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Managing Nature – Business as Usual

Patterns of wording and patterns of meaning in corporate environmental discourse

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I would like to register my thanks to my family for their support, and publicly promise my children that I will spend more time with them in the next year than I have in the last three. A special note of thanks goes to my wife, Dagne, who has carried a greater part of the burden at home than she should, without ever once reproaching me. Finally, my thanks are due to the community of scholars, living and dead, whose ideas have entered into my own patterns of meaning and come to expression in this work. Like many of the people mentioned in this acknowledgement, my debt cannot be repaid to them personally and I shall have to satisfy myself with offering some modest help to others.

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Table of Contents

List of figures

List of tables

Notational conventions

I have used double quotation marks to indicate the boundaries of text which I have taken from other sources, following the Chicago style to cite all my references. I use single quotation marks for two reasons. The main purpose is to indicate that I use the word with certain reservations about its representation. For example, I shall regularly use the phrase "the 'fleshy' and 'fibrous' natural landscape" to refer to one way of representing, in language, the natural world. The usual meaning of the two words, *fleshy* and *fibrous*, might give the reader the impression that I am referring to the reality of the natural landscape, which is definitely not my intention. I hope that the single quotation marks will communicate my sense of caution. I also make occasional use of single quotation marks to indicate my admission that I have represented a concept clumsily, as, for example, when I suggest that the term *Keywords*, would be more accurately labelled as '*KeySigns'*.

I use Times Roman font style throughout the thesis. The text samples in the reports from the computer-based processing of the language databases, however, are in the Arial font. They have been left in Arial, except for the occasions where I take an extract from the report into the text of the thesis. The computer-based analysis enables the researcher to look in the database for occurrences of a word string, and the exclusive usage of capital letters in a character string is interpreted, by the computer programme, as an instruction to look for *all* occurrences, regardless of the case. For example, if I key the character string RISK into the search programme, the software will look for Risk, risk, RISK and even such unlikely candidates as RIsk, riSK, etc. When I refer, in the thesis, to such empirical work, I leave the character string in the capital letters – RISK – which I used for the computer-based searches.

My usage of italics is normally to emphasise a point in an argument. But a secondary usage is to represent the sign of a word, as opposed to its referent as, for example, when I comment that the "semantic field of family relationships would include words such as *father, daughter, wife, grandmother, uncle* etc." When I refer to how terms are used in my language databases, my practice is to maintain the capital letters style – RISK – which I use to indicate searches.

When cross-referencing within a chapter, I have simply referred backwards or forwards to the relevant section. Outside of a chapter, however, I have included a page number to help the reader find the relevant section, figure or table. All the sections, tables and figures that are labelled in the appendices begin with a letter, A to L, which indicates the appendix in which they can be found. All the sections, tables and figures that are labelled within the main body of the thesis begin with a number, 1 to 8, which indicates the chapter in which they can be found.

1 Introduction – the hijack hypothesis

1.1 Two primary aims

1.1.1 Testing the hijack hypothesis

This project was conceived with the primary intention of testing empirically a claim made by a senior British environmentalist academic, Professor Richard Welford, to which I gave the name "the hijack hypothesis." At the time of making his claim, Welford was the editor-in-chief of Europe's leading business and environment journal: *Business Strategy and Environment.*[1] As early as 1997, he argued that the language of the green corporations was establishing itself as the only language of the greening of business, marginalising in the process the critical voices of the environmental movement:

> In brief, industry has hijacked the more radical environmental debate taking it out of its traditional discourses and placing it in a liberal-productivist frame of reference.[2]

The implications of Welford's claim are profound. If, as he claims, the 'green' corporations now control the language of the radical environmental debate, then other agents will also have adopted the same way of debating. This means that it is now industry's representation of the environment and the environmental challenges we face, which dominates the debate. Even more worrying, it is industry's assumptions about how to address these challenges, which are now defining the limits within which solutions may be sought.

The doctoral project, then, was funded in order to test out Welford's claim. But whereas he speaks to an international community of scholars whose research focus might collectively be described as 'the greening of business', my research interests are limited geographically to the UK. From my perspective of British culture studies, a crucial test of industry's supposed success in its hijacking operation is the extent to which the environmental discourse of green business may now have become the favoured representation of government. If it is safe to assume that control of the language is a vital factor in exercising power, then it is of great importance to establish the manner and extent to which the environmental representations of the UK government parallel those of business. Whether my findings for Britain are of interest to the wider international community of 'green business' scholars to whom Welford speaks, is a matter for others to judge.

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[1] Wiley Interscience, *Business Strategy and the Environment,* http://www.interscience.wiley.com/jpages/0964-4733/aims.html, (accessed 28th January 2008).
[2] Richard Welford, *Hijacking Environmentalism: Corporate Responses to Sustainable Development,* (London: Earthscan Publications, 1997), x.

In the course of this PhD thesis, then, I shall be testing out Welford's hijack hypothesis with reference to the UK. Whereas he, in his claim, referred to "industry," I shall examine British corporations which are 'green' (a term whose definition I shall address later). And whereas he referred to the "radical environmental debate," I shall focus my attention on British environmental organisations which, it might be argued, speak *radically* on behalf of the natural landscape. These empirical aspects of the project, however, make their first substantial appearance in chapter four. Before this, I shall define the project's objectives more closely and set up my conceptual model. First, I shall use the major part of this chapter to explore the case that Welford made for his hijack hypothesis and, in doing so, make a series of interpretive moves which, I argue, clarify the claim that he made. The most significant move I shall make will be to insist on a more fine-grained treatment of Welford's use of the term *discourses* in the quotation above. I shall argue that the hijack hypothesis is founded upon an unfortunate conflation of two separate discourses, which I label *the linguistic discourse* and *the cultural discourse*. I shall explain the consequences of this confusion in due course, but will reassure the reader that although I shall reject Welford's metaphor of a hijack, I believe his underlying concerns to be sound. One consequence of my insistence on a distinction between a linguistic and a cultural discourse that I must address immediately, however, is the project's methodological challenge.

1.1.2 The methodological challenge

The project has sought to test the hijack hypothesis in two different, but related ways. First, as already indicated, I shall make a careful interpretive examination of the case made by Welford. This process will first modify the hijack metaphor in chapter one and then lead me, in chapter two, into formulating two main hypotheses regarding the *cultural* discourse of 'green' business in the UK: (i) the appropriation claim and (ii) the incorporation claim. In my second approach to testing the hijack hypothesis, I shall, in chapters four and five, make an empirical examination of the *linguistic* discourse of business and the environment.

In the four chapters mentioned thus far, I shall maintain a clear distinction between the two discourses. However, in chapters six and seven I shall attempt to make some connections, using my appropriation and incorporation claims to look for evidence of a correlation between the linguistic and cultural discourses. The findings from this process will enable me to discuss the extent to which linguistic analysis can make a useful contribution to an understanding of cultural discourse. It is this attempted movement between linguistic and cultural discourse which I have labelled "the methodological challenge." From the point of view of Welford's

'greening of business' research community, it is of no great significance. However, from an academic point of view it is highly relevant. I hope my work will make a contribution to ongoing academic discussions about interdisciplinary research work, in this case, the cross-fertilisation between culture studies and linguistics. I explore the methodological challenge in chapter three and there develop my conceptual model for making connections between the linguistic and cultural discourse. But I now include a short introduction to the challenge, in order to give an impression of the difficulties, and then the possibilities, that prompted me to make this attempt.

In his *Introduction to Functional Grammar,* Michael Halliday presents his conceptual view of language as having three separate layers, which I have illustrated as figure 1.1 below:

> A language is a complex semiotic system composed of multiple LEVELS or STRATA. The central stratum, the inner core of language, is that of grammar. To be accurate however, we should call it LEXICOGRAMMAR, because it includes both grammar and vocabulary. […] The lexicogrammar is the level of 'wording' in a language. The wording is expressed, or realised in the form of sound or writing; hence the two levels of phonology and graphology serve as alternative modes of expression. […] The wording realizes *patterns* of another level higher than itself – but still within the system of language: the stratum of SEMANTICS. […] One way of thinking of a 'functional' grammar, like the present one, is that it is a theory of grammar that is oriented towards the discourse semantics [emphasis added].[3]

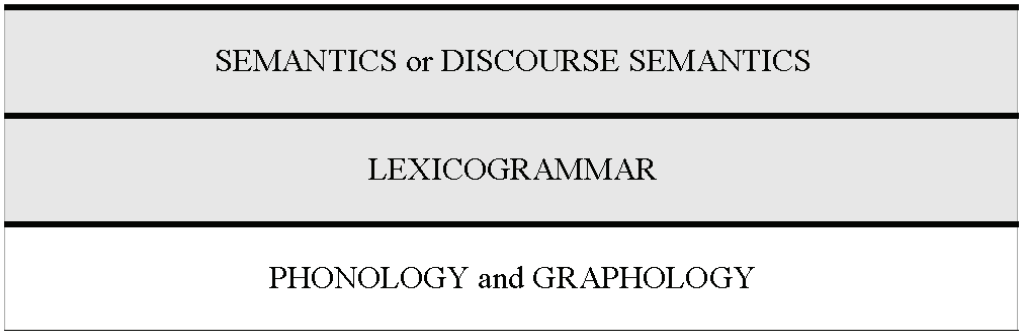

Figure 1.1: An illustration of Halliday's three-strata view of language

For the sake of making a faithful replication of Halliday's argument, I have included the lower level of "PHONOLOGY and GRAPHOLOGY." However, for the purposes of this project we may dispense with it immediately and focus attention on the middle and upper layers which are shaded in grey. As the final sentence in the quotation above implies, Systemic Functional Linguistics, the theory for which Halliday is renowned, seeks to explain the layer of the lexicogrammar in terms of the function to which it is being put, i.e. its meaning.

[3] M. A. K. Halliday, *An Introduction to Functional Grammar*, 2nd edition, (London: Edward Arnold, 1994), 15.

Halliday is a leading figure within a movement sometimes referred to as *British Functionalism*. Linguists within this school consider the appropriate test of models of grammar to be how well they manage to account for language *as it is actually used*. One approach to the collection and study of language that is compatible with this school, is corpus linguistics, my chosen tool for the empirical research of the project. I shall have a good deal to say about it in chapter three and also in later attempts at moving from analysis of linguistic discourse to making interpretations of cultural discourse. For my purposes here, I shall limit myself to a brief description. Essentially, corpus linguistics, as I have used it, provides the researcher with a tool for seeing spatial patterns of wording in a very large quantity of texts. Its appetite for texts is a virtue of the computer technology on which it is based. Using a PC from 2005, I have operated with a collection of electronic texts which, if printed on paper, would run to thousands of pages. The computer also limits the capability of corpus linguistics; although it counts very quickly, it doesn't really think. Thus it can generate reports on the formal placing of words relative to other words, showing me, for example, that in my texts the word *greenhouse* often appears in the company of *gas* or *effect*. But it has no idea why these two words do appear near *greenhouse* and why the word *tomatoes* does not.[4]

It is within the central stratum of figure 1.1 that the corpus linguistics project has its object of study. Through the analysis of the lexicogrammar layer, it is shedding new light on the way in which language communities, such as British English speakers, actually use language. It is demonstrating that there is a great deal of inter-dependence between our use of lexis (vocabulary) and the grammar (organisation) of that same vocabulary. This accounts for Halliday's usage of the term *lexicogrammar*, rather than the traditional separation of lexis and grammar. But the project goes further than simply charting the layer of the lexicogrammar. By careful interpretation of the semantics of language in use, corpus linguistics is building a powerful case that form, i.e. the *patterns* we create with words, is perhaps more closely aligned with our intended meaning than has hitherto been supposed. There is, of course, a very profound boundary between form and meaning - between the lexicogrammar and the discourse semantics of figure 1.1. But having first recognised the great difficulty (and challenge) in moving from the patterns in the lexicogrammar to the stratum (or strata) of discourse semantics, one needs to remind oneself that it is chiefly through the organisation, i.e. the lexicogrammar, of the language that we communicate our meaning to each other. Respected scholars see possibilities for making useful observations about culture on the basis

[4] This is a topic to which I shall return many times in the course of the thesis.

of a study of the language. Here is a view offered by Michael Stubbs, a linguist, on the possibilities for looking 'upwards' from the level of the lexicogrammar:

> Vocabulary and grammar provide us with the potential and resources to say different things. But often this potential is used in regular ways, in large numbers of texts, whose *patterns* therefore embody particular social values and views of the world. Such discourse *patterns* tell us which meanings are repeatedly expressed in a discourse community [emphasis added].[5]

Testing out Stubbs' claim requires, first, that one can identify a "discourse community" and, second, that one can obtain a large enough sample of its "texts" for analysis. Assuming one can do this, he is suggesting that it might be possible to make statements about "meanings," which are expressed by the community, from the formal analysis of the ways in which words are arranged on the pages of its texts.

This methodological challenge offers the promise of moving 'upwards' from an analysis of a linguistic discourse to making interpretive statements about the way in which meanings of words are understood in the discourse of different cultural communities. The interest in making such connections is not just limited to linguists. Raymond Williams, a scholar with his roots in literature and culture studies, was also interested in the connections between language usage and meanings. In his introduction to *Keywords: A Vocabulary of Culture and Society*, he recounts his experience of returning to Cambridge in 1945, after four and a half years of military service. As he confided to a friend who had also been away, many of his old university friends did not "speak the same language;" the words themselves were familiar, but they were used in ways which he did not recognise.[6] This experience would seem to have been instrumental in fuelling Williams' interest in language use. In *Culture and Society: 1780 – 1950*, which was first published in 1958, Williams charts the semantic development, over a period of 170 years, of five important words: *industry, democracy, class, art* and *culture*. He described them as being "of capital importance," and saw the changes that occurred in their usage as "bear[ing] witness to a general change in our characteristic ways of thinking about our common life:"[7]

> There is in fact a general *pattern* of change in these words, and this can be used as a special kind of map by which it is possible to look again at those wider changes in life and thought to which the changes in language evidently refer [emphasis added].[8]

Here, Williams is suggesting that by first searching for semantic change in words "of capital importance" it is then possible to explore how these differences might affect the construction

[5] Michael Stubbs, *Text and Corpus Analysis: Computer-assisted Studies of Language and Culture,* (Oxford: Blackwell, 1996), 158.
[6] Raymond Williams, *Keywords: A vocabulary of culture and society*, (London: Fontana Press, 1988), 11.
[7] Raymond Williams, *Culture and Society: 1780 – 1950*, (Middlesex: Penguin Books, 1977), 13.
[8] Ibid.

of a social reality. None of the five words which he selected here would be useful in my project, but the principle will be understood.

In all three of the quotations from Halliday, Stubbs and Williams, I have italicised the word *pattern(s)* and will emphasise its important role within the thesis. The methodological challenge may be conceived as an empirical attempt to substantiate the claims of Halliday, Stubbs and Williams by finding *patterns* in the organisation of words in my linguistic discourse and relating them to *patterns* in meanings within a cultural discourse. But having briefly sketched out this second of my two primary aims, I now return to my interpretation of the former: Welford's hijack hypothesis.

1.2 The hijack hypothesis developed – Welford's case

Hijacking Environmentalism: Corporate Responses to Sustainable Development was first published in 1997.[9] Richard Welford is credited as author and five of the ten chapters in the book are his alone, with five other writers listed as making a contribution. Three of the contributors worked with Welford on one chapter each, while Nick Mayhew and Tarja Ketola each produced their own chapter. The ten chapters are organised into three sections: "Part 1 Defining the Problem," "Part 2 Underlying Tensions" and "Part 3 Searching for Solutions." It is in the first part of the book that Welford (chapters one to three) and Mayhew (chapter four) develop their case for the hijack hypothesis, and it is from a close reading and interpretation of these almost 100 pages that I now explore the hypothesis with the intention of developing some research questions.

After a general introduction in which he reviews environmental challenges and business's institutional role, Welford advances, in chapter two, "From Green to Golden: the Hijacking of Environmentalism," to the main theme of the book. He makes considerable use of a schematic, the original of which he attributes to the Norwegian researcher Johan Galtung. However, the actual diagram from which Welford works was drawn by Rudolf Bahro, who uses it in his *Avoiding Social and Ecological Disaster*.[10] Calling it "Galtung's World Schematic," Bahro references a meeting with its author in Berlin in 1983, telling the reader: the "sketch I give here comes from an unpublished manuscript of Galtung's which I have

[9] Richard Welford, *Hijacking Environmentalism.*
[10] Rudolf Bahro, *Avoiding Social and Ecological Disaster: The Politics of World Transformation*, (Bath: Gateway Books, 1994). This is a translation of the original German version which was first published in 1987. Johan Galtung subsequently published his own, very similar version of the sketch in *My Peace by Peaceful Means*: *Peace and Conflict, Development and Civilization*, (London: SAGE, 1996), 149.

before me."[11] This schematic became the starting point for Welford (see figure 1.2 below), which he describes in terms of the five colours that are used to label positions on the model:

> Blue represented the West; red was the Soviet; green the sphere of under-development and traditional societies; and yellow (or henceforth golden so as not to imply any racism and in order to stress the links with money) was that of the Japanese and Asia-Pacific rim or so-called 'Tiger' or 'Dragon' economies. In the middle of the square we find the pink, social-democratic model, typified, perhaps, by Swedish politics in the 1980s.[12]

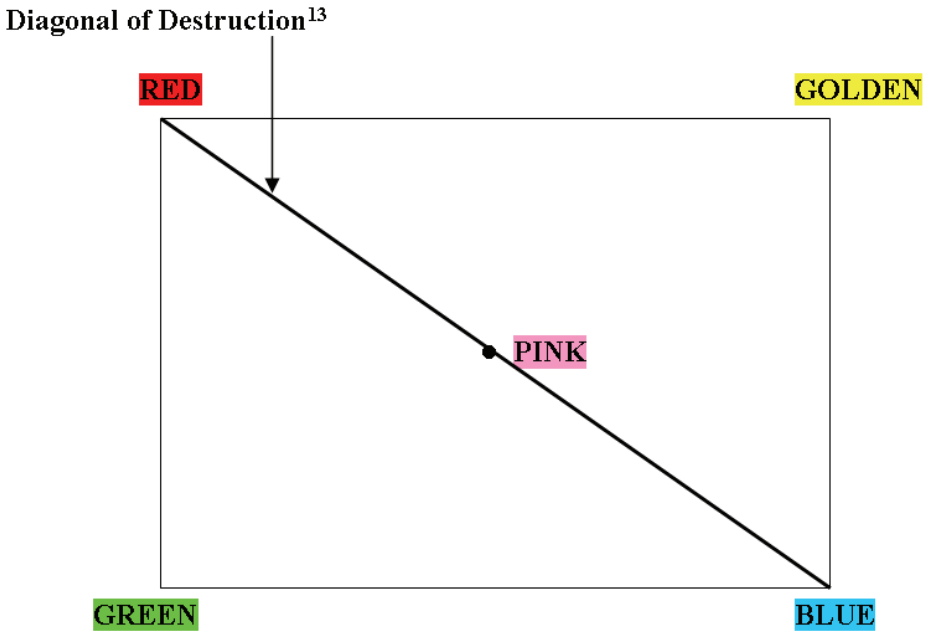

Figure 1.2: Galtung's World Schematic as presented by Welford[13]

In Bahro's version of the schematic each of the coloured corners is characterised with a brief description and I include these here in order to give a flavour of how the colours might be conceptualised: "RED – State, PLAN, Bureaucracy, **Marxism**, (Socialism)," "YELLOW/GOLDEN – State **and** Capital, PLAN **and** MARKET, Bureaucracy **and** Corporation, **Japanism**," "GREEN – localistic, The human in the middle family, Life-circle, Village, **Anarchism, Ghandi-ism, Maoism**," "BLUE – Capital, MARKET, Corporation, **Liberalism**, (Capitalism)" and "PINK – Social-democratism."[14] Welford's description of the schematic is suggestive of political systems, whereas the terminology that Bahro applies to it refers to political institutions and, in the bold typeface, the various 'isms' of political ideologies. I am not entirely comfortable with this conflation of political institutions ("State, Bureaucracy"), political ideas ("Marxism, Ghandi-ism") and values ("The human in the

[11] Rudolf Bahro, *Social and Ecological Disaster,* 38.
[12] Richard Welford, *Hijacking Environmentalism,* 17.
[13] Ibid.,18.
[14] Rudolf Bahro, *Social and Ecological Disaster,* 26.

middle family, Life-circle"). Some of this mixture is filtered out by Welford and Bahro as they develop their argument. I shall also make an interpretive move, which separates the cultural from the political landscape. But it is necessary to keep faith with Welford's argument, so I shall retain his terminology for the time being.

According to Welford (paraphrasing Bahro), Galtung had superimposed arrows onto the square. In this way he used the schematic to describe different forces at work in an adversarial political plane. For example, two arrows pointing towards each other from respectively the RED corner and the BLUE corner illustrated the "tendency of East and West to converge," as represented by the development of social democracy.[15] In doing so, Galtung interprets his plane institutionally and the arrows are intended to illustrate his interpretation of historical events, or, in the case above, perhaps of his hope, as a Norwegian writing in the 1980s, that the success of the Scandinavian model of social democracy would act as an institutional magnet on the political systems east and west of the iron curtain. Welford adopts the same technique of arrows to represent important trends, but presents his own interpretation of the four which he considers to be important ones. Recognising that at this point, he places his own interpretation on the model, I shall refer to this and succeeding figures as "Welford's schematic."

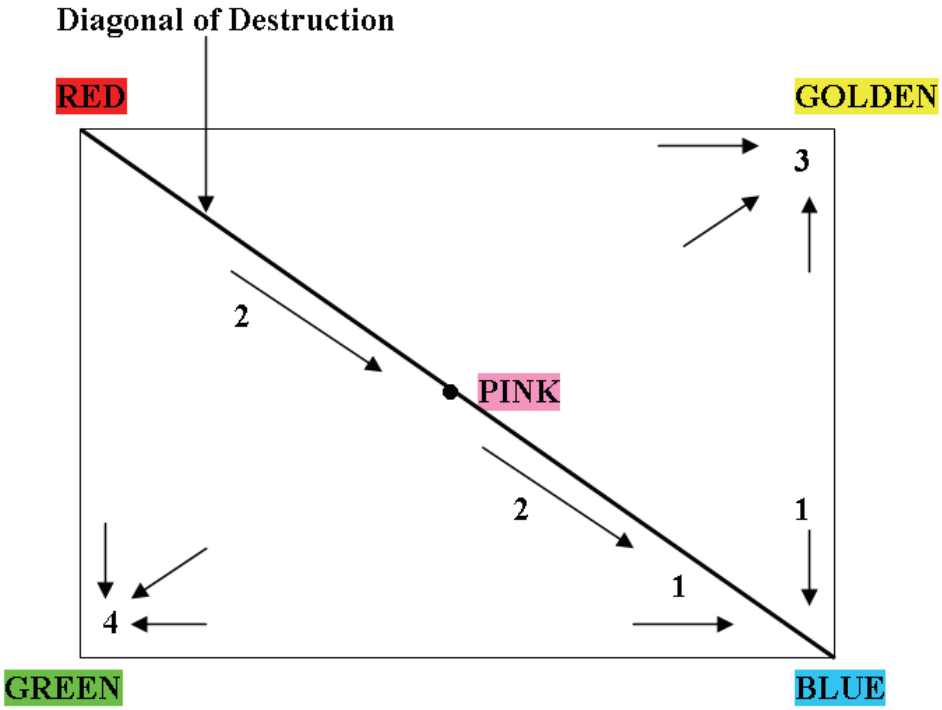

Figure 1.3: Welford's Schematic[16]

[15] Ibid.
[16] Richard Welford, *Hijacking Environmentalism*, 19.

The four trends are the numbered arrows in figure 1.3 above, and all the quotations are taken from Welford's description on pages 19 and 20. Associated with arrows 1, Welford identifies free trade, transnational corporate investment and foreign aid provided to the third world on condition that it implements economic 'reforms', as having drawn the developing world towards the blue corner. Here, the ideological aspect of the arrow is represented by neo-classical economics, most famously advanced by Milton Friedman and the Chicago school. The institutional target of Welford's criticism would no doubt have been the World Bank and/or the International Monetary Fund, whose loan conditions pushed borrower countries into introducing "free-market economic policies, liberalization strategies and, at times, deliberate austerity measures." The second trend (represented by arrows 2), again towards the BLUE corner, represents the collapse of the Soviet Union and the introduction of market economies in most of the resulting nation states.

But as I read the development of his case, it seems to me that in trying to adhere to the discipline of the schematic and its labels, Welford confuses the target of his criticism. The agent of social change on which he really wishes us to focus our attention with the two trends above, is not some historical movement towards a BLUE political ideology of liberalism, but rather the overwhelming success of what he has termed *liberal-productivism*, in both the developing world and the former socialist countries. An alternative and more widely-used term to describe this process is *free-market capitalism*. However, the term *capitalist* has political connotations which will not be useful for my purposes, so I shall refrain from using it. Liberal-productivism is the same historical trend as the one which Welford describes as pulling towards the GOLDEN corner (arrows 3): "economic advancement and success (in economic and financial terms) of Japan and the Asia-Pacific rim." In support of my interpretation, Welford himself then observes that the pull of arrows 1 towards the BLUE corner, is schematically at odds with arrows 3. In order to deal with this 'schematic' difficulty he proposes a "synthesis trend" of a "dominant ideology associated with globalization, scale, private (often nomadic) capital, Japanese management styles and working practices, economic growth and deregulation." I imagine that this might be illustrated on the schematic by a very thickly drawn arrow aiming due east. But, possibly because it would not conform to the limitations of just four corners imposed by his schematic, Welford does not suggest it.

Finally, using arrows 4, Welford presents the green wave. It is significant that there are three of them and that they point away from each of the other three corners. As I read Welford, what he is illustrating with each of these arrows is a rejection of the one over-riding

trend that he has described in the three other arrows, namely the global trend towards liberal-productivism. With arrows 4 he identifies the alternative values of the GREEN corner: "connectedness, spirituality (as opposed to organised religion), individuality, community, sufficiency and simplicity," as providing a motivation for movement. His formulation suggests that he conceives of this trend as being driven by individuals making personal, value-based decisions about how they wish to live their lives. This is in contrast to society being shaped by forces emanating from the various domains of government, with which traditional, democratic politics has been associated.

Here, I now flag the nature of my intended interpretive move. The above observation on the apolitical origins of green trends, combined with my view, on the previous page, that Welford's chief target of criticism is unfettered global liberal-productivism, suggests that the Welford/Bahro schematic, with its single plane of competing political ideologies, would be better conceptualised as two, connected planes, rather than one. The upper plane may be conceived of as the traditional political arena in which we are used to thinking in terms of a RED – BLUE dichotomy. Lying close underneath the former, separate from it but still having some points of connection, the second plane, following Ulrich Beck, may be thought of as a sub-political plane.[17]

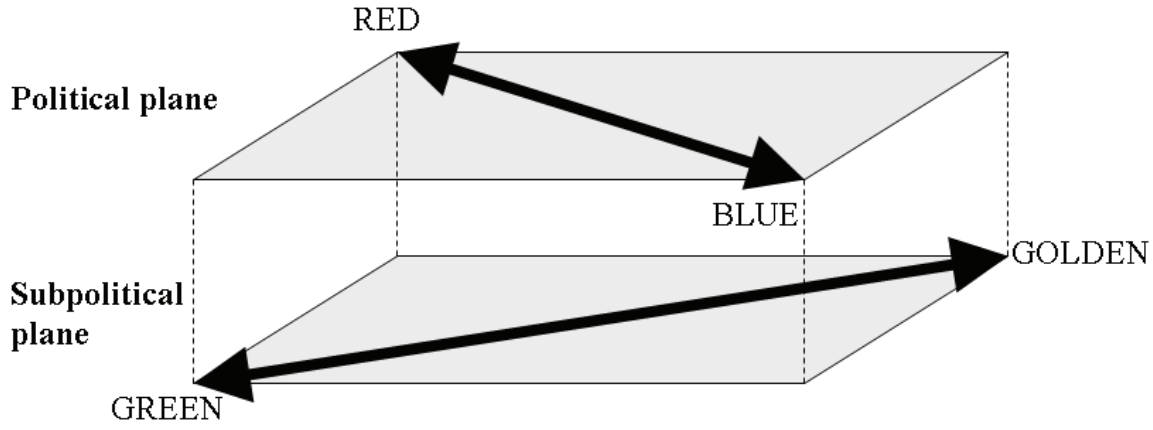

Figure 1.4: Re-interpretation of the Welford/Bahro schematic in terms of Beck's thesis of the subpolitical

Welford's forces of "globalisation, private (often nomadic) capital, growth and deregulation" are more productively conceived as Beck's "[t]echno-economic development" which "becomes a third entity, acquiring the precarious hybrid status of a sub-politics, in which the

[17] Ulrich Beck, *Risk Society: Towards a New Modernity*, (London: Sage Publications, 1992).

scope of the social changes precipitated varies inversely with their legitimation."[18] In this reading, Welford and Bahro would see the opposition between GREEN and GOLDEN as a largely *sub-political* process, as I have illustrated in figure 1.4 above.

Having registered my intended interpretation, I shall, nevertheless, proceed with Welford's single schematic, in order to keep faith with his development of the argument. In this way, I can continue to cite his text and figures verbatim, but I shall return to this political-subpolitical division once I am finished with his argument. One drawback of this textual decision is that as I continue to sketch out the Welford/Bahro reasoning, it will become increasingly apparent that some of their moves could be better accommodated by using my Beck-inspired separation and focussing attention purely on the subpolitical plane. An example of this is how Welford now deals, schematically, with the divergent directions of the opposing arrows within his single plane. With reference to figure 1.3, although arrows 1 and 2 both point in the direction of the BLUE corner, he now argues "that the line of destruction has actually become less important," on the grounds that "the debate between left-right politics is certainly more muted than it was and in many cases, in many countries, it is now difficult to see a clear divide between left and right." What he is really observing is the waning influence of the traditional political plane as a force for social change, and the waxing of sub-political processes. In so doing, Welford now brings himself into line with radical green or eco-centric thinking, that the question whether the ownership of the means of production is capitalist or socialist is irrelevant to the future of planet earth. Jonathon Porritt doesn't use the Beck terminology of the subpolitical, and the original German version: *Risikogesellschaft: Auf dem Weg in eine andere Moderne* was in any case published in 1986, two years after the following quote. Here, Porritt makes a similar argument to Welford in pointing to subpolitical processes that are driving social (and hence environmental) change:

> Both [capitalism and communism] are dedicated to industrial growth, to the expansion of the means of production, to a materialist ethic as the best means of meeting people's needs, and to unimpeded technological development. Both rely on increasing centralisation and large-scale bureaucratic control and co-ordination. From a viewpoint of narrow scientific rationalism, both insist that the planet is there to be conquered, that big is self-evidently beautiful, and that what cannot be measured is of no importance.[19]

Bahro also considers the RED-BLUE axis to be increasingly irrelevant, and chooses to see these political solutions as "accomplices of one overarching system, the industrial system or

[18] Ibid., 186.
[19] Jonathon Porritt, *Seeing Green*, (Oxford: Blackwell, 1984), 44. Such a point of view is also advanced in Jonathon Porritt and David Winner, *The Coming of the Greens*, (London: Fontana, 1988), 256.

industrial civilisation. It was one two-headed dragon – which, from 1989 [i.e. the collapse of the Soviet Union], began merging as one."[20]

In Welford's interpretation of the political plane, the demise of the RED-BLUE "diagonal of destruction" (see figure 1.3), is superseded by the rise of "the diagonal of tension" between GREEN politics and the values of the GOLDEN corner (see figure 1.5):

> At the green end of the line we live in harmony with nature and with each other. As we move in the opposite direction, towards the golden corner, we see an emphasis on growth, globalisation, materialism and consumption which is inevitably exploitative and results in the suppression of nature and the individual in favour of the interests of the corporation and capital.

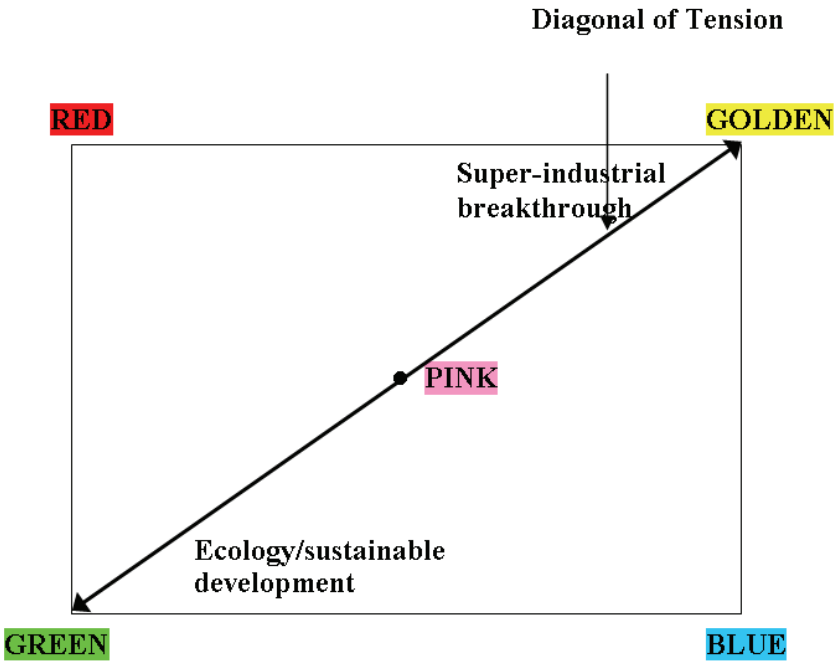

Figure 1.5: Welford's schematic showing the Diagonal of tension[21]

His label in the GREEN corner of "Ecology/Sustainable development" is self-explanatory and also makes clear his own view of where "sustainable development" belongs. The label in the GOLDEN corner: "Super-industrial breakthrough" is not explicitly explained, though he comments that the "inevitable consequence of this growth [towards the GOLDEN corner] and increase in scale is that the corporation will, indeed, rule the world."[22] The term: *super industrial,* has come from Bahro in one of his modifications of the original Galtung schematic.[23] In Bahro's schematic, the label of the super-industrial breakthrough is not placed in the GOLDEN corner. Rather, it represents the direction of movement of the diagonal of

[20] Rudolf Bahro, *Avoiding Social and Ecological Disaster,* 34.
[21] Richard Welford, *Hijacking Environmentalism,* 21.
[22] Ibid.
[23] Rudolf Bahro, *Avoiding Social and Ecological Disaster,* 35.

tension, towards the GOLDEN corner. In Bahro's description of this powerful force, it conforms to the combined effects of arrows 1, 2 and 3 in my reading of Welford, i.e. liberal-productivism, and also to Porritt's 'industrialism argument', which I cited previously. Regardless of the purported political ideology of the parent country, everything, from a green standpoint, is moving towards the GOLDEN corner. A further important observation to make about Bahro's schematic, is that he now introduces the label "Ecological modernising," associated with the force of the "Super-industrial breakthrough." According to Bahro, ecological modernising conceals the real intentions of the super-industrial breakthrough. Whereas Welford sees the overt action of a hijack, Bahro suspects a similar, but covert, operation:

> In reality the whole blue-red diagonal was moving itself in the direction of the super-industrial breakthrough, which would be flanked and *concealed with ecological modernising* [emphasis added].[24]

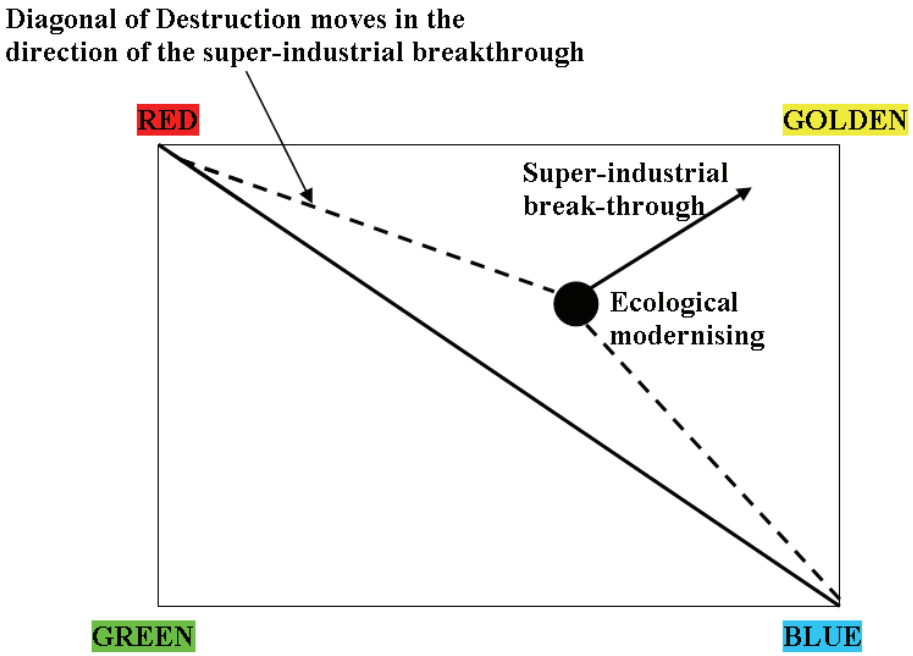

Figure 1.6: My construction of the schematic based on Bahro's description

It is not entirely clear from his text, how Bahro conceptualises *ecological modernising*. What is fairly obvious is that Bahro conceives of it as mere window-dressing; the onward march of liberal-productivism towards his super-industrial breakthrough continues unchecked, with an ecological 'look' concealing its true intentions. Although Bahro does not provide a schematic to illustrate precisely this point of development in his argument, I have constructed what I believe to be a faithful replication from his description, presented above in figure 1.6.

[24] Ibid.

Bahro was writing his original German manuscript in the mid 1980s. According to Stephen Young, the "origins of ecological modernisation can be dated to the late 1970s and early 1980s," and he notes that Germany was one of the early adopters of the idea.[25] Bahro was therefore writing at roughly the same time that the concept of ecological modernisation was gaining ground. Here, I would like to take a short break from the Welford/Bahro development in the interests of some historical contextualisation of the term.

The received wisdom of what was then, the relatively new politics of the environment, was that economic development and environmental protection were mutually exclusive objectives. A country couldn't expect to have both at the same time; more economic growth would automatically lead to more degradation of the natural environment.[26] Given virtually every nation's dependence on economic growth, the political discourse was locked by this 'either-or' impasse.[27] But it was, therefore, all the more receptive to the new idea of ecological modernisation, which postulated that it might be possible for a country to find avenues of economic growth that were not environmentally damaging. By seemingly reconciling the two goals, ecological modernisation offered to governments the exciting prospect that they might design or encourage a form of economic growth, which would deliver jobs and welfare to their electorates, *without* degrading the natural environment, whose own welfare was becoming an increasingly important concern of that same electorate. Young cites several other benefits that led to the fairly rapid take up of ecological modernisation in the political discourse of the environment, at least in Western Europe.[28] First, its adoption improved the relationship between government and industry. Instead of a confrontational line, in which government was obliged to set pollution limitations on damaging industrial processes, ecological modernisation suggested that the carrot of financial incentives could be used to encourage business to move towards more environment-friendly operation. This process widened the dialogue and made it more co-operative, as trade associations started to discuss with government officials the most effective ways of rewarding the corporate 'good guys' for their environmentally-beneficial innovations and investments. Another advantage for government was that the carrot approach required far less policing than the stick, of first legislating discharge limitations, and then setting up a small army of inspectors to make sure the laws were followed. In the Anglo-US environment of political de-

[25] Stephen C. Young (ed.), *The Emergence of Ecological Modernisation*, (London: Routledge, 2000), 17.
[26] One consoling avenue of thinking for would-be environmentalists was that once economic growth had generated sufficient economic resources, the country could pay attention to the needs of the environment.
[27] The Himalayan nation of Bhutan is perhaps the exception which proves the rule.
[28] Stephen C. Young (ed.), *The Emergence of Ecological Modernisation*, 19-23.

regulation that characterised the Reagan-Thatcher 1980s, this was a much more palatable policy.

Second, a few of the more far-sighted corporate leaders actually began to conceive of the environmental 'magnifying glass' through which their industrial operations were now being viewed, as a spur to business innovation and financial payoffs. The first, most well-known, and by far the earliest example of this, is the US corporation, Minnesota Mining & Manufacturing (3M). Its "Pollution Prevention Pays" programme, an institutional forerunner of ecological modernisation, was established in 1975 and is still going strong.[29] However, this single, pioneering example of ecological modernisation in action was well ahead of its time. The favourite early example of a UK green business is Body Shop, although it is of a different sort than the 3M case. From its inception and the opening of the first store in Brighton in 1978, Body Shop maintained a very visible environmental profile which it used to good effect in its marketing campaigns.[30] Growing financially, whilst minimising its damage to the environment, demonstrates the potential for decoupling that ecological modernisation promised. What the Body Shop example does not illustrate is the u-turn from being a corporate polluter, to the sort of '3M-belief' that by redesigning business processes, pollution can be avoided and more profits generated. Aside from Body Shop, notable UK examples of corporate ecological modernisation do not appear until the 1990s, many in the wake of the publication in 1992, of *Changing Course: a Global Business Perspective on Development and the Environment*. This was followed by the establishment, in 1995, of the World Business Council for Sustainable Development, by the book's author, Stephan Schmidheiny.[31] Another important spur to business leaders adopting the idea of ecological modernisation, was Michael

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[29] 3M, *Pollution Prevention Pays (3P)*, http://solutions.3m.com/wps/portal/3M/en_US/global/sustainability/management/pollution-prevention-pays/, (accessed 29th January 2008). The following paragraph introduces the programme: "Over the last 32 years, the program has prevented more than 2.6 billion pounds of pollutants and saved over $1 billion based on aggregated data from the first year of each 3P project. The 3P program helps prevent pollution at the source - in products and manufacturing processes - rather than removing it after it has been created. When 3P was launched in 1975, the concept of applying pollution prevention on a companywide basis and documenting the results was an industry first."

[30] The Body Shop*, Our History*, http://www.thebodyshopinternational.com/About+Us/Our+History/, (accessed 29th January 2008). The following is paragraph two from the web page: "In 1985, in its first year as a public company, The Body Shop sponsored posters for Greenpeace. A year later, it created an Environmental Projects Department of its own, while the first major campaign for The Body Shop is "Save the Whales" with Greenpeace, in 1986."

[31] Stephan Schmidheiny, *Changing Course: a Global Business Perspective on Development and the Environment*, (Cambridge, MA: Massachusetts Institute of Technology, 1992). Information on the World Business Council for Sustainable Development can be found at the following webpage: *Dedicated to Making a Difference*, http://www.wbcsd.org/templates/TemplateWBCSD5/layout.asp?MenuID=1, (accessed 29th January 2008).

Porter's article: "Green and competitive," which appeared in the *Harvard Business Review,* also in 1995.[32]

Third, many of the radical NGOs also saw that there were benefits to be gained by entering into a cooperative dialogue with government and business, rather than simply chaining themselves to the top of the smoke stack and unfurling a banner. The more pragmatic, and less ideological, of the NGO leaders believed that they could achieve greater gains for the environment, by getting involved in the detailed development of policy. They also recognised that their spectacular 'end-of-pipe' actions and rubber dinghies appealed to only a minority of the public. By exchanging their orange survival suits for a darker variety, appearing on television alongside the Secretary of State for the Environment, and selecting environmental issues with general appeal, these NGOs sought to build their membership numbers across a much broader section of the public, and thereby strengthen their bargaining position at the government negotiating table.[33]

I read ecological modernisation as a *facilitating* discourse. By this, I mean that its great usefulness has been in legitimising a dialogue between economic growth and the ecological critique, on a political level, as well as in the sub-political plane, where business operates. In this lower plane, the senior managements of certain business corporations have been able to respond positively to criticism from NGOs, while ecological modernisation, as concept, has covered their backs from attack by fund managers, whose exclusive goal is greater earnings per share. Using ecological modernisation's idea that green can be profitable, they have launched their corporations on a process of ecological modernising. From the various events and dates mentioned in this minor detour into the history of ecological modernisation, it will be apparent that Rudolf Bahro, preparing the German language manuscript of *Avoiding Social and Ecological Disaster: The Politics of World Transformation* for its original publication in 1987, would have been familiar with the term at a very early stage in its life. Several years before the idea of ecological modernisation had begun to win over its first corporate disciples, Bahro was already deeply sceptical towards the concept and what he, or his translator, seems to have considered to be its corporate

[32] Michael Porter and Claas van der Linde, "Green and competitive: ending the stalemate", *Harvard Business Review*, 73, nr. 5, (1995): 120-33.

[33] "The success of FoE's [Friends of the Earth's] campaigning has drawn it onto government committees and into consultation with civil servants and legislators […] This has inevitably prompted modifications in its tactics […] [A]s FoE has established its authority for rational argument, it has distanced itself from the more militant forms of protest. Though civil disobedience and direct action were contemplated in its early days, it now eschews any illegal or disruptive activities." Philip Lowe and Jane Goyder, *Environmental Groups in Politics*, (London: George Allen & Unwin, 1983), 132.

manifestation, ecological modernising.[34] I see no need to make a distinction between the two forms, and will follow the convention of using the term *ecological modernisation.*

Writing roughly a decade later in the mid-1990s, Welford agrees with Bahro that the "diagonal of tension" is now the important ideological arena. Along this axis he first chooses to designate a "Bioregional – Modernism" polarity, reflecting an idea that he had published two years previously:

> This [the diagonal of tension] is now the centre of the debate even though the left-right battles still exist. It is often represented by a tension between local and global and I have previously typified this as a debate between modernism (a mixture of blue and golden) and a bioregional (green) alternative.[35]

Welford's usage of the term *modernism* is problematic, carrying, as it does, so many different connotations. The focus of his attack is really the liberal-productivism to which I have already referred, and I shall make the substitution once I have concluded my summary of his argument and begin to make my own interpretation. For the time being, however, I shall keep faith with the terminology that he uses in his argument. He follows Bahro in making a distinction, albeit modest, between modernism and what he chooses to dub *eco-modernism*. In the quote below, Welford considers eco-modernism to be "a discourse on the environment," and his description suggests that he conceives of it as something very similar to ecological modernisation:

> A characteristic of the last ten years has therefore been that industry, facing pressure from a number of stakeholders, has actively got involved in the environmental debate. This has been difficult because industry is firmly wedded to the system which has caused the environmental crisis in the first place. They have examined the alternatives put forward by the various groups within the rainbow society but have generally found them threatening. It is not surprising therefore that they have sought out a discourse on the environment which fits within their other aims and objectives. Eco-modernism therefore represents not a break with what went before but a continuation of it. It adds an environmental dimension to the development path but does not allow that dimension to radically change the path.[36]

According to Welford, eco-modernism keeps faith with the GOLDEN ideology previously described as consisting of "growth, globalisation, materialism and consumption." He therefore places it on the diagonal of tension up towards the top-right corner, where Bahro had placed his "Super-industrial breakthrough" and "Ecological modernising." I suggest that the result ought to look like figure 1.7 below.

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[34] Bahro's strong socialist sympathies clearly played an important role in his scepticism. The ecological critique was, for Bahro, not just a questioning of western, growth-oriented economics and industrialism, it was also an important tool in the socialist project of bringing about capitalism's demise.
[35] Richard Welford, *Hijacking Environmentalism,* 22.
[36] Ibid., 24.

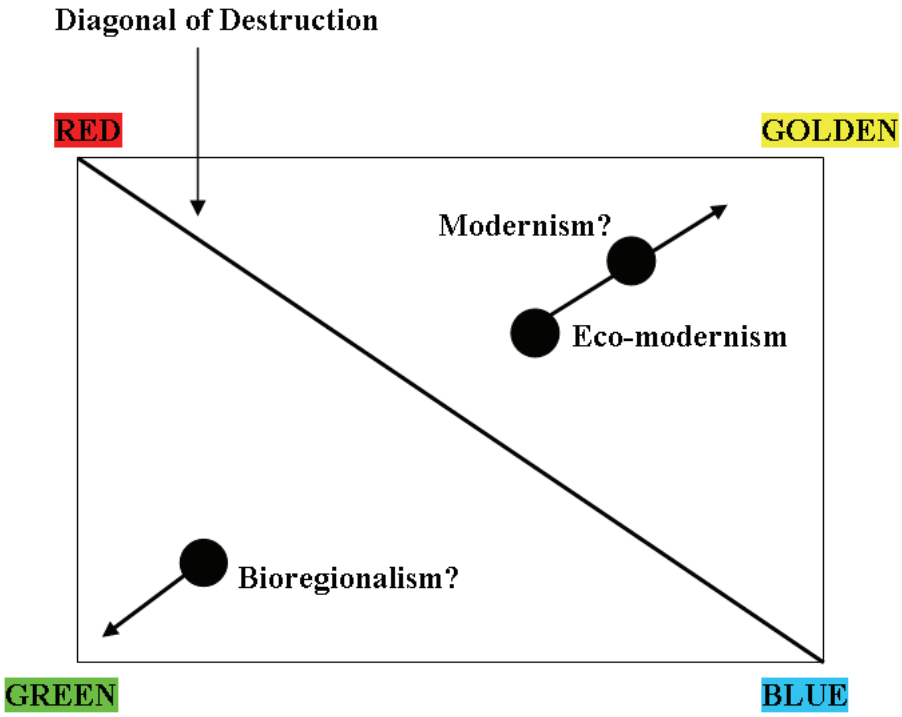

Figure 1.7: My construction of the Bahro and Welford criticism

I have placed both of Welford's terms, *Modernism* and *Bioregionalism*, along the GREEN – GOLDEN axis, which he and Bahro call "the diagonal of tension." Other than the fact that *Bioregionalism* is placed near to the GREEN corner, my positioning of *Modernism* and *Eco-modernism* on the diagonal is fairly arbitrary. With respect to *Modernism,* however, I have positioned it further towards the GOLDEN corner than *Eco-modernism,* on the grounds that although Welford and Bahro regard the latter as more bluff than substance, there is, nonetheless, a need to distinguish between the two.[37] But as is the case with *bioregionalism,* the distance between these points is completely arbitrary and should not be interpreted as indicating anything other than an, as yet unexplained, difference. The placing of all three points reflects the fact that while both Bahro and Welford recognise that a left-right diagonal still exists, political differences are bracketed for the moment, as the diagonal of tension becomes the axis of a new struggle. And the outline of the stronger protagonist in this struggle is now taking shape; operating within Welford's liberal-productivism, the world is being pulled towards Bahro's super-industrial breakthrough. The institutional agents of change in this struggle are the business corporations. The majority of them are unapologetic but honest, in their stated business intentions: 'growth in earnings per share and damn the environment!'

[37] I am sceptical towards the introduction of this new position in the Welford/Bahro political/cultural plane, and will make my reservations clear later. However, I wish, for the time being, to keep faith with the development of their case.

However, a growing minority of these corporate wolves have been alerted to the attractive message in ecological modernisation. They have donned the clothing of its rhetoric, which enables them to conceal from the world their true intentions (Bahro) and which is in the process of hijacking the bioregional/green discourse (Welford).

But what is the bioregional/green discourse that is in such danger? According to Welford (paraphrasing Bahro), Galtung defined an area towards the bottom left-hand corner, which he called "the rainbow society," an area which "is not defined by a single ideology, rather it is a mixture of ideas with an overriding acceptance that green is important."[38] Within Galtung's model of political ideologies with its triangular "rainbow society," Welford places green political discourse:

> Within his rainbow sit many environmentalists and their emphasis on the environment is what binds them together. The rainbow society is what Bahro (1994) calls the 'other republic' or, more accurately, an association of 'eco-republics' which Greens and Alternatives have been wanting. It is disengaged from the diagonal of destruction although it still has within it a degree of tension between various types of environmentalists.[39]

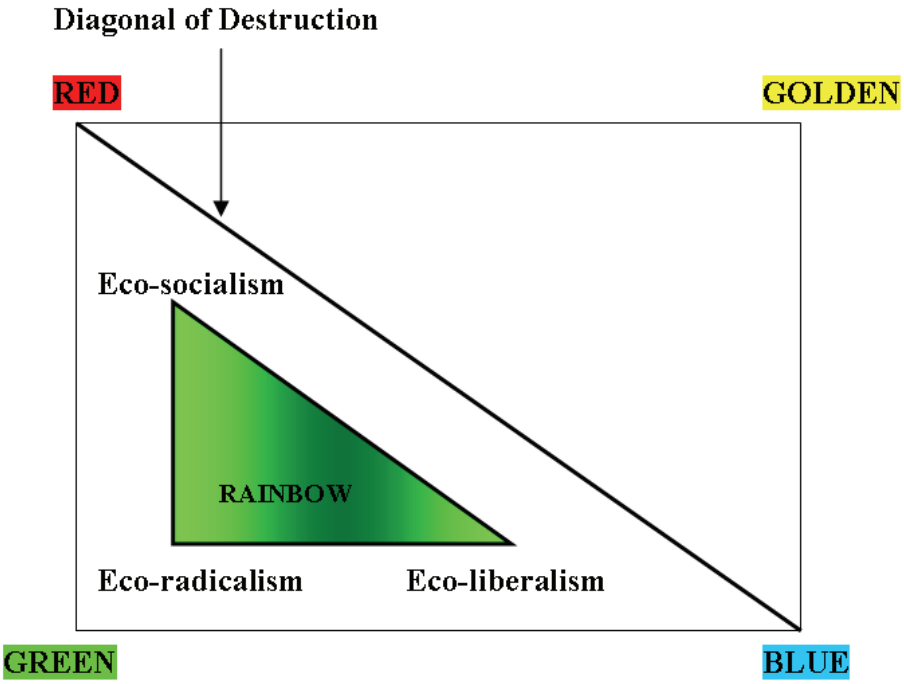

Figure 1.8: Welford's schematic showing Galtung's rainbow zone[40]

Welford uses the three points of the triangle to represent three, 'outer-limits' of green, political thought (see figure 1.8 above); *eco-socialism*, *eco-liberalism* and *eco-radicalism,* and

[38] Richard Welford, *Hijacking Environmentalism*, 22
[39] Ibid., 24-25.
[40] Ibid., 26.

provides a brief account of each under the sub-heading of "The debate over environmentalism," in which bioregionalism is described as being one example of eco-radicalism.[41] He is, however, confined to the single schematic which requires him to treat the traditional political plane as being at one with the sub-political. So he repeats the green movement's 'left-right politics is irrelevant' argument, but this time aims at the bottom-left corner of the schematic, rather than the usual green target in the top-right. He concedes that within this rainbow zone "[c]onflict has often been as common as consensus," but prefers to focus on the triangle's "opportunities for debate centred around a greener vision. It challenges the domination of large-scale capital and seeks to define business in a new way."[42] Although Welford is preparing the ground for us to conceive of eco-radicalism as the natural opponent of his modernism and eco-modernism, he retains the triangle in order to use it in the final move, which will demonstrate the hijack in operation.

Welford does not make an explicit statement to the effect, but his textual presentation of the dichotomous characteristics of bioregionalism and modernism points strongly to his conceptualising the diagonal of tension, not as the continuum that he has implied with the continuous line used in the schematics, but rather as two separate spheres of ideology, which are radically and irreconcilably different from each other. In the schematic, eco-modernism's position of isolation from the rainbow triangle's environmentalist discourse, underlines his view that it is the only 'green' language that industry would be willing to accept. Any 'green' viewpoint other than eco-modernism would demand some form of "discontinuous" change:

> Accordingly, any model of environmentalism outside of eco-modernism would involve a break with business-as-usual and some sort of discontinuous change. It would challenge the pillars of free-trade, scientific and technological domination and the orthodoxy of continuous improvement and economic growth. It is not surprising that alternatives to eco-modernism frighten the corporate establishment and that their response has been to hijack the debate.[43]

The final version of the Galtung/Bahro/Welford schematic is shown below in figure 1.9. Here, we can see the large black point of eco-modernism, and the arrow pointing towards the GOLDEN corner of "growth, globalisation, materialism and consumption."[44] In keeping with his discontinuous conceptualisation of the relationship between this and the discourses of the rainbow society, eco-modernism sits in a state of schematic isolation from the other environmentalist discourses. It is difficult to follow Welford's logic, as he now attempts to

[41] Ibid., 24-28. For a fuller discussion of how green thinking relates to other 'isms' in the political plane, Andrew Dobson's *Green Political Thought* 2nd edition, (London: Routledge, 1995), is a fine read.
[42] Richard Welford, *Hijacking Environmentalism*, 28.
[43] Ibid., 29.
[44] Ibid., 21.

explain how the hijack of the debate has taken place. Here is his description of what has apparently happened to the debate:

> The effect of the domination of eco-modernism in our model is quite simple. Essentially it means that the environmental discourse now has eco-modernism within it at the expense of more radical approaches consistent with ecology and sustainable development. Eco-modernism is much closer to the golden corner in our model than it is to the green corner. The eco-modern discourse is therefore outside of the rainbow society however and this represents a flipping over of the triangle as depicted.[45]

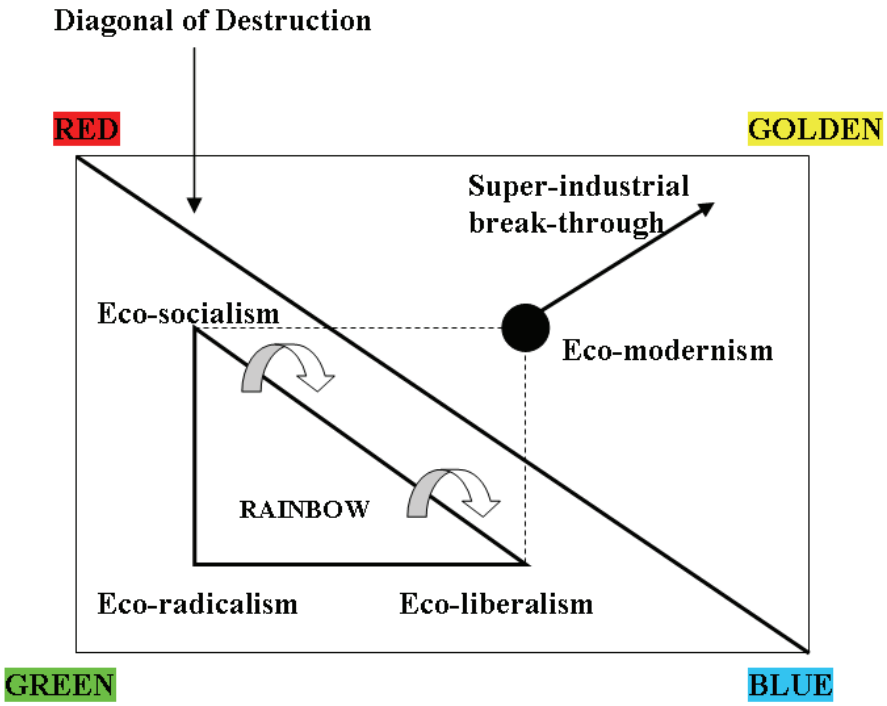

Figure 1.9: Welford's schematic showing the "Hijacking of Environmentalism"[46]

The "flipping over" of the triangle is illustrated by the two curved arrows, and the dotted lines, which indicate the new boundaries of the environmental discourse. But Welford's account of the process of transformation is confusing. He states his assumption that eco-modernism dominates over the other discourses in the model, as if it were a fact. He refers to the new triangle (dotted lines) that is created, but makes no comment about the creation of new discourses that might occupy the area of the new, 'flipped' triangle. Consistent with his schematic, he suggests that some eco-liberals are still in the hijacked discourse. He characterises them as "neo-classical economists who see the solution to the environmental problem in the evaluation of environmental costs, internalising these costs and leaving the market to do the rest."[47] Similarly, eco-socialists ought to be in the corner of the

[45] Ibid., 31.
[46] Ibid.
[47] Ibid.

new triangle as well, but Welford has earlier emphasised the widely held perception that, since 1989, socialism has become irrelevant, thereby weakening the significance of the RED – BLUE polarity and thus nullifying its discourse.

Interpretation of his schematic suggests that the discourse of the eco-radicals must either 'flip' over to eco-modernism(!), or disappear, perhaps becoming entirely irrelevant. But Welford is silent on what he thinks has actually happened. A hijack is a deliberate operation to take over control of something, with the intention of forcing it, unwillingly, in another direction. So his usage of "hijack" is consistent with the "flipping over" of the triangle, in arguing that the eco-radical discourse has mysteriously been forced into becoming an eco-modern discourse. But it is here, at the climax of his argument that Welford, I suspect, recognises that the hijack metaphor lacks the subtlety to account for what has happened to the environmental discourse. He can only paper over the crack in the argument with the illogical final sentence, in which he attempts to persuade us that because the eco-modern discourse is outside of the rainbow society, this must mean (!) that the triangle has been flipped over.

1.3 Modifying Welford's case

1.3.1 Introduction - the hijack metaphor rejected

I do not mean to denigrate Welford's hypothesis with this criticism. I am claiming that the hijack metaphor lacks sufficient subtlety to describe what is happening.[48] But it would also be naïve, to believe that Welford's eco-modern environmental discourse does not wish to take the debate about business and the environment in its own favoured direction. So the metaphor's imagery of unwilling movement in another direction is useful.[49] And although we may baulk at his somewhat dogmatic statement of the domination of eco-modernism as a fact, we should also recognise that he is not far from a truth; the resources of green business do give it a great deal of power in representing its favoured views of the world within the public debate, and the environmental movement is obliged to adjust to this discourse. So the metaphor's imagery of force is also appropriate. Thus on the two counts of (i) unwilling movement in the 'wrong' direction, and (ii) a superior force applied to achieve an objective, the hijack hypothesis does provide us with a useful metaphor for interpretation.

[48] This point marks my interpretive break with Welford. As part of that intellectual distancing, I shall jettison certain items of his terminology. One indication of my reservations about the suitability of a word will be to place it in single quotes as I do now with his term *eco-modernism*.

[49] In *From Apocalypse to Way of Life*, (London: Routledge, 2003), Fredrik Buell presents a chronological treatment of the development of the discourse of the ecological critique. He also weaves into his account the many anti-environmentalist discourses that have arisen in response to the critique and the different discursive strategies they have employed in order to counter the green movement's arguments.

For the time being, however, I wish to put this question of what may or may not be happening on hold. I wish to make two interpretive moves on the conceptualisation of the overall schematic, which will clarify the context within which the alleged discursive movement is taking place. I shall also mark my parting from Welford's argument, by making the terminological changes to which I have previously referred. In my first move, I shall return to Beck's concept of the *sub-political,* and argue that this plane may best be conceptualised as an arena of competing cultural discourses. Second, I shall suggest that there is a further confusion in the Welford hypothesis, which may be resolved if we think of the sub-political as receiving expression in two planes of (i) *cultural* discourse and (ii) *linguistic* discourse. These moves are now presented in the following two sub-sections.

1.3.2 The sub-political as a plane of cultural discourse

Risk Society: Towards a New Modernity is a good read for ecologists.[50] In his deliberations over the direction of modernity, Ulrich Beck advances the thesis that the industrial societies' project of redistributing scarce goods among their members has largely been successful, and is consequently running out of steam. The (liberal-productivist) system of production, what Beck refers to by its function and its ends as a system of "techno-economic 'progress,'" has, in his opinion, been enormously successful in generating the wealth for modern society. His innovative contribution is to conceive of the process of production as a form of, what he describes as *sub-politics*.[51]

For Beck, the 'progress' of industrialisation was one automatic assumption on which the success of the modernity project was based; more material wealth was an essential input, which the welfare state could then redistribute in order to deliver greater well-being.[52] In the sense that it was a 'given', i.e. a fundamental element of a modern society, its function was never the subject of discussion, and Beck therefore assigns it to the non-political sphere. But, he argues, its non-political status has been challenged by the ecological critique's questioning of its claim to be a universal good. Parallel with this criticism, the recognition has emerged that, viewed *politically* as a force for shaping the conditions of social life, the influence of techno-economic development is becoming more pervasive:

> [T]echno-economic development loses its character as a non-politics in parallel to the increase in scope of its potentials for change and endangerment [.] the outlines of an alternative society are no longer seen in the debates of parliament or the decisions of

[50] Ulrich Beck, *Risk Society*.
[51] Much of the following is paraphrasing of chapter 8: "Opening up the Political" Ibid. pp. 183 – 236.
[52] I use the term *modernity project* in the sense in which a social scientist would be most comfortable, i.e. to describe the 'progress' of society.

> the executive, but rather in the application of microelectronics, reactor technology and human genetics. […] Techno-economic development thus falls between politics and non-politics. It becomes a third entity, acquiring the precarious hybrid status of a sub-politics.[53]

Beck's observation of the waning influence of parliament and the executive echoes Welford and Bahro's conviction, that conventional, mid-twentieth century left-right politics is less important. His observation of the waxing role of techno-economic development from non-politics to sub-politics, confirms their reading of the march towards "a super-industrial breakthrough." But where Beck differs from Welford and Bahro is in conceptualising these two trends on *separate* planes; the social changes being wrought by techno-economic development are not under the overall control of the traditionally-understood political processes, which govern the modern state. As Timothy Luke comments:

> [S]o many different administrative, ethical, legislative, and regulatory interventions over the past generation have been tried, and these have mostly failed completely or only slowed the rate of destruction. This is true because liberal democratic politics typically restricts itself to the domains of government, public administration, regulation, or civic management, which overlook too many sites and structures where the real damage continues to be done.[54]

I return, therefore, to my two-plane reinterpretation of the Welford/Bahro analysis illustrated below in figure 1.10, and suggest that their arguments would benefit from Beck's thesis by enabling them to focus purely on the sub-political plane.

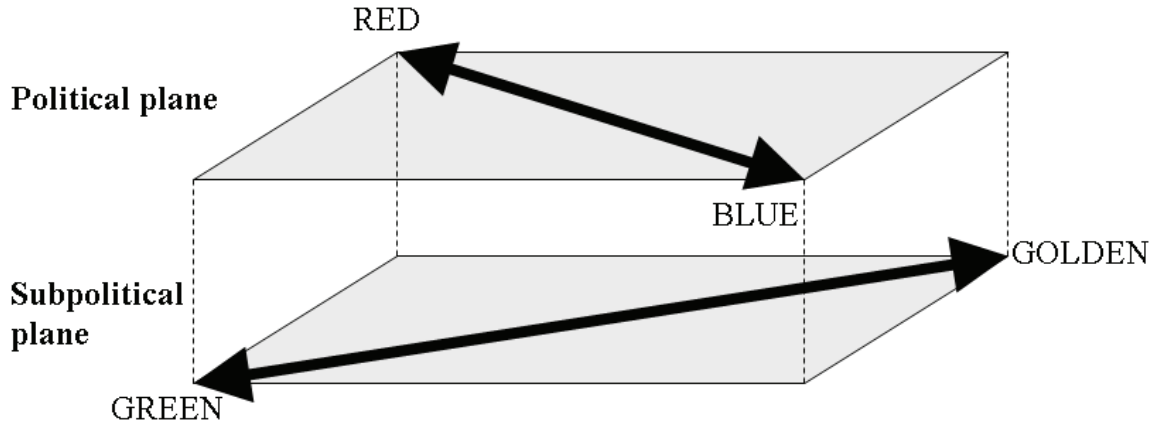

Figure 1.10: Reinterpretation of the Welford/Bahro schematic in terms of Beck's thesis of the subpolitical

In making a distinction between the two planes, it is not my intention to separate them completely from each other. Clearly, aspects of techno-economic development are regulated

[53] Ulrich Beck, *Risk Society*, 185-186.
[54] Timothy Luke, "Collective Action and the Eco Subpolitical: Revisiting Bill McKibben and The End of Nature", *Organization and Environment*, 18 (2005): 202.

by democratically-elected governments and their bureaucracies. Clearly, radical environmentalists must continue to pursue their agenda for change in the forums in which traditional political processes take place. And clearly, governments must seek ways of extending their authority over the business corporations that are so influential in the ordering of our daily lives, and thereby bring this social change back within the orbit of democratic, political processes. The standard bearers of the ecological critique must continue to engage with the discourses of the traditional political plane. But Beck's conception of the sub-political does help us to recognise that much of the activity carried out under the innocuous label of 'business as usual', is a *political* process, in the sense that it imposes social change. But because 'business as usual' exercises this power without having first sought political legitimacy to do so, we need to apply the prefix *sub* to it and describe it as a *sub-political* process.

Recognising, also, the relative impotence of traditional politics to influence processes in the sub-political plane, we can better see why so much of the radical green response has rested on hopes of personal, lifestyle transformation. Frustrated by the lack of a political discourse sufficient to control the corporate agents of liberal-productivism, environmentalists have sought public leverage through a discourse of cultural values. The values-based and individual-oriented focus of much eco-radical discourse also bears out another of Beck's theses about the direction of modernity, namely its reflexivity:

> In the nineteenth century, modernization took place against the background of its opposite: a traditional world of mores, and a nature which was to be known and mastered. Today, at the threshold of the twenty-first century, in the developed Western world, modernization has consumed and lost its other and now undermines its own premises as an industrial society along with its functional principles. Modernization within the horizon of experience of pre-modernity is being displaced by reflexive modernization.[55]

Beck argues that the development of modern society will constantly lead it into challenges that call into question the direction of its own development: "industrial society *destabilizes itself through its very establishment.*"[56] Cultural assumptions are called into question as "[t]he system of coordinates in which life and thinking are fastened in industrial modernity – the axes of gender, family and occupation, the belief in science and progress – begins to shake."[57] For radical greens, the 'business as usual' activities of the corporations are the brutal, but honest, reflection of the unreconstructed lifestyle and life choices of modernity's

[55] Ulrich Beck, *Risk Society,* 10.
[56] Ibid., 14.
[57] Ibid., 15.

children. We cannot criticise liberal productivism or its agents, the business corporations, until we have first begun to live according to a new set of values. The sub-political plane's diagonal of tension draws attention to fundamental differences in "the system of coordinates in which life and thinking are fastened;" we may usefully interpret it as an arena of competing, cultural discourses.

Having made this first interpretive move, I shall now turn to my second. I shall now insist that in our conceptualisation of the sub-political, it is important to make a distinction between two planes, one consisting of cultural discourse and the other of linguistic discourse.

1.3.3 Two planes of cultural and linguistic discourse

By a fortunate set of circumstances, I was able to meet Welford shortly after reading his book.[58] When I asked him to enlarge upon his claim, he cited some words, which, he maintained, commonly appeared in the language of green business. The terms were *Profit maximisation, Value creation, Shareholder value, Management systems, Growth, Market share, Free markets,* and *Wealth creation*. This business-oriented terminology alongside the lexicon of the environment made him, he said, uneasy about the meaning of the ideas presented by green corporations. Welford himself was at pains to stress that he didn't experience the business people he worked with as insincere. Neither would he make the claim that he was witness to deliberate rhetorical techniques employed by these corporations, with the intention of presenting their companies' activities in a more 'environment-friendly' light than they really knew to be the case. Rather, it was the presence of what he called "liberal-productivist" vocabulary, in the discourse of these companies that made him question whether they and the radical environmentalists were really talking about the same things. Thus, in our meeting, Welford concurred with the 'competing-discourses' interpretation, in which eco-radicalism and liberal-productivism maintain an uneasy standoff in the guise of eco-modernism. Indeed, in his book, he tacitly concurs as well; in the remaining seventy pages of "Part 1 Defining the Problem," following the revelation of the so-called hijack, eco-radicalism lives on in the role of a usurped discourse, struggling to retain its identity and make itself heard in the cacophony of eco-modernist claims.

But there was a very intriguing aspect to his verbal justification of the hijack hypothesis at our meeting; he chose to ground the justification for his claim on his experience of a *linguistic* discourse rather than an interpretation of a *cultural* discourse. It was the

[58] At the time, he had a contract as visiting Professor at the Norwegian School of Management (BI) in Oslo, where I have my teaching position.

language used by green business which he cited as his evidence. His hijack hypothesis, I reasoned, had to be a phenomenon of a linguistic plane, even though Welford had attempted to explain its operation within a schematic whose illustrative ambitions were both political and cultural. This conflation of different discourses is a source of confusion which I shall now clear up, in order to reinterpret at what, I believe, Welford was really driving. I shall insist on a clear distinction between the *cultural* plane, adopting a simplified version of the Welford/Bahro/Galtung schematic as a useful vehicle for its illustration, and a *linguistic* plane. The latter has points of correspondence to the former, but is, in several important respects, different. In chapter two, I shall provide a more detailed characterisation of the two planes, but begin the process here, with a short overview that will suffice, for the development of this interpretive move. First, I shall focus on my interpretation of the cultural plane.

1.3.4 The cultural plane

Figure 1.11 below is a simplified version of the figure 1.7, and I shall now account for the changes which I have made.

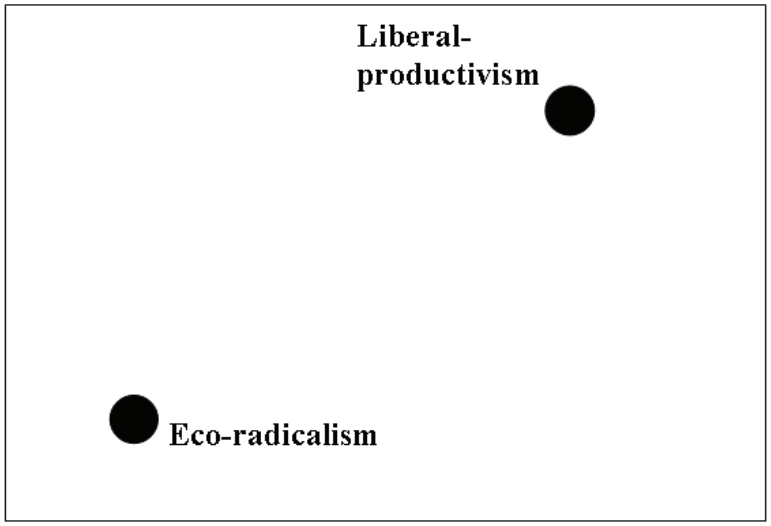

Figure 1.11: The cultural plane

First, recognising that this is a plane of *cultural* discourse, I have removed the labels of the four corners with their various political colours. Second, following up on the promise that I made in connection with Welford's introduction of his "Bio-regionalism – Modernism" dichotomy in figure 1.7, I have removed the *Modernism* label and replaced it with *Liberal-productivism*. Third, I have relabelled Welford's original *Bio-regionalism* point with his subsequent *Eco-radicalism,* because this term encompasses the former, and has a stronger verbal connotation with the ecological critique as an alternative discourse to liberal-

productivism. Fourth, I have removed the arrows which might, misleadingly, suggest that liberal-productivism is heading for the top-right corner and eco-radicalism for the bottom-left. I have done this because I do not think that *ideas* can simply be moved across the cultural plane like pieces on a chessboard. Eco-radicalism and liberal-productivism are subject to the endless process of reinterpretation in the academic discourse, and this may, of course, lead to adjustments in their relative positions. But the vocabulary selections of green businesses (in the linguistic plane) to which Welford was witness, are not capable, as the hijack hypothesis claims, of dragging eco-radicalism somewhere it doesn't want to go.

Fifth, and most radically, I have removed Welford's position of *eco-modernism* from the cultural plane. I hasten to explain that my reason for doing this has its origin in the conceptualisation of the two planes, which I am in the process of presenting, rather than the intellectual content of the term itself. Welford and his colleagues have carefully examined what they consider to be the 'culture' of the new green corporations, and have concluded that "[i]t adds an environmental dimension to the development path but does not allow that dimension to radically change the path."[59] Like Welford, I am sympathetic to the desirability of marking the distinction, however small, between green corporations and their 'non-green' competitors. However, I am unconvinced that the differences that may be uncovered between, say, Shell and ExxonMobil, are sufficient to merit the creation of a new position in the cultural plane, as the "Liberal-productivism – Eco-modernism" distinction suggests. I must emphasise that I do believe there to be real, institutional differences, and I am interested in understanding how these changes 'on the ground' are reflected in the 'culture,' for want of a better word, of the green corporations. But I think that by placing the label of *eco-modernism* in the cultural plane, I would assign it a status which it does not, yet, deserve. I shall return to my conceptualisation of the cultural plane later in this chapter, in order to further justify this interpretation.

1.3.5 The linguistic plane

In this section, I shall present my interpretation of what Welford experienced and what led to him making his argument. I shall do so by introducing a schematic of the linguistic plane, which looks similar to the one above. It must be understood, however, that the diagrammatic similarities are only intended to assist in an understanding of certain correspondences between, what are really, two very different planes. I shall start from Welford's confused understanding of the linguistic plane (see figure 1.12 below), and argue my way through to

[59] Richard Welford, *Hijacking Environmentalism,* 24.

the view that I believe he really would have presented, had he seen the need for my 'two-plane' solution.

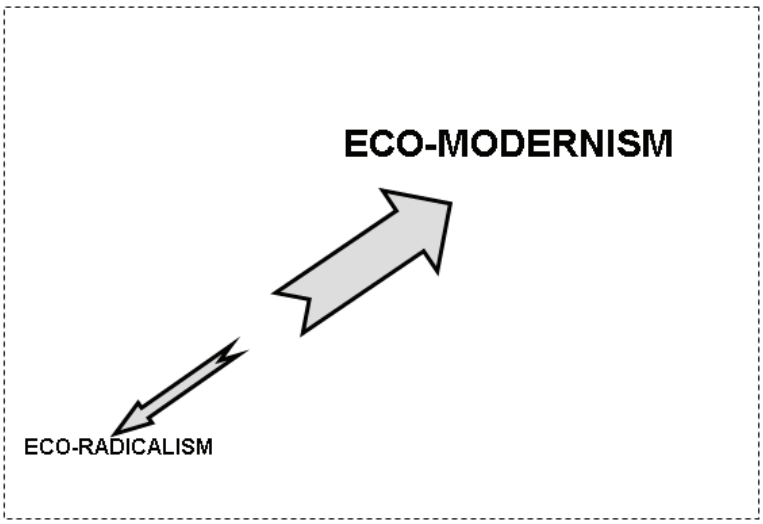

Figure 1.12: The linguistic plane as experienced by Welford

In Welford's interpretation of the linguistic plane, there is a single opposition between, what he argues to be, the dominant discourse of eco-modernism and its much weaker opponent: eco-radicalism. The usage of arrows to represent the linguistic discourses is my initial attempt to illustrate that although I reject the hijack metaphor, I wish to retain a sense that there is some sort of 'movement' taking place. In this plane, eco-radicalism's vocabulary has been appropriated and its voice marginalised by the dominating *linguistic* discourse of eco-modernism. The disparity in both arrow size and font size is intended to reflect the 'dominant-subordinate' relationship of the two discourses. The break between the two arrows represents Welford's view of the dichotomies of cultural values that exist between the protagonists, to which I have referred previously. However, since we are now looking at a linguistic plane (consisting of signs on pages) and not at the cultural plane (where ideas exist), we need not worry overly about the best method of illustration. Instead, I shall now make several 'corrections' to the linguistic plane.

First, in looking at the linguistic plane, Welford gets his terminology wrong. Although he makes several claims about the vocabulary and linguistic characteristics of "eco-modernism," and the chapter by Mayhew contains a great many references to documents and articles by so-called "eco-modernist" lobby organisations, such as the World Business Council for Sustainable Development (WBCSD), the authors are mistaken in arguing that their object of criticism is the linguistic discourse of *eco-modernism*. They are actually

focusing their attention on the linguistic discourse of *green business* and its associated lobby organisations. I shall now explain the distinction between the two and why it is an important distinction to make.

The discourse on eco-modernism exists almost exclusively within research articles and textbooks that circulate largely in a university environment. In this environment, the cultural concept, which Welford has labelled *eco-modernism*, is interpreted and re-interpreted by informed observers who operate, for the most part, in an academic discourse. Their objective is to provide interpretations of the multi-faceted concept of eco-modernism in the cultural plane. The green corporations and their lobby organisations, which are the object of Welford's criticism, do not participate very much in the discourse of eco-modernism that I have just described. It is not their responsibility to write exhaustive, intellectual reflections over their own cultural assumptions.[60] Their interest is primarily in making representations of how they experience the world in which they find themselves. The enormous quantity of linguistic discourse in which they represent their activities and the natural environment around them, is the linguistic discourse of *green business* and not eco-modernism. And whereas the discourse on eco-modernism is largely an academic affair carried on in an environment of journals, conferences and books, the linguistic discourse of green business is mostly conducted in the public sphere of newspapers, television, and increasingly, internet sites.

There is also a similar distinction to be drawn at the other end of the axis. The linguistic discourse of the radical NGOs, which function, in the public discourse, as the opposition to the green corporations, is not the same as the discourse on eco-radicalism. The latter is predominantly an academic, intellectual discourse, just like the one on eco-modernism. But in exactly the same way that the linguistic discourse of the green corporations represents their activities and interaction with the natural world, the linguistic discourse of the radical NGOs is almost exclusively focused on how they experience their world. They participate to only a very minor degree in developing the cultural discourse of eco-radicalism.61 There is, therefore, symmetry in the two pairs extending between the linguistic plane and the cultural plane. We may conceptualise green business as the institutional representatives of a cultural position which Welford calls eco-modernism, and we may think

[60] The word: ECOMODERNISM for example, does not occur once in my linguistic discourse of green business.
[61] Different NGOs participate in the discourse of eco-radicalism in differing degrees. Some, such as Greenpeace, devote themselves to campaigning. Others, such as the New Economics Foundation, conduct more 'think-tank' oriented work and therefore participate to a greater extent in the eco-radical discourse.

of the radical NGOs as the institutional representatives of eco-radicalism. The result of this conceptualisation is shown in figure 1.13 below.

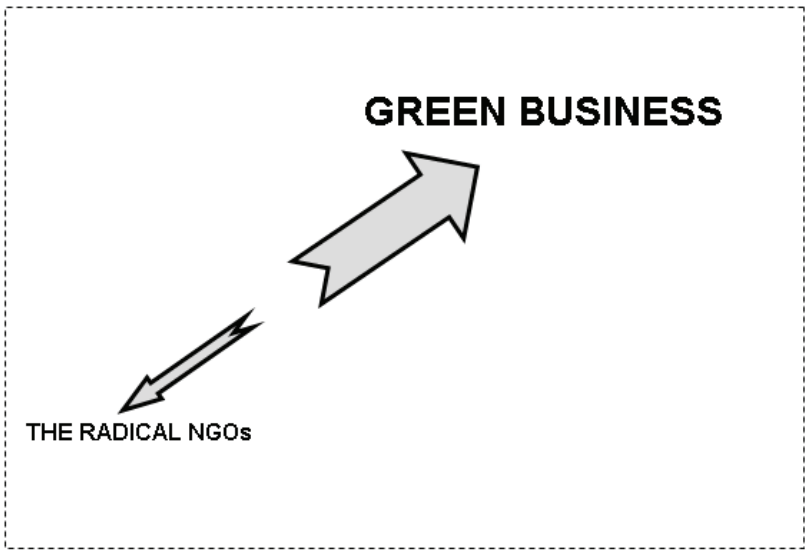

Figure 1.13: The linguistic plane relabelled

The second modification that I shall make to the linguistic plane is to review Welford's sense of movement, for the representation of which, I used the two arrows. Like my scepticism regarding movement in the cultural plane, I also have reservations about the notion that linguistic discourses 'move'. We know from our experience that, ten years after the alleged hijack of eco-radicalism, the radical NGOs continue to represent their experiences of the world in language. We know, too, that the reactionary, 'non-green' business representatives of Welford's liberal-productivist culture, continue to represent their financially-oriented experiences of the world in a linguistic discourse which ignores or, at best, refutes the ecological critique. These two linguistic discourses remain where they have always been. Welford's sense of movement has been created by the emergence, within this linguistic plane, of a new linguistic discourse: that of green business, as illustrated in figure 1.14 below.

In this 'before and after' view, there are two very different, stationary discourses before the alleged hijack: the radical NGOs and 'non-green' business. After the hijack, there are three stationary discourses: the original two, in unchanged positions, and the new, emergent discourse of green business. One of the characteristics of this emergent linguistic discourse is that it contains new combinations of vocabulary, which Welford has previously experienced as belonging to the original two very different, linguistic discourses. The presence of what Welford refers to as the vocabulary of "the radical environmental debate"

now appearing within the "liberal-productivist" vocabulary of this emergent hybrid, creates the mistaken impression that the linguistic discourse of eco-radicalism is on the move.

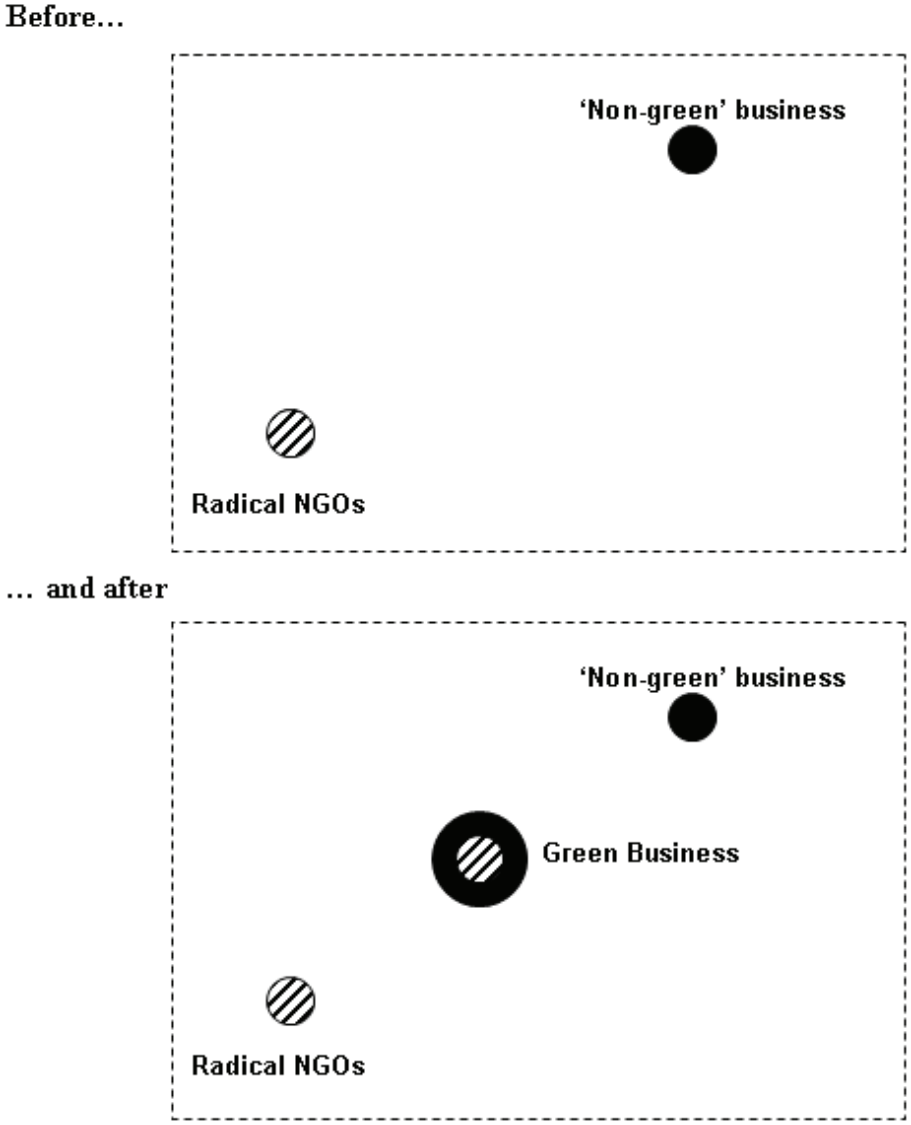

Figure 1.14: The linguistic plane before and after the alleged hijack

The third and final modification I wish to make is to consider the relative positions of these stationary linguistic discourses in the linguistic plane, which I do now, with reference to figure 1.14 above. With respect to the situation 'before', I place the discourse of the radical NGOs in the same position in the linguistic plane, as the position of the discourse of eco-radicalism occupies in the cultural plane. Similarly, the discourse of 'non-green' business in the linguistic plane occupies the same position, as the discourse of liberal-productivism in the cultural plane. The usage of cross-hatch shading for the radical NGO discourse is intended to draw attention to the difference between the vocabularies, which had aroused Welford's suspicions.

If we now consider the linguistic plane after the alleged hijack, I maintain the original two linguistic discourses in exactly the same positions as the ones they occupied before. The final matter to decide is the position of the emergent linguistic discourse of green business, with its hybrid vocabulary, relative to the original two. Here, I return to the verbal justification that Welford made to me in support of his hypothesis. His concern was that the business-oriented terminology alongside the lexicon of the environment created an impression that green business culture, or *eco-modernism* as Welford mistakenly labels it, was nearer to eco-radicalism than was really the case. Schematically then, the linguistic discourse of green business must be placed nearer to the linguistic discourse of the radical NGOs, than where Welford had placed the cultural discourse of eco-modernism. I have also made it larger, so as to illustrate the incorporation of the "radical language of the environment" (the cross-hatch shading), within a "liberal-productivist" linguistic discourse, and also to reflect the enormous representational power of the green corporations.

Here, I take a very short pause from my modification of Welford's case, in order to insert an advert for my chosen tool of analysis: corpus linguistics. By now, the development of the conceptual model has made my empirical intentions fairly clear; I wish to identify particular institutional agents as my representatives of particular cultural positions, and then look for *patterns* of language use in the linguistic plane. In my model, a group of radical NGOs, sharing the cultural values of eco-radicalism, will make linguistic representations of the world as they experience it. Similarly, a group of green corporations, sharing the cultural values of eco-modernism, will make linguistic representations of the world as they experience it. If the views of Halliday, Stubbs, Williams and others have some substance, then I ought to be able to identify patterns in these two collections of linguistic discourse. Further, these patterns of language use ought to help me in identifying "which meanings are repeatedly expressed in [the two] discourse communit[ies]."[62] When I first conceived of the project, I had only the vaguest of notions of what "patterns of language" might mean. But, as the thesis will demonstrate, the intuitive understanding of the term *pattern,* which first led me to corpus linguistics, has proved remarkably accurate. In order to observe patterns in the language usage of green business, I saw two reasons why there had to be a large amount of textual material. First, I needed to argue plausibly that it was representative of the linguistic discourse of green business in the UK. Second, the larger the volume of material I had available, the greater were my chances for identifying the repetitions that characterise a pattern. This requirement,

[62] Michael Stubbs, *Text and Corpus Analysis*, 158

combined with the computer technology to which I have referred previously, and also the development in scale and sophistication of internet websites, argued powerfully for corpus linguistics as a tool of analysis. I return now to the two planes of discourse and complete my modification of the hijack hypothesis.

1.3.6 Confusing the planes

Welford, as I have already argued, conflates the two different planes of discourse into one. The point from which he views these discourses is through the language of the radical NGOs and green business. Seen through the cloudy window of this language, Welford may be forgiven for thinking that the various discourses that he reads in the linguistic plane are also elements in the cultural plane. From his perspective, the (linguistic) discourse of green business ought to occupy the same position in which he has already placed eco-modernism – a very modest improvement on liberal-productivism. But he reads a green business discourse, which fairly bubbles over with the language of radical environmentalism. What he actually 'sees' is a product of his own imagination: an emergent, mirage 'culture' of green business, which he has inserted in the cultural plane in a position which corresponds to the location of green business's linguistic discourse. I have attempted to illustrate this as 'Welford's eye view' of the situation, in figure 1.15 below.

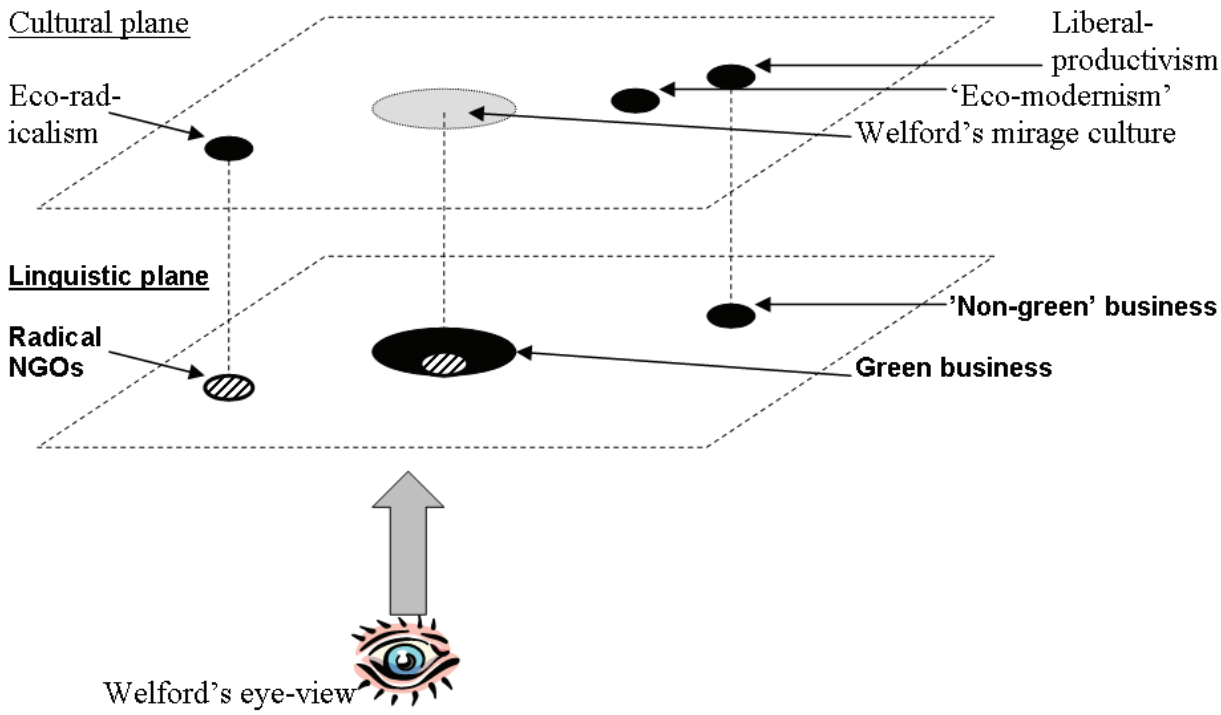

Figure 1.15: Welford's mirage of green business culture in the cultural plane

Welford has not made the distinction between a linguistic discourse and a cultural discourse. Nor has he distinguished the cultural discourse he labels *eco-modernism* from one institutional manifestation of it: green business 'culture'. He now mistakenly believes that he is witness to the movement of the cultural discourse of eco-modernism in the direction of eco-radicalism.

1.4 Chapter one - summary

In the context of this thesis, the 'two-plane' schematic of figure 1.15 is very significant. I shall continue to refine it conceptually, and use it as the foundation on which the thesis is based. However, this point marks my final interpretation of Welford's hijack hypothesis and is therefore an appropriate point to conclude chapter one. In chapter two, I shall discuss the characteristics of the two planes in greater detail and the consequences for the project, of my chosen conceptual model.

2 Two planes – developing the research questions

2.1 Introduction

Figure 1.15, with which I concluded chapter one, illustrates the consequences, for Welford, of his failure to make the distinction between a linguistic and a cultural plane of discourse; he draws cultural conclusions on the basis of evidence in the linguistic plane. Now, in figure 2.1 below, I have used the same two-plane schematic to represent my own interpretation of the state of affairs. There are two simplifications compared with figure 1.15. First, in keeping with the interpretive move I made in section 1.3.4 on page 27, I have declined to include a discrete point labelled "Eco-modernism" in the cultural plane. It seems to me that eco-modernism shares too many traits with liberal-productivism to merit its own distinct position in the cultural plane. Welford himself says as much when he argues that eco-modernism allows "business-as-usual:"

> Accordingly, any model of environmentalism outside of eco-modernism would involve a break with business-as-usual and some sort of discontinuous change. It would challenge the pillars of free-trade, scientific and technological domination and the orthodoxy of continuous improvement and economic growth.[1]

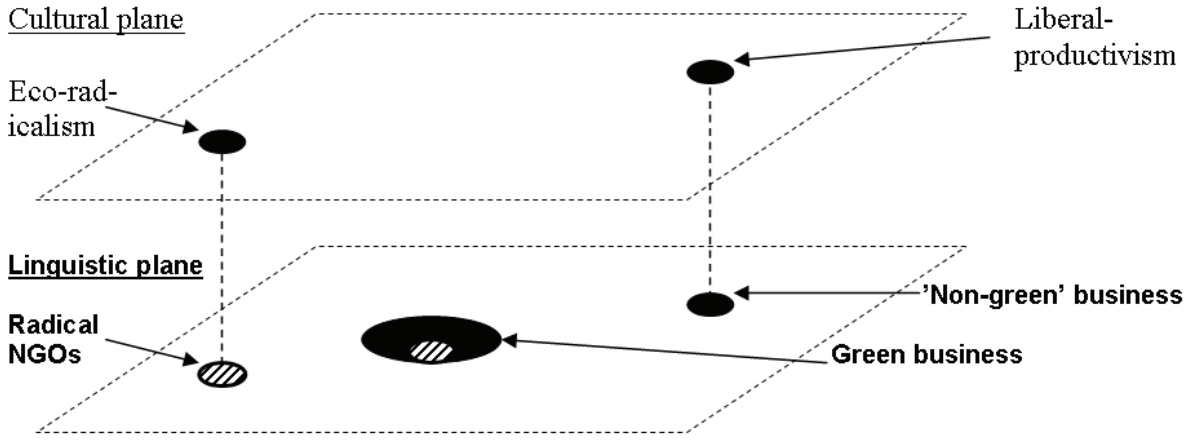

Figure 2.1: My conceptualisation of the two planes

Having demoted it from its cultural-plane status, however, I shall continue to use the term *eco-modernism.* The meaning which I, and, as the evidence suggests Welford, attach to eco-modernism, is a view that the best available means of production and distribution is liberal-productivism, but which adds to this belief an environmental dimension. So we may think of eco-modernism as Welford's liberal-productivism with green interests.

[1] Richard Welford, *Hijacking Environmentalism,* 29.

My second simplification is made out of respect for the methodological challenge, which I sketched out in section 1.1.2 on page 2. I have resisted the temptation to draw in any figure or symbol in the cultural plane, which might suggest that we can fully describe a 'culture' of green business, solely on the basis of empirical analysis of its linguistic discourse. In doing this, I do not mean to imply that this goal, or perhaps some more modest variant, is wholly impossible. But at this early stage in the thesis, I have advanced no conceptual model, which would entitle me to make such a projection from the linguistic plane.

In order to remove any possible doubts as to my intentions, I am obliged to state explicitly that I propose this two-plane conceptualisation for a number of closely related and purely heuristic reasons. First, and not surprisingly, the evolution of my 'two-plane' model has its origins in the ambitions of my 'two-discipline' project. I have come from a background in culture studies, but the project has required that I gain a grounding in linguistics. Life might be easier, if I could construct some model of culture and language which bound them tightly together. But my experience of these two very different scientific communities and the accepted methods, by which they work, is one of the factors which has led me into making this very clear conceptual distinction between the two planes. In this way, I hope that I can present a view of each one, with which its respective practitioners will feel reasonably comfortable. Clearly, the downside of this move is to make my methodological challenge all the more difficult. But the advantage I hope to gain is the acceptance by both groups of scholars that I am starting from a set of assumptions, which they can support. In this chapter, therefore, I shall devote considerable space to a characterisation of each plane.

My second reason, closely related to the first, is that the empirical side of the project, by which I intend to test out Welford's claims, is based on corpus linguistics. He, himself, gave me the idea at our meeting in Oslo, when he described his suspicions regarding the occurrence of a vocabulary of business management alongside that of the environment. It was, therefore, essential that my interpretation of the hijack hypothesis should include a clear linguistic plane, which would be amenable to such analysis. The reasoning process of chapter one has only served to strengthen my misgivings as to Welford's usage of the hijack metaphor. The empirical analysis of a large volume of language in the lower plane will, I hope, provide much more detailed and convincing evidence of what is happening with the linguistic discourses.

The third, also closely related reason, for the two-plane conceptualisation, has its origin in the methodological challenge, which I introduced at the beginning of chapter one. In

order to first plot a course between two positions, A and B, and second, to navigate successfully from one to the other, it is obviously important from the outset, to have a clear definition of where and what A is, and where and what B is. The two-plane schematic and the characterisation, which I shall now make, are pre-requisite procedures for my discussion as to the possibilities for making connections between them.

These are the reasons, driving the development of this two-plane conceptualisation of discourse. If we first confine our attention to the cultural plane, it will already be apparent that I have chosen a strict interpretation of the criteria for membership. Welford's eco-modernism has been removed from my cultural plane, and no movement of either eco-radicalism or liberal-productivism has been allowed. As I have previously argued, I prefer to insist on this more-or-less stationary positioning of the different cultural discourses, because I think it conforms more closely to our understanding of the manner, in which the intellectual exchange develops its interpretations of the cultural plane.[2] I have therefore chosen to apply the Berger and Luckmann term: *intersubjectivity,* to my cultural plane.[3] Intersubjectivity conveys an impression of the cultural plane as a social construction and its claim to *relative* authority; its construction can always be modified. Having conceded the principle, however, I will reiterate the authority that it does have; it is the most strongly-supported current view of the most highly regarded minds. It is in the cultural plane that one finds a rigorous discourse about the intellectual content of concepts. I insist that, in order for a culture to be 'allowed' an existence in this cultural plane, it must go through an academic ordeal of rigorous criticism, and prove that it has sufficient coherence to qualify for inclusion.

A further quality of the cultural plane, as I am defining it, is that the labels which are attached to various cultural co-ordinates: *eco-radicalism* and *liberal-productivism* signify nothing more or less than ideas, and, as such, they have no power of agency. Thus a statement such as "Eco-modernism has taken over the vocabulary of the environment," is not valid. One can only make the claim that the culture of certain institutions looks similar to say, liberal-productivism with some concern for green values, but in doing so, it is important to recognise the distinction between the two. The latter - liberal-productivism, has a more-or-less fixed, *intersubjective* status. The former, on the other hand, is the culture of an institution or group of institutions, in this case, green business, and, as such, it is subject to modification to a

[2] Readers may prefer to apply the more usual term of *sphere* instead of *plane.* I do not make any distinction between the two, but will retain mine on the grounds that it is easier to draw.
[3] Peter Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*, (London: Penguin Books, 1991).

greater extent and over a shorter time, than liberal-productivism. There is interplay between these two variants of culture, which I shall discuss in section 2.3. Culture changes over time as the symbolic behaviour of people and institutions changes. The cultural paradigm of liberal-productivism may be in a process of evolution towards some, as yet, little understood green variant. The green corporations may provide us with some empirical clues as to the direction(s) in which this evolution is heading.

The ability of the green corporations to construct a linguistic discourse which, if Welford is to be believed, does not correspond to its true cultural equivalent, highlights an important difference between the two planes. The cultural plane, understood through a rigorous academic discourse of interpretation and re-interpretation, may safely be relied upon to own a logical integrity, both internally and with respect to its neighbours. The linguistic plane, constructed largely for use in a public discourse of sound bites, ten-minute attention spans, and one-page executive summaries, is not obliged to address intellectual criticism of its alleged weaknesses. Language has a flexibility to construct complex, often illogical, abstractions, and in the linguistic plane there are no referees. The cultural plane, as I have constructed it, is the product of a largely intellectual discourse. The language in the linguistic plane, on the other hand, is a very public discourse, and its contributors are not beholden to the rigorous rules of participation that apply in the academy. One advantage of this very much lower threshold for entering the discourse arena is that far more players take part and, as a result, the linguistic plane contains a far larger and more varied display of representations in language. But the lack of rigour, which makes for the openness of the public discourse, is also a weakness. Instead of a group of participants united in their desire to communicate *meaning* accurately between each other, and to seek the sort of intersubjectivity as envisaged by Berger and Luckmann, the players in the public, linguistic discourse see themselves as competitors, jockeying for advantage. They compete in an arena, in which the name of the game is to establish one's own representation of reality, as the point of departure for a discussion. In such a heated forum of debate, we cannot expect the linguistic discourse of the institutional representatives of a culture, to be a faithful realisation of that culture. Eco-modernism marks, according to Welford, the position in the cultural plane of the culture of green business. If these corporations adopted, what Welford would regard as a linguistic discourse which was a faithful realisation of their eco-modernistic culture, then there would be less of a problem. But, according to Welford, the linguistic discourse of green business exaggerates its greenness. We cannot assume that there is a strong correlation between the linguistic

discourse of an organisation and the cultural coordinates of which it is assumed to be an institutional representative.

Having presented this brief sketch of the two planes I shall now proceed to a more detailed characterisation of each one of them, and make use of these descriptions to discuss how they affect the project's empirical ambitions.

2.2 The linguistic plane

As I have just explained in the introduction, one of the project's design decisions was to use corpus linguistics as my tool of empirical analysis. The availability, on websites, of very large quantities of text in electronic format, provided a ready source for creating an object of study for the project. One consequence of this, however, has been that the linguistic plane must be defined in terms that qualify this electronic text for inclusion. In chapter four, I shall provide a detailed account of the various empirical issues involved in the selection of websites, and of textual material from those websites, in order to prepare the objects of study in the linguistic plane. Here, I shall confine myself to the broader design problems that I have had to address, in the meeting between my conceptual model and the practical possibilities imposed by the available material.

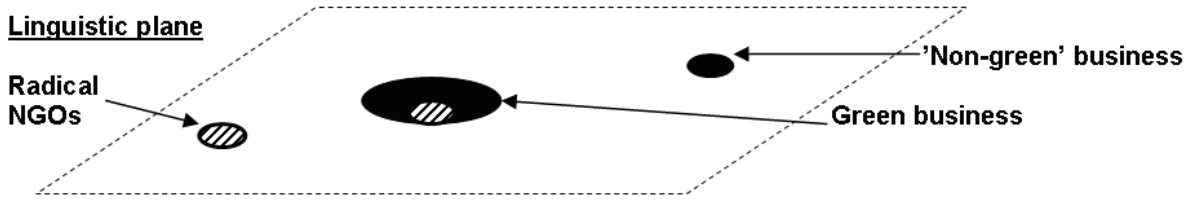

Figure 2.2: My conceptualisation of the linguistic plane

The current interpretation of the linguistic plane is presented above in figure 2.2. Welford's drama of the hijack of eco-radicalism has already been reinterpreted by me as a criticism of the linguistic discourse of green business. From the mistaken 'Welford eye-view', I have argued, the language of green business creates a rose-tinted mirage in the cultural plane, of 'eco-modernism's' environmental credentials.[4] But what are the broad characteristics of the linguistic discourse of green business, and how do they compare with, say, the radical NGOs? From the many hours of browsing through corporate and radical NGO websites during the empirical stages of the project, the overriding impression I have gained is that I am reading the respective representations in language of that particular organisation's

[4] I illustrated this in figure 1.15 of chapter one.

experience of reality. Each institution 'sees' itself and the 'real world' around it in a certain way, which it then describes in language. This material forms some of the basis for the formation of public opinion and debate.

Discourse specialists have long since pointed out that this public arena of debate operates, for very obvious, practical reasons, exclusively in representations of experiences of reality, rather than in reality itself. We cannot all make fact-finding missions to the Arctic, to experience the melting of the ice-cap at first hand. We cannot all travel to the Amazon basin, to experience the slash-and-burn destruction of the rain forest. We acquire our understandings of the way the world is, and our opinions of what ought to be done, by choosing from a selection of competing representations of reality, as I have tried to illustrate in figure 2.3 below. For illustrative reasons, I have mainly used pictures to convey the variety that it is possible to achieve in these preferred representations of the world 'out there'. But the books and reports, which are sandwiched between the pictures, are meant to illustrate the linguistic discourse that is my particular object of study.

Figure 2.3: Competing representations of the world in the arena of public discourse

It is one of my assumptions, still to be discussed, that the culture of which a particular institution is a representative, influences what that institution chooses to focus on, amongst the enormous variety of objects available in reality, and further, how it then 'sees' the objects it has selected. For the radical NGO, for example, the tanker in the top-left picture is a threat

to the natural eco-system around the terminal at which it will discharge its cargo. For a government official of a poor Asian nation, it might very well be viewed as a carrier of much needed energy to fuel a nascent industry, which may lift the country out of grinding poverty. For the green corporation, the doctor checking the health of a small child is evidence of its social concern for the communities in which it operates. For the radical NGO, the logging operation in the picture top-right is destroying the rain forest upon which we depend, for its consumption of carbon dioxide, its production of oxygen and for its biodiversity. For the green corporation, the bird sanctuary in the bottom-left corner is part of its efforts to maintain the biodiversity of the countryside in which it operates. Both for the green corporations and the radical NGOs, it is these representations of how they experience reality which make up the overwhelming volume of their media output. The textual material that is the object of study in the linguistic plane is an arena of competing, culturally-influenced representations of reality under the broad descriptive umbrella which we might, for the time being dub *business in the environment*.

This is the nature of the material with which I shall be working in the linguistic plane, and it has two important consequences for the project, which I will now discuss. First, from the perspective of a culture studies scholar, the object of study is *not* a discourse. I shall discuss my culture-studies conceptualisation of a discourse in section 2.3. Suffice to say here, that in order to have a discourse, in the culture studies sense of the term, there needs to be a proper communication of meanings between the protagonists in the debate. There needs to be a wish to make oneself understood to the other, and to use a common language, which is understood similarly by both parties. Viewed from a culture studies perspective, my linguistic plane is fragmented. It has the appearance of a huge collection of texts, which compete much more than they communicate. How could it be possible, I reasoned, for a *hijack* of the language of the radical environment to have occurred, when there never was, it seemed to me, a genuine connection anyway? Rather than there being a hijack from one intended destination to another in the linguistic plane, it seemed much more likely that the protagonists were presenting different representations of different journeys to the public.

But the second consequence of my characterisation of the linguistic plane, as an arena of *competing* representations, is to ask who is winning. When Welford makes cultural inferences on the basis of linguistic discourse, he is far from alone. It has become a truism, that the increase in the role of the media has caused the policy-making process of governments, to be influenced to a greater extent by public linguistic discourse, than was

previously the case. If the British government's understanding of the greening of British business is formed, to a considerable extent, by the public linguistic discourse, in just the same way as the 'Welford eye-view', then he is absolutely right to raise the alarm, even though it is not for a hijack. It means that, just like Welford, the British government will see, in the grey 'mirage' language of green business, a much too optimistic picture of the cultural plane, and will probably adopt a far-too generous approach towards the corporations. There will be no need to take a hard line, because green business has got the environmental issues under control! The danger is that the linguistic discourse of green business wins the public battle, to decide whose representation of 'business in the environment' is going to be the starting point for the debate. If that is the case, then there ought to be evidence that the government's language representations bear a closer resemblance to those of green business, than the radical NGOs' representations. In order, therefore, to attach some degree of significance to the testing of Welford's criticism, I realised that I had to introduce the linguistic discourse of the British government into the study, as a litmus test, against which I could compare the discourse of the two protagonists.

I turn now to a further design problem, which arose from my initial exploration of websites. Although I have characterised the linguistic plane as an arena of fragmented discourse, it is not totally unconnected. The protagonists certainly choose to represent different aspects of 'business in the environment' reality, and they probably represent those aspects in ways that are culturally influenced. But having conceded this degree of variation, I will make the claim that all the texts fall under the spacious descriptive umbrella which I have dubbed *business in the environment*. This is an empirically enforced trade-off between, on the one hand, the need to permit the textual selections to be representative of the protagonists, and on the other, to make the exercise of comparing the protagonists' texts *useful*. In other words, I wish to assume that I may reasonably claim to be comparing apples with apples, rather than apples with pears. I shall leave, as a task for chapter four, the detailed discussion of how the particular 'linguistic apples' were selected for comparison, so as to make this assumption as credible as possible. Suffice it to say here, that the general subject of the selected texts is business's interaction with, and influence on, the natural environment. This is a matter on which (i) green business, (ii) the radical NGOs and (iii) the British government, all have a good deal to say.

As I have just argued, in order to be able to make a useful comparison of the linguistic discourse, I need to be able to argue that the texts are comparable. Welford might criticise

green business's discourse, but it does, at least, provide a basis for argument and discussion of ideas with other players such as the radical NGOs and the government. With 'non-green' business, however, there can be no comparison, because these organisations do not provide any material, which I can plausibly argue to be comparable. They do not regard the natural environment as a relevant subject for their representations of the 'real world'. A glance at the linguistic plane in figure 2.2 is enough to register, that there is symmetry along the "radical NGO – green business – 'non-green' business" axis. Green business sits between two outer positions and it would clearly have been interesting to examine the linguistic discourse of these 'environment-friendly' corporations, as a possible compromise between the other two. However, my disappointment that this could not be done was alleviated by a working assumption that, I think, is plausible. I shall make the reasonable assumption that 'non-green' business has *nothing* to say about the natural environment. In that case, all the evidence of a representation of the natural environment, within the linguistic discourse of the green corporations, may be assumed to be a direct result of its new environmental interest. 'Non-green' business having ruled itself out of consideration, the linguistic analysis and interpretation becomes a three-way comparison, as I have shown below in figure 2.4.

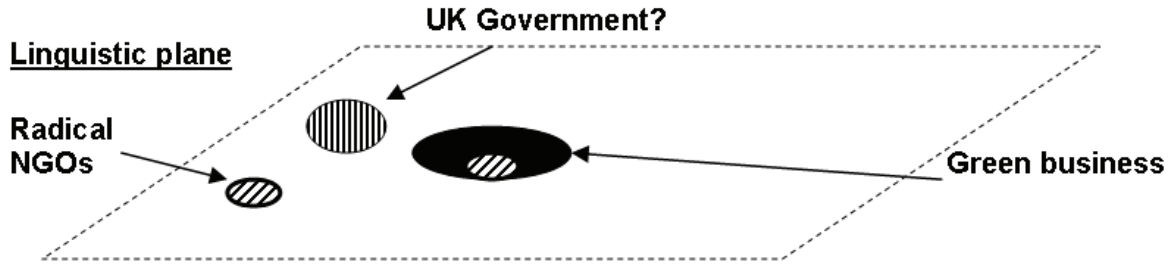

Figure 2.4: Comparison within the linguistic plane

Research question one asks, then, how the linguistic discourse of green business compares with that of the radical NGOs. Can we find evidence that green business has, as Welford has suggested, adopted the language of the radical environmental debate? His claim ought not to raise any eyebrows. Business has been placed under pressure to address itself to the environmental critique. Given that green business has made some genuine attempts to modify its operations in order to be more environment-friendly, it is only to be expected that it should adopt the language of the environment, in order to represent these environmental activities. We cannot accuse the green corporations of behaving in an underhanded fashion when they use the language of the environment in order to talk about the environment.

The empirical confirmation that green business has adopted the language of the environment will not, therefore, be very surprising. Of more interest will be the results of a three-way analysis, which responds to research question two. When we compare the linguistic discourse of the radical NGOs and green business with that of the British government, do we find evidence that the government talks more about the things that business talks about, than it talks about the things that the radical NGOs talk about? Can we find evidence that the government talks about these things in similar ways to green business or the radical NGOs, or does it have its own ways of talking about these things? Such questions are the first ones to be addressed by the empirical analysis. In chapter four, I shall present the work which I carried out in order to design and construct the three 'raw' objects of linguistic study shown in figure 2.4 above, and also the process of refining them so that they could be usefully compared. Then, in chapter five, I shall address myself to the two research questions discussed above. Having characterised the linguistic plane, and developed my two research questions, I turn now to my conceptualisation of the cultural plane.

2.3 The cultural plane

2.3.1 Introduction

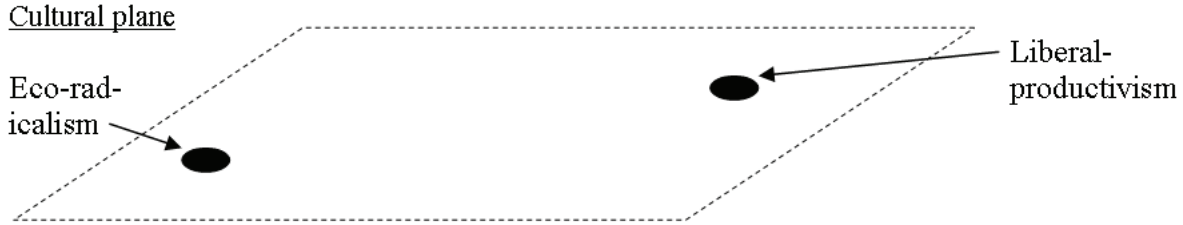

Figure 2.5: The cultural plane

The view of the cultural plane, which I reproduce above in figure 2.5, has been useful in the process of distinguishing it from the linguistic plane. But this schematic representation, in which I label one point *eco-radicalism* and another *liberal-productivism,* and position them in the same parallelogram, conveys a grossly simplified impression of their relationship. Locked into their cultural plane like two billiard balls on a table, capable of moving in just two dimensions, one could be forgiven for imagining that the processes of cultural change are purely quantitative; give it enough nudges in the correct direction and liberal-productivism will roll smoothly across the baize towards the bottom-left pocket. Obviously, the reality is far more complex. My model of a plane conceals enormous qualitative differences. What, in my cultural plane, seems to be a journey of purely quantitative distance consists, in reality, of a

whole series of discontinuities, which are so culturally significant, we may fairly think of them as ideological divisions.

The most lucid account I have read, of the disjunctions that exist between eco-radicalism and some mild form of environment-friendly liberal-productivism, is contained in Andrew Dobson's *Green Political Thought*.[5] Dobson's project is to examine the different wings within the environmental movement, and his major conclusion is the insistence on a qualitative divide between what he calls the *ecologists* or *deep greens*, on one side, and the *environmentalists* or *light greens*, on the other. Equated with the terminology of Bahro and Welford that I introduced in chapter one, Dobson's *ecologism* corresponds to eco-radicalism, and *environmentalism* to eco-modernism. According to Dobson, whereas environmentalism fits fairly comfortably within Welford's liberal-productivist paradigm, ecologism challenges it fundamentally:

> Ecologists and environmentalists are both inspired to act by the environmental degradation they observe, but their strategies for remedying it differ wildly. Environmentalists do not necessarily subscribe to the limits to growth thesis, nor do they typically seek to dismantle 'industrialism'. They are unlikely to argue for the intrinsic value of the non-human environment and would balk at any suggestion that we (as a species) require 'metaphysical reconstruction' (Porritt, 1984a, pp. 189-200).[6] Environmentalists will typically believe that technology can solve the problems it creates, and will probably regard any suggestions that only 'frugal living' will provide for sustainability as wilful nonsense.[7]

Dobson has provided us with a flavour of radical green thinking in the quote above, but I shall also use his example to make a further interpretive move. Recalling my brief description of the cultural plane in the introduction to this chapter, I stipulated that it consisted solely of ideas which had no power of agency. In characterising his cultural positions, Dobson uses *people* who hold such a cultural point of view. He may simply be personifying the cultural positions for rhetorical purposes, but this technique draws attention to another difference, which it is important to make in this process of description; the distinction between culture-as-idea, and the institutional culture of an agent who, it is argued, is a representative of that culture-as-idea. The recognition that this distinction has been conflated reveals a new, and this time insurmountable, obstacle, to the empirical ambitions of the project, which I now illustrate in figure 2.6 below. In the specific context of this project's cultural plane, there is a difference between eco-radicalism and the culture of a group of organisations, which I categorise as the radical NGOs. Similarly, there is a difference between

[5] Andrew Dobson, *Green Political Thought*.
[6] Jonathon Porritt, *Seeing Green*, 189-200.
[7] Andrew Dobson, *Green Political Thought,* 37.

Welford's eco-modernism and the culture of a group of corporations, which I categorise as green business. Finally, there is a difference between liberal-productivism and the culture of a group of corporations, which might be categorised as 'non-green' business.

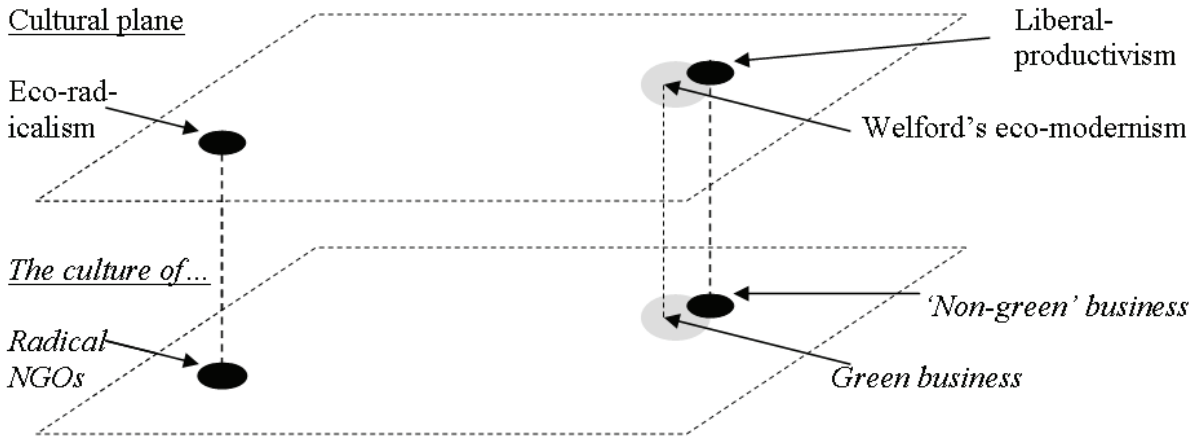

Figure 2.6: Two cultural planes

In each of the three pairings, the first item belongs in the cultural plane and, having no power of agency, writes nothing itself. However, the second items in each pairing do have power of agency. Amongst other things, they write textual representations of how they experience reality. This linguistic discourse may lend itself to an analysis, which can shed light on the culture of its institutional producer. But it will be clear from my interpretive move that the ambitions of the empirical approach, cannot aspire to characterise or comprehend the cultural plane proper. I must satisfy myself with the possibility of saying something useful about the development of the culture of a group of institutions, which I have labelled green business. I shall return to this distinction later to explore its significance, but will now proceed with the characterisation of, what are now, the two cultural planes.

Returning to my theme of the enormous qualitative divide between the cultural coordinates on the left and right of these two planes, it is hardly surprising that eco-radical NGOs are deeply suspicious of green business rhetoric. Their deep green 'ideology' presents liberal-productivist corporations with a raft of fundamental challenges to their patterns of thinking and assumptions about 'the way the world is'. Yet amazingly, from an eco-radical perspective, in the space of a few years of development, some freshly greened corporations

seem to be claiming to have reconciled the ecologists' world view with free-market 'capitalism', while their business operations trundle on more or less as usual.[8]

One of the several reasons, why the business corporations attract so much negative attention is because they are such a visible reminder to us, of the damaging ways in which we live. They consume so many resources in feeding their production processes, and they produce so much pollution of the planet, and the unfortunate fact is that they carry out all this exploitation of the natural world, just for us. From the earliest engineering beginnings, when our forefathers began to fashion flints for spearheads in order to hunt more successfully, we have been launched on a trajectory over the non-human natural world. The project was subsequently given a goal: *mastery of nature*, by Bacon, and became an important feature of the Enlightenment. Knowledge of nature's processes has been the objective of natural scientists. But it has been liberal-productivism's uncompromising instrumentalist view of all that it beholds, which has carried us through on our trajectory over nature, by incorporating both the human and non-human world within its processes. From its all-seeing vantage point, everything can be subordinated within its techno-economic process of creating 'value'. But the assessment of value is made within the context of a market place where buyers meet sellers, and its measurement is purely financial. There is no moral aspect, either social or ecological, in a market place transaction. The seller's gain is calculated as the monetary difference between the price she can obtain from the buyer, and her expenses in getting the product to market. The 'capitalist', whether sole-trader or multi-national, must always seek to drive down, or better, drive out, costs from the production chain. Without a moral market place, there will be no room for sustainability or social responsibility in the production chain of liberal-productivism.

In common with the radical greens, I am sceptical as to the prospects for achieving ecologically sustainable 'capitalism'. The project is hugely ambitious. But I don't think that we have any other realistic choice than to join in. This is not to denigrate the myriad ecological initiatives which explore alternative lifestyles, alternative ways of organising the means of production and alternative ways of organising society. All such work contributes to our understanding of how future, sustainable models, might be constructed. But Welford's liberal-productivist paradigm is where we are at. As Jonathon Porritt, in the introduction to

[8] I remind the reader of my reservations, presented in chapter one, as to the political connotations of the term *capitalism* and *capitalist*, and my intention to use the term *liberal-productivism* with reference to my own cultural plane. The wholesale removal of *capitalist* from my text has proven to be unworkable. Where I have felt that its removal would lead to a too-cumbersome alternative, I have placed it in single quotation marks to indicate my reservations.

one of his more optimistic books, evocatively concedes, "capitalism is now the only economic game in town."[9] Concurring with Porritt, a Friends of the Earth press briefing points out that "[t]he top 200 multi-nationals have sales equivalent to 26 per cent of global GDP."[10] Their role in the scheme of things, like that of the USA and China, is too significant for us simply to bemoan their behaviour, and get on with ringing the environmental changes without them. Unless these institutional representatives of liberal-productivism change, all the environmental benefits of all the alternative-lifestyle communes on the face of the planet, won't save us.

Yet the existence of the green corporations, with their eco-modernist cultural coordinates, is evidence that movement, though modest, is possible. In the space of thirty to forty years, the ideas of the environmental movement have succeeded in changing society, perhaps, even our own thinking. Andrew Jamison, in *The Making of Green Knowledge*, ventures the view that "[a]n ecological consciousness, we might say, is in the process of being internalised in our cultures and our personalities."[11] His chosen view of the cultural plane and its processes is an interpretation which I particularly like. Jamison is not concerned with specific political realities. He chooses, instead, to conceive of the ecological project "as a series of cultural transformations by which the visionary ideas and utopian practices of the environmental movement are working their way into the social lifeblood."[12] At this point, I wish to focus attention on the cultural plane 'proper', this intersubjective arena of ideas, of the academic work within it, and the role this can play, in bringing about changes to reality.

2.3.2 A cultural discourse – ideas as levers on reality[13]

It is over thirty years, since E. F. Schumacher pointed out that our capitalist-inspired production processes are busy liquidating nature's capital assets, and pretending that value has been created because the results appear in our income account.[14] What we spuriously call "value creation," is being funded by a once-in-a-millennium sale of the family silver. This is one example among many, of the way in which the ideas that we may loosely collect together

[9] Jonathon Porritt, *Capitalism as if the World Matters*, (London: Earthscan, 2005), xiv.
[10] Friends of the Earth, *The Problem with Corporations*, http://www.foe.co.uk/resource/briefings/problem_with_corporations.pdf, (accessed 30th January 2008).
[11] Andrew Jamison, *The Making of Green Knowledge: Environmental Politics and Cultural Transformation*, (Cambridge University Press, 2001),17.
[12] Ibid., 45.
[13] Although there is no direct quotation, the ideas in this section are inspired by Gene Wise's *American Historical Explanations: A Strategy for Grounded Inquiry*, (Homewood, Illinois: The Dorsey Press, 1973).
[14] Ernst Schumacher, *Small is Beautiful: a study of economics as if people mattered*, (London: Sphere Books Ltd, 1974). See "The Problem of Production," 10-17.

under the umbrella term of *the ecological critique*, have the power to change the way we experience reality.

Closer to home than the balance sheet of the earth, I have spent five minutes on an internet website answering a series of questions designed to assess my ecological footprint, here, in Norway.[15] The test is very rough and ready. I don't, for example, seem to get any credit for my comprehensive composting arrangements (for which I am not a little pleased with myself), and I don't know which band of petrol consumption my car falls into. But I answer the questions as honestly and accurately as I can, and out pops the result that my global footprint, measured in hectares, is fourteen. The idea of "14 global hectares" is not powerful. It doesn't relate to my experience. But the system proceeds to tell me that "THE AVERAGE ECOLOGICAL FOOTPRINT IN YOUR COUNTRY IS 7.9 GLOBAL HECTARES PER PERSON," which puts me well over the average for Norway. Further, it points out that "WORLDWIDE, THERE EXIST 1.8 BIOLOGICALLY PRODUCTIVE GLOBAL HECTARES PER PERSON," and then, the killer blow, "IF EVERYONE LIVED LIKE YOU, WE WOULD NEED 7.8 PLANETS." This final sentence is then followed by a little illustration of the "7.8 planets" (rounded up to eight and reproduced below as figure 2.7), that would be necessary if everyone on earth were to live as Mark Brown does.

Figure 2.7: Mark Brown's ecological footprint

This idea, when I first tried it, changed my experience of reality. Yes, it's very crude, and yes, I have the two children in the household neither of whom drive a car, which would probably, I console myself in thinking, bring the family's average down to a more modest level. But I cannot now experience my life as anything other than environmentally irresponsible. Seen through the lens of a new idea, an unchanged reality 'out there' - my lifestyle - is experienced differently by me. In the seeds of my changed experience, lie the possible beginnings of a process of changing the reality of my life.

[15] Earthday Newtork: Redefining Progress, *Ecological Footprint Quiz*, http://www.earthday.net/footprint/index.asp, (accessed 30th January 2008).

The best work of the cultural plane should aspire to the development of new ideas. A *cultural* discourse starts, when someone brings together two or more, hitherto unrelated ideas, and creates a new conceptualisation, which has the power to change the way we experience reality. The discourse develops, if and when other scholars take the new idea and work with it further, extending the conceptualisation or testing its durability or the range of its application. The discourse is disseminated, as its ideas spread beyond the academic journals and begin to influence political and institutional leaders. A further example of what I mean, comes from Andrew Dobson's latest book, *Citizenship and the Environment*, in which he brings together two existing ideas to create the new conceptualisation of *ecological citizenship*. The publisher's summary at the back of the book describes Dobson's work as follows:

> He develops an original theory of citizenship, which he calls 'post-cosmopolitan', and argues ecological citizenship is an example and an inflection of it. Ecological citizenship focuses on duties as well as rights, and these duties are owed, non-reciprocally, by those individuals and communities who occupy unsustainable amounts of ecological space, to those who occupy too little.[16]

It will be interesting to see whether Dobson has managed to start a cultural discourse, which is both academically productive and also makes political progress, as he hopes. Is it possible that in years to come, we may have altered our personal understanding of what it means to be a good citizen, to something approaching Dobson's proposal? Will that widespread cultural transformation affect the way we lead our lives, so that Dobson may fairly be credited with having changed reality, through the leverage of his idea? I have included it as one good example from among probably hundreds of possible projects, in order to illustrate the activity of the cultural plane 'proper'. The task is to open up the cultural space of liberal-productivism, so that new ways of understanding what it means to be a good 'capitalist', are created. This work is well underway and the liberal-productivist paradigm is assuredly experiencing a feeling of strain from opposing intellectual forces. Among the ranks of the would-be reformers, I can, for example, pick half a dozen books off the shelves of the University of Oslo library, which explore the possibilities for 'capitalism-with-morality'. And among the revisionists, there are also neo-liberal economists and political think tanks, which argue that a purer form of capitalism will right any environmental wrongs. Just like reality 'out there', the experience of the cultural plane varies according to the observer's viewpoint.

[16] Andrew Dobson, *Citizenship and the Environment*, (Oxford: OUP, 2003).

2.3.3 Ideas as lenses on reality and ideas as lenses on ideas

As my reference to Andrew Dobson's work has already intimated, the 'idea lenses', through which different cultures view reality, are radically different from each other. In figure 2.8 below, I have drawn a simple schematic, which is intended to illustrate the way in which eco-radical experience can differ from liberal-productivist experience. Even though they are looking at the same external reality of a factory, the natural landscape and a family, the 'cylindrical shape' of eco-radical experience is very different from the 'cubic shape' of liberal-productivist experience.

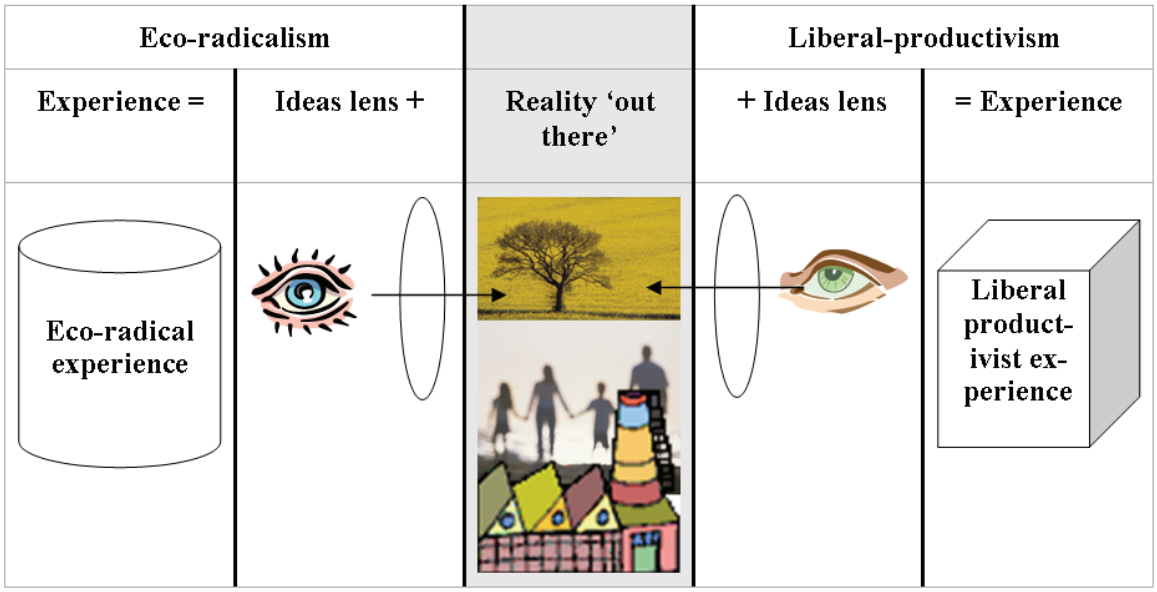

Figure 2.8: Two different lenses on the same reality produce two different experiences

There is a parallel, between looking at reality 'out there', and looking at the cultural plane. It need hardly be pointed out, that work of interpretive science in the cultural plane is a personal and subjective process, in which the individual scholar's cultural assumptions must influence the result. If we wish to find an optimistic interpretation of the possibilities offered by eco-modernism, for example, I can find no vision of this future that is presented with greater conviction, than Paul Hawken's 'market launch' of natural capitalism:

> It [this book] is about the possibilities that will arise from the birth of a new type of industrialism, one that differs in its philosophy, goals, and fundamental processes from the industrial system that is the standard today. In the next century, as human population doubles and the resources available per person drop by one-half to three-fourths, a remarkable transformation of industry and commerce can occur. Through this transformation, society will be able to create a vital economy that uses radically less material and energy. This economy can free up resources, reduce taxes on personal income, increase per capita spending on social ills (while simultaneously reducing those ills), and begin to restore the damaged environment of the earth.

> These necessary changes done properly can promote economic efficiency, ecological conservation, and social equity.[17]

On the other hand, in *The End of Nature*, Bill McKibben paints an ironic picture of an unrepentant capitalist paradigm, with an overweening self-confidence in its technological ability to manipulate nature to everybody's benefit. In his chapter "The Defiant Reflex," McKibben's account of genetic engineering illustrates mankind's God-like pretensions over nature:

> Just in time - just as the clouds of carbon dioxide threaten to heat the atmosphere and perhaps starve us - we are figuring out a new method of dominating the earth, a method more thorough, and therefore more promising, than burning coal and oil and natural gas. It's not certain that genetic engineering and micromanagement of the world's resources will provide a new cornucopia, but it seems probable. We are a talented species. [18]

From McKibben's eco-radical standpoint, his interpretation of a liberal-productivism, that is capable of rising to the challenge of environmental devastation, is not a pretty sight. So he turns his back on it, to face his alternative and preferred vision, which will entail a return to the eco-radical trenches. This is presented in the final chapter of the book, under the heading "A Path of More Resistance." Here, he explores bio-centric conceptualisations of man within the landscape (Welford's *eco-radicalism*), hoping for changes in the way we think, which might make useful changes towards simpler lifestyles easier. This second scenario is a wistful view of a desirable, but probably unattainable, eco-radicalism. As the title indicates, he is quite clear about the enormity of the project. McKibben, however, has set up an either-or choice to be made. Standing at this junction of his own creating, "the path of more resistance" is the best (or least bad) of the two options. However, it does not have to be a case of 'either-or'.

McKibben's bifurcation into an '*either*-an-environmental-*or*-an-ecological' future is a very common eco-radical interpretation. The eco-radical experience of liberal-productivism's green progress is never encouraging. Welford, as we have seen, is inclined to assign cynical motives to the corporations, and to warn that the changes are too little, too late. Viewed through the cultural lens of an eco-radical, this is an understandable interpretation, and McKibben and Welford are, of course, entitled to construct their own experiences out of reality. But one problem I find, with this pessimistic reading, is that it makes withdrawal to

[17] Paul Hawken, Amory Lovins & Hunter Lovins, *Natural CAPITALISM: The Next Industrial Revolution*, (London: Earthscan, 1999), 2.
[18] Bill McKibben, *The End of Nature*, (New York: Random House, 1989), 166.

the cultural trenches such a tempting option. Whether we are studying the cultural plane or its institutional twin, we need to look for movement.

We don't need to succumb to Hawken's 'green capitalist' promises of utopia. We can apply our energies to the greening of liberal-productivism, because we want to do something, and because it is a sensible thing for us to do. And we can console ourselves with the thought, that even though Hawken's utopian promise most probably won't be realised, we will, at least, achieve something. Neither do we need to buy into McKibben's pessimistic interpretation of an eco-modernist domination over, and manipulation of, nature. The technological management of the natural world does not need to be an unmitigated disaster. We know, from our social experience, that there are examples of good management; of managers who create environments in which their subordinates thrive and flourish. In short, the response of liberal-productivism to the ecological critique does not need to be either all good or all bad. By applying ourselves to the job in hand, we may avoid both the temptation of foolish hopes and the paralysis of despair.

In my more optimistic moments I like to think that I am capable of seeing both sides of the paradigmatic coin. My academic life, as a student of Anglo-American literature and culture, has been marked by an interest in the work of farmer and poet Wendell Berry, whose work is grounded firmly in an eco-radical vision for the landscape of rural Kentucky. And in my private life, gardening according to the principles of perma-culture in a small village by a fjord, ranks as a major spare-time activity. I consider myself to be sympathetic to the cause, but an environmental sinner; although I do try, when measured against a strict ecological yardstick, I could do much better. But in my formative school years and stage one of my professional life, I was a card-carrying member of the liberal-productivist paradigm. I read chemical engineering and business studies in my first degree, and worked on a Mobil Oil refinery during the summer vacations. I have five years' service as an IBM salesman on my record. I retain my engineer's interest in technology, and a fascination for its achievements. In my daily commuting, I am unable to go past major building projects without a shiver of delight, over the astonishing mastery of materials and the logistical coordination of resources, to which I am witness. And observing the indifference of the other passengers on the 08:06, I realise that the sophistication and complexity of this built environment is only visible, to those of us with the right eyes to see. The case, that I am making, is that my eyes are well-suited to looking at the greening of liberal-productivism and also the greening of business.

2.3.4 Two cultural planes

The best work of the cultural plane is the theoretical development of new ideas. These ideas have the power to change our experience of reality. I described in section 2.3.2, how my own usage of the lens of the ecological footprint, changed my experience of reality; experiencing my own life as eight planet earths, may help me to change the reality of my life. A similar process is taking place with some of the institutional representatives of liberal-productivism: the green corporations. Shell uses the same metaphor of a lens, to describe how the idea of sustainable development, changes the way in which it looks at its reality:

> **The sustainable development lens**
> Making sustainable development part of the way we work means learning to look at all aspects of our business through a new lens. This lens lets us see the world through the eyes of our stakeholders and helps us to understand the many ways that our business activities affect and are affected by society and the environment [emphasis added].[19]

A second example of the leverage of an idea that has filtered down from the cultural plane, is the concept of ecological modernisation. As I argued in chapter one, it has functioned as a facilitator, making it possible for business to maintain a dialogue with the radical NGOs. Considered as a cultural discourse, it has proved to be extremely successful in generating responses and dialogue within the academy. From a business studies point of view, it probably peaked with an endorsement from none other than Michael Porter in an article in the Harvard Business Review.[20] It has also generated a good deal of criticism from neo-liberals, such as Milton Friedman, who have argued that corporations, which spend money on voluntary Corporate Social Responsibility (CSR) measures, are stealing money from their shareholders.[21] Despite Friedman's criticism, the Porter view retains its corporate adherents. The idea that, in 3M's original formulation, "Pollution Prevention Pays," has provided the legitimacy for the senior management of such corporations as Shell, to talk to the representatives of the radical NGOs.[22] But ecological modernisation's importance extends

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[19] Shell, *Our sustainable development commitment,* http://www.shell.com/home/Framework?siteId=envirosoc-en&FC2=&FC3=/envirosoc-en/html/iwgen/sustainability_and_our_business_strategy/our_sd_commitment/our_sd_commitment_000407.html, (accessed 30th January 2008).

[20] Michael Porter and Mark Kramer, "The Competitive Advantage of Corporate Philanthropy", *Harvard Business Review*, December 2002: 57-68.

[21] Milton Friedman, "The Social Responsibility of Business is to Increase its Profit", *New York Times Magazine*, September 13, 1970.

[22] I experienced an illustration of this 'CSR is good for business' argument first hand at a business school seminar on Corporate Social Responsibility (CSR) in Copenhagen in 2004. A senior CSR professional from Royal Dutch Shell had been invited to present his company's environmental strategy to an audience consisting predominantly of economists and organisational theorists. What was striking to me, with my eco-radical sympathies, was the insistence in Shell's message to the outside world, that CSR was good for its bottom line.

beyond the legitimising of a dialogue. Eschewing the 'stick' of old-style regulation and legislation, ecological modernisation has enabled the corporations not just to 'talk green', but also to spend considerable sums of money on making changes to their reality. As they have 'voluntarily' installed the scrubbers, and redesigned their plants for energy efficiency, all at the shareholders' expense, and with their tacit acceptance, they have represented their corporate investments as symbolic actions of their environmentally- augmented business culture.[23]

It will also be apparent, from the intellectual sophistication of the examples that I have provided, that the cultural plane is an enormously complicated arena of interconnected discourses. If I were to do it illustrative justice, the cultural plane, which I first presented in figure 2.6 along with its institutional twin, ought to look like the dendritic structure of the human brain, as I have tried to illustrate in figure 2.9 below. Referring back to my example of Andrew Dobson's *ecological citizenship* project, his different cultural ideas would correspond to different black spots in the upper plane. He develops his conceptualisation of *ecologism* (Welford's eco-radicalism), and his conceptualisation of *citizenship*, and brings them together in his new conceptualisation of an idea which he calls *ecological citizenship*. This new idea of citizenship might act as a lever, in modifying our conceptualisation of *environmentalism* (Welford's eco-modernism).

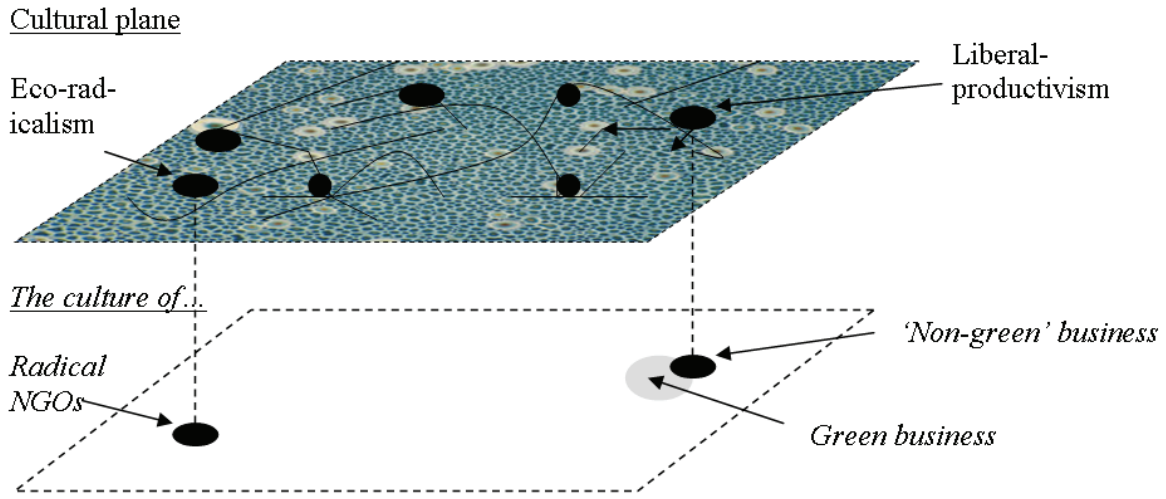

Figure 2.9: The dendritic appearance of the cultural plane above its institutional twin

This point was repeated several times in different guises: it gave Shell a strategic advantage, it functioned as a spur to organisational creativity, many of its innovations had led to greater resource productivity or to other manifestations of eco-efficiency, etc.

[23] Clifford Geertz's insistence that we need to interpret culture as socially established structures of meaning in terms of which people *do* things, is a view with which I feel most comfortable. It certainly resonates most strongly with my experience from reading the many 'texts' produced by green business in which they explain what they are doing and why they are doing it. I shall return to this in more detail in chapter three.

Conceptually, then, ideas can filter down from the cultural plane, and either modify or augment the patterns of thinking – what we might call the corporate culture - in which businesses operate. On the assumption, therefore, that there has been a 'significant' amount of augmenting and/or modification, we may postulate that there are, under development, some distinctive patterns of thinking which we shall collectively dub *the culture of green business* – the light grey shaded point in the lower cultural plane of figure 2.9 above. The corporations have the challenge of 'translating' the new patterns of thinking, which comprise the culture of green business, into practical measures. They must set their corporate goals, create plans and projects, invest in plant and equipment, and set management targets for their operation. As these new patterns of thinking are manifested in the corporations' physical reality, they are described in language, whose analysis can provide us with useful feedback on how liberal productivism is responding, institutionally, to the new ideas.

As things now stand conceptually, the institutions' role is essentially passive; sit back and wait for the academic discourse in the cultural plane to come up with all the right ideas, and then implement the blueprint for survival. But, of course, the signals coming from the cultural plane are far from clear, or unanimous, in their advice. There is no such blueprint for the green corporations to follow. Currently, we have only speculative and controversial views, as to how the cultural discourse of liberal-productivism might usefully respond to eco-radical ideas. If the cultural plane was the only impetus for change within the boardrooms of the corporations, green business would not have made much progress. However, thanks in large measure to the radical NGOs, a powerful impetus for the greening process has come from the 'real' world in which the corporations operate, and from where they experiences reality. It was in the real world, that radical NGOs targeted certain 'non-green' corporations, for public demonstrations of their environmental 'sins.' It was in that world 'out there', that they hung up banners on smoke stacks, chained themselves to discharge pipes, and generally harassed their corporate adversaries, with charges of environmental abuse. It was also in the world 'out there', that the UK (and other) governments, also under pressure from the radical NGOs and public opinion, introduced environmental legislation, which imposed limitations on the polluting activities of business. The immediate consequence, of such embarrassing media events and parliamentary regulation, was that the corporations, operating very much in a reactive mode, took practical steps to reduce the worst environmental impacts of their operations.

I shall expand on this corporate model of change in chapter three. But essentially I am arguing that, viewed chronologically, the dynamic, by which 'non-green' corporations have been disturbed from their steady-state culture of liberal-productivism, and have evolved into green businesses, has varied. In the early stages, this dynamic has been driven by the simple expediency of wishing to avoid public humiliation at the hands of the radical NGOs. The 'non-green' corporations spent money, to implement new technology in their operations, that would lead to reductions in their polluting impact. As they did so, they made representations in language and pictures of what they were doing. These texts and images gave them the raw material with which to address the public relations threat, posed by such organisations as GreenPeace, with their spectacular 'end-of-pipe' media events. But no self-respecting institution operates without also describing the 'culture', which lends its organisation and its activities, a symbolic significance. The business corporation is no exception. As the green businesses' textual representations, of *what* they were doing and *how* they were doing it, grew in complexity, their corporate insight increased. The senior managers of these evolving green corporations were increasingly able to articulate *why* they were doing it as well, (beyond the obvious reason that they wished to avoid any more PR disasters). The next step from this articulation was its formalisation and integration, into the "mission statements" and "business principles," that appear at the front of the corporations' brochures and reports.

So the light grey area in the lower plane of figure 2.9 – *the culture of green business* – is not simply a product of ideas, filtering down from the cultural plane. These corporations are launched on a journey of 'greening' their business culture, but have embarked without a map to tell them where to go, or how to get there. As they feel their way along the path, they represent themselves, their experience of the reality around them, and their activities, in language. In this linguistic discourse of the green corporations we may be able to discern new, emergent patterns of thinking, which give us clues as to *how* green business culture is developing.

2.3.5 The cultural plane - summary

One consequence, of the discussion in section 2.3, is that I now dispense, for the purposes of this project, with the cultural plane 'proper'. All further references to a cultural plane will refer to the cultures of the institutions, which form the subject of this study. The two-plane schematic which defines the methodological challenge at the centre of the project, now appears as shown in figure 2.10 below.

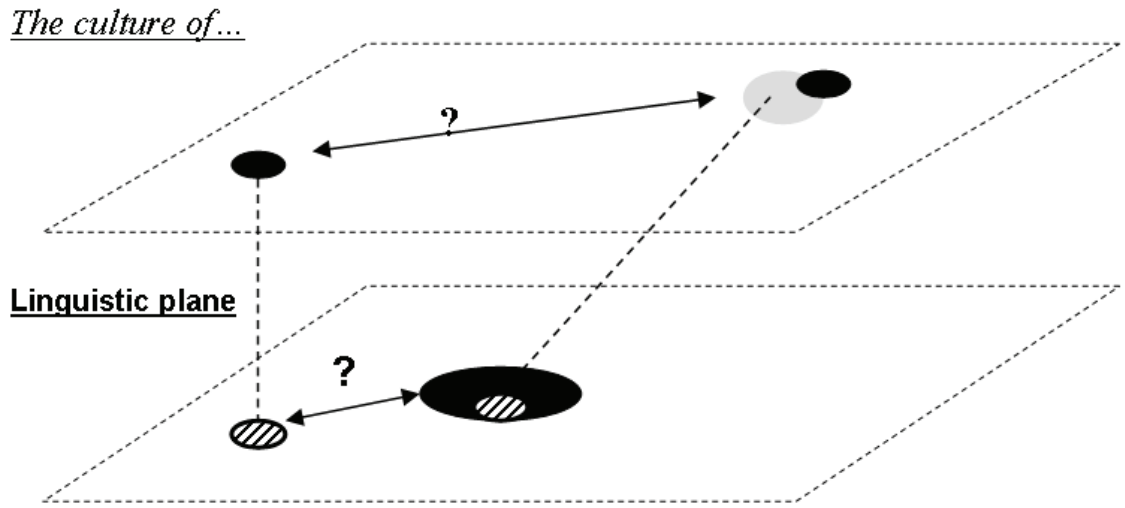

Figure 2.10: The focus of the inter-plane comparisons

The methodological challenge requires that I demonstrate some form of plausible connection between the two planes. At present, this is based on a notion of identifying patterns in language in the linguistic plane, and 'projecting' them (!) into patterns of meaning in the cultural plane. As vehicles for testing out the possibilities of making such 'inter-plane' connections, I shall now advance two hypotheses, the testing of which will require movement from one to the other. First, in section 2.4, I will outline a claim that will require me to move from the lower, linguistic plane to the upper, cultural plane. I shall briefly discuss a key criticism of the linguistic discourse of green business made by Welford: the *appropriation claim*, and then set up the empirical parameters for testing this claim, by looking for evidence in the linguistic plane. Assuming that I find evidence here that supports Welford's appropriation claim, I will then need to make a case for how this evidence contributes to our understanding of patterns of meaning in the cultural plane. Second, in section 2.5, I shall enter into a longer, interpretive development in the cultural plane, which I have called the *incorporation claim*. The purpose of the discussion in this upper, cultural plane is to arrive at a number of research questions, a response to which might be found in the lower, linguistic plane.

2.4 Linguistic evidence to cultural interpretation – the appropriation claim

"It is increasingly clear," writes Welford, "that when we discuss environmentalism many of us are essentially speaking very different languages."[24] He is not, of course, to be understood

[24] Richard Welford, *Hijacking Environmentalism,* 32.

literally, in the sense that the protagonists are communicating in two languages that are as foreign to each other as, say, English is to Norwegian. There are two obvious reasons, which support a figurative interpretation of his complaint. First, he has already made it a part of his hypothesis that the radical language of the environment has been incorporated into the rhetoric of green business's linguistic discourse. I have concurred with this claim, when presenting my own interpretation of the linguistic plane. So, at least some, of the language used by the radical NGOs and green business, must be common. Therefore, his meaning in saying that the protagonists are "speaking very different languages," must be referring to something more subtle than two separate vocabularies. Second, in the quotation above, Welford observes that "we discuss environmentalism," so there must be some sort of exchange of opinions occurring between the radical NGOs and green business. The protagonists might not be able to agree, but there is enough common language for them to at least take part in a communicative process.

The source of Welford's exasperation lies at a more subtle level, than that of differences *between* two languages. At our meeting in Oslo, referred to in section 1.3.3 on page 26, Welford explained that the presence of business-oriented terminology alongside the lexicon of the environment, made him uneasy about the meaning of environmental vocabulary appearing in the language of green corporations. The language being used was the same, or approximately so, hence the impression that the two sides were creating a meaningful discourse between them. But Welford suspected that the meaning, which green business people attached to a particular word of environmental vocabulary, was different from the meaning that the radical NGOs attached to it. The source of the problem is differences of understanding and interpretation of the same word signs in the language. This is the reason why I have used the word *appropriate* in the heading to this section. I am using the word with the sense of *to take possession for one's own use*. Building on the earlier, uncontroversial claim that the linguistic discourse of green business has adopted the vocabulary of radical environmentalism, Welford now advances one step further. Not only have the words of eco-radicalism been taken on board by green business, their meanings have been modified to suit the usage of the corporations. It is as if the process of incorporating eco-radical language within the green business discourse has, for Welford, undermined the traditional meanings, that he has associated with each of the words in his own eco-radical vocabulary.

I am obliged, at this point, to take a short pause from my argument, in order to clarify the meaning I attach to the word *sign*, which I introduced in the previous paragraph. It is

extremely important in the context of the empirical work, and since I have elected to use the term in what is, for linguists, an unusual way, there is a danger of causing confusion, which I must avoid. When I use the term *sign* in a phrase such as "word signs" or "signs on a page," my conceptualisation of it is akin to a physical marking, out of which a reader can infer some significance. For linguists, who are familiar with Saussure's definition of the term, mine is an impoverished meaning. In the Saussurian view, a sign is understood to have two parts: the *signifier* (the markings on the page or the sound waves that we hear), and the *signified* (the concept that appears in our brain when we read or hear the signifier).[25] In my usage of the term, there is no *signified* element. Indeed, it is a pre-condition for my endorsement of Welford's appropriation claim, that a sign does not have a *signified*. I am proposing that for a given marking on a page, the radical NGOs have their accepted *signified* whereas green business has developed a slightly different *signified*.

The reader will appreciate that, for me, the process of creating the *signified* (the concept in the brain) is individually-controlled but culturally-influenced, whereas in the Saussurian view there is apparently some objective existence of one *signified* (concept) for each *signifier*. This view is often reflected by my students, who will ask "What is the meaning of *honour*?" implying in their question that there is just one answer. Linguists may complain that I could have elected to use the Saussurian term *signifier* rather than *sign*, but that carries the danger of dragging along the 'single-meaning' connotation, which I am keen to avoid, and *sign* also has the advantage of being simpler English.

I shall now make an interpretive move, for which I have prepared the ground, in applying the term *appropriation* to Welford's claim. Rather than talking in terms of different *meanings* (of words), I shall rephrase Welford's claim, in terms of the *usage* of the vocabulary in the linguistic discourse. Interpreted thus, he is claiming that, what has traditionally been the vocabulary of eco-radicalism is being *used* in the discourse of green business in new ways. The eco-radical vocabulary is being put to work, in the new (liberal-productivist) context of green business's representations of its activities. If, however, we reflect on this hypothesis by considering the institutional history, it does not seem so strange. Recapitulating some of my discussion from section 2.3.4, 'non-green' business corporations, under pressure from outside forces, decide to introduce environmental objectives into their operations. In the transition to becoming new green corporations, they wish to represent, to a

[25] My explanation leans heavily on a description provided by the Department of English at the University of Wisconsin, *Frequently Used Literary Terms and Titles,* http://www.english.uwosh.edu/core/lingsign.html, (accessed 30th January 2008).

sceptical outside world, their newly-acquired awareness of the natural landscape within which they operate, and their new institutional ways of working. In order to differentiate their new status as green corporations, from their old liberal-productivist culture, they *adopt* the language of the environment and start using it in their standard, liberal-productivist-inspired linguistic discourse. But the green corporations have a very different frame of experience, compared with the traditional 'guardians' of the environment: the radical NGOs. The representations (in language), which they make of their corporate frame of experience, will be correspondingly different. Therefore, their usage of the newly-adopted vocabulary of the environment must differ, as they use it to represent their own experiences of reality.

I argue that, in practice, *adoption* of a vocabulary by members of a different culture, with different experiences of the world 'out there,' must inevitably lead to the *appropriation* of the vocabulary. The representatives of the new culture can only adopt *words,* in the sense that they are markings on a page or sounds in a speech or conversation. In the act of writing or talking with them, the users must inevitably *appropriate* their meaning, as they put them to use in new contexts that represent their particular experience of the world. The people within green business culture: the executives and employees of the corporations, absorb the contexts of use of their new vocabulary of the environment, and then repeat them, in a self-reinforcing process of interpretation and usage, which reflects the way in which they experience their relationships with the world 'out there'. For members of other cultures who try to communicate with them, such as Welford, the new usages of these words, for which they have long since developed their own conventions of usage, appear strange, and awaken suspicions of a hijack.

My suggestion, here, that the experience of the effects of language appropriation are interpreted by Welford and others as a hijack, brings me back to my earlier rejection of his metaphor for understanding what has happened. Welford's exasperation "that when we discuss environmentalism many of us are essentially speaking very different languages," was much closer to the mark, than the hijack hypothesis.[26] I consider the appropriation claim to be the better of the two interpretations of the same linguistic phenomenon.

In the context, then, of figure 2.10, repeated below as figure 2.11, we wish to know if there is empirical evidence in the linguistic plane, which can demonstrate that the same items of environmental vocabulary are used differently by the radical NGOs and green business. Assuming I can make an acceptable case, that there is a correlation between the *usage* of a

[26] Richard Welford, *Hijacking Environmentalism,* 32.

word and its *meaning*, the evidence of the linguistic plane will be suggesting that the different cultural representatives have different conceptualisations of the environmental vocabulary, which they both use. The interpretation, of how these differences in meaning might affect cultural assumptions, is a matter that I shall explore in chapter three. But with this appropriation claim, there is some movement from making a comparison of language in the linguistic plane, to making some projections of conceptual differences in the cultural plane. I have suggested this with the large, vertical arrow pointing upwards on the right-hand side of the schematic. I shall present both the empirical results from the linguistic analysis, and the interpretive discussion of their significance for the cultural plane, in chapter six.

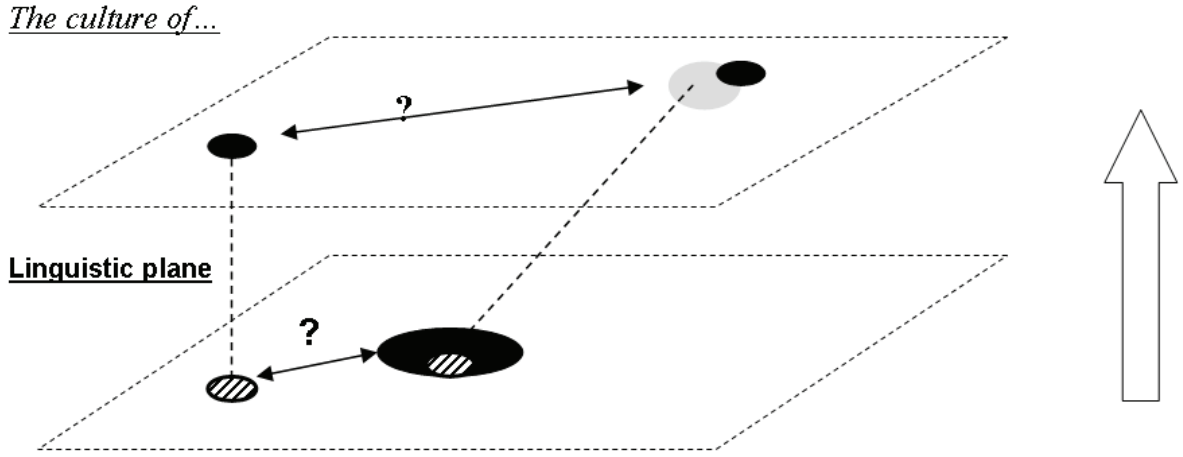

Figure 2.11: Is there appropriation of language in the linguistic plane and what might it tell us about the cultural plane?

2.5 From cultural discussion to linguistic evidence – the incorporation claim

2.5.1 Introduction

In *The End of Nature,* Bill McKibben argues that the idea of a wild nature, independent of and separate from the activities of man, should be recognised as out of date. He is horrified, by the prospect that there really is no virgin wilderness left in the world, and hopes against hope that it might still be possible, for nature to recover her independence. But the power of his own argument, forces him to the conclusion that nature is, and ought to be conceptualised as, a part of a man-made landscape. Bacon's project to attain mastery over the non-human world has now reached its fulfilment. The global modification of nature has been achieved:

> *We have substantially altered the earth's atmosphere*. This is not like local pollution, not like smog over Los Angeles. This is the entire earth's atmosphere. If you'd climbed some remote mountain in 1960 and sealed up a bottle of air at its peak, and

> did the same thing this year, the two samples would be substantially different. Their basic chemistry would have changed [emphasis in original text].[27]

If we accept McKibben's argument, then we can no longer enjoy the luxury, of thinking of non-human nature as external to, and self-sufficient from, human activities. Nature, on his reading, now becomes a part of our cultural processes. "The logic of our present thinking," he points out, "leads inexorably in the direction of the managed world."[28]

In this section, I shall begin in the cultural plane 'proper', and develop my interpretation of nature's incorporation into the sphere of human culture (see upper layer of figure 2.12 below). Using mankind's instrumental relationship with nature, as a common discourse of both eco-radicalism and liberal-productivism, I shall first illustrate the liberal-productivist relationship, between man's cultural processes and nature. Then I shall explore an eco-radical vision, for mankind's relationship with the natural world. These two views will then enable me to progress to my interpretation of McKibben's argument. His is an eco-radical experience of mankind's relationship with the world 'out there,' in which all of nature is incorporated within a culturally-determined landscape.

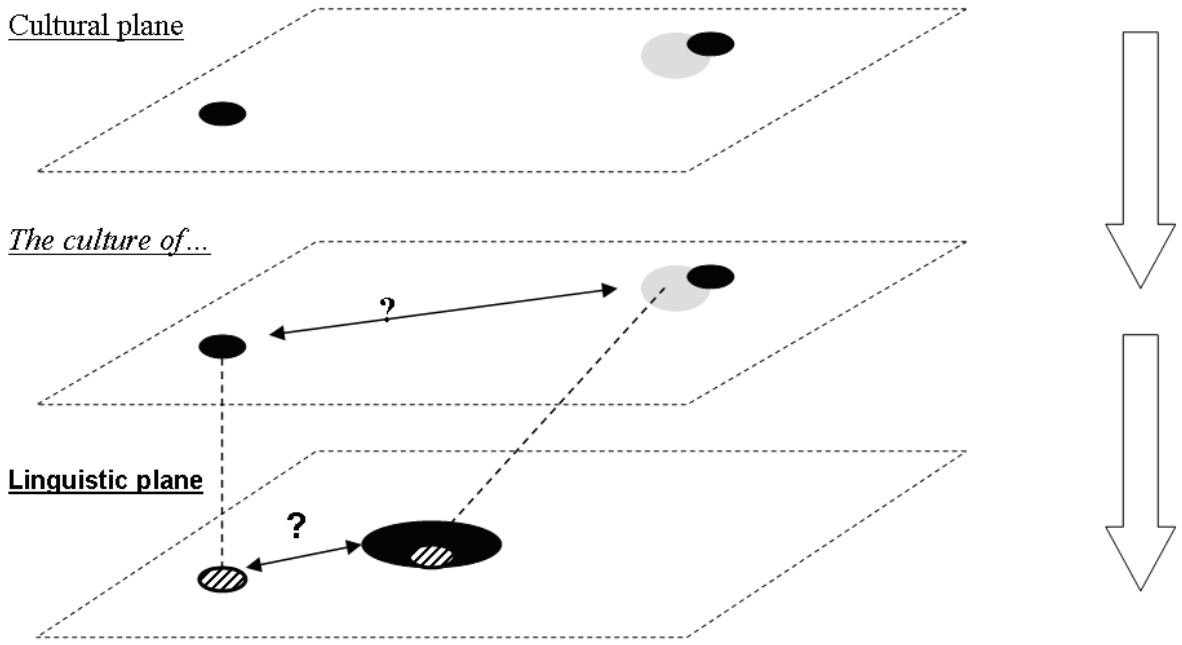

Figure 2.12: How does green business culture appear to be modifying its relationship with the natural world? Is there any evidence in the linguistic plane to support the claim that nature is being incorporated within culturally-defined processes?

[27] Bill McKibben, *The End of Nature*, 18.
[28] Ibid., 172.

Having prepared the theoretical ground in the cultural plane 'proper', I shall then move my attention to the institutional plane. Here, I shall use a combination of reasoned discussion and case-study examples, to examine how green business appears to be responding to the eco-radical vision. In the context of figures 2.6 and 2.10, combined here as figure 2.12 below, my intention is to sketch out possible patterns of thinking, which may be under development in the grey shaded position of the middle layer that represents the culture of green business. The plan of the thesis is that these ideas, formulated as research questions, will then be tested against the evidence that I can find in the linguistic plane. In contrast to section 2.4, in which the direction of movement is from the lower, linguistic plane to the upper, cultural plane, the direction of movement in this section is downwards, from the cultural to the linguistic. I begin this process, therefore, in the cultural plane 'proper', with a consideration of how nature is conceived in a liberal-productivist culture.

2.5.2 The cultural plane – the liberal-productivist experience of reality

When I was growing up in a small town in the north of England, we had a coking plant on the east side of the valley. As all urban planners in Western Europe know, the east side of a population centre is the place to put the smoking chimneys. The prevailing winds are from west to east, so the smoke gets blown away from the town, rather than over it. From time to time, of course, the wind would blow from east to west, and on such occasions, I would have to sleep in my brother's bedroom, in order to avoid the worst of the rotten eggs smell from the sulphur dioxide that contaminated our air. But it wasn't a big issue. It was just something that was there in our landscape, and we all lived with it. As far as I am aware, the coking plant was never challenged by the townspeople, over the consequences for the air we breathed, of its industrial processes. It burnt its coal for decades, without ever needing to recognise that it actually had a relationship with me and several thousand others. The senior management of the plant and its owners, the National Coal Board, would, if pressed on the question, probably have agreed that there *were* people living in the valley. But they never were pressed on the matter. The economics of town gas production fell victim to the economics of natural gas production, a few years before the environmental critique reached South Yorkshire, so they never were challenged to recognise the existence of a relationship.

A fundamental theme, of the environmental critique, is that liberal-productivism does not recognise the existence of its myriad relationships, with either non-human nature or human beings, (aside from those who are on its payroll). The brief example, above, from my

own childhood, is typical in illustrating the ignorance of the existence of the 'other'. I gave an example, of a liberal-productivist industrial process that was ignorant of other people, or, at least, ignorant of the existence of a relationship with those people. But the coking plant was also ignorant, of its relationships with elements of the non-human natural world; the slag heap, which defaced the deciduous woodland covering one side of the valley, is testimony to that.

Using a modified version of figure 2.8, presented in figure 2.13 below, we realise that the ideas lens of liberal-productivism, restricts its vision of reality massively. Figure 2.13 is just the right hand side of figure 2.8, because we are not, for the time being, interested in the radical NGO experience of reality.

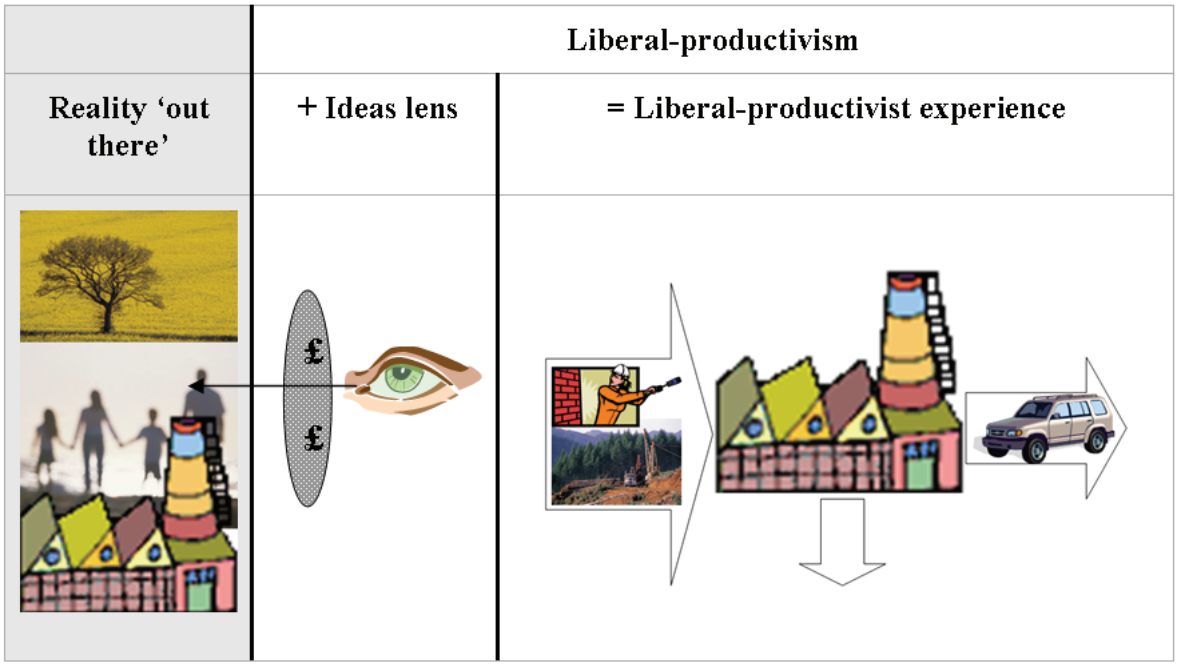

Figure 2.13: The idea lens of liberal-productivism limits its experience of reality[29]

The liberal-productivist ideas lens restricts its experience of reality, to only those elements, which it requires to sustain its business processes. The lens is, therefore, drawn as being heavily opaque, and contains just a few pinprick holes through which to see. There is, for example, a tree in the reality of the world 'out there', but, because of the shortcomings in the lens, it is not a part of liberal-productivist experience. There is also a family of four, out in reality, but the only human in its experience, on the right hand side, is a worker wielding a hammer. Those few elements of reality, that it does see, are also viewed through a lens, which

[29] The conversion of a forest into an SUV, by a woman with a hammer, is a dubious proposition, for which I apologise. I hope, however, that they illustrate the principle satisfactorily.

insists on placing a monetary valuation on all objects, so I have included two pound signs in the illustration. This means that the liberal-productivist process 'experiences' those elements, in financial terms. The machines required to produce the goods are valued financially, the power to drive the machines, and the manpower to operate them, similarly. The central element of liberal-productivist experience is the business process, what I shall also call *the productive landscape*, illustrated by the factory. Nature 'exists' only to the extent that it is considered as a necessary input to the productive landscape. Thus natural resources, both renewable and non-renewable, for which the process is obliged to pay as raw material inputs, have their prices, and these are entered into the profit and loss account (P&L), on the expense side.

In figure 2.13, I have included the image of a worker and a scene of logging activity in a forest. These representatives of the natural world are diagrammatically bounded by the 'supply chain' arrow, which is feeding raw materials, labour and power into the factory. This illustrates that these elements of the natural world are incorporated into the productive landscape. The output arrow contains a picture of an SUV, intended to represent a typical product of the liberal-productivist business process. If it is obliged to pay someone for the disposal of any 'waste' products, then these costs also find their place in the 'P&L' – one very important representation of liberal-productivist experience. The downward-pointing arrow is intended to illustrate the production of 'bi-products', which, in the days before politically-correct language was invented, was referred to as 'waste'. In the case of my childhood coking plant, I would imagine that the National Coal Board had merely secured 'permission', from a pliant local council, to use the woodland as a sink for its slag. Without the necessity of having to pay for its disposal, the destruction of the woodland wouldn't even merit a line in the coking plant's P&L. Hence the downward-pointing arrow can be empty. Like Dickens' Coketown, there is nothing in liberal-productivism's accounts which isn't "severely workful."[30]

2.5.3 The cultural plane – the eco-radical vision for reality

Liberal-productivism's ideas lens on reality is overwhelmingly instrumentalist. It makes for an experience, which we might characterise as not just the use of, but also the abuse of, nature, caused by its 'ignorance' of the qualities – cultural and ecological – of the natural landscape. The eco-radical ideas lens would never tolerate such an abusive relationship, but

[30] Charles Dickens, *Hard Times: For these Times,* (London: Chapman & Hall, 1911). My allusion comes from paragraph four in chapter three: "You saw nothing in Coketown but what was severely workful."

its usage of nature is an inescapable fact of our human condition.[31] "We cannot," as Wendell Berry has observed, "exempt ourselves from living in this world," and "we cannot exempt ourselves from using the world."[32] The issue is not "to use or not to use," but rather, "*how* to use." If we introduce Berry's axiom into the context of the cultural plane 'proper' in figure 2.12, we can see that, although the two points of eco-radicalism and liberal-productivism are far apart, they do share common ground, in their instrumentalist view of nature. We are examining two different ideas lenses within the single span of usage. Having already presented the liberal-productivist ideas lens on the use of nature, I turn, therefore, to the eco-radical end of this instrumentalist span.

Within Welford's rainbow triangle (see chapter one, figures 1.7 on page 18 and 1.8 on page 19), is Kirkpatrick Sale's bioregional vision, which I shall use as my representative for eco-radicalism in the cultural plane.[33] But before I proceed, I must make one interpretive move clear. We can all validate, that liberal-productivism's experience of reality, resonates reasonably well with our own life experience of reality. Here, in Norway, business is obliged to recognise more of its connections with the natural world, than my simplified illustration in figure 2.13 suggests. But we watch the television, and read the newspaper reports of intolerable levels of air pollution in some Chinese cities, and these confirm to us, that the limited, liberal-productivist experience may be found in many parts of the world. Kirkpatrick Sale's bioregional vision, on the other hand, is just that: a *vision,* of how reality might be. Eco-radicals cannot look at the reality they see around them and create their vision. Instead, they must *envision* a possible reality in their imagination.[34] In the bio-regional vision, nature's intrinsic value is appreciated, but the necessity of using the world for mankind's benefit, albeit within the constraints of the region, is also recognised:

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[31] The deep ecology view of nature ranks as the most radical of the eco-radical conceptualisations, in arguing that nature has its own rights to an existence, independent of humankind, and insisting that its valuation, should be free of any hint of a possible benefit to people. While these cultural coordinates might be useful in staking out the limits of a position in the cultural plane, their institutional representation is confined to a very small collection of predominantly animal-rights organisations. These groups have sought to advance their case, by trying to extend the ethical domain, from human life to certain areas of the animal kingdom. They argue, for example, that the boundary we have drawn between ourselves and, say, the higher primates, is not defensible, and that such animals are, therefore, entitled to the same ethical consideration and treatment, as we currently assign to human life. However, this study of green business is concerned with more than just animal rights. In the much wider field in which the entire natural world is of concern, deep ecology's intrinsic view is absent, and I will not, therefore, be exploring it further.

[32] Wendell Berry, "The Conservation of Nature and the Preservation of Humanity", *Another Turn of the Crank*, (Washington D.C.: Counterpoint, 1995), 72.

[33] Kirkpatrick Sale, *Dwellers in the Land: The Bioregional Vision*, (London: University of Georgia Press, 1991). I remind the reader that at one point in the development of his argument Welford uses the term *bioregional* as an alternative to eco-radicalism: "I have previously typified this as a debate between modernism (a mixture of blue and golden) and a bioregional (green) alternative." Richard Welford, *Hijacking Environmentalism,* 22.

[34] I shall examine how they *experience* the reality of the world, in section 2.5.4.

> Once the place and its possibilities are known, the bioregional task is to see how this potential can best be realized *within* the boundaries of the region, using all the biotic and geological resources to their fullest constrained only by the logic of necessity and the principles of ecology [emphasis in original text].[35]

The bio-regional task permits the fullest usage of nature's resources, *within* the constraints of the region. But how do human beings, living in Kirkpatrick Sale's bio-regional landscape, manage to make the practical decision of whether to do A, or to forgo doing A, because the 'cost' to the natural landscape, is greater than the benefit to the human community? Sale's response is to emphasise the importance of scale, in order that humans are capable, both of knowing, and experiencing, the consequences of their actions on their natural landscape:

> The only way people will apply "right behavior" and behave in a responsible way is if they have been persuaded to see the problem concretely and to understand their own connections to it directly – and this can be done only at a limited scale. It can be done where the forces of government and society are still recognizable and comprehensible, where relations with other people are still intimate, and where the effects of individual actions are visible; where abstractions and intangibles give way to the here and now, the seen and felt, the real and known. Then people will do the environmentally "correct" thing not because it is thought to be the *moral*, but rather the *practical*, thing to do. That cannot be done on a global scale, nor a continental, nor even a national one, because the human animal, being small and limited, has only a small view of the world and a limited comprehension of how to act within it [emphasis in original text].[36]

In Sale's presentation of the bio-regional landscape, the costs and benefits that mankind will experience as a result of a proposed action, are all known by the human community, and they are all contained within its boundaries and, consequently, experienced by the same human community. I have attempted to illustrate this eco-radical vision for reality, in figure 2.14 below. All the instrumentalist processes, in which nature is used by the human community, exist within the boundaries of the bio-regional landscape. Hence, I have included the factory illustration with its inputs, outputs and waste products, *within* the picture of the tree in the field. The benefits that accrue from the factory's output, in this case, the SUV, will go to the people in the natural landscape. Similarly, the damage that is caused to the natural world, by the factory's activities, will be experienced by the same people. The input arrow takes its raw materials from the natural landscape, and the waste bi-products must also be handled within the same, natural landscape. The liberal-productivist requirement, to assign a financial value to all elements, is made redundant by the scale of the bioregional vision. Neither is it necessary to demand of humankind that she apply some yardstick of

[35] Kirkpatrick Sale, *Dwellers in the Land,* 46.
[36] Ibid., 53.

ethical behaviour, in order to exercise restraint. The judgement "to use or not to use" is a purely practical matter, for the community, of weighing experienced benefits against experienced disadvantages.

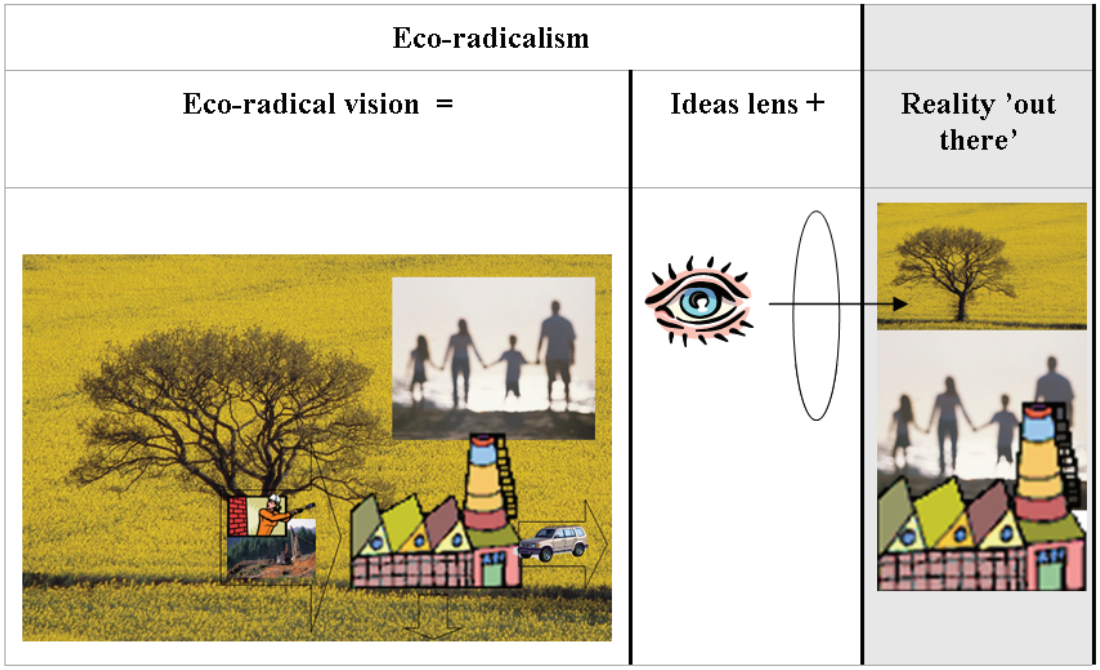

Figure 2.14: The idea lens of eco-radicalism places all human activity within the natural landscape

The crucial task for a bio-regionalist, then, is to find the maximum tolerable size for the region: as large as possible, so as to allow for some specialisation to deliver a modicum of the goods and services of modern society, but still within the limits of one human's "view" of it, and "comprehension of how to act within it."[37] The success of the bio-regional vision, rests on (at least) these two fundamental requirements, both of which I intend to discuss. In the first, individuals are capable of *knowing* their landscape, and all the connections that their activities establish within that landscape. The second requirement is contingent upon the first. Given that the individual knows all her connections, in the second, she must *experience* all the consequences that are transmitted through those connections, so that she experiences, say, the damage to some forest in the landscape, as damage to her own existence. If both of these requirements can be satisfied, then the question of "how to use" is a straightforward, practical issue for the human community.

In order to make a comparison easier, I have taken my illustrations of the liberal-productivist experience of reality in figure 2.13, and the eco-radical *vision* for reality in figure

[37] Ibid.

2.14, and juxtaposed them below, in figure 2.15. Although they ostensibly share a common, instrumentalist conceptualisation of the natural world, the distance between these images is considerable. In the bioregional vision, all of mankind's cultural processes - all of the productive landscapes – operate *within* the natural landscape. In the liberal-productivist experience, most of the natural world disappears from the blinkered experience of its productive landscape.

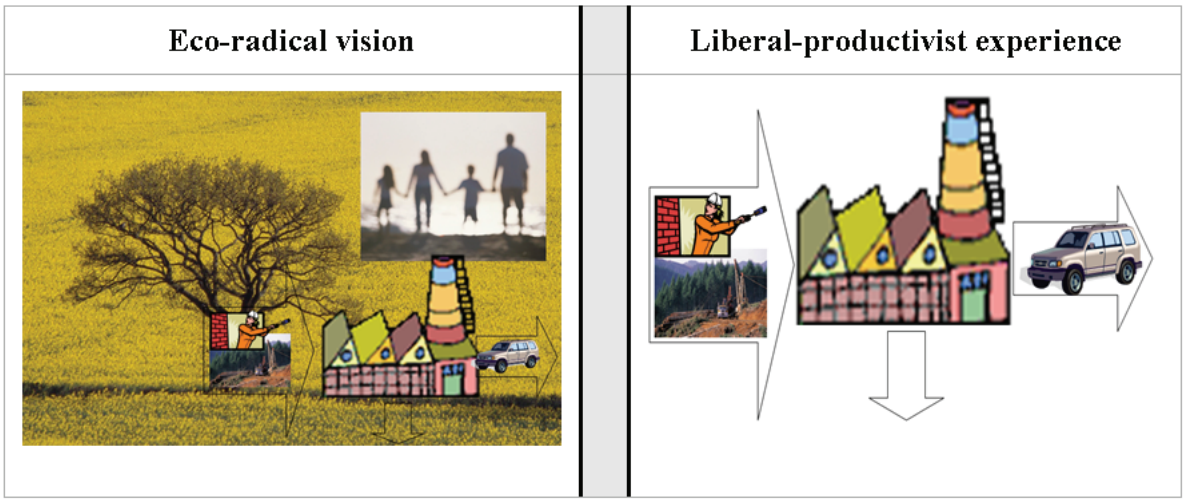

Figure 2.15: The eco-radical vision for reality and the liberal-productivist experience of reality

However, although the juxtaposition of figure 2.15 illustrates a dramatic divergence, it is not as great as the one between the eco-radical *vision for* reality, and its McKibben-style *experience of* reality. In the next section, I shall develop this eco-radical conceptualisation of mankind's current predicament, so that we can see the full divergence.

2.5.4 The cultural plane – the eco-radical experience of reality

In this section, I return to the experience of Bill McKibben, with which I introduced section 2.5. His contention is that the idea of an untouched nature 'out there' has been a convenient pretence, but that its subordination to the dictates of liberal-productivism ought now to be formally recognised. I have illustrated this McKibben-style eco-radical experience of reality, in figure 2.16 below. Through McKibben's ideas lens, he sees all of nature as part of the liberal-productivist business process, what I am referring to as *the productive landscape*. We can all agree, that liberal-productivism ignores those myriad aspects of nature for which it is not obliged to pay. But viewed through McKibben's ideas lens, *everything* is now affected by liberal-productivist business processes, as I have tried to illustrate.

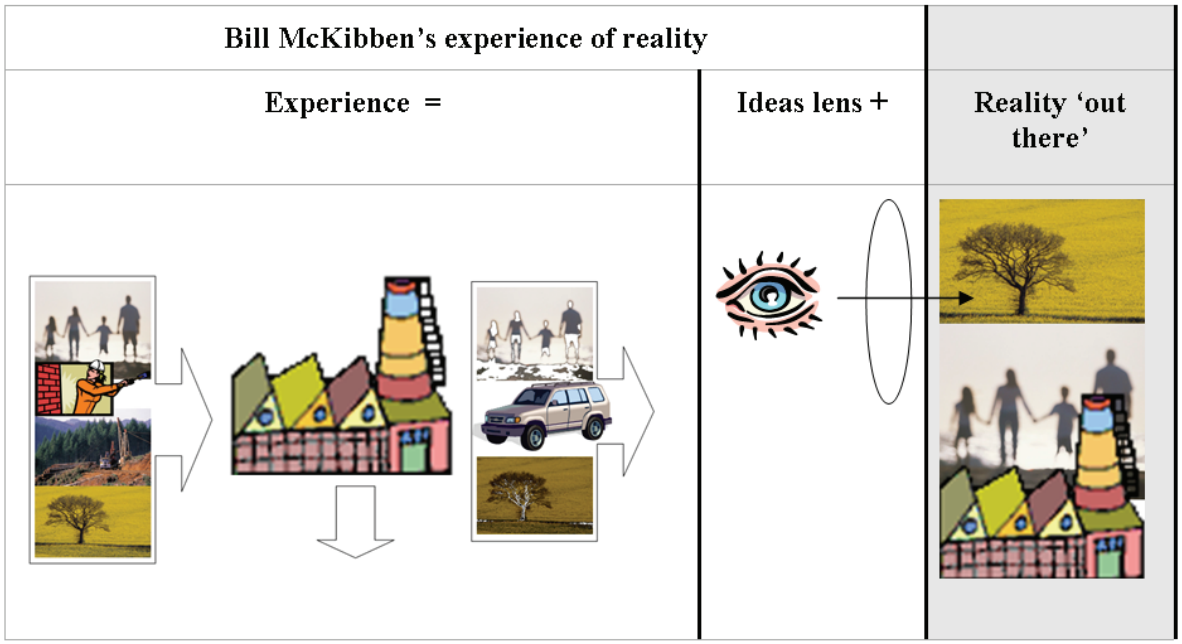

Figure 2.16: The eco-radical experience of reality

If we now compare this illustration, with the liberal-productivist experience of reality that I first presented in figure 2.13, both the family and the tree in the field – my representations of the natural landscape - have now been incorporated into the input arrow, of the productive landscape. In contrast to the worker and the forest, for which liberal-productivism must pay, and who, therefore, get 'seen' by the process, the family and the tree are incorporated into the productive landscape, without the system recognising their presence. But in the McKibben view, they are part of the process, all the same. Although they pass through it, coming out of the other end still recognizable, they are modified by the productive landscape, in ways that we are beginning to understand, and also in ways which we only vaguely appreciate, but whose consequences we are now experiencing.[38] I hope the adjustments I have made to the two pictures in the output arrow, of the family and the tree, convey this sense of modification.

It is tempting to ask the question "Is McKibben right?" Answering it is an enormous task, in which legions of natural scientists are already involved. Rachael Carson's *Silent Spring,* which demonstrated that the indiscriminate usage of DDT in (liberal-productivist) agricultural processes had serious consequences for wildlife, is, perhaps, the first example of

[38] It is a simple task to 'Google' a phrase such as "asthma in children." Among the hits, I find a summary of a report, written by researchers at the Ullevål University Hospital, in Oslo. The major finding is that the incidence of asthma among children living in Oslo has doubled over the last ten years. The reasons are unclear, but the researchers wish to study nutrition and pollution as possible causes. This is one example of the changes in our health that are taking place, seemingly without clear causes. Everyone has their favourite example.

such work.[39] Since then, there have been countless discoveries of the unforeseen consequences, for the natural landscape, that an innovative use of a new technology can have. The train of events is a familiar one. Individual, private concerns become more widespread public fears. Pressure mounts for an investigation, as the alleged perpetrators, who have some financial stake in continuing the activity, deny the possibility of a cause-effect relationship. Scientific evidence mounts, but is disputed by the perpetrators. In the end, the weight of evidence, and the public outcry, force a recognition that this liberal-productivist process does, after all, have unforeseen connections with, and consequences for, some aspect of the natural landscape. Alternatively, scientific evidence fails to demonstrate any cause and effect relationship, and the public is asked to believe that, despite their misgivings, there is no proven link, and that this liberal-productivist landscape is environmentally benign. The scientific activity, of empirically testing out McKibben's hypothesis on the incorporation of nature, is destined to continue indefinitely. Its findings will be as 'messy', as our experience of empirical science leads us to expect. Some of nature is profoundly and dangerously threatened by our liberal-productivist productive landscapes, while some of nature appears, for the time being at least, to be passing through its processes unscathed.

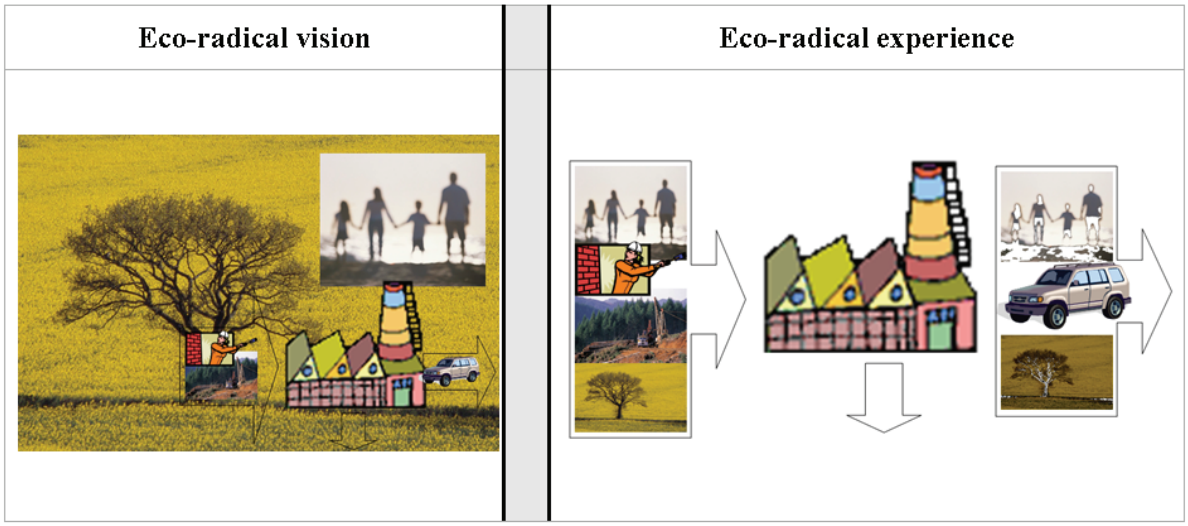

Figure 2.17: The eco-radical nightmare – the gap between eco-radical vision and eco-radical experience

Consider then, in figure 2.17 above, the despair of the eco-radical, as she surveys reality 'out there', and experiences the McKibben sense that all of nature is affected, to a greater or lesser degree, by our productive landscapes. They have turned her world inside out! On the left, we have the eco-radical vision. Mankind, and its activities, are integrated

[39] Rachel Carson, *Silent Spring*, (Boston: Houghton Mifflin, 1962).

harmoniously within the rhythms of the natural landscape. On the right, we have the eco-radical experience of reality. The whole of nature has now been incorporated within liberal-productivism's productive landscape. As we reflect on the implications of McKibben's experience, we can understand his point that the "logic of our present thinking leads inexorably in the direction of the managed world."[40] It is an awesome prospect, for mankind to take full responsibility for the smooth-running of nature. Is that what green business is planning to do?

2.5.5 The institutional plane – green business selects its experience of the natural world

The rhetorical purpose of the question, with which I ended the previous section, was to mark my transition, within figure 2.12, from the cultural plane 'proper', down to the institutional plane. It is here, that green business 'culture' is undergoing its corporate development, in which it distinguishes itself from the culture of 'non-green' business. The case studies, which I present in these final sections of chapter two, are all selected from the company websites of the British green corporations, which are the subject of this project. They are the corporations' own textual selections, of the work they are doing to become greener, and we may safely assume that they are, therefore, activities which have been assigned symbolic significance, by the corporations' senior managers. As such, each one provides an important insight into the cultural patterns of thinking of a green business.

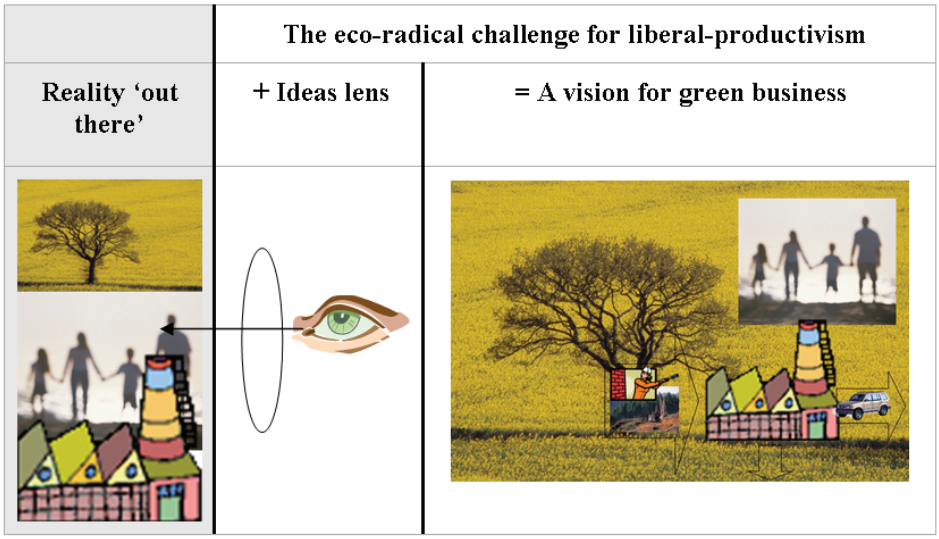

Figure 2.18: The cleaned up ideas lens of green business gives it an eco-radical vision

[40] Bill McKibben, *The End of Nature*, 172.

However, recognising the role of the cultural plane as a provider of new ideas to the institutions, I now repeat figure 2.14, as figure 2.18 above. Whereas I described figure 2.14 as being "the eco-radical vision for reality – business integrated in the landscape," I now re-label it as "a vision for green business," which is what it is. I have previously described the ideas lens of liberal-productivism, as being very opaque with a few pinprick holes, and a financial filter on everything that is seen through it. In the metaphor favoured by Shell, the challenge is to widen its lens.[41] I think it is more appropriate to think of cleaning the lens, so as to be able to see more clearly. From an eco-radical point of view, liberal-productivism would, with the aid of a clear ideas lens, be better able to see its place in, and its connections with, the natural landscape.

In this eco-radical vision, the grime, which was spread over the surface of the lens, has now been removed, and green business can see all of its reality. This remains as it should; unchanged from the original illustration in figure 2.8. If we turn our attention to the right hand side of figure 2.18, we can see that the green business vision has also 'inherited' the liberal-productivist business experience from figure 2.13. There is the factory, with its input, output and waste arrows, and in the expanded input arrow, we can see the natural resources, for which liberal-productivist business is required to pay money, and which, therefore, are 'seen' in its liberal-productivist experience. But the green business ideas lens is capable of seeing far more of its reality, than its liberal-productivist predecessor. It recognises the human and social reality, represented by my 'four figures family'. It recognises, too, a non-human, natural landscape, represented by the tree in a field. Crucially, the clear green business lens enables its owner to 'see', that its business operations are a part of the natural landscape. In this illustration, then, green business has embraced the eco-radical vision for reality.

However, a moment's reflection over my innocuous placement of the factory, *within* the natural landscape, reveals the enormity of the challenge, which the eco-radical vision presents for today's would-be, green corporations. Recognising the world-wide spread, and the huge technical complexities, of the supply chains that sustain their production and distribution, the natural landscape, within which green business operates and which it is challenged to know, is nothing less, than the almost infinite knowledge of the biosphere and all that lives within it. As an illustration of my point, I have selected an example from Unilever's web pages. Here, we find a corporate commitment to address itself to the challenge of understanding its place in the natural landscape. Unilever uses a process it refers to as "Life

[41] See my discussion in section 2.3.4 of chapter two.

Cycle Analysis (LCA)" and describes it thus: "Our business and brands have impacts at every stage of their life-cycle: from sourcing raw materials for our products, all the way through to when our consumers use and dispose of them."[42]

When, for example, I buy a bar of Dove cream soap from my local supermarket outside Oslo, I am entering into a transaction whose connections involve Unilever. Excluding the packaging, which is probably a history in itself, the bar of soap has, according to Unilever's website, 26 different ingredients.[43] These products may be sourced from different suppliers in different parts of the world. But some of them are the refined products of palm oil, and are produced in Unilever's own chemical plants. Palm oil is obtained from the oil palm tree, which is grown on large plantations in tropical climates. It is argued by environmental groups, such as Friends of the Earth, that the spread of these plantations, (in response to rising demand for palm oil from me), is responsible for the destruction of tropical rainforest:

> Demand for palm oil, a vegetable oil present in 1 in 10 supermarket products, is the most significant cause of rainforest loss in Malaysia and Indonesia. Palm oil plantations destroy biodiversity and are associated with human rights violations and worker exploitation.[44]

It is not clear, from the company's website, how much of its palm oil needs Unilever is able to satisfy from its own plantations. But through direct ownership, Unilever has greater control over its supply chain, and the way in which the plantations are managed. Thus, we are able to learn from one of their web pages: "Promoting Biodiversity on Palm Oil Plantations," that two plantations in Ghana, West Africa, are the subject of several different environmental projects, all aimed at making the production of palm oil more sustainable.[45] Significantly, and quite accurately, Unilever distinguishes between stages of its products' life cycle, such as "Production/manufacturing," over which it has sole control, and other stages, such as "Marketing, consumption & disposal," over which it has "control/influence." In these later phases of the life cycle of the bar of soap, responsibility has passed to distributors, retailers

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[42] Unilever, *Our Impacts*, http://www.unilever.com/ourvalues/environment-society/our-impacts.asp, accessed 31st January 2008).
[43] Unilever, *Product Information – Dove Cream Bar*, http://www.unilever.com/PIOTI/SV/p4.asp?selectCountry=SE&language=SV&productid=1345699, (accessed 31st January 2008).
[44] Friends of the Earth, *Biodiversity: Palm oil – rainforest in your shopping*, http://www.foe.co.uk/campaigns/biodiversity/case_studies/palm_oil/, (accessed 31st January 2008).
[45] Unilever, *Ghana: Promoting Biodiversity on Palm Oil Plantations*, http://www.unilever.com/ourvalues/environment-society/case-studies/environment/ghana-promoting-biodiversity-palm-oil-plantations.asp, (accessed 31st January 2008).

and then customers, such as me. Clearly, Unilever cannot reasonably take responsibility for *all* the consequences of its products.

More ominously, neither has the company anything to say, on the feasibility of knowing *all* the connections associated with its transactions. Note the warning from Friends of the Earth, that the palm oil plantations destroy biodiversity. What, for example, is happening to the soil, which, until recently, formed the floor of a tropical rainforest, but which is now 'cultivated' by Unilever's agricultural specialists, with the express purpose of optimizing the growing conditions for their palm oil trees? Paul Hawken, in *Natural Capitalism*, claims that topsoil is the most complex ecosystem on earth. He quotes a Stanford University biologist, named Gretchen Daily, apparently citing a colleague: "One teaspoon of good grassland soil," explains gardener/biologist Evan Eisenberg, "may contain 5 billion bacteria, 20 million fungi, and 1 million protoctists."[46] Unilever's efforts in life cycle analysis are laudable, but they represent a tiny fraction of my bar of soap's impacts on the natural landscape. Consider, for example, the energy and transport consequences on the atmosphere, of the bar of soap's life cycle. Consider what is happening to the lives of indigenous peoples, whose forests are disappearing and being replaced by plantations.

Changing the type of lens, from a microscopic examination of the soil, to the macroscopic view of the biosphere, Hawken lists nineteen separate 'services', which are provided to humankind on a global scale, by the natural environment. Among these services are "production of oxygen, maintenance of biological and genetic diversity, storage, cycling, and global distribution of freshwater, fixation of solar energy and conversion into raw materials, protection against harmful cosmic radiation" and "regulation of the local and global climate."[47] Many of these 'services' either make a contribution to, or are affected by, the production of the bar of soap. His list makes for fascinating reading, but we do not need to examine the choices I have made for inclusion, or the detailed validity of Hawken's claims. The essential point I want to make, is the need for us to see the natural world's astonishing complexity. Given the enormous and only very partially understood sophistication of the biosphere and its contents, the eco-radical challenge of knowing the natural landscape, is an impossible burden that Unilever, very sensibly, avoids shouldering. What it and the other green businesses are doing, is putting a toe in the water. They are finding out about some of what is on the other side of the perimeter fence, which has marked the external boundary of

[46] Hawken, Paul. *Natural Capitalism,* 150. The confusion over who has said what, is compounded by Hawken's unfortunate omission of a reference for this quotation.
[47] Ibid., 153.

their productive landscapes. As they clean away the grime and polish their lenses on reality, they are recognising the existence of certain people(s), certain plants, certain animals and certain elements of the natural landscape, about all of which, they were previously 'ignorant.' And they are setting about the business of 'knowing' who and what, these elements of the natural world are, with which they have chosen to recognise a relationship.

2.5.6 The institutional plane – green business incorporates selected knowledge about nature into knowledge of its own landscape

McKibben's claim is that nature itself is being incorporated, within the process of production. A very close parallel to this is Welford's claim, that the corporate 'knowing' about nature, has been incorporated, within the corporate 'knowing' of its productive landscapes. While the 'flesh and blood' of nature pass through the 'concrete and steel' landscapes of liberal-productivism, knowledge of nature is incorporated within the corporation's management information systems. According to Welford, the "eco-modernist approach sees the future as being a product of what went before. Environmentalism, it asserts, must therefore be embedded in what is here and now."[48] We ought not to be surprised, that the institutional response from the green corporations has been to modify their business management processes, so as to incorporate newly-adopted social and environmental objectives, *within* the already-existing business objectives. The directors and senior management of these corporations have little alternative. If they were to reject their financial targets, and adopt social and environmental objectives as the new *raison d'être* of the corporation, they would be acting contrary to their legal obligations to the shareholders. Such a redefinition, of the corporation's objectives, would require a comprehensive rethinking and institutional reworking of the organisation, a process of upheaval which is, plainly, impossible. The only plausible response for the green corporation, is what Welford describes as "largely integrationist. In other words, corporate environmental management is integrated into (or worse), bolted on to business as usual."[49] As an illustration of this observation, I shall refer to the GlaxoSmithKline (GSK) *Corporate Responsibility Report for 2005*. In the report, there is a section with the heading "Managing Corporate Responsibility," in which GSK outlines the processes, by which it 'manages' its corporate responsibility. GSK's integrationist approach is confirmed explicitly:

[48] Richard Welford, *Hijacking Environmentalism,* 32.
[49] Ibid.

> We believe that day-to-day management of CR issues and performance is done most effectively *within* our business operations, where experts on all our CR issues work [emphasis added].[50]

At a more detailed level of management than GlaxoSmithKline's, and as an example of its commitment to transparency, it is possible, on the British Petroleum (BP) website, to examine the different "environmental mapping tools" that are used in the corporation's management processes. Having selected a particular tool, the user can then select first, a world region, then a country, and finally a BP site, and access the report from that site, for the usage of that particular tool. Below, I have selected the tool for monitoring air emissions, and then found my way to BP's Sullom Voe oil terminal in the Shetland Isles, north of Scotland. In the small window that opens, there is a brief and rather general statement from the terminal management, about the importance of air quality, followed by a link to the appropriate report:

> During 2006 considerable work has been undertaken to quantify emissions that arise from the loading of crude oil tankers and the potential abatement measures available.
> View site verification reports[51]

The link to the "site verification reports" opens a second window, from which the "North Sea Strategic Performance Unit Environmental Statement for 2006" can be opened, in a third window. In this document, all the BP sites within the North Sea geographic area report on each of BP's five environmental tools. "Atmospheric emissions" is dealt with on page eighteen.

Objectives, controls, and *targets* have long been key words in the discourse of modern business management, and they have also become key words, for the green corporations' management of their environmental commitments. We expect to be able to hold them to account for their actions, and it is hard to see how else this can be achieved. One of the ways in which individuals learn the culture of the corporate institution, is by following its reporting systems. Through the discipline, of having to provide information about our activities to our organisational superiors, we learn what they consider to be the more important aspects of our performance. In order to gain approval within the culture, we organise our activity so as to maximise those aspects of performance, which the culture prioritises. A favourite line of criticism, of the green corporations, is that their rhetoric is much greener than their actions. Without wishing to become an apologist for them, they must be conceded the size of the

[50] GlaxoSmithKline, *Managing Corporate Responsibility*, http://www.gsk.com/responsibility/cr_report_2005/managing-cr/index.htm, (accessed 31st January 2008).
[51] British Petroleum, *Sullom Voe Terminal – Air Emissions*, http://www.bp.com/hsetool.do?siteId=65&issueId=5&regionId=8&categoryId=9014401, (accessed 31st January 2008).

challenge that they face, in changing the culture of their enormous organisations, so that the actions of their thousands of employees fall into line, behind the corporate rhetoric. Here is a comment from BP which addresses exactly this issue:

> **Managing the reporting process**
> For the past eight years we have managed corporate reporting as an integrated programme covering both financial and non-financial aspects. We place considerable emphasis on accountability of individuals and clarity of process, in line with our management framework.[52]

The challenge, then, is that all line managers within the BP organisation, should absorb the importance of the new "non-financial aspects" of BP's activities. In addition to her financial objectives, the head of operations at Sullom Voe is learning how to manage the terminal to meet objectives for "liquid waste, energy usage, accidental spills, material waste and air emissions."

In my introductory comments to this section, I observed that the only realistic response we could expect, from the green corporations, was that environmental concerns were incorporated within business *objectives*. These two examples, from GSK and BP, illustrate that the corporate implementation is to incorporate the environmental concerns within the business management *processes*. We can see from the example above, that the manager of the Sullom Voe oil terminal is being steered, by BP's reporting obligations, into recognising that her responsibilities do not end at the perimeter fence. We would like to think that the BP reporting process encourages her to extend her conceptualisation of the terminal's operations, so as to see its myriad connections with nature. However, the impression gained from a reading of the manager's five environmental tools, is that the perimeter fence functions as a powerful conceptual divide, between the Sullom Voe terminal, which is her productive landscape, and the natural landscape beyond. The reporting system defines the terminal's pollutant 'output', and, presumably, sets the terminal manager specific targets, for minimising these emissions over the fence.

There is a similarity, between BP's view of the natural landscape as something on the other side of the fence, and Unilever's wish to draw a line of limited responsibility around the life cycle of its bar of Dove soap. In the BP example, the initially quite impressive presentation of its five environmental tools, is tempered by the reflection that there are just *five* tools, and that these can, by no means, address the wide range of environmental

[52] British Petroleum, *Our Approach to Reporting*, http://www.bp.com/sectiongenericarticle.do?categoryId=9014393&contentId=7028461, (accessed 31st January 2008).

consequences of the Sullom Voe productive landscape. What BP has very sensibly done, is to identify those environmental impacts which are 'greatest', and then implement procedures for monitoring them, reporting on them and then taking remedial action. This is good work. But we should not let it obscure all the other environmental impacts that are ignored, because they are not recognised in the corporation's management information systems. The selection of what knowledge to gather, about the natural landscape within which a green business operates, is also a process of *de*-selection of all the other elements of nature, from their inclusion within the knowledge of the corporation's productive landscape. The manager of the Sullom Voe terminal, for example, has no knowledge of how BP's operations are affecting the biodiversity of the marine environment around the Shetland Islands. This knowledge of the natural landscape has not been selected for inclusion in BP's knowledge of its Sullom Voe productive landscape. The reason for this is, presumably, that BP senior management has decided, that the environmental impact of the terminal on marine biodiversity, is not as worrying as the other problems that have been reviewed. As we imagine BP's internal decision-making procedures, we can discern this selection/de-selection process, being strongly influenced by questions of politics and public relations. Corporate managers will select which knowledge of the natural landscape to bring into their information processes, for reasons which are very sensible for the corporation.

Rio Tinto, for example, has selected knowledge about local communities in the vicinity of its mines, to become a part of its productive landscape, and we may be sure that it has good, corporate reasons for so doing.[53] It now has a corporate-level framework, for 'managing' its relations with the human communities that are affected by the operations of its mines. It includes a company standard, which "sets out the requirements businesses need to consider in the design and implementation of an effective community relations programme. It describes requirements in the areas of Five year communities plans, baseline communities assessments, consultation, cultural heritage, and community assistance."[54] The "baseline communities assessment" referred to in the quotation above, is a process of data collection, so that Rio Tinto can know something of its reality, in the vicinity of the mines which it

[53] One such reason may be the effectiveness of an NGO by the name of *Mines and Communities*, which has campaigned successfully against the damaging effects that mining activities have on local indigenous communities. This NGO is included in the linguistic 'database' of radical NGOs whose design is described in chapter four. Their website is at http://www.minesandcommunities.org/Aboutus/aboutus.htm, (accessed 31st January 2008).

[54] Rio Tinto, *Rio Tinto Communities Standard*, http://www.riotinto.com/SustainableReview/communities/programmes/RTCommunities.aspx, (accessed 31st January 2008).

operates. Here is Rio Tinto's explanation of what it expects to learn about a local community, through such a process:

> Such studies provide data on, for example, demographics, livelihoods, subsistence, employment, local economic activity, social organisation, community decision making, cultural and religious beliefs, and experience and expectations of a mining development.
>
> These data are critical to our success in community relations because, firstly, areas where our operations can assist affected communities are identified (health, education, water supplies, etc). Secondly, these data inform our operations' consultation strategy. The baseline study will identify those people who are (or will be) affected by the operation. Therefore, information from the baseline study informs both the content and process of consultations.
>
> Community needs assessments and other similar opinion surveys are designed to understand the perceptions and expectations that our affected communities have of our operations. The information gleaned from these surveys might identify particular issues of community concern, which the operation will have to tackle, or state community priorities to which our assistance can be directed. As with socio-economic studies, these surveys are also very useful in commencing and informing consultation strategies.[55]

Here, then, it is information about the local communities in the vicinity of its mining operations, which is the knowledge of the natural landscape that Rio Tinto selects for incorporation into its knowledge of its productive landscapes. In another example, we learn that as a major UK landowner, Severn Trent Water has selected knowledge of the biodiversity of the natural landscapes for which it is responsible, for inclusion within its knowledge of its productive landscape. Here, the company describes its biodiversity programme, to know something of the plant and animal life in the vicinity of, and within, its operations:

> Our BAP identified 11 UK key habitats and 18 UK priority species in need of protection and enhancement for which we could make a significant contribution. Action Plans and targets have been produced for these, refined as necessary in the light of natural changes and survey results. Progress against these targets is detailed in the report and our contribution to the Local Biodiversity Action Plans which overlap the Severn Trent region is demonstrated.
>
> Examples include: 8.7% of Derbyshire's target for new Reedbed, 15.6% of the Peak National Park's target for restoring Upland Oak Woodland on conifer plantations, 20% of Leicestershire's target for new Wet Woodland, major re-introductions of Black Grouse, Water Vole and White Clawed Crayfish, a regionally-significant Tree Sparrow Recovery Project and nationally-significant support for Otter re-colonisation in the Severn and Trent rivers.[56]

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[55] Rio Tinto, *Baseline Communities Assessments (BCA's),* http://www.riotinto.com/SustainableReview/communities/programmes/Baseline.aspx, (accessed 31st January 2008).

[56] Severn Trent Water, *Biodiversity Action Plan: the first five years*, http://www.stwater.co.uk/upload/pdf/Section_1;_Management_of_water_and_landholdings.pdf, (accessed 31st January 2008).

2.5.7 The incorporation claim – summary

I began section 2.5 with the description and presentation of figure 2.12, and I now conclude it, by repeating the middle and lower levels, in figure 2.19 below. Through my discussion of mankind's conceptualisation of a relationship with the natural world, first in the cultural plane, and then in the institutional plane, I have advanced the interpretation, that green business 'culture' selects which knowledge of the natural landscape it wishes to acquire. Further, I have endorsed the Welford/McKibben claim, that this selective knowledge, of the natural landscape, is incorporated within the corporations' knowledge of their own productive landscapes. I have discussed the grey shaded spot, which represents the 'culture' of green business in figure 2.19, with the help of a few corporate 'case studies'. These have been selected from among the hundreds of examples, with which green business demonstrates the manifestation of its new culture in the world 'out there'. The weakness of the case-study approach, however, is that it is open to accusations of partiality in the selection process. Although I strive to make a selection which is representative of the 25 corporations included in the empirical study, subjectivity, in my interpretation of green business 'culture', is unavoidable. However, my case-study view of this institutional culture is only one, of the two empirical techniques, which I can use. It might be possible to test the accuracy of the case-study view, by using the more macro-oriented techniques of corpus linguistics in the lower plane. Assuming that I can construct a database of the language of green business, in which these corporations make representations of their culturally-influenced experience, the linguistic patterns may 'respond' with a different view, to the interpretation which I have just advanced.

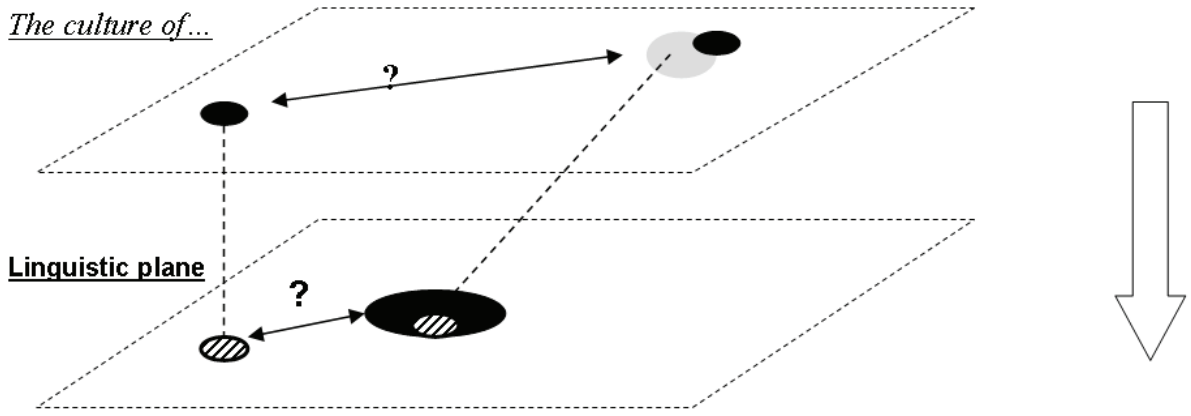

Figure 2.19: Is there any evidence in the linguistic plane to support the claim that knowledge of nature is being incorporated within knowledge of productive landscapes?

There are two research questions, to which I would like the linguistic analysis to make some response. First, what knowledge of the natural landscape is being selected by green business for inclusion? Second, how is that knowledge incorporated, linguistically, within the traditional language of business? I shall describe this linguistic analysis in chapter seven. If it is able to provide useful information in response to these two questions, I shall follow up its results, by discussing how they influence my interpretation of the 'culture' of green business.

2.6 Two planes – summary and plan of the thesis

In the light of my rejection of the hijack hypothesis and presentation of the two-plane conceptual model in chapter one, I have, in chapter two, revised the empirical ambitions of the project considerably. I shall summarise my research questions below, but first, present a final version of the two-plane model, in figure 2.20 below.

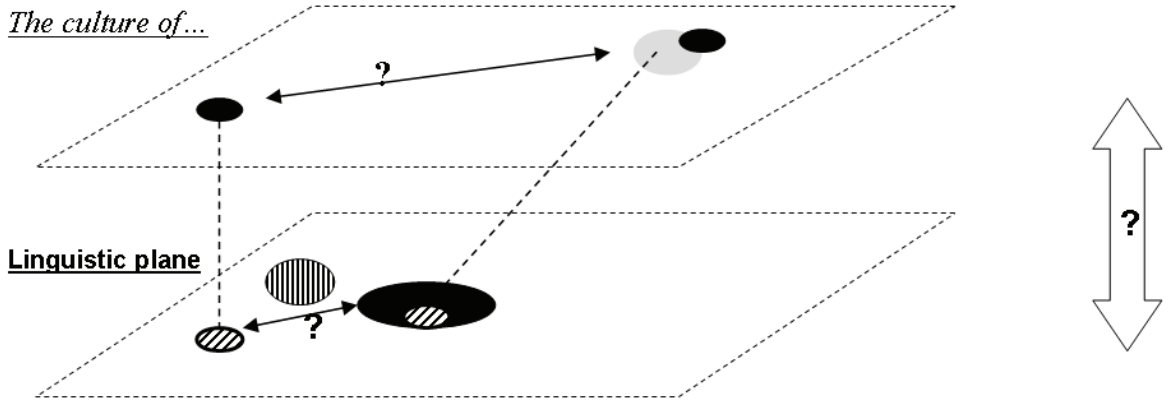

Figure 2.20: The two-plane conceptual model

Chapter four summarises the entire design, construction and preparation procedure, by which I created the object of study in the linguistic plane. Chapters five, six and seven provide the various empirical responses, to the research questions that I have worked out in this chapter. In section 2.2, I developed two research questions confined simply to a comparison and interpretation of the linguistic discourse of the three players: (i) green business, (ii) the radical NGOs and (iii) the British government. First, can I find evidence that green business has, as Welford has suggested, adopted the language of the radical environmental debate? Second, when I compare the linguistic discourse of the radical NGOs and green business, with that of the British government, do I find evidence that the government talks more about the things that green business talks about, or that it talks about the things that the radical NGOs talk about, i.e. is there any linguistic evidence that green business might, in some way, be 'winning' the environmental debate? In chapter five, I will present my method and results for

this linguistic-plane comparison, and also my interpretation and discussion, of the extent to which the results provide a useful response to the research questions.

In section 2.4, I discussed the appropriation claim, which attempts to provide useful knowledge about the institutional plane, on the basis of evidence from the linguistic plane. The desire to move between the two planes, requires me to make an acceptable case that there is a correlation between the *usage* of a word and its *meaning*, and this is a challenge which I shall address in chapter three. The appropriation claim's research question asks if there is empirical evidence in the linguistic plane, which can demonstrate that the same items of environmental vocabulary are used differently by the radical NGOs and green business. Assuming that I succeed, in chapter three, in making a correlation between *usage* and *meaning*, and can also demonstrate differences in *usage*, then the evidence of the linguistic plane will suggest that the different cultural communities: green business and the radical NGOs, have different conceptualisations of the environmental vocabulary that they both use. The interpretation, of how these differences in meaning might affect cultural assumptions, is a matter that I shall also explore in chapter three. But with this appropriation claim, there is some movement from making a comparison of language in the linguistic plane, to making some projections of conceptual differences in 'culture'. I shall present both the empirical results from the linguistic analysis, and the interpretive discussion of their significance, in chapter six.

In section 2.5, I have just developed my interpretation, in the cultural and institutional planes, of the incorporation claim. There are two research questions, to which I would like an empirical analysis in the linguistic plane, to make some response. First, what knowledge of the natural landscape is being selected by green business for inclusion? Second, how is that knowledge incorporated, linguistically, within the traditional language of business? I shall describe this linguistic analysis in chapter seven. If it is able to provide useful information in response to these two questions, I shall follow up its results, by discussing how they influence my interpretation of the 'culture' of green business.

In overview, then, chapters five, six and seven contain the results and interpretation, which respond to the research questions that I have developed in this chapter. Chapter four describes my work in addressing the empirical challenge, of designing and constructing my language databases in the linguistic plane, so that they may plausibly be described as being representative of the institutional 'culture' of green business, the radical NGOs and the UK

government. First, however, I proceed to chapter three, to address the methodological challenge of making a connection between language and culture.

3 Theory and method

3.1 Introduction

My purpose, now, is to 'flesh out' the conceptual model, which underpins the work of this project. I have already made use of three basic schematics, and I need to establish a convincing degree of coherence between them, by the end of this chapter, so that I can move confidently on to the empirical work. The three schematics, to which I refer, are shown below in figure 3.1.

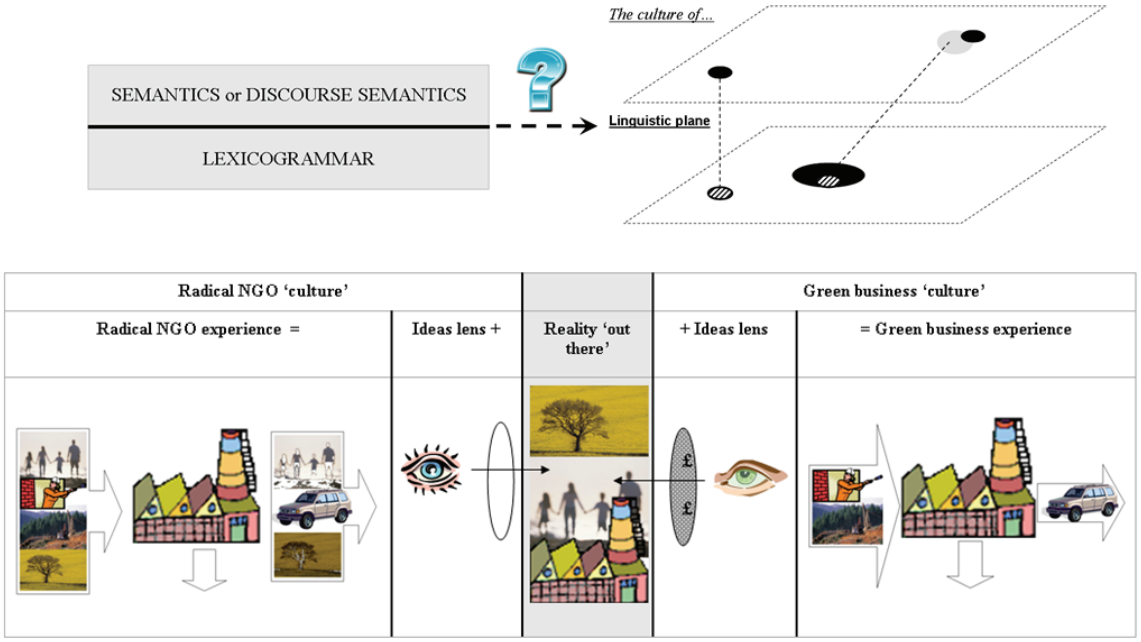

Figure 3.1: Three basic schematics of my conceptual model

In section 1.1.2 on page 2, I introduced the first model, taken from the systemic functional model of language, as presented by Michael Halliday. The simple grey box with the thick, black, horizontal dividing line, located in the upper left corner of figure 3.1, is extracted from figure 1.1 on page 3. The promise, of being able to move from the lexicogrammar, over this line and up to the discourse semantics, was held out by Michael Stubbs:

> Vocabulary and grammar provide us with the potential and resources to say different things. But often this potential is used in regular ways, in large numbers of texts, whose *patterns* therefore embody particular social values and views of the world. Such discourse *patterns* tell us which meanings are repeatedly expressed in a discourse community [emphasis added].[1]

The question, that occurred to me then, was how to formulate the relation between the lexicogrammar, on the one hand, and 'social values and views of the world', on the other. My

[1] Michael Stubbs, *Text and Corpus Analysis*, 158.

reworking of Welford's hijack hypothesis, led me into the two-plane schematic of a cultural discourse and a linguistic discourse. I have placed this in the top-right corner of figure 3.1, and the positioning of these two planes alongside the linguists' diagram, was intentional. I have extended the thick, black horizontal boundary of abstraction between the lexicogrammar and the layer of discourse semantics, as a dotted line pointing towards my two-plane schematic, and placed a question mark over it. The intention with this is to indicate my need to clarify, how I understand this boundary, and how it relates to the two-plane schematic. The lexicogrammar is clearly placed in the linguistic plane. But does it also contain "meanings," that Stubbs, the linguist, thinks I might be able to project from the lexicogrammar? And if so, what contribution do they make to the understanding of green business 'culture', in which I am interested? These are questions which I shall address in section 3.3.

Whereas the first two schematics have a vertical orientation, the significance of my third model is best understood horizontally, though it extends across both of the planes. In chapter two, I made frequent use of the 'reality + ideas lens = experience' formula, in making my case for the best work of culture studies, and in illustrating how changes to an ideas lens were capable of changing experience.[2] Although the reader will have registered that I occasionally switched between a left-to-right and a right-to-left orientation, I provided no explanation for doing so. Now, however, my purpose becomes clear; I wished to juxtapose the two of them, in opposition around one common centre of reality 'out there'. With two sides to this third schematic, I can now relate it to my 'two spots in two planes' model, as shown in figure 3.2 below.

First, I propose that the two ideas lenses, of radical NGO 'culture' and green business 'culture', correspond to their respective spots in the cultural plane. Second, I suggest that the large volumes of texts, which I have collected, are the written representations of the two protagonists' experience, and that they correspond to their respective spots in the linguistic plane.[3] In the centre of the schematic is reality 'out there'. My assumption, of just one reality, is important to the potential payoff in the cultural plane.[4] Assuming, as I have schematically suggested, that the two cultural communities look at the same reality 'out there', I may argue

[2] This model was introduced in section 2.3.2 of chapter two, and I remind the reader that the formula is taken from Gene Wise's, *American Historical Explanations: A Strategy for Grounded Inquiry,* (Homewood, Illinois: The Dorsey Press, 1973).

[3] The alert reader will note that figures 3.1 and 3.2 contain an illustration of *liberal-productivist*, not *green business,* experience. The reason for this is simply that I did not construct such a schematic in chapter two and do not, therefore, have one available to copy. I hope the principle of my argument is clear enough, even if the illustration is slightly inaccurate.

[4] However, it also poses a significant empirical challenge which I address in section 4.2.2 of chapter four.

that, any differences between their textual representations of experience, are due to the differences in their respective ideas lenses. Thus, by maintaining reality 'out there' as a constant, I am able to argue that differences in patterns of language use in the linguistic plane, correspond to differences in patterns of meaning in the cultural plane, just as Stubbs suggests in the quotation above.

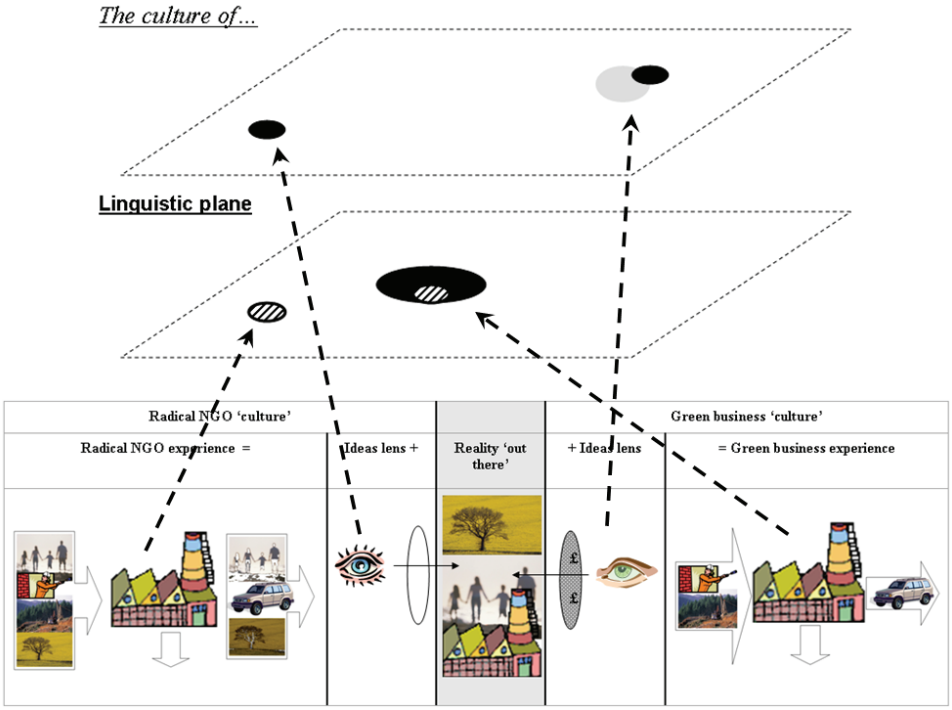

Figure 3.2: Ideas and experience related to the two planes

For the purposes of this introduction, I have explained the overall architecture of the model sufficiently. I shall not propose any new models in chapter three, though there will be some small adjustments, as I discuss the relationships between the different parts. Note, for example, the various terms, *semantics or discourse semantics*, *the 'culture' of green business* and *ideas lens*, which are used in the context of my upper plane. In section 2.3.4 on page 56, I have also characterised this cultural plane as containing *distinctive patterns of thinking*, which one might collect together under the umbrella term of *the 'culture' of green business*.[5] In addition to the examination of the internal organisation of the conceptual model, I also need to review the object of study, to see how well my conceptual model accounts for it. As I also have the advantage of re-writing this chapter after I have completed all the empirical work, I

[5] None of these terms match with Geertz's (following Weber's) view of culture, as mankind's "webs of significance" in which the method of analysis is an "interpretive one in search of meaning." Clifford Geertz, *The Interpretation of Cultures,* (New York: Basic Books, 1973), 5. However, I have already argued that this search for meanings in the cultural plane ought to be the goal of good culture studies work, and a contribution to our understanding of the 'culture' of green business satisfies that requirement.

am able to discuss the theoretical soundness, of the analysis techniques which I have used. Following my engineering inclination, the chapter has a 'bottom-up' organisation of its material; section 3.2 reviews the objects of study that are intended to play the role of the two spots in the lower, linguistic plane.[6]

3.2 The objects of study in the linguistic plane

With the exception of my mother and a few faithful, non-academic friends, I am surprising none of my readers, when I reveal that the orderly presentation of a PhD thesis conceals the disarray of activities in a PhD project. In practice, the development of my conceptual model has progressed in parallel with the construction of the objects of study. It has evolved, as my interpretive understanding of the texts with which I have been working, has grown in sophistication. From the experience of reviewing the material on the websites – the html pages and the pdf reports – I have drawn up an informal taxonomy, consisting of three types of textual representation, which I describe below with reference to green business.

However, there is one general observation I would like to make, concerning all the website-based material, as it has an important bearing on the validity of the model. My experience of reading different examples of material from the websites, whether it was green business, radical NGOs or government departments, is that the texts are sincere representations of reality 'out there'. I make this comment in response to an anticipated accusation from some readers that, typically, green business is trying to pull the wool over everyone's eyes and is deliberately constructing rhetorically-attractive, but misleading representations of reality. When I explain my project, the listener often refers to a newspaper or TV advertisement they have recently seen, in which a business corporation has represented itself as greener than the grass. And the expectation, which I often have to disappoint, is that I am going to analyse this devious corporate rhetoric, and 'prove' that big business is only interested in the money.

At the risk of being accused of naivety, however, I will re-iterate my conviction that the material, which I have studied, contains little of the rhetorical icing sugar that we are all prone to use. Clearly, it would be naïve of me, to reject the notion that green business does not wish to represent its activities attractively. But the green corporations are also subject to close scrutiny by the radical NGOs, and they know it. Any exaggerated claims will quickly be uncovered, and the negative publicity of being made a laughing stock is too big a risk to take,

[6] The full account of the design and construction process is contained in sections 4.2 to 4.6 of chapter four.

for some short term rhetorical gain. I would add that the tendency, to make sincere representations, is stronger for website material than advertising. My reason, for making this claim, is that the durability of the representation influences the imperative to be as objective as possible. Whereas advertisement representations are extremely short-lived, the material on the websites stands, for much longer, as a record of the corporation's representation of itself and its environment. Many of the corporate websites have archives of material, in which it is possible to find a report that was published several years ago, and many of the heavy reports are made available both in pdf format for electronic downloading, or as hardcopy reports that can be ordered from the corporation. Because everything on the corporate website is delivered electronically, it can, in principle, be adjusted at any time, in order to suit an evolving corporate message. But my experience is that such a *1984*-style rewriting of history is not practised by green corporations in the UK. On the contrary, many of them make a virtue of the fact that they have been producing an annual environmental report "for the last X years," and that the reader can discern a growing sophistication in them, as the years have passed and the green corporation's expertise has grown. Given that the corporation expects these representations to be publicly available for many years, it will take pains to make sure that they will stand the test of time and critical scrutiny. Clearly, in the 'theatre' of TV advertisements, such rigorous demands for representational authenticity are neither demanded by the public, nor delivered by the advertising agencies. Newspaper advertisements, I would think, fall somewhere between these two outer positions.

The radical NGO, Friends of the Earth, has its own *Greenwash* 'awards', with which it tars corporations and agencies who, it asserts, are saying one thing and doing another. From their main page at http://www.foe.co.uk/index.html, one can search for "Greenwash" and generate about 100 hits from their archive. The impression gained from browsing through some of these documents, is that their Greenwash allegation is usually levelled at a corporation, not for directly lying, in a representation of a specific aspect of its operations, but rather, for selecting one part of reality for representation, which tells the positive story, whilst omitting another which tells the negative one. This observation brings us back to the feasibility of my assumption of one reality 'out there', which I shall address in section 4.2.2 on page 143.

3.2.1 Representations of cultural meaning

First, in all of the large green businesses that have provided the object of study for this project, it has been possible to identify one or two documents, that might be categorised as

making a contribution to the cultural plane. I think of these documents as contributions towards how green business represents its 'culture'. This very limited quantity of material, which is often referred to on the website with titles such as "Our Values," "Business Principles" or "Our Mission," serves as a focal point for the organisation. Senior management often ascribes to these "Principles" the role of "underpinning everything that we do." Such a document lends meaning to the activities of the green corporation.

From my illustration of the single grey spot in the conceptual model, it will be apparent that, one assumption I am making is that, we can talk about shared meanings among the institutions that I have called British green business. Within groupings of like-minded agents there will, of course, be variations between each agent's meanings. I also recognise that, within each green corporation, there will be an ongoing discussion about the greening process, in which certain individuals might be thought of as progressives and others as reactionaries. But, having made these caveats, it is my assumption that at the level of this group of green business corporations, it will be possible to make observations about a shared set of meanings, which I call green business 'culture'. This, very small number of texts may be viewed as a modest contribution from the corporations, to the, largely academic, discourse on the meaning of green business, and I am sure that many scholars would have good reasons for criticising its quality. Nonetheless, its language is at a level of abstraction from the representations of experience in the linguistic plane, and I have, therefore, kept it out of the object of study.

3.2.2 Representations of management processes

There is a second category of texts that are characterised by their descriptions, of exactly how the corporation is managed in order to deliver the environmental objectives, which it has set itself. This material is often publicised under the title of "Managing for the Environment," or is contained in the "Environmental Audit Report," and it makes representations of the working procedures that the corporation's employees follow, in their daily, weekly and annual routines. The quantity of material is relatively small. My impression is that the larger corporations have more documentation than the smaller ones, perhaps reflecting the greater challenge of managing a corporation with 50,000 employees, rather than one with 500. A typical example may be found in the British Petroleum (BP) management framework:

> The group's system of internal control is described in the BP management framework. The system of internal control is the complete set of management

> systems, organizational structures, processes, standards and behaviours, that are employed to conduct the business of the group and deliver returns to shareholders.[7]

This introduction is then followed, by a series of very detailed representations, both in text and in diagrammatic form, of the ways in which BP organises its activities.

I have drawn attention to this relatively small category, for two reasons. First, although it makes representations of desired activity that must definitely occur in reality, it is not the sort of description of business operations and environmental measures, which I originally envisaged I would find on websites. Its representations are of corporate-internal management processes, rather than the nuts and bolts of production sites. Obviously, there is a difference between describing what *ought to* happen, and what is actually happening. I judged these reservations to be minor, and decided to include the material within my object of study, as representations of experience. My second reason, for pointing out its existence, is to draw attention to the important role, which the process of management takes, in the thesis. This will come to greatest prominence in chapters five and seven.

3.2.3 Representations of activity[8] in reality

In contrast to the managerial texts noted above, the vast majority of the material, which I have collected from the green corporations' websites, consists of representations, either of what the corporation is doing in particular places, usually its *productive landscapes,* or how it represents that part of the environment, the *natural landscapes*, whose existence it recognises. This is the sort of material that I envisaged I would find, and it corresponds well with the Gene Wise-inspired schematic, in which the green business eye looks in the direction of reality 'out there', (see figure 2.13 on page 67). Representations of concrete activities and measurable improvements are favoured, in green business texts. A common style is the case study, which is able to draw on the details of names and places to build its narrative credibility. For example, in "Case study: Help for the wood workers of Woorabinda," the reader can learn how an Australian coal-mining subsidiary of Anglo-American is helping the local aboriginal community.[9] I would estimate that well over 95% of the textual material that

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[7] British Petroleum, *The BP Management Framework*, http://www.bp.com/sectiongenericarticle.do?categoryId=9014920&contentId=7030693, (accessed 1st February 2008).

[8] For the systemic functional linguists who read this thesis, I would advise them that my usage of *activity* is broader than the sort of material processes, with which they associate the term.

[9] "The town of Woorabinda is the nearest aboriginal community to Anglo Coal Australia's Dawson Mine. It is also, traditionally, a local centre for woodworking. Until early 2006, however, the woodworkers of Woorabinda pursued their craft in an ad hoc way. That changed when Anglo Coal Australia signed an innovative 'shared responsibility agreement' with community leaders and officials of the Federal and State Governments to create a small furniture production business. As part of that agreement, the Dawson Mine is providing support to the

makes up the green business object of study in the linguistic plane consists of this sort of representation of ongoing 'business in the biosphere' operations.

3.2.4 Texts representing green business 'culture' and experience

I have classified this material from the green business websites so that I can make a good fit, between my object of study and the conceptual model. I will now superimpose my three-part taxonomy upon the 'reality + ideas lens = experience' schematic, as shown in figure 3.3 below. I have made one simplification, one substitution and two enhancements, all of which need some explanation.

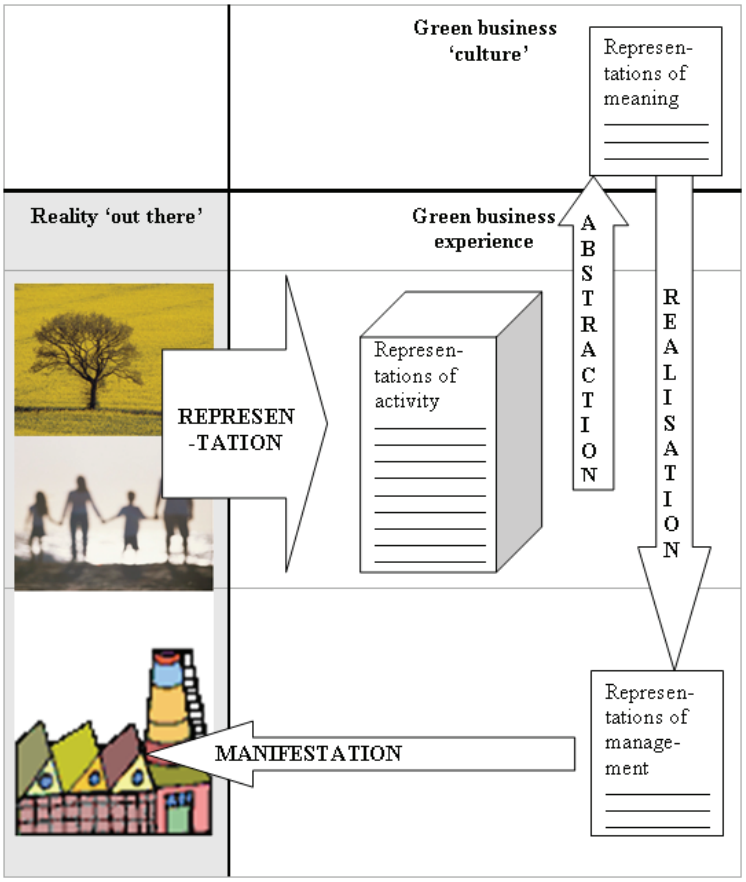

Figure 3.3: Texts in green business 'culture' and experience

fledgling enterprise in several ways: project managing an extension to the start-up's woodworking shed; advising on occupational health and safety issues; and developing a business plan. While all of that was going on, the woodworkers themselves embarked on certified training courses in carpentry and furniture making. By the end of the company's first year, it had produced a successful range of highly marketable shelves, tables and seating – and received official recognition as well. Anglo's Woorabinda project was cited in an award for Outstanding Community Benefit at the Jobs Career Future Awards at the Parliament House in Australia's capital, Canberra, and one of the project's leading lights, Anglo Coal Australia's sustainability manager, was selected for a prestigious Vincent Fairfax Fellowship from the St. James Ethics Centre." Anglo American, *Communities*, http://www.angloamerican.co.uk/cr/sustainabledevelopment/communities/, (accessed 1st February 2008).

First, I have simplified the original schematic, by removing the middle section that contains the eye of green business, looking through its ideas lens upon reality 'out there'. It still exists in my conceptual model, but would have been an unnecessary visual complication in this schematic. The substitution, I have made, is to remove the illustration of green business experience, showing the factory with its input and output arrows, and to replace it with my new illustration, intended to emphasise that the object of study consists only of textual representations of green business experience. The corporations' websites contain text, photographs and some drawings, usually the schematics of management reporting processes or organisation charts. The media centres of the more sophisticated green businesses are now also offering webcasts. My object of study, however, contains just their textual representations. In figure 3.3, I have placed two illustrations of a single page, one labelled "Representations of meaning" and the other "Representations of management." My third illustration of text is, I hope, suggestive of a very large pile of pages, and is labelled "Representations of activity." These are the three categories in my taxonomy, and the size of the illustrations is intended as a guide, to the quantity of texts which I have downloaded. So, in the model, green business experience is communicated just in written texts, and the overwhelming majority of these texts are representations of what, according to the corporations, is happening out in their productive landscapes and the natural landscape.

I have made two enhancements. First, in order to underline the disjunction between a plane of linguistic discourse and the cultural plane, I have made the horizontal dividing line, under green business 'culture', thicker and blacker, matching the vertical black line that divides reality 'out there', from green business experience. The second enhancement is my introduction of the four large arrows with the labels, *representation*, *abstraction*, *realisation* and *manifestation*. These are attempts to describe the processes that 'translate' the object at the back end of the arrow, into the object at its head.[10] I wish to show that there is a circular dynamic at work, in which the texts are instrumental in converting ideas into reality, and then completing the feed back from reality to ideas. I would like to be able to convey the impression of a process of changing meanings in figure 3.3, but must satisfy myself with this static image – a representation or 'snapshot' of the flux taken in the middle of 2005, when I downloaded my texts from corporate websites. Nonetheless, I hope that I can account in some

[10] The terms *Representation, Manifestation, Abstraction* and *Realisation* will be recognised by systemic functional linguists. I have taken them from Martin and Rose's *Working with Discourse*, and my usage of them in relation to the model of green business which is presented in this section, leans heavily on chapter one, "Interpreting Social Discourse." J. R. Martin and David Rose, *Working with Discourse: Meaning beyond the Clause* (London: Continuum, 2003).

way for the process of constant change, which these texts represent, through the description of figure 3.3, that I now provide.

My description of the dynamic ties in with the account of the development of ecological modernisation, in connection with figure 1.6 on page 13, and also with the concluding part of section 2.3.4 on page 56, in which I sketched out my chronological view, of the corporate greening process. In this latter section, I argued that the impetus for the greening process did not, in the first instance, come from the boardroom of the corporations, but rather from the world of reality 'out there', on the left side of figure 3.3. It was there, that radical NGOs targeted certain 'non-green' corporations, for public demonstrations of their environmental 'sins'. It was in the real world, that they hung up banners on smoke stacks, chained themselves to discharge pipes and generally harassed their corporate adversaries, with charges of environmental abuse. It was also an aspect of social and political reality that the UK (and other) governments introduced environmental legislation imposing limitations on the pollution generated by industry. The immediate consequence, of such embarrassing media events and parliamentary regulation, was that the corporations, operating very much in a reactive mode, took practical steps to reduce the worst environmental impacts of their operations. With reference to figure 3.3, I argue, therefore, that the first disturbances to the model of 'non-green' business 'culture' occurred on the left side of the schematic; corporations spent money to implement new technology in their productive landscapes, which would lead to reductions in their impact on the natural landscape. This gave them the raw material with which to address the public relations threat, posed by such organisations as GreenPeace, with their spectacular 'end-of-pipe' media events. They began to produce representations, in language and other modes of communication, as I have illustrated with the large REPRESENTATION arrow, pointing from left to right. This fat arrow ought also to emanate from my illustration of the factory, as well as the tree and the people; the green business representations described the improvements being made to the corporations' *productive* landscapes, as well as the benefits that were accruing to the *natural* landscape.

The more astute corporate management teams realised that the NGOs would not simply go away, once they had succeeded in achieving a clean-up from one discharge pipe. Recognising that, if they adopted a wait-and-see strategy, the NGOs would keep returning to embarrass them, these corporations chose to be proactive. This drove the evolution of environmental reporting within the corporations' management systems. The function of this process was to monitor the environmental impact of the corporations' productive landscapes,

and thereby advise senior management about those areas, in which it was most vulnerable to NGO criticism. With reference to figure 3.3, this activity would also be illustrated by the left-to-right arrow of REPRESENTATION. However, whereas the representations of environmental *improvements* that the corporations were implementing, would have been made available to the media from the public relations offices, these representations of *damage* to the natural landscape would most probably have been confined to internal reports.

The logical next step from environmental *reporting,* was to progress to environmental *management*. The evolving green corporations drew up plans, to modify their corporate organisation chart and their management and reporting procedures. Their purpose was to 'manage' the environmental aspects of their business operations. With reference to figure 3.3, this corresponds to the "Representations of management" in the bottom-right corner. Once approved by senior management, the modifications were implemented, and their manifestation in the world of reality 'out there' took shape, illustrated by the MANIFESTATION arrow, pointing from right to left. The new procedures were implemented within the daily, weekly and monthly activities of the corporate reporting system. Middle managers adjusted themselves to the additional environmental elements in their reports, and the evolving green corporations began to 'walk the talk'.

Within the model of figure 3.3, then, I argue that there has been a chronological dynamic, as 'non-green' corporations have been disturbed from their steady-state model and have evolved into green businesses. This dynamic has been driven, in the early stages, by the simple expediency of wishing to avoid public humiliation at the hands of the radical NGOs. But every self-respecting 'culture' describes the webs of significance which imbue its activities with meaning, and the business corporation is no exception. Ecological modernisation was one such significant concept, in the evolution of a green business 'culture', and its representation would be placed in the "Representations of meaning" in the top-right corner of figure 3.3. In section 2.3.4 on page 56, I made a reference to my experience of meeting a CSR expert from Shell, in which he presented the ecological modernisation argument that sustainable development was also good for Shell's financial performance.[11] This argument is formally presented on the Shell website, where the corporation advances

[11] The account is provided in footnote 22.

seven reasons that substantiate its belief. Here, then, we have an example, of how a 'non-green' corporation augments its meanings, in its transition to a green 'culture'.[12]

The green credibility of the corporation's senior management depends, among other factors, on their ensuring that the four arrows, in the model of figure 3.3, actually function so as to make for a coherent organisational whole.[13] Out of the new, environmentally-friendly, mission statement ("Representations of meaning") of the corporation, there should emanate coherent REALISATIONS, in the form of documents ("Representations of management"), which describe the ways in which the corporation organises itself, in order to achieve its objectives. These documents should then be MANIFESTED in the procedures which the corporation's officers follow, as they go about their daily duties. The pay-off, for this effort, should come in the form of improvements to the natural landscape, in reality 'out there'. From this world of reality comes the feedback loop of REPRESENTATIONS, which inform management about what is really happening. This enables them to compare the reported state of affairs with their plan, and through this process, to exert control over the corporation's productive landscapes. At the same time, this information flow also provides senior management with an opportunity, to study representations of the corporation's productive landscapes and their effect on the natural landscape. Through a process of ABSTRACTION, they can reflect on how well these reports live up to the more abstract 'culture', with which

[12] "Contributing to sustainable development is not only the right thing to do, it makes good business sense. Sustainable development helps us be a more competitive company and create value for our shareholders by: **Reducing our operational and financial risk** Delays, approval failures, or disruption to existing operations by concerned communities are significant risks to our business. Understanding what our stakeholders perceive as responsible behaviour, meeting these expectations and achieving recognition from financial institutions, investors and customers deliver obvious financial benefits. **Reducing costs through eco-efficiency** This is about producing more with less energy and materials. For example, by adopting cleaner technologies, reducing emissions, recycling, reusing, minimising waste and even turning waste into saleable products. These activities improve the efficiency of our operations, help us reduce our costs, avoid current and future costs of emissions and even create new income streams. **Influencing options and evolving portfolios** By anticipating new markets driven by societal and customer desires for a cleaner, safer, more sustainable world, and evolving business portfolios and supply chain relationships to match, we can gain competitive positions and enhance our "licence to operate and grow". **Influencing product and service innovation** Being aware of changes to customer life styles and values enables us to differentiate our products and provide more services to customers that reflect and meet their demand. **Attracting more loyal customers and enhancing the brand** Providing products and services built on sustainability thinking create customer loyalty and market share. **Attracting and motivating top talent** Our commitment to sustainable development is an important factor in some people's decision to join and stay and that alignment between personal values of staff and corporate values is a powerful motivator. **Enhancing reputation** By being seen and being credible as a good corporate citizen whose performance matches its words, we become the organisation of first choice for customers, staff, investors, suppliers, partners and the communities in which we operate." Shell, *Our business case for sustainable development*, http://www.shell.com/home/content/envirosoc-en/sustainability_and_our_business_strategy/the_business_case_for_sd/the_business_case_for_sd_000407.html, (accessed 1st February 2008).

[13] I realise, in describing this corporate dynamic, that there are other forces at work in reality 'out there', which seek to influence the business corporation. But I don't need to include them here, where my focus is on the role of texts in the process.

they are concerned. To what extent does the representation that is coming in to head office, confirm that the corporation is developing in the direction, which their recently 'greened' mission statement has directed? Are there new factors, in the representation, that were not present when senior management last reviewed the corporation's "meanings," and which now demand consideration? Are adjustments necessary, that will then need to be realised in new guidelines and reporting procedures, for middle management? So the cycle continues, as the corporation strives to maintain its balance within the environment of flux in which it operates.

3.2.5 Different 'culture' – different representation

It remains, now, to relate the textual object of study of the radical NGOs to my conceptual model, a task which is much simpler than it was for green business. In figure 3.4 below, I have augmented figure 3.3 with the other side of the social reality pertaining to environmental issues – the radical NGOs. The textual object of study is much simpler for the radical NGOs, than for green business, as I shall now explain.

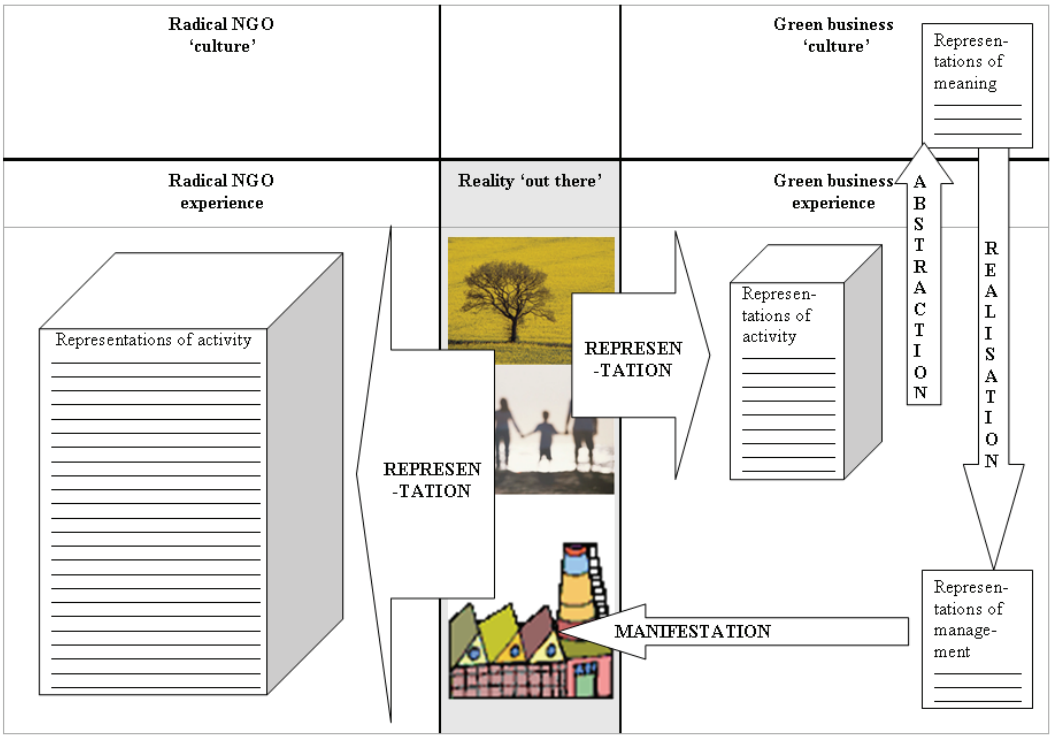

Figure 3.4: Different representations of the experience of reality 'out there'

First, the radical NGOs are not as consistent in documenting their 'culture' as are the green corporations. Many of the NGOs, that I have selected, have their origins in the environmental protest movement, and the cultural statements, that one does find, often tend to be couched in terms of what they are fighting *against,* rather than what they stand *for*. In the illustration,

therefore, there is no document called "Representations of meaning." Related to this, I am also in doubt about the cultural homogeneity of the 'culture' of the radical NGOs. Whereas the assumption of my project, that the green corporations adhere to a reasonably similar cultural position is warranted (as I argued in section 3.2.1), the empirical evidence suggests that those organisations I have found, and to whom I have given the label *radical NGOs,* cannot so easily be classified, as representatives of a reasonably similar cultural position, such as eco-radicalism. This question is discussed in more detail in chapter four, in which I explore some of the empirical challenges I encountered, in setting up the objects of study. However, as my main interest in the project is to make a contribution to understanding green business 'culture', the problem is not serious.

Second, for similar, practical reasons, the radical NGOs do not need to expend effort thinking about how they organise themselves, in order to be more sustainable. Their role is to change the way in which other agents, notably the business corporations, interact with the natural world, and they do not reflect on their own organisation. I have, therefore, also omitted the document showing "Representations of management," from the left side of figure 3.4. As a result of these two simplifications, the radical NGO representation of experience is reduced to the single enormous quantity of text containing "Representations of activity," in which the radical NGOs present their experience, of how the natural landscape is affected by the productive landscapes of business. The respective sizes of their "Representations of activity," reflect the actual sizes which are presented in section 4.7 on page 160: three million words for green business and eleven million for the radical NGOs.

3.2.6 The objects of study in the linguistic plane - summary

I now summarise the way in which I relate my empirical object of study, to the theoretical model of the two planes. In figure 3.5 below, I have removed the 'culture' section from the schematic in figure 3.4.[14] The single, enormous text type of "Representations of activity" provides the radical NGOs' object of study in the linguistic plane. Against this, green business provides its own "Representations of activity" and a smaller volume of texts which are "Representations of management." These serve as their object of study in the linguistic plane.[15] For ease of reference, I have included a smaller version of figure 2.3, from section 2.2 on page 41. It was here, that I provided my first characterisation of the linguistic plane, and

[14] The green business "Representations of meaning" were put on one side for possible reference in discussions on the cultural plane.

[15] The observant reader will note that in terms of the actual sizes of the objects of study, the spots that I have drawn in the linguistic plane are the wrong way round. This is unfortunate but not important!

argued that it was a public arena of competing representations of reality. I conceive of the left side of figure 3.5, as my attempt to set up an empirical method, for sampling the welter of representations that make up this public arena. The question I now wish to address, in the next section, is what knowledge it is possible to obtain, from these enormous objects of study in the linguistic plane.

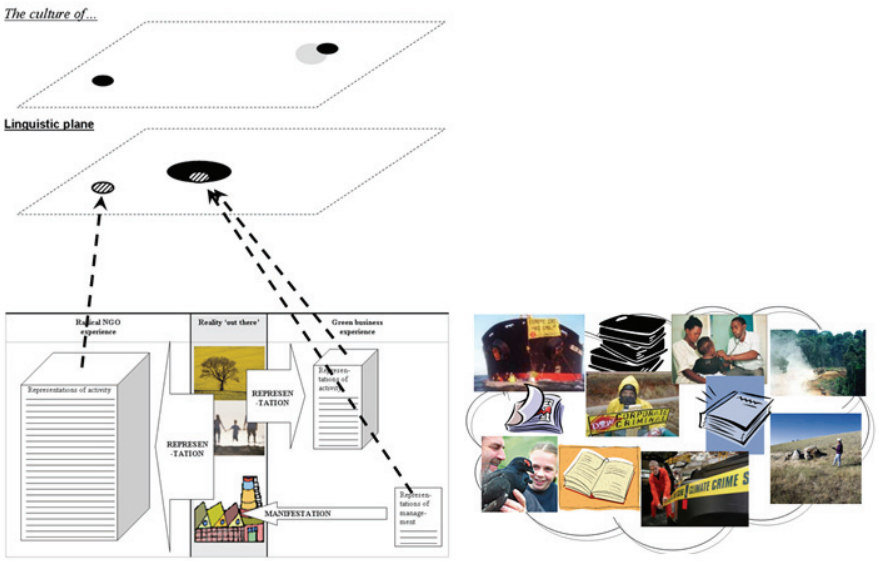

Figure 3.5: The objects of study in the linguistic plane

3.3 Patterns of usage in the linguistic plane

3.3.1 Introduction

The previous section was concerned with the objects of study in the linguistic plane, and I now start this section with the 'promise' made by Stubbs:

> Vocabulary and grammar provide us with the potential and resources to say different things. But often this potential is *used* in regular ways, in large numbers of texts, whose *patterns* therefore embody particular social values and views of the world. Such discourse *patterns* tell us which meanings are repeatedly expressed in a discourse community [emphasis added].[16]

The sharp-eyed reader will notice that, in addition to italicising *patterns*, I have, in the second line, also italicised *used*. I have done this, in order to draw attention to the objective of my examination of the linguistic plane, namely to identify *patterns of usage*. Stubbs is suggesting that the green corporations' cultural meanings will influence the way in which they write about their experience of reality 'out there'. The evidence of this influence will not be apparent at the level of the sentence or through the analysis of an individual text. But, in a corpus consisting of a large number of texts, argues Stubbs, patterns in the organisation of the

[16] Michael Stubbs, *Text and Corpus Analysis*, 158.

words emerge which can help us to identify patterns in their usage.[17] Section 3.3, then, explores the ways in which I have approached the objects of study in the linguistic plane, to identify, first, patterns in the spatial organisation of the words and, second, patterns in their usage, which I can take into the methodological challenge of section 3.4.

However, the two-step approach to analysing the linguistic plane, described in the previous paragraph, draws attention to the fact that I am now claiming that it is possible to identify some 'objective meaning' in texts. The first step, finding patterns in the spatial organisation of words as they are arranged over thousands of pages, is fair enough.[18] But in order to give my account of a discourse community's *pattern of usage* of a word, (as Stubbs describes), I must apply some process of interpretation to the words. This means, therefore, that I am defining my linguistic plane as containing at least some of the discourse semantics, which Halliday describes as being a stratum "within the system of language," as I have suggested in figure 3.6 below.[19]

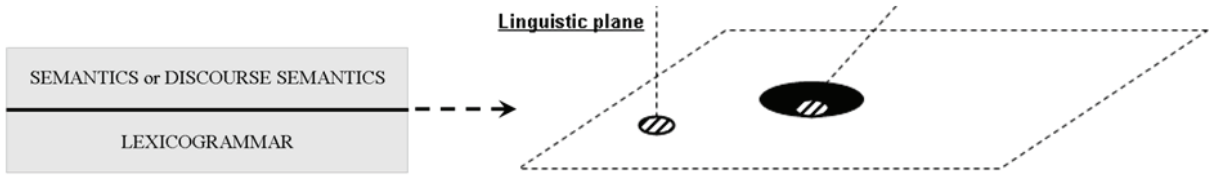

Figure 3.6: Identifying *patterns of usage* in the linguistic plane

In section 2.4 on page 60, I argued strongly for the appropriation claim. I reasoned that it was only to be expected, that green business would adopt the language of the environment, and that it was also inevitable, that it would make use of these signs in ways that suited its own experience of reality 'out there'. I suggested that it ought to be possible to find evidence in the linguistic plane, which suggested that the same sign was used in different ways, by green business and the radical NGOs. In figure 3.6, I have moved the stratum of semantics down compared with figure 3.1, so that it is now directly alongside the linguistic plane. I will also underline Halliday's insistence that semantics, i.e. meaning, is *within* the "system of

[17] I understand this concept most easily by imagining myself standing in a field of wheat and being asked the question "What are the major cereal types – wheat, barley, oats – that are grown in this part of the country?" Clearly, my own first-hand knowledge of the wheat field is not sufficient to answer the question. By climbing a nearby hill, I can see more fields. The higher I climb the more fields I will be able to see and the clearer will the *pattern* of cereal cultivation become.

[18] We will see that my chosen tool of analysis, Wordsmith Tools, is outstandingly good at counting words and working out which words appear in close proximity to other words.

[19] "A language is a complex semiotic system composed of multiple LEVELS or STRATA. […] The wording realizes patterns of another level higher than itself – but still within the system of language: the stratum of SEMANTICS." M. A. K. Halliday, *An Introduction to Functional Grammar*2nd edition, (London: Edward Arnold, 1994), 15.

language." Since I am reasonably confident of finding differences in usage, and will then argue that differences in usage correlate with differences in meaning, I am, obliged to read Halliday's "system of language" as referring to one "system of language" *as it is used by green business,* and another "system of language" *as it is used by the radical NGOs*. I suggest, in effect, that a language community develops its own conventions of usage for particular words, and that these conventions are distinguishing differences in their "system of language." In the case of this project, for example, my proposal is that green business develops such distinguishing conventions within a lexical field of environmental vocabulary. Otherwise, its conventions of usage of British English are the same as those of the radical NGOs. I shall pursue this subject further in section 3.4, where I address the methodological challenge. In this section, however, I wish to concentrate on the techniques I have developed for identifying, first, patterns of wording and, second, patterns of usage, in the linguistic plane.

3.3.2 Corpus linguistics

In section 1.1.2 on page 2, in which I presented the methodological challenge, I made a first mention of corpus linguistics as my chosen tool of analysis. Three reasons dictated this decision, which I now explain. First and foremost was Welford's oral justification of the hijack hypothesis, which he made at our meeting in Oslo that I referred to in section 1.3.3 on page 26. There, he made it clear that his suspicions had been aroused, by the mixing of a vocabulary of business with the vocabulary of the environment.[20] At the time, Welford already had several years of experience as a senior advisor to industry on its greening process. His opinion was based on many individual instances of experience, in which he had read green business reports or discussed greening processes with senior managers. Over time, he had developed the opinion, that these differences in vocabulary were evidence of differences in meaning between himself and green business. But as I have already pointed out in section 1.3.3 on page 26, the cases he presents in his book are based on his interpretive reading of the cultural plane of green business. At our Oslo meeting, he was inviting me to test out his hypothesis by examining the linguistic evidence, which he himself had identified as part of the problem, but which he was unable to present in the book. In order to be persuasive, the linguistic evidence would have to be based on a survey of textual usage, rather than individual case study-style examples picked out by me to 'prove' Welford's point.

[20] I remind the reader that the terms he mentioned in illustration of his point were *Profit maximisation, Value creation, Shareholder value, Management systems, Growth, Market share, Free markets,* and *Wealth creation*.

The second, closely-related, reason for choosing corpus linguistics lay in Welford's formulation of the hijack hypothesis, in which he levelled his accusation at "industry" rather than named corporations.[21] This reinforced the requirement to make a survey of the language; somehow or other, I would need to define the term *industry* true to the spirit in which Welford used it. The third reason for choosing a corpus-linguistic approach had to do with a fortuitous combination of events. The department which assisted me, in the development of my Ph.D. application, was keen to see interdisciplinary projects and already had, among its English language staff, a strong and experienced corpus linguistic environment.[22]

Systemic functional grammar, to which Halliday and Stubbs subscribe, seeks to account for the organisation of the wording in language, in terms of the use to which it is put. Corpus linguistics is one approach to the capture and study of language in use. Although language corpora do not, necessarily, need to be stored in electronic format, corpus linguistics' association with the usage of computers is an automatic assumption today. As computer technology has become increasingly available over the last three decades, the possibilities for collecting larger quantities of 'language-in-use' have increased. Rather than poring over single utterances from native speakers with a view to accounting for their form, corpus linguists have developed ever larger 'databases' of authentic language, on which to focus their research effort. The exponential growth in the volume of material has posed a new challenge; in corpus linguistics' roughly forty years of development, researchers have had to develop a range of *quantitative* analysis techniques, in order to 'manage' the volumes effectively. So research work in corpus linguistics, today, might be characterised as being *quantitative* in its early stages in order (i) to be able to make sound generalisations about the overall object of study and (ii) to justify the adequacy of small samples. Once the process has generated samples of text for analysis, the linguist's traditional skills are employed in a *qualitative* interpretation of usage, and how it relates to form.

Coupled with corpus linguistics' clear advantages in being able to deal with the very large volume of text in the object of study, my reading of Michael Stubbs' *Text and Corpus Analysis* and his methodological challenge, gave me the incentive to believe that it might be

[21] "In brief, industry has hijacked the more radical environmental debate taking it out of its traditional discourses and placing it in a liberal-productivist frame of reference." Richard Welford, *Hijacking Environmentalism,* x.
[22] At the time of making the Ph.D. application, this was the Department of British and American Studies. The leading figure within this group is my advisor, Stig Johansson.

possible to make connections between a linguistic and a cultural plane.[23] The Ph.D. thesis of one of Stubbs' students, Andrea Gerbig, further encouraged my belief.

3.3.3 Previous work in the field – Gerbig's Ph.D. thesis

In this section, I shall review Andrea Gerbig's Ph.D. thesis.[24] I am most grateful to her for providing me with a copy of the thesis, but, more importantly, for the intellectual ideas she presents in her pioneering project. Gerbig took, for her theme, the international concern over damage to the ozone layer. Her corpus, of about half a million words, was composed of contributions from a variety of different agents with an interest in the issue: business corporations that produced the ozone-damaging chlorofluorocarbons (CFCs), a PR agency acting for the corporations, environmental organisations, scientific institutions, the Australian press and the Australian government. In her introduction, Gerbig presents as a major aim "to make concrete how different interpretations of the political topic by different interest groups are realized linguistically in texts."[25] In this she partially succeeds, and I would endorse her concluding claim, that she had shown "that stylistic (and ideological) differences can, *to a certain extent*, be quantitatively described and interpreted [emphasis added].[26] In this part of her thesis, I interpret Gerbig's work as demonstrating a correlation, between certain spatial characteristics in the linguistic plane, and her own interpretation of the ideology of the agents. In my terms, she has argued for a link between the linguistic and cultural planes.

From the point of view of the linguistic scientific community, this work is very interesting. It is a fundamental tenet of systemic functional grammar, that a language provides its users with alternative ways of expressing themselves. For specific reasons, users choose to encode their intended meanings in the language in certain ways rather than in other ways. Gerbig demonstrates in her work, that some of the coding orientations, selected by particular users, correlate with what one would expect from the producers, on the basis of their known ideology. She shows, for example, a plausible correlation between the statistical frequencies of certain lexical items in different groups' linguistic discourses, and their known ideology and areas of interest.[27] In the terminology of this project, she demonstrates differences in wording that appear to match with what one would expect of the player's representational inclinations. She examines, for example, the usage of RESPONSIBILITY and argues that the

[23] Michael Stubbs, *Text and Corpus Analysis.*
[24] Andrea Gerbig, *Lexical and Grammatical Variation in a Corpus: a Computer-assisted Study of Discourse on the Environment,* (Frankfurt am Main: Peter Lang, 1997).
[25] Ibid., 13.
[26] Ibid., 209.
[27] As an illustration of this, section 4.3 "Keywords" is the most persuasive.

"PR agency [which works for the CFC-producing companies] avoids using the word forms in their second sense of accepting or assuming responsibility for something."[28] In response to these findings, a sceptical researcher in culture studies might well reply that this is entirely to be expected, and merely stating the obvious. However, this scepticism as to the value of such knowledge is exaggerated on three counts.

First, the elucidation of the linguistic techniques, by which culturally-inspired representations are presented, has an important role in responding to the discourse of powerful interest groups. Gerbig sees her work as a contribution to the development of a tool, "which will make the circulation of ideological and cultural knowledge accessible to analysis and will make the linguistic, material marks of this process visible."[29] Second, there is a value in finding a correlation between knowledge produced in different disciplines, on the one hand, and the different techniques used to produce knowledge, on the other. To describe such knowledge as "stating the obvious," might be more indicative of the narrow disciplinary arrogance of an academic, who believes that her specialist area, and her research techniques, are the only source of reliable knowledge. As Gerbig herself remarks, the elucidation of how knowledge gained in one field influences knowledge gained in another, can be important in challenging powerful discourses. Third, there is always the possibility, that empirical *correlation* work might produce results, which *do not correlate* with already known knowledge. If the empirical results from the linguistic plane do not "state the obvious," but, instead, run counter to accepted meanings circulating in the cultural plane, then both the linguistic community and the culture studies community have an interesting new challenge. For these reasons, therefore, there is value in making empirical analyses in the linguistic plane, to elucidate the ways in which this knowledge correlates with what we would expect, given our current interpretations of the cultural plane.

However, Gerbig tries to push her project beyond making comparisons in the linguistic plane. She uses statistical techniques for summarising and reporting on the spatial patterning of words around a selected word – a phenomenon known as collocation, which I discuss in greater detail later in section 3.3.8. With the results she obtains from the corpus, she claims to demonstrate what she refers to as different "conceptual fields that emerge around

[28] Ibid., 193. One difficulty, which I have with Gerbig, is that she makes less of a distinction between arrangements in wording and patterns of usage. This makes it more difficult to see what the evidence is, on which she bases her interpretations.
[29] Ibid., 209.

the word [Oo]zone."[30] I am not convinced that she is able to demonstrate that different discourse producers use the word [Oo]zone within different conceptual fields. My fundamental reservation is that her evidence is limited to patterns of *wording* around [Oo]zone and not patterns of *usage*. But there is no doubt that Gerbig's work has provided me with important ideas, which I have been able to develop in my attempts to make connections between the linguistic and cultural planes. Before examining the tools I have developed for analysing spatial patterning and then patterns of usage, I shall briefly remind the reader of the research questions, which I developed in chapter two. Tools are designed in order to do specific jobs, and it was my attempts to respond to these specific questions, which drove their development. The text in section 3.3.4 has been copied, almost verbatim, from section 2.6 on page 85.

3.3.4 The research questions

In section 2.2 (see chapter two), I developed two research questions which solely involve the comparison and interpretation of the linguistic discourse of the three players: (i) green business, (ii) the radical NGOs and (iii) the British government. First, can I find evidence that green business has, as Welford suggested, adopted the language of the radical environment debate? Second, when I compare the linguistic discourse of the radical NGOs and green business with that of the British government, do I find evidence that the government talks more about the things that green business talks about, or that it talks about the things that the radical NGOs talk about, i.e. is there any linguistic evidence that green business might in some way be 'winning' the environmental debate?

In section 2.4 of see chapter two, I discussed the appropriation claim, which attempts to provide useful knowledge about the institutional plane, on the basis of evidence from the linguistic plane. The desire to move between the two planes, requires me to make an acceptable case that there is a correlation, between the *usage* of a word and its *meaning*. The appropriation claim's research question asks if there is empirical evidence in the linguistic plane, which can demonstrate that the words common to an environmental vocabulary are used differently by the radical NGOs and green business. Assuming that I succeed in making a correlation between *usage* and *meaning*, and can also demonstrate differences in *usage*, then the evidence from the linguistic plane will suggest that the different cultural communities: green business and the radical NGOs, have different conceptualisations of the environmental

[30] Ibid., 109. Gerbig's notational convention with [Oo] indicates that she has searched for both the uppercase: "Ozone" and lower case: "ozone" forms.

vocabulary that they both use. With this appropriation claim in place, we move closer to delineating a link between comparative language usage in the linguistic plane and conceptual differences in 'culture'.

In section 2.5 of see chapter two, I developed my interpretation, in the cultural and institutional planes, of the incorporation claim. There are two specific research questions, to which I would like an empirical analysis in the linguistic plane, to make some response. First, what knowledge of the natural landscape is being selected by green business for inclusion in its discourse? Second, how is that knowledge incorporated, linguistically, within the traditional language of business?

3.3.5 Wordsmith Tools[31]

Having decided on the broad, corpus-linguistic approach, I needed to find a tool which would do these jobs. Essentially, it had to fulfil two functions. First, with the comparisons within the linguistic plane in mind, the tool needed to be able to *characterise* the discourse of a language community, so that I could use the characteristics to compare the different corpora. Second, with the focus on identifying differences in patterns of usage of words, the tool needed to be able to identify spatial patterns in the lexicogrammar, what I will be referring to as their *contextualisation*, and use these to generate corresponding examples of usage. Stig Johansson, my linguistics supervisor, advised me to try Wordsmith Tools, and I have not had cause to regret following his recommendation. Wordsmith has proven itself to be well suited to this sort of research work, for a number of reasons that I will examine in subsequent sections. Before doing this, however, I will advance three general advantages of Wordsmith, which would apply regardless of the functionality required.

First, the product is robust. This may seem an odd reason for me to have at the top of my list, but it comes from hard experience with software development. I have seen software products that scored high on functionality in their sales brochures, but which crashed on customers' computer systems far too often to compensate for the fancy tricks. From the experience of my pilot project, I found that Wordsmith was reliable; the occasions on which it locked, and had to be closed down and restarted, were few. Given that my Ph.D. project was dependent on its functioning reliably, this was a very important plus. Second, Wordsmith runs

[31] Oxford Wordsmith Tools is an integrated suite of programs for looking at how words behave in texts. It is sold by Oxford University Press from their website at http://www.oup.com/elt/catalogue/isbn/6890?cc=no. Its development continues under the control of the original owner and author, Dr. Mike Scott, of Liverpool University. He maintains a user website at http://www.liv.ac.uk/~ms2928/, where it is possible to find out more about the product and the different uses which linguists have made of it.

well on a modern PC. Although the university IT department discourages such local programmes and makes network versions available, I preferred to run all my reports with the single-user version of Wordsmith, and to store my electronic corpora on the C drive. I always maintained the original versions of the corpora on a server, and always made network back-ups of the Wordsmith-generated reports on the C drive. But local processing was a better solution for two reasons. The sizes of the corpora are several tens of megabytes, and transferring these across the network when running Wordsmith, slowed it down excessively. Moreover, as I report in section 6.3 on page 223, I needed to utilise an older version of Wordsmith, than the one which is made available on the faculty network.

My third reason for recommending Wordsmith is that Mike Scott has been willing and able to take emails regarding problems, and to fix them! I had cause to get in touch with him several times, and always found that his comments were prompt and helpful. When the results for one's Ph.D. project are dependent on getting a prompt solution to a small bug in the software, it is reassuring to know that the helpline really does help. These, then, are my general reasons for recommending Wordsmith. I shall now proceed to examine how well it fulfils the two key functions, of characterising discourse, and revealing patterns of contextualisation in the wording.

3.3.6 Characterising linguistic discourse – keywords

"What it is about?" is, perhaps, the most basic and most commonly asked question, which is ever made about a text, whatever the genre – book, newspaper article or report. It is a disarmingly simple question, but a moment's reflection is enough to realise that its answering invokes human processes of astonishing complexity. The reader constructs meanings out of the black squiggles on the page – the *signs* as I introduced the term, with its impoverished definition, in section 2.4 on page 60, and synthesises the different meanings into her own coherent conceptualisation of the text. In order to answer the question, she then reverses the process to create a representation, in language, of her experience of the original text. This small cameo illustrates my point, that the characterisation of the linguistic discourse of, say, green business is a very ambitious project. It is as well to concede this early, and to set the expectation level at a realistic level.

My corpora of text, in common with many other corpora produced this side of the millennium, run to millions of words. As I have already pointed out, the power of computing is the only practical technology for dealing with such volumes. My radical NGO corpus, for example, contains about 11.5 million words, corresponding to roughly 23,000 pages of text. It

is organised in 6,337 separate text files and takes up nearly 70 MB on the C drive. But Wordsmith will tear through the lot, and construct a report of the number of occurrences of every single word in the corpus, in just over two minutes flat. Fast it certainly is, but, as Mike Scott, its author constantly reminds us, "Wordsmith doesn't do *meaning*." Nor, I should add, does any other computer-based software programme. These quantitative tools of analysis are limited to showing us the spatial arrangements of *signs.* Although Wordsmith contains one programme called *Word*List [emphasis added], and another called Key*Words* [emphasis added], they would, in my terminology, be more accurately described as '*Sign*List' and 'Key*Signs'*. These are clumsy labels and I fully appreciate Scott's preference for his more user-friendly WordList and KeyWords. But the downside of accepting his naming convention is that we users of Wordsmith tend to make the unconscious assumption, that it is showing us reports of the occurrence and frequency of words *that have meanings*, when this is not the case.[32] If I am going to answer the question "What is the linguistic discourse of green business about?" even in a very modest way, I shall be obliged to make interpretive moves on Wordsmith's reports.

In sections 4.8.2 on page 161 and 4.8.3 on page 162, I describe the Wordsmith-based procedure, by which I was able to generate lists of the corpus-based keywords in the linguistic discourse of (i) green business, (ii) the radical NGOs and (iii) the British government. In order to produce lists that could be compared productively, the procedure is much more time consuming than the impression of a few minutes, which I created in the previous paragraph. But, conceptually, the notion of a corpus-based keyword is easily explained. The concept of the term *keyness,* as it is applied here, is exclusively statistical. This is not surprising, given the comments I have already made about Wordsmith's amazing speed in counting, but its inability to work with meaning. Wordsmith calculates the *keyness* of a word in the linguistic discourse of a particular group, by counting how often it appears in the group's texts, and comparing this frequency of occurrence with the same word's frequency of occurrence in another, benchmark corpus of texts.[33] *Keyness* in corpus linguistics, then, is always an

[32] Despite my insistence on the importance of thinking in terms of *signs* in connection with the use of Wordsmith, I have not been able to override my habitual tendency to think in terms of *words*. Neither may I rename Wordsmith's own terminology of *Word*list and Key*Words*. The result, in this Ph.D. thesis, is a rather unsatisfactory compromise, in which I continue with the usage of the term *word*, but express my dissatisfaction with it at regular intervals, often by placing it inside single quotes.

[33] Corpus linguists will realise from my description of the procedure that I have used a *corpus-based* approach to calculating keyness rather than a *file-based* approach and I refer the reader to footnote 42 for a description of the difference. I have favoured a corpus-based approach because there is a great deal of variation in the file size within each of the corpora, and this creates problems for the file-based approach to calculating keyness.

expression of a comparison of linguistic discourses.[34] Figure 3.7 below illustrates my overall design to achieve this comparison.

Figure 3.7 shows the three corpora of green business, the radical NGOs and the British government. In order for Wordsmith to draw my attention to the *keyness* in their respective linguistic discourses, it needs a benchmark corpus, against which to compare them. Given that the material in these three corpora is all written texts, and its participants are all from the UK, an appropriate benchmark would be the 'average' of what is written in British English. This is not, of course, available, but an electronic corpus of texts which aims to be representative of written, British English – the BNC – is available.[35]

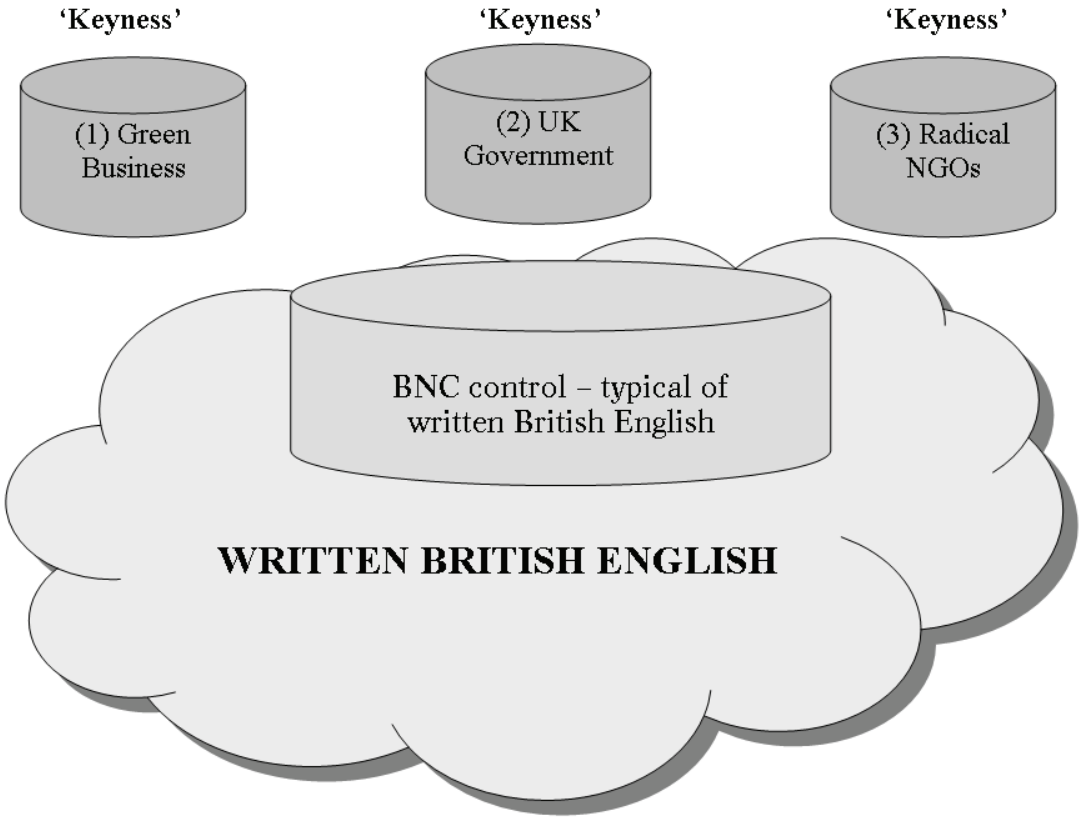

Figure 3.7: Schematic of the three test corpora and the BNC control corpus

[34] I realise that the notion of keyness does not need to be based on statistics. As I have already discussed in chapter two, in the cultural plane the issue of mankind's relationship to nature is very important and ought to have a high *keyness* factor. In the linguistic plane, however, words such as NATURE and THE NATURAL WORLD are very rare, i.e. their statistical *keyness* is very low. I discuss this issue further in section 3.4.3. Mike Scott provides a useful discussion of the concept of keyness, and also the difference between, what I have called, the corpus-based approach and the file-based approach, in his latest book. Mike Scott and Christopher Tribble, *Textual Patterns: Key words and corpus analysis in language and education*, (Amsterdam: John Benjamins Publishing Company, 2006). See chapter 4 "Key words and individual texts" and chapter 5 "Key words and genres."

[35] BNC stands for the British National Corpus. I describe this in some detail in section 4.4 of chapter four.

By comparing the wordlist of, say, the British government against the wordlist of the BNC, Wordsmith will produce a ranked listing of the keywords of the British government. The most often requested format, in which it presents this keyword listing, is in descending order of *keyness*. At the end of section 4.8.3, I present the top fifteen *statistically-calculated* keywords of the three players, for purposes of illustration.[36] Table 4.4 on page 164 is repeated below as table 3.1.

Table 3.1: The top fifteen edited one-word keywords for the three test corpora

The top 200 edited corpus-based keywords in the three corpora			
	Green Business	**The radical NGOs**	**UK Government**
1	ENVIRONMENTAL	COUNTRIES	EMISSIONS
2	BUSINESS	GM[37]	ENERGY
3	ENERGY	ENVIRONMENTAL	SUSTAINABLE
4	SUSTAINABLE	CLIMATE	ENVIRONMENTAL
5	EMISSIONS	WASTE	WASTE
6	EMPLOYEES	GLOBAL	GM
7	SAFETY	TRADE	ENVIRONMENT
8	MANAGEMENT	DEVELOPMENT	CARBON
9	WASTE	INTERNATIONAL	IMPACTS
10	PERFORMANCE	GOVERNMENT	DEVELOPMENT
11	ENVIRONMENT	ENVIRONMENT	CLIMATE
12	BIODIVERSITY	SUSTAINABLE	STRATEGY
13	COMPANIES	IMPACTS	CROPS
14	DEVELOPMENT	COMPANIES	BIODIVERSITY
15	GLOBAL	EMISSIONS	LANDFILL

As one runs one eye down the lists, automatically assigning meaning to the signs on the page, it is easy to recognise in the 'meaning' of such words as BUSINESS, ENERGY, EMISSIONS, CLIMATE, WASTE and ENVIRONMENT that these lists have been generated from a linguistic discourse, which represents the productive landscapes of business and the natural landscape around them. But the most important key word, in the linguistic discourse of green business, ENVIRONMENTAL, also serves to illustrate the limitation caused by the computer's inability to interpret meaning. This sign has an adjectival function in writing; it

[36] The top fifteen keywords are, of course, a very small fraction of the enormous quantity of information that Wordsmith generates from these corpora. A constant challenge in corpus linguistics is how to deal with the danger of information overload. One of my responses to this problem is to place all of my substantial reports in appendices and present just the discussion in the main report. For example, these keywords are extracted from tables D.1, D.2 and D.3 in appendix D. There, it is also possible to read the "keyness coefficient" that Wordsmith calculates for each of the words in the list, and which serves as its criterion for ranking them.

[37] The only 'word' in table 3.1 which might present an interpretive problem is GM. It is an acronym for Genetically Modified, and it functions syntactically as an adjective in such noun phrases as *GM food, GM crops* and *GM organisms*. Note that as well as ranking second in the keywords of the radical NGOs, it is also sixth in the UK government's corpus.

describes a noun, which is almost always placed immediately to its right, in the creation of two-word units of meaning such as *environmental performance*, *environmental damage* or *environmental risks*. If I am going to characterise the linguistic discourse, by providing some form of answer to the question "What is it about," it is, clearly, vitally important to know whether green business, say, writes mostly about its environmental *performance,* or the environmental *damage* which it causes.

My response to this problem, the procedure for which I describe in sections 4.10 on page 170 and 4.11 on page 172, is to intervene interpretively in Wordsmith's procedure for generating two-word, and three-word, keywords. I refer the reader to jump directly to these sections and read their few pages, in order to appreciate the tricky empirical challenges in the procedure. The process of drawing boundaries for units of meaning, for example, is not always straightforward. But by intervening interpretatively in Wordsmith's 'raw' lists, I can produce edited lists of key*words,* i.e. the statistically key two-word, and three-word, *units of meaning,* in the linguistic discourse of the three players. These objects of study are presented in tables D.1, D.2 and D.3 on pages 382, 386 and 390, and one minute spent scanning these lists of words will confirm that they just contain units of meaning, rather than a mixture of units of meaning and meaningless signs. However, in order to characterise and then compare these three lists of units of meaning, a further interpretive move is necessary. This is described in the next section.

3.3.7 Characterising linguistic discourse – semantic fields of coherence

In chapter five, I make my empirical response to the two research questions that are exclusively concerned, with making comparisons of discourse within the linguistic plane. Since both are answerable with the same empirical instrument – that of being able to make some useful characterisation of the linguistic discourse – mention of the first question will suffice here. Can I find evidence that green business has, as Welford suggested, adopted the language of the radical environmental debate? Tables D.1 and D.2 contain the statistically significant, top 200 one-word key'words', the top 100 two-word keywords and the top 50 three-word keywords, of green business and the radical NGOs respectively. The obvious first step in making my response to the question of language adoption, was to compare the two lists, to find out how many and what words they have in common. I describe this process in section 5.2.2 ("Keyword comparison") on page 185, and refer the reader to read its few pages. The results of the comparison of keywords show that there is some linguistic overlap between

the two discourses. This suggests that they do talk about some of the same issues. But my frustration, which I also describe in section 5.2.2, is that, *listed individually*, the keywords do not provide a useful characterisation of the different areas of subject matter, to which these keywords contribute their meanings. In order to see what the issues are, I really need to be able to see the semantic connections, which the writers made between the individual units of meaning, when they originally wrote their texts. These semantic connections existed once in their minds, and led them to make certain organisations of the wording rather than others. Although they are not visible from Wordsmith's current analysis of the spatial patterns of wording, it is not inconceivable that such patterns might be revealed by more advanced algorithms in its 'counting' routines. Wordsmith can show us, for example, that CARBON often pairs up with DIOXIDE and that GREENHOUSE and GAS are frequent partners. This spatial co-occurrence is, clearly, the result of the semantic process. In exactly the same way, but at a higher spatial order of magnitude, our intuition tells us that CARBON DIOXIDE is more likely to appear in the vicinity of GREENHOUSE GAS, than in the vicinity of CHILD LABOUR or HIV AIDS. The semantic process which lies behind the writing of all texts will lead to keywords 'clumping' together in such corpora as mine. However, these very broad spatial patterns in wording are not currently revealed by the technology.[38] In order to advance the process of characterising the discourse, the only option is to make my own interpretive semantic connections, between these individual units of meaning. This is a process which creates semantic fields of coherence.

The procedure in this interpretive technique is described in section 5.2.3 on page 188, and my results in sections 5.2.4 to 5.2.7 from page 189. The theory of semantic fields, also known as lexical fields, is well-known within linguistics. Semantic field theory views the vocabulary of a language as a system of interrelated networks of words, rather than considering it as a large box of independent items, which are connected together solely by syntax.[39] Thus the English language semantic field of family relationships would include

[38] Some evidence of the existence of this 'clumping' is already being advanced. In a discussion of semantic fields, Michael Stubbs illustrates with an example of the vocabulary for talking about horses, a subject on which he had conducted some empirical research using a 2-million-word corpus. The keyword HORSE appeared 230 times and for each of these occurrences he had examined the ten words that appeared on either side. From this pool of 4,600 (= 230 x 20) words he had extracted the vocabulary of 'horsy' words: "They include words for types and colours of horse, movements that horses make, equipment used with horses, people who deal with horses, along with phrases and idioms which contain the word *horse*." Michael Stubbs, *Words and Phrases: Corpus Studies of Lexical Semantics,* (Oxford: Blackwell, 2001), 35-36.

[39] For a useful introduction to semantic field theory see John Lyons, *Semantics: Volume I* (Cambridge University Press, 1979) 250-261. There is also a good short description under the heading of **Lexical field** in *The Encyclopedia of language and linguistics*, (Oxford: Pergamon Press, 1994). It uses the pioneering work of the German linguist Jost Trier to describe some of the theoretical issues that have arisen in its development.

words such as *father, daughter, wife, grandmother, uncle* etc. My method differs – and is unique, as far as I am aware – in that I have given the group of keywords, that have a semantic connection, a label which describes their semantic coherence.

The notion of *coherence* within a text is also well-recognised, by linguists, as a term for describing the connectivity of semantic content, within a text. Lyons describes coherence in the following way:

> In default of any contextual indication to the contrary, what is being said in any one text-unit is assumed to be relevant to what has just been said in the immediately preceding text-units.[40]

A very important difference, between the notion of coherence and a semantic field, as it is conceived in these theoretical treatments, and my application of a semantic field of coherence, is that I have used the technique on a whole corpus of texts, rather than the individual texts.[41] Although I can point to the fact that the corpora were designed and constructed with the overall semantic coherence of 'business in the biosphere', I have to concede that across the text boundaries, Lyons' requirement of relevance is not satisfied.

Having made my concessions, however, I will encourage the reader to examine the two-word and three-word units of meaning, shown in figure 5.4 on page 187, and to make her own assessment of semantic connections and possible semantic fields of coherence. I do not claim any sort of 'objectivity' about this process, but the views on the linguistic discourse which it creates, do provide useful knowledge, which should surely be the proof of the pudding. My goal is producing knowledge that gives useful *results* and, to do so, I am willing to push my claims past the threshold of what we can know with absolute certainty. The semantic fields of coherence that I interpret provide an interesting characterisation of the linguistic discourses, and a useful method of comparison.[42]

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[40] John Lyons, *Linguistic Semantics: An Introduction* (Cambridge University Press, 1995), 264.

[41] This distinction touches upon an interesting distinction between two types of keywords that Wordsmith is capable of generating. The procedures that I have used have always been based on what I might more accurately describe as *corpus-based* keywords. But Mike Scott has also programmed Wordsmith so that it will calculate what I prefer to call *file-based* keywords. In this latter procedure, Wordsmith will generate a list of the statistically significant keywords in each of the files that make up a corpus of texts. This provides a view of what Mike Scott calls the 'aboutness' of each of the files in the corpus. When all the files are relatively short and may be assumed to deal with one particular issue so that each file has one 'aboutness', the file-based keywords procedure provides a useful view. However, with the sort of mixed genre corpora that I created in which one file might be an order of magnitude larger than another and include ten different issues, the procedure is less useful.

[42] As the linguists use the terms interchangeably, I was in two minds whether to call them *lexical fields of coherence* or *semantic fields of coherence.* The former term would be more in keeping with the lexical terminology of Wordsmith, but I have made much of my distinction between a *sign* and a *word* and I think that *semantic field of coherence* draws attention to my personal, interpretive 'interference' in the process. *Lexical*

3.3.8 Corpus-level spatial contextualisation of key 'words' – collocation

In the introduction to section 3.3, I made it clear that I viewed the analysis of the linguistic plane as a two-stage process: first, Wordsmith would first reveal spatial patterns in the wording and, second, I would interpret Wordsmith's results, by looking for patterns in usage. I have just illustrated this two-stage approach in the process of *characterising* the discourse. First, Wordsmith generated key 'words' – really just key signs. Then I edited the 'raw' two-word and three-word listings down, in order to convert them into lists of two-word and three-word units of meaning. Wordsmith was able to show me the common units of meaning between the corpora, but I then needed to link them together into semantic fields of coherence.

Now I turn to the second of the functions which I sought to obtain from Wordsmith – that of *contextualisation* and the same two-stage process will be apparent. The reader will recall from section 3.3.5 that I sought this functional requirement of Wordsmith in order to provide an empirical response to the appropriation claim. I might summarise this as my belief that green business has adopted the words of the radical environment, and is using them in new ways which suit their particular experience. Wordsmith's inability to read meaning is no handicap at all since I am interested, in this first step, in its ability to reveal differences in the spatial patterns around *signs* in my non-Saussurian definition of the term. I shall call the spatial patterning by its corpus-linguistic name: *collocation*, and start from the Firthian view of semantics which underpins it, namely that "the complete meaning of a word is always contextual, and no study of meaning apart from a complete context can be taken seriously."[43] In this statement there is a type of symmetry in the two clauses. In the first, "complete meaning" is equated with "contextual" and, in the second, "meaning" is equated with "complete context." Firth's conception of context is clearly more comprehensive than an examination of the spatial patterns which occur around a word. Nonetheless, he makes great effect of his concept of collocation as the tendency of certain words to co-occur, in evaluating both poetry and prose.[44]

Firth's notion of collocation, as a guide to the interpretation of how words are understood and used, has become a central tool of analysis in corpus linguistics. The

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field of coherence might convey the impression that there was some inherent meaning in the words that caused them to congregate in such fields.

[43] J. R. Firth, "The Technique of Semantics" in *Papers in Linguistics: 1934 – 1951*, (London: Oxford University Press, 1957), 7.

[44] J. R. Firth, *Papers in Linguistics.* See, particularly chapter 15 "Modes of meaning", 190-215.

fundamental principle is that, by examining the words that appear in the immediate vicinity of the word, whose meaning we are interested in studying, we obtain an indication of how that word is used by the writer. It is most easily understood by the maxim "You can tell the meaning of a word by the company it keeps," and the procedure for calculating collocates of a particular word (known as the *node* word), is a sophisticated feature of Wordsmith. In section 6.2 on page 219, I present a summary of the procedure for generating a view of the comparative contextualisation of a *sign,* by its significant collocates. The details are provided in appendix G, most importantly section G.1.3 on page 439, in which I present the process I used, based on the calculation of the *specific mutual information,* between the node word and its collocate. I illustrate the procedure with the example of the sign BIODIVERSITY, using Wordsmith to generate its significant collocates in the corpus of the radical NGOs and of green business.[45] Then, in figure 6.2 on page 221, repeated below as figure 3.8, I present the result of the procedure.

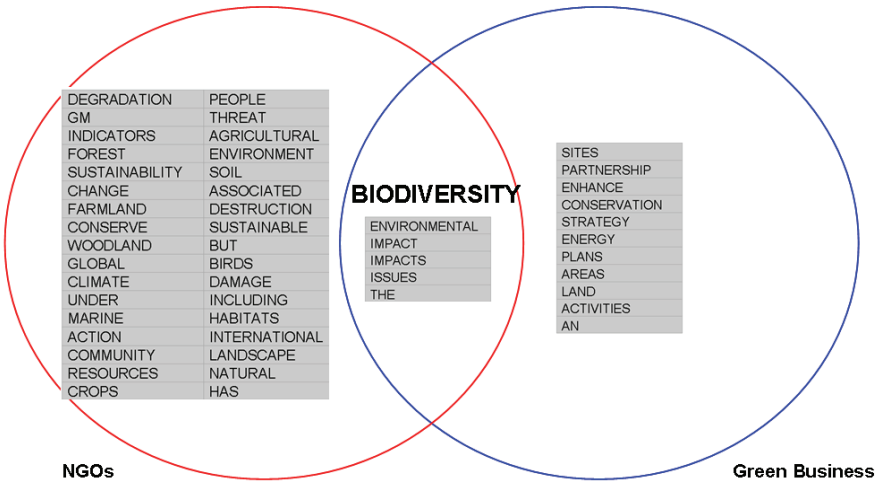

Figure 3.8: The comparative collocate contextualisation of BIODIVERSITY

Bearing in mind that the function of this first stage is to provide an *indication* of the possible variation in usage of a word by two discourse communities, the Venn diagram presentation has a number of advantages. First, by presenting information as a diagram rather than a table of words, there is less pressure on the eye and brain to engage with the individual

[45] For corpus linguist readers the following information, also presented in appendix G, may be of interest. The horizon I used for the collocational span was +/-5 from the node word, which is Wordsmith's default. This may be slightly generous. John Sinclair has, in an interview with Wolfgang Teubert, claimed that an earlier judgement was that +/-4 was most appropriate, but that it ought to be extended to +4 and -5; see Ramesh Krishnamurthy (ed.), *English Collocation Studies: The OSTI Report* (London: Continuum, 2004), xix. The MI was calculated using Wordsmith's algorithm (though see my notes from section 6.3 of chapter six on its reliability). I used a lower cut-off point for collocational significance of MI ≥ 3, which is also a recommendation in the Wordsmith user manual.

words in the lists. This makes it easier to keep one's focus on the overview of the corpora that is desired at this stage, as one searches for broad patterns in wording. Second, a comparison of the sizes of the left-hand and right-hand grey-shaded rectangles gives an *indication,* of which community is using the node-word in the most unusual ways. In this example, we can see that the radical NGOs have substantially more significant collocates clustered around BIODIVERSITY, than does green business. Third, a comparison of the central grey-shaded rectangle with the other two provides an *indication,* of the extent to which the two discourse communities share their striking contextualisation of BIODIVERSITY with each other. In section 6.3 on page 223, I provide a more wide-ranging discussion of the reliability of these Venn-diagram presentations of the spatial patterning around key'words', to which I refer the reader. There, I point out the difficulties. But here, I wish to emphasise the value of the Venn diagram as a tool for *indicating* possible differences in usage of the same *sign* by two different language communities. On the strength of the information provided by this view, it is possible to progress to stage two in the examination of contextualisation, by looking at particular examples of usage of the node word.

3.3.9 Patterns of usage – contextualised concordance reports

Using the Venn diagrams such as the one shown in figure 3.8 as my patterns of wording, I describe, in section 6.6 on page 239, a procedure for generating contextualised concordance reports for selected words.[46] These reports are the basis for my describing the patterns of usage of particular words by the two language communities. The term *concordance* refers to the occurrences of a word or phrase within a stretch of language-in-use. It is through the study of lists of such concordance lines, that we can make statements about the discourse semantics of the language. Wordsmith provides a sophisticated concordancing programme. The creation of a report providing twenty randomly-generated examples of how a *sign* such as BIODIVERSITY is used by green business, say, is a straightforward procedure. Normally, the researcher wishes to examine examples of the usage of a *sign* that are representative of the corpus as a whole. However, in order to make a response to the appropriation claim, my interest was to identify the *differences* in usage that the different groups made of the same *sign*. This requirement led me to the development of my procedure for *contextualised* concordance reports, which I describe in section 6.6. My purpose in creating two contextualised concordance reports, one for the radical NGOs and one for green business, was to have an object of study which would reveal most clearly the *divergences in usage,* which

[46] I refer the reader to jump straight to this section for my account of the procedure.

the two groups made of the same sign. In section 6.7 on page 242, I present a comparison of the way in which the *sign* RISK is used by green business and the radical NGOs, and illustrate my interpretation in figure 6.14 on page 255. In figure 3.9 below, I have rearranged the two concordance reports from figure 6.14, in my procedural schematic from figure 6.10 on page 241. Using figure 3.9, I can comment on the overall procedure going from patterns of wording to patterns of use.

Above the dotted line, the presentation of the information is the result of an entirely 'mechanistic' process, utilising Wordsmith's programmed algorithms and my procedural routines of data manipulation. At this stage, the Venn diagram product is merely showing us the evidence of differences in the spatial patterns of *signs* on pages; in this case those around a four-letter *sign* with the form RISK. The considerable size of the grey-shaded boxes in the left and right sides of the Venn diagram are an *indication,* from Wordsmith, that this *sign* may be used differently by the two different communities. So we instruct Wordsmith to generate a twenty-line contextualised concordance report for each community, which will be representative, not of the 'average' usage of the sign by each community, but rather of the usage of the sign which is most distinctive for that community.[47] These two concordance reports form the object of study for me to make a comparative interpretation, of the different ways in which the radical NGOs and green business make use of the *sign* RISK.

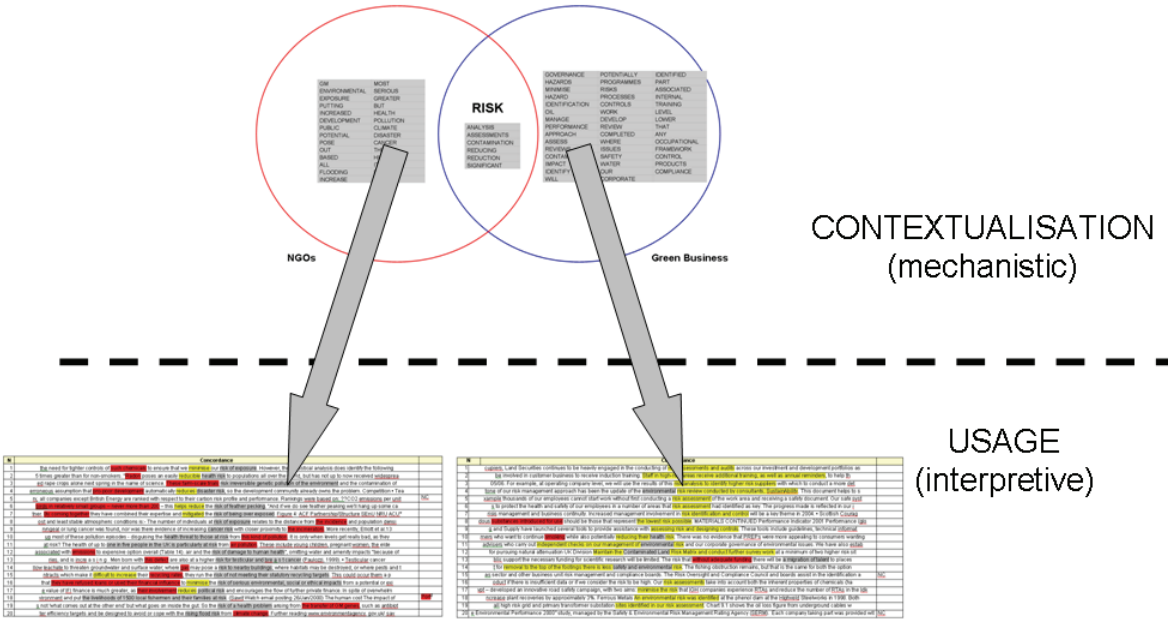

Figure 3.9: Patterns of wording to patterns of usage

[47] This is also a 'mechanistic' process, and I could have included the two concordance reports with no colour shading on them, placed above the dotted line. However, it would have resulted in a very crowded schematic, and I chose to jump over this stage.

3.3.10 Patterns of usage in the linguistic plane – summary

In section 3.3 I have, in two processes, made interpretations of the evidence from the lexicogrammar which has been supplied by Wordsmith. First, in constructing the semantic fields of coherence from the keywords, I have (i) made interpretive judgements of the intended meanings of the two-word and three-word *signs,* in the reports that Wordsmith has generated. Then I have made the interpretive assumption that, because they have similar semantic characteristics, I may connect them together in a field of coherent meaning which is of my construction. Second, in examining the concordance reports and describing the use to which a sign was being put, the description is, again, my interpretation. In my introduction to section 3.3, I presented figure 3.6, which I now repeat below as figure 3.10. I have made the speculative modification of including my two interpretive procedures within Halliday's stratum of discourse semantics.

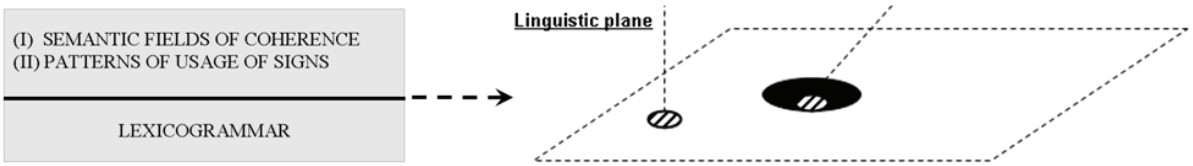

Figure 3.10: Patterns of usage in the linguistic plane

I can now paraphrase Halliday and argue that the "wording realizes patterns of another level higher than itself – but still within the system of language:"[48] the stratum of (I) SEMANTIC FIELDS OF COHERENCE and (II) PATTERNS OF USAGE OF SIGNS. I remind the reader that I interpreted Halliday's meaning of "within the language" in terms of *shared conventions of usage* within the language community. The case for the first – SEMANTIC FIELDS OF COHERENCE – is difficult. It contains two processes of personal interpretation of the lexicogrammar. As regards the first stage of interpretation, most native English speakers would probably concur with my selection and rejection procedure for units of meaning. So I may reasonably argue that these conventions of usage are shared by the language community, and might therefore be considered as 'encoded' in the lexicogrammar. But with the second procedure – the linking of units of meaning into semantic fields of coherence – there is a much harder case to make. In order to argue that these are realised by the wording and within the language, I would need to argue convincingly that most British English speakers, presented with these lists of two-word and three-word units of meanings, would choose to organise them into fields of coherence, in the same way that I have done.

[48] M. A. K. Halliday, *An Introduction to Functional Grammar*, 15.

The case for the second phenomenon – PATTERNS OF USAGE OF SIGNS – is more convincing. In chapter six, I shall show that the two different language communities display differences in the wording of their lexicogrammar, and that these indications lead us to being able to identify significant differences in their usage of *signs*. There is evidence of different conventions of usage for the signs that I have examined, so that, in Halliday's terminology, we would need to argue that, although the two groups both use British English to communicate, there are some differences in their respective discourse semantics. But in making the case that they use words differently because they must have different conceptions of *meaning*, I have jumped ahead of myself. The methodological challenge of relating usage to meaning is the subject of the next section.

3.4 The methodological challenge – usage and meaning

3.4.1 Introduction

In this section, I address the methodological challenge so that I may argue that the patterns of usage, which I identify in the linguistic plane, may be 'translated' into meanings, that is interpretations of the ways in which the two groups conceptualise the language of business in the environment. This 'move' between the linguistic and cultural planes, as I suggest in figure 3.11 below, will enable me to argue that I have empirical evidence which points to differences in meaning, and, further, that this knowledge makes a contribution to our understanding of the institutional culture of green business.

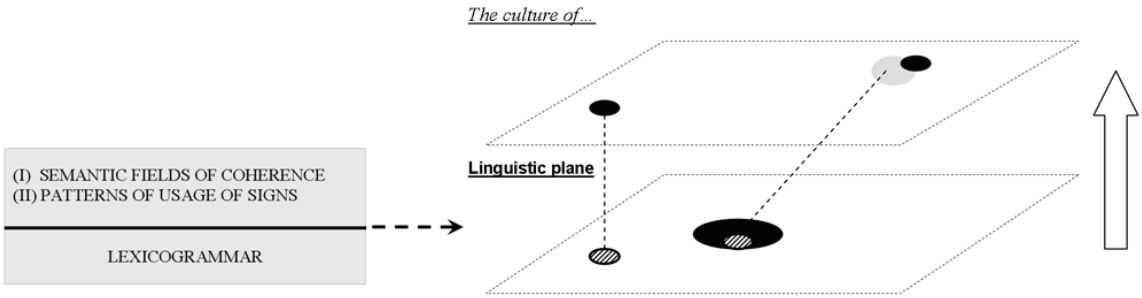

Figure 3.11: Patterns of usage in the linguistic plane to patterns of meaning in the cultural plane

I shall pre-empt a possible criticism from culture studies scholars by conceding, at the outset, that the knowledge which can be gained of such meanings, from the linguistic evidence, can only be partial. As I have already argued in section 3.2.4, the conceptualisations in the cultural plane are abstractions from textual representations of experience, and they are not necessarily even represented by the same linguistic terms as those that are used in the linguistic plane. Quentin Skinner illustrates this distinction in his criticism of a comment,

made by Raymond Williams, in the introduction to the first (1976) edition of *Keywords* (which the latter subsequently amended for his 1983 edition). He pointed out that Williams did not seem to see the difference, between a word and a concept:

> Suppose, for example, that I am studying John Milton's thought, and want to know whether Milton considered it important that a poet should display a high degree of originality. The answer seems to be that he felt it to be of the utmost importance. When he spoke of his own aspirations at the beginning of *Paradise Lost*, what he particularly emphasised was his decision to deal with 'things unattempted yet in prose or rhyme'. But I could never have arrived at this conclusion by way of examining Milton's use of the word *originality*. For, while the concept is central to his thought, the word did not enter the language until a century or more after his death.[49]

In this example, Skinner shows that the important concept in which the historian is interested may not even exist as a *sign* within the text.

An example from this project, which illustrates the problem, is the exploration of attitudes towards the natural world. In my interpretation of the cultural plane of green business in section 2.5 on page 64, I argued that the conceptualisation of the natural landscape is an important focus of research. I developed a view that I dubbed *the incorporation claim*, arguing that green business incorporates selected knowledge about nature into knowledge of its own productive landscapes. In my Wordsmith-based statistical analysis of the linguistic discourse, however, words such as NATURE or THE NATURAL WORLD do not rank as being very significant. On the basis solely of the linguistic plane, it is not possible to deduce that conceptualisations of nature are important in the interpretation of the culture of green business. In section 3.4.3, I shall return to the question of the limits to the possibilities for acquiring knowledge of meanings from the patterns of usage. But first I must relate usage to meaning.

3.4.2 The systematic usage of words in language communities

Since a natural object of study for corpus linguistics is the word, I shall begin at this level by noting the commonplace recognition that it is absurd to talk about 'the meaning of a word'. My point of reference is J. L. Austin's *Philosophical Papers*, but there are undoubtedly many other respected voices which have made the same observation.[50] Austin pointed out that "the sense in which a word or a phrase 'has a meaning' is derivative from the sense in which a sentence 'has a meaning'."[51] What we do, when we try to understand the meaning of a word,

[49] Quentin Skinner, *Visions of Politics: Volume I Regarding Method,* (Cambridge University Press, 2002), 159.
[50] J. L. Austin, *Philosophical Papers,* (Oxford University Press, 1970), 56.
[51] Ibid., 56.

is to study sentences in which it appears, to see how it is used. We cannot talk about the *meaning* of a word, but we can talk about the *usage* of a word.

Here we immediately see common ground, between Austin-the-philosopher's rational reflections over the relation between sign and what, on the basis of examples of usage, it appears to mean, and the corpus linguistic project to study language-in-use. Indeed, it appears that, having made his theoretical argument, Austin then developed an empirical procedure for studying language-in-use. In *The Linguistic Turn*, Richard Rorty's collection of essays exploring the increasing focus on language within philosophical enquiry, there is a very short contribution on Austin, by his colleague and posthumous co-editor of his papers, J. O. Urmson.[52] Rather than making some comments on Austin's published, and already widely discussed work, Urmson chooses to describe an apparently little-known "laboratory technique" which Austin had developed, for exploring the use of words within a language community. The aim of the technique that Austin developed and then practiced, often with Urmson as a member of the team, was "to give as full, clear, and accurate account as possible of the expressions (words, idioms, sentences, grammatical forms) of some language, or variety of language, common to those who are engaged in using the technique."[53]

Austin found that the technique was most effective if he could gather together a group of about a dozen colleagues, both because there was a good deal of work to be done, and because the team atmosphere would act as a corrective to any linguistic idiosyncrasies that a single member of the team might otherwise be tempted to impose on a colleague. Having chosen the area of discourse to be explored, stage one was the data-gathering exercise to "collect as completely as possible all the resources of the language, both idiom and vocabulary, in that area."[54] In stage two, the group had to employ the vocabulary that had been collected, in order to tell stories to each other and conduct dialogues so that "they give as clear and detailed examples as possible of circumstances under which this idiom is to be preferred to that, and that to this, and of where we should (do) use this term more than that."[55] The group was also encouraged by Austin to provide examples of *incorrect* usage of words. According to Urmson, this second stage was a time-consuming process requiring enormous effort over several sessions. But by the end of this, the group would have produced a considerable quantity of their own 'language in use'. Urmson observed that a group, "not just

[52] Richard Rorty (ed.), *The Linguistic Turn: Recent Essays in Philosophical Method*, (Chicago: University of Chicago Press, 1967), 232 – 238.
[53] Ibid., 233.
[54] Ibid.
[55] Ibid., 234.

a group of Oxford philosophers but, say, a mixed American and British group, can reach virtual unanimity" on these discussions of usage.[56] This comment led to much criticism of Austin's technique, but coming to his defence, Urmson argued that it was based on a misunderstanding:

> If Austin had therefore claimed that any group of, say, English speakers, however collected, would give unanimous reports on what they would say in various circumstances, his claim would obviously be false. But though not an unchanging monolith, language is not a Heraclitean river either, certainly not a set of private Heraclitean rivers […] What Austin essentially wished to claim was that it was not as a matter of fact difficult to collect a group together in which speech differences were of marginal importance [emphasis added].[57]

Once all their examples of language-in-use were collected, the group could then proceed to the third stage in which they would "attempt to give general accounts of the various expressions (words, sentences, grammatical forms) under consideration."[58]

As I read this short account, there crept into my mind an image of twelve Oxford philosophy dons sitting around in Austin's study, engaged in constructing a corpus of 'language-in-use,' which they then set about analysing. In the preceding sentence I have placed language-in-use in single quotation marks, in order to register the possible misgivings that a corpus linguist might register about the authenticity of the data. But setting aside this difference in setting up the object of study, the empirical similarities between Austin's approach and the practice of corpus linguistics are striking. What is also very interesting is the close agreement on *usage,* which Austin claimed that his group could achieve. This is echoed by the homogeneity in word and phrase *usage* by a language community that is reported by corpus linguistics. Its study of the lexicogrammar

> is leading to wholesale changes in the idiom of language description. In the relation of form and meaning, it became clear that in all cases so far examined, each meaning can be associated with a distinctive formal patterning. So regular is this that in due course we may see formal patterns being used overtly as criteria for analysing meaning.[59]

The case that I am making, using Austin's word game and corpus linguistics to justify my line of thought, is that, within a language community, there is a very high level of consistency among the members in the *usage* of words. The close correlation between form and meaning,

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[56] Ibid.
[57] Ibid., 237. This observation is also relevant in section 3.4.5, where I shall discuss the relationship between individual cognition, such as that occurring in the brains of the green business employees who draft the texts, and the meanings of institutions, such as green business whose experience of reality the texts are supposed to represent.
[58] Ibid., 234-235.
[59] John Sinclair, *Corpus, Concordance, Collocation*, (Oxford: OUP, 1991), 6.

which the corpus linguistics project is now demonstrating, is powerful evidence that each individual participating in a language community, chooses, for the most part unconsciously, to use the signs in the same way as do the other members of the language community. Clearly, there are good pragmatic reasons for doing so and I shall not dwell further on this issue. The extent of this systematic usage is such that we may reasonably talk of *conventions* of usage, and processes of *encoding* and *decoding* of meaning, as texts are written by one person and read by another member of the same language community.

The skills of coding and decoding are acquired by each individual through exposure to other users in the language community. There is no inherent code fixed in the language. Halliday's reference to the "discourse semantics of language" needs to be refined as "the discourse semantics of the language *as it is used by the particular language community*." And the logical consequence, of making this nuance, is that it is now perfectly possible for different language communities to develop different conventions of usage for a word, as a result of their particular ways of looking at the world or their particular experience of it.[60] Certain patterns of usage of words, in the linguistic discourse of green business, may differ from the patterns of usage of the same words, in the linguistic discourse of the radical NGOs or the UK government. Green business readers of a green business text will feel comfortable with the patterns of usage that they find in the lexicogrammar and, following their green business conventions of interpretation, they will create their green business meanings from the signs, just as the green business writer intended. The radical NGO reader of the same text will experience the green business conventions of usage as strange, and may not be able to construct the intended meaning. I explain this more fully in the next section.

3.4.3 The limitations of coding in the discourse semantics

At the close of section 3.4.1, I promised to return to the limitations on the retrieval of meaning, if one forsakes interpretation and relies exclusively on an analysis of wording. I have tried to illustrate the gap between the intended meaning of the writer and the constructed meaning of the reader, in figure 3.12 below. Column (1) "The writing process" represents the situation in the head of the writer of the text. The thick black vertical arrow is intended to

[60] In making this claim, I am saying something very similar to Michael Hoey in his recently presented theory of lexical priming: "Priming need not be a permanent feature of the word or word sequence; in principle, indeed, it never is. Every time we use a word, and every time we encounter it anew, the experience either reinforces the priming by confirming an existing association between the word and its co-texts and contexts, or it weakens the priming, if the encounter introduces the word in an unfamiliar context or co-text or if we have chosen in our own use of it to override its current priming." Michael Hoey, *Lexical Priming: a new theory of words and language*, (London: Routledge, 2005), 9.

represent all the meaning which the text writer would like to communicate to her readers. Unfortunately, this is unachievable, and in column (2) "The text," we find the result. The wording patterns in the language of the text encode meaning that is understood consistently by the members of the same language community. The thick black arrow of encoded meaning is shorter than the arrow of intended meaning in column one. The horizontal line, at the head of this arrow, represents the maximum potential for the encoding of meaning in the language, using the available conventions of usage, i.e. it is the upper boundary of Halliday's discourse semantics. The evidence from corpus linguistics, to which I referred in section 3.4.2, is that, at the level of single units of meaning, "each meaning can be associated with a distinctive formal patterning."[61] It is logical and reasonable to assume that the encoding capacity in the language of a community will start at the lower level of semantic conceptualisation with basic units of meaning, and then, dependent upon the level of its development within the user group, attempt progressively more complicated conceptualisations, as each of the members of the language community endeavours to communicate the progress of her thinking with her colleagues.

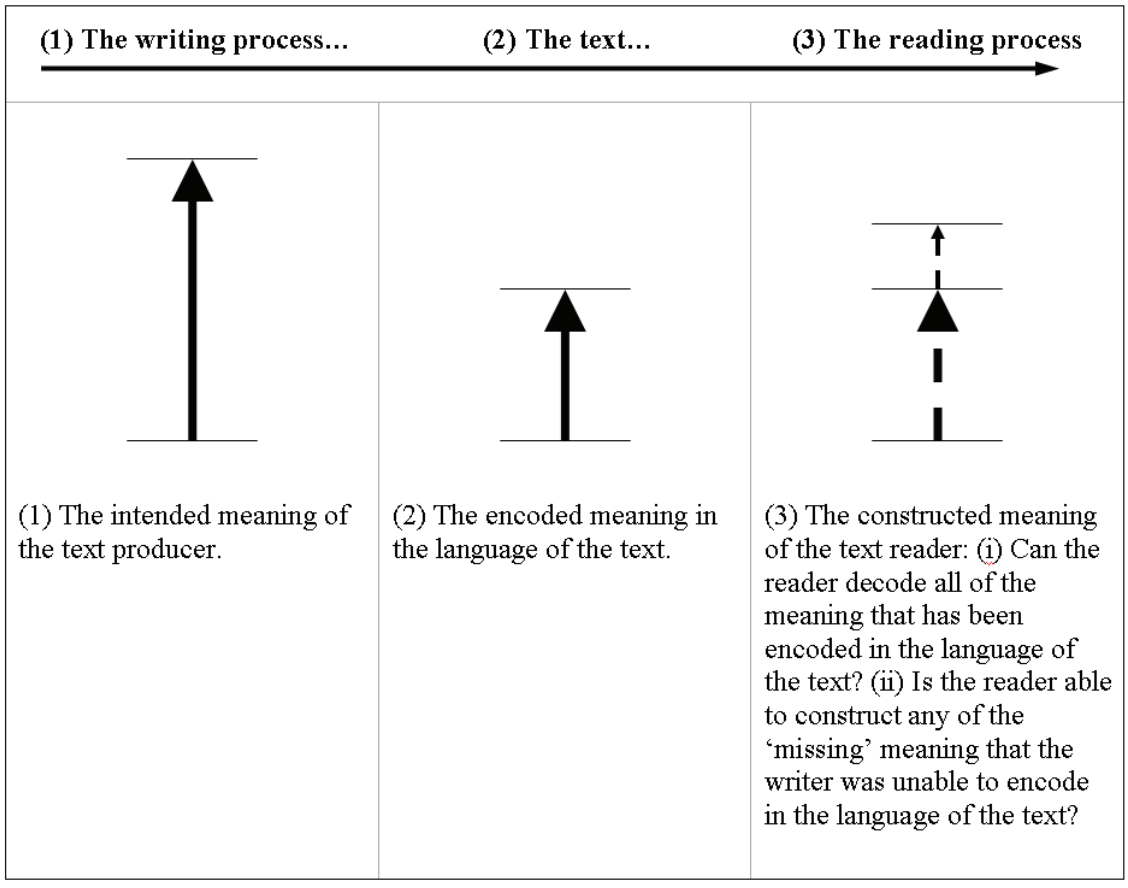


Figure 3.12: Encoding, decoding and interpretation of meaning

[61] John Sinclair, *Corpus, Concordance, Collocation*, 6.

Column (3) “The reading process” represents the situation in the head of the reader of the text. As I have drawn the illustration, we cannot be sure whether the reader is a member of the same language community as the writer. This is because the thick, black arrow is represented as being dashed. Welford could be used as an example of this situation. The text writer works in the public relations office of a green business and she has written a case study account of the corporation’s activity in and around one of its productive landscapes. Her text has gone through a thorough drafting process, in which it has been read by many other employees of the corporation and signed off for publication by senior management. The conventions of usage which apply to some of the *signs* are influenced by the ideas lens of the green corporation – its culture. Welford does not share the same lens as the employees of this green business, and neither, therefore, does he have quite the same conventions for the usage of language. As a consequence, he finds that some of the encoded meaning in the language of this green business text is problematic to decode. If, on the other hand, we had been certain that the reader was a member of the same green business language community then, according to my argument, she would have acquired all the ‘correct’ systematic conventions of usage for words that enable her reading process to be considered as a process of *decoding* the discourse semantics. She would be able to retrieve all of the meaning that was encoded in the language of the text. Reflecting this, the thick, black arrow would have been solid and not dashed.

The second, thinner dashed line represents the reader’s interpretive role, in constructing meaning that has not been encoded into the language of the text. Here, a host of exterior, but nonetheless vital, factors would influence the extent to which the reader could venture an interpretation of the writer’s intended meaning in column one. This second arrow and the feasibility of the project which it represents, namely the reconstruction of the author’s intended meaning, is a perennial debate within all disciplines that have texts as their object of study. The model I have now developed ought to be an acceptable compromise, for both researchers within culture studies and corpus linguists. Into the language of the texts there has been encoded *some* meaning and it might therefore be decoded, but there will always be a need for interpretation.

An obvious question to ask is where the upper boundary of Halliday’s discourse semantics lies along the vertical scale of meaning. Is the language of the community of users capable of encoding and decoding 90% of their meaning, 10% or something in between? I have no answer to this but would venture two observations. First, there is no copyright on the

'meaning' of words; the language of the community is owned by its users. As such, it undergoes a continuous process of development. It is not unreasonable to conjecture that the upper boundary of the language community's discourse semantics can, over time, be pushed upwards. Second, the current state of the art in corpus linguistics is capable of revealing patterns in wording at the level of words and multi-word units of meaning; but above this level in the semantic hierarchy, there is still plenty of need for interpretation.

3.4.4 Homogeneity and heterogeneity in the cultural plane?

In the previous two sections, my explanatory focus has narrowed from language communities down to a dozen dons in Oxford, and further, to the ways in which individual people, of which Welford was one example, encode and decode conventions of wording usage. I continue the trend, in this section, by temporarily exploding my two-plane schematic in order to examine the cognitive assumptions on which I must insist, in order for it to be internally coherent.

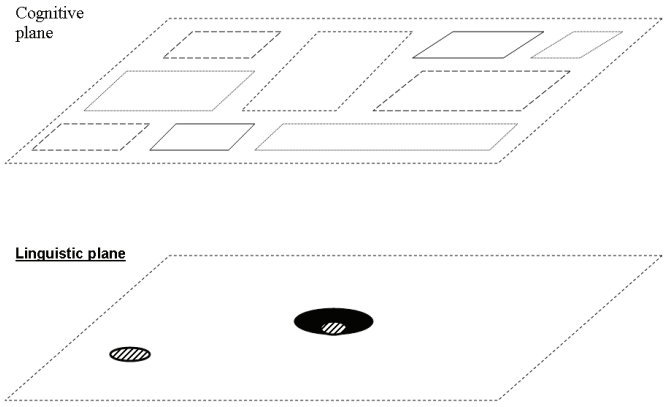


Figure 3.13: Individual cognitive differences influence wording in the linguistic plane

In figure 3.13 above, I have introduced a cognitive plane above the linguistic plane. The cognitive plane contains each of the mindsets of all the hundreds, perhaps thousands, of employees of the green corporations or the radical NGOs who were involved in the process of drafting the texts, which subsequently became a part of my object of study. The different shapes with their different line style borders within this plane are intended to illustrate the uniqueness of the cognitive 'profile' that each person possesses. Each individual, whether an employee of a green business or a radical NGO, has their own unique ideas lens, which will influence their conventions of usage of language. This is the messy reality of the object of study.

However, in my model of the institutional plane of culture, I wish to claim, using the evidence from corpus linguistics that, despite their cognitive individuality, there is a striking consistency in these individuals' usage of British English. All of my institutions are British, and are staffed, I assume, by native speakers, who are, for the most part, members of the educated British middle class. With this assumption, I can claim that the conventions of usage for written English, which these subjects who may well number in the thousands have all acquired, are fundamentally identical. In short, all of the language in the linguistic plane has one, homogenous, *basic* discourse semantics, which is to say that a significant degree of meaning is common to the two cultures.

In the model, I also argue that we will find patterns of thinking and assumptions about the world (on the cultural plane) that repeat themselves, from individual to individual, and institution to institution. I conceive of these patterns as contributions to Weber's "webs of significance" or Gene Wise's notion of the ideas lens that I introduced in chapter two. These are the ways of thinking with which we attempt to characterise culture. I argue, therefore, that we may postulate the existence of institutionally-based groups of people who share broadly similar patterns of thinking, of which the employees of the green corporations would be the best example. In terms of my model, I wish to argue that one cognitively-homogenous group of British English language users, containing perhaps several hundred individuals, has acquired certain conventions of usage for a small portion of its language, while another cognitively-homogenous group, also numbering several hundred individuals, has acquired other conventions. The differences, I argue, will arise from institutional influence and the effects, on each person, of being a member of a group, as well as the individual's own predisposition to see reality through the ideas lens of the institution. But ideally, i.e. to fit my model best, I would like the end result – the acquired conventions for the usage of certain signs in the English language, to be the same for all the individuals in the group. I have attempted to illustrate this in figure 3.14 below, in which the cognitive patterns of two different cultures are represented.

Figure 3.14 shows my standard two-plane schematic on the left, with an expanded version on the right, which takes account of the cognitive processes I am describing. If we examine the cognitive plane in this part of the schematic, there are six representatives of the culture of the radical NGOs, all of whom have the same cognitive pattern, illustrated by the stack of rectangular wafers. On the right side of the diagram, there are seven representatives of the culture of green business, whose cognitive patterns are also the same as each others'

but different from the first group. As I have drawn the schematic, there are no odd-shaped cognitive profiles in the two stacks. We may surmise, therefore, that all the individuals are loyal adherents to their respective institutional cultures.

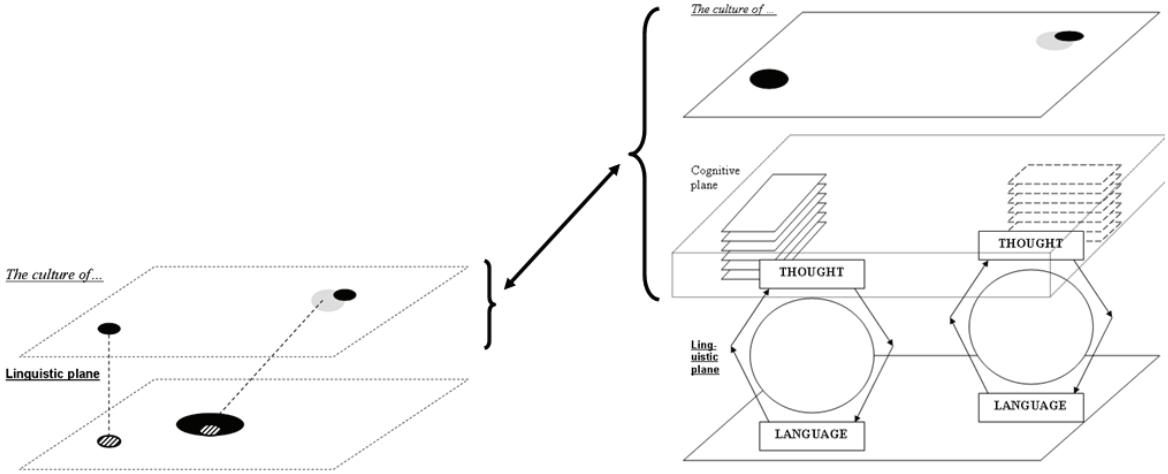


Figure 3.14: Institutional influences lead to homogeneity in 'cognitive patterns'

In reality, of course, the cognitive profiles are not all the same. They differ, too, from the institutional culture of the organisation to which they belong – organisational psychologists live very comfortably by investigating these differences. For my model to work, however, I must assume a basic cognitive homogeneity. As the individuals in my model take part in their respective linguistic discourses, each one is exposed to and acquires an understanding of, or perhaps it is more accurate to say *absorbs*, the conventions for usage of the *signs*, which they then replicate in a self-reinforcing circle of absorption and reproduction. This is illustrated, in figure 3.14, by the two circles and the arrows surrounding them, which link up THOUGHT in the cognitive plane and LANGUAGE in the linguistic plane in an endless cycle. In this way, differences in the usage of the same word *sign* can develop within these culturally-defined institutional groupings, although their basic discourse semantics of British English remains the same. In such a scenario, the plane of institutional culture can be brought down to encompass the cognitive plane. The assumption of cognitive homogeneity within the institution also means that my bracketing of the two planes on the right and their connection to the single plane on the left with the double-headed arrow, is valid.

According to my model, therefore, there are two culturally-determined groups of institutions which are labelled *the radical NGOs* and *green business*. Across both groups, all of the individuals who are involved in the process of publishing texts on the subject of business in the environment are educated, native speakers of British English. However, within

each of these two groups these same individuals have a cognitive profile – an ideas lens through which they see the world – that is identical to all the other members of the same group, and different from the profile in the other group. In the model, then, there are just two ideas lenses, and because I have insisted that everything else is the same, they are the only variables that can influence the language of the two groups; if I can identify a systematic difference in the usage of a *sign*, then I may conclude that it is the result of a systematic difference in meaning in the minds of the people, and that this corresponds, conveniently, to the 'culture' of the institutions which they represent. Like all models, mine is a considerable simplification on the Heraclitean river that is our reality. I can do no more than admit its shortcomings and ask to be judged on the usefulness of the empirical procedure and its results. In the next section, I discuss my technique for describing how a sign is used.

3.4.5 A pattern of systematic usage and a pattern of meaning

In figure 3.9, I presented a schematic showing the process of moving from a Wordsmith-generated picture of contextualisation, to Wordsmith's generation of contextualised concordance lines. From these, I suggested, it would be possible to make an interpretive assessment of the usage of the same sign by the two language communities.

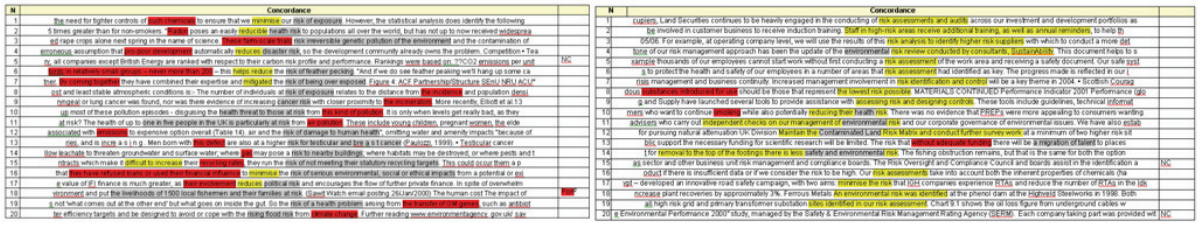


Figure 3.15: The usage of RISK – radical NGOs on the left and green business on the right

Figure 3.15 above, contains the lower section of figure 3.9, showing two twenty-line concordance reports for the *sign* RISK. Although the scale is too small for the lines to be legible, the reader will have noticed my colouring, which I did not comment on in my description of figure 3.9, but which I shall explain now. This example will illustrate my empirical approach, conducted in chapters six and seven, to describing the usage of a selection of *signs*. As a prelude to the explanation, I remind the reader from what body of material the lines of text, which I examine in these concordance reports, are extracted. It consists of representations of the natural landscape, of the productive landscapes of green business, and most importantly, of the interaction between the two. I summarised this pictorially in figure 3.4, repeated below as figure 3.16.

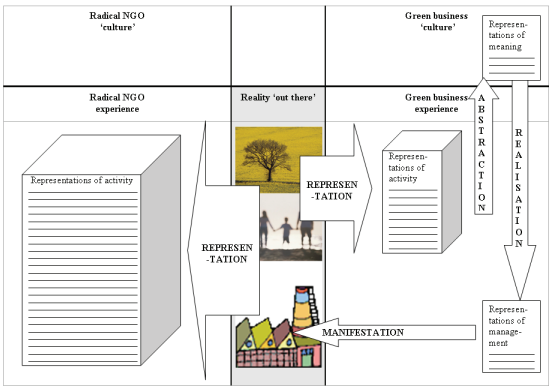


Figure 3.16: Different representations of the experience of reality 'out there'

Even though the object of study is enormous, and even though it contains representations of thousands of landscapes, natural and productive, it is not so very complex. There are material processes, in which some*thing* – my practice has been to use the label *agent* – is the cause of a process that has an effect on some other thing, which I call the *recipient*.[62] There are also mental/relational processes in which the text producers evaluate some aspect of the landscapes, for example, in expressing judgements on some situation, real or imagined. In examining the concordance lines of text around a particular *sign*, my approach to describing its usage has been to look for the agents and the recipients of the processes, and the writers' evaluations, which are often judgements of the possible risk.[63] For example, as the typical green business looks through its ideas lens at reality 'out there', what does it see and in what sort of language does it represent what it sees? What agent causes the damage and what recipient suffers the consequences? How serious is the threat posed by the emissions? How are they being dealt with? Etc.

The practice I have developed has been to background shade portions of the text, according to the different roles which they fulfil within the overall representation. For example, in the two reports for RISK shown in figure 3.15, I have made use of three colours. The red shading highlights what agent the text producer thinks is causing the RISK. The grey shading highlights what the text producer considers to be the consequences of that RISK materialising. Finally, the yellow shading highlights the possible ways of managing the RISK,

[62] Systemic functional linguists will wonder why, having used Halliday's term of *material processes*, I have not followed through on his terminology with *Actor* and *Goal*. My reason is that while *Actor* would work just as well as *Agent*, *Goal* is not an appropriate label for the poisonous by-products of productive landscapes. *Victim* and *Sufferer* were two other candidates, but I think *Recipient* is a neutral compromise.

[63] My experience of reading assessments of risk is that it is usually represented by one evaluation, but is based, in reality, on two factors. First, there is the issue of probability and, second, there is the seriousness of the consequences. This distinction is rarely made explicitly in the texts. Usually, the level of risk is represented in a single formulation without an explanation of how it has been assessed.

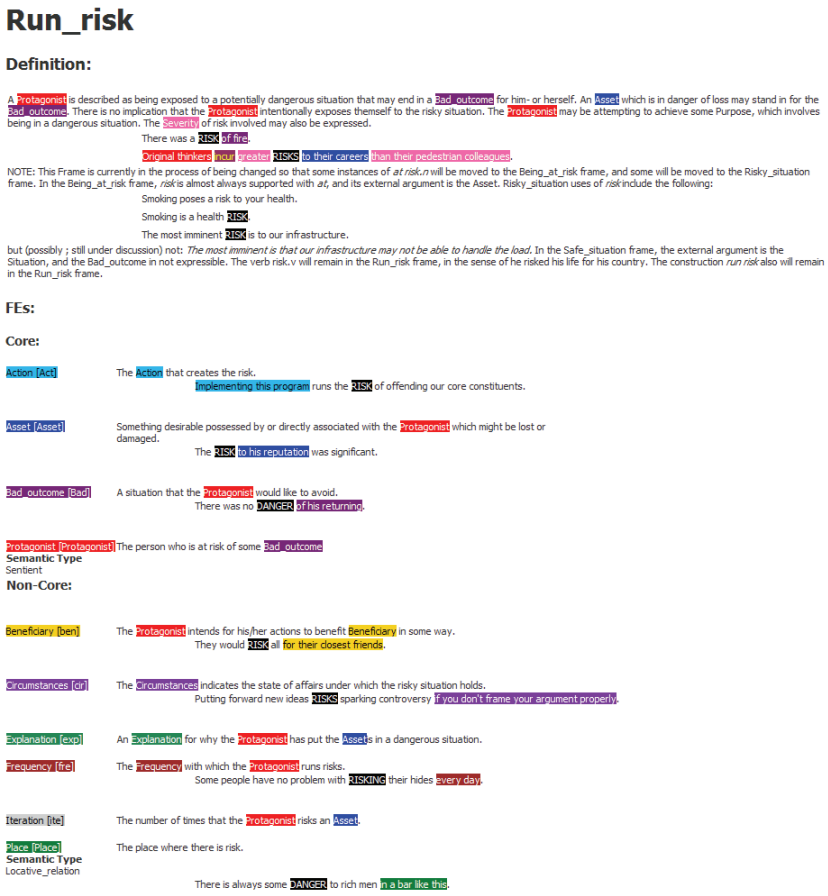
in order to reduce either the likelihood of it happening or the consequences should it do so. The scale is too small to read (the full-page tables are H.25 and H.26 on pages 498 and 499), but the colours reveal a pattern which is so strong that I might fairly call it *systematic usage*. In the radical NGOs' report, on the left hand side, we can see the red shading which highlights the agents responsible for RISK and plenty of grey, highlighting the consequences for the natural landscape. On the right hand side, in the report from green business, we can see that there is relatively little red shading, which would highlight the agents responsible for the RISK, or of the grey shading, which would highlight the consequences. But the relative paucity of agents and consequences, in the green business report, is more than compensated for, by the pervasive yellow shading of managing the RISK.

The classifications are my own invention, but the technique is inspired by Charles Fillmore's theory of frame semantics, and particularly by his current project: Frame Net. The project uses the BNC as a source of language-in-use and its ambition is nothing less than the documentation of

> the range of semantic and syntactic combinatory possibilities [.] of each word in each of its senses […] The lexical database currently contains more than 10,000 lexical units [.] more than 6,100 of which are fully annotated, in more than 825 semantic frames, exemplified in more than 135,000 annotated sentences."[64]

In order to illustrate how Fillmore's frame semantics theory models the semantic 'behavioural possibilities' of a word, I have accessed the Frame Net lexical database, referred to in the introductory quote above, and searched for its models of RISK. The database enables the user to search for a word through an alphabetical listing akin to using a dictionary. However, in contrast to most standard dictionaries, there are six separate entries for the *sign* RISK, reflecting Frame Net's classification into four distinct meanings of the *sign* as a noun, and two when it is used as a verb. I selected one of them, choosing the sense which I felt was closest to the one used most often in my corpora – that of running a risk. As the introduction states, Frame Net's goal is, amongst other things, to document the *range* of semantic *possibilities*. In other words, its model, of how this sense of the word can be used, ought to cover all possible instances. In contrast, I have had the much easier job of starting from a relatively small set of usages: my twenty-line reports, and looking for the major trends in the usage of the sign. Figure 3.17 below, is a screen dump from the Frame Net lexical database. This entry describes the semantic behaviour of RISK when used in the sense of running a risk.

[64] Frame Net, *Welcome to FrameNet*, http://framenet.icsi.berkeley.edu/index.php?option=com_frontpage&Itemid=1, (accessed 4th February 2008).



Run_risk

Definition:

A Protagonist is described as being exposed to a potentially dangerous situation that may end in a Bad_outcome for him- or herself. An Asset which is in danger of loss may stand in for the Bad_outcome. There is no implication that the Protagonist intentionally exposes themself to the risky situation. The Protagonist may be attempting to achieve some Purpose, which involves being in a dangerous situation. The Severity of risk involved may also be expressed.

There was a RISK of fire.

Original thinkers incur greater RISKS to their careers than their pedestrian colleagues.

NOTE: This Frame is currently in the process of being changed so that some instances of *at risk.n* will be moved to the Being_at_risk frame, and some will be moved to the Risky_situation frame. In the Being_at_risk frame, *risk* is almost always supported with *at*, and its external argument is the Asset. Risky_situation uses of *risk* include the following:

Smoking poses a risk to your health.

Smoking is a health RISK.

The most imminent RISK is to our infrastructure.

but (possibly ; still under discussion) not: *The most imminent is that our infrastructure may not be able to handle the load.* In the Safe_situation frame, the external argument is the Situation, and the Bad_outcome in not expressible. The verb risk.v will remain in the Run_risk frame, in the sense of he risked his life for his country. The construction *run risk* also will remain in the Run_risk frame.

FEs:

Core:

Action [Act] — The Action that creates the risk.
Implementing this program runs the RISK of offending our core constituents.

Asset [Asset] — Something desirable possessed by or directly associated with the Protagonist which might be lost or damaged.
The RISK to his reputation was significant.

Bad_outcome [Bad] — A situation that the Protagonist would like to avoid.
There was no DANGER of his returning.

Protagonist [Protagonist] — The person who is at risk of some Bad_outcome.
Semantic Type
Sentient

Non-Core:

Beneficiary [ben] — The Protagonist intends for his/her actions to benefit Beneficiary in some way.
They would RISK all for their closest friends.

Circumstances [cir] — The Circumstances indicates the state of affairs under which the risky situation holds.
Putting forward new ideas RISKS sparking controversy if you don't frame your argument properly.

Explanation [exp] — An Explanation for why the Protagonist has put the Asset in a dangerous situation.

Frequency [fre] — The Frequency with which the Protagonist runs risks.
Some people have no problem with RISKING their hides every day.

Iteration [ite] — The number of times that the Protagonist risks an Asset.

Place [Place] — The place where there is risk.
Semantic Type
Locative_relation
There is always some DANGER to rich men in a bar like this.

Figure 3.17: Frame Net description of the semantic behaviour of RISK[65]

I do not have the space to give a comprehensive description of all the detail that the Frame Net researchers provide on this page, but the similarity of the colour coding technique will immediately strike the reader. First, there is a definition in which the circumstances in which RISK is used are described. For example, the first sentence of the definition states that "[a] Protagonist is described as being exposed to a potentially dangerous situation that may end in a Bad_outcome for him- or herself." Underneath the definition, the short heading "FEs" stands for "Frame Elements." The elements are part of the Frame Net-determined taxonomy of the real world 'out there', all of which might be represented when RISK is used in this sense. Considered as a collection, they make up the "Frame" within which RISK is used. For example, the first of the core elements in the frame is "Action [Act]", and it is defined as "The Action that creates the risk." The list of elements continues with "the Asset," which may be damaged, "the Bad Outcome," which is to be avoided, and "the Protagonist," who is at risk. These four items are considered to be the core elements in the semantic frame

[65] Frame Net, *Frame Report (recent data)*, http://framenet.icsi.berkeley.edu/index.php?option=com_wrapper&Itemid=118&frame=Run_risk&, (accessed 4th February 2008).

within which RISK is used. But FrameNet then continues, with a longer list of other, "None-core" elements that might possibly occur within the semantic frame: "the Circumstances," "the Place," "the Frequency," etc.

Given time, it would have been very interesting for me to immerse myself in the theory of frame semantics, learn its taxonomy and apply it to my object of study. But time is always in short supply, and I am not convinced that the payoff, from the much more sophisticated Frame Net model, would have merited the effort. As I have already pointed out, Frame Net's ambition has been to give a semantic account of *all the possible usages* of the sign that can be found in the BNC. But I have started with my comparison of two reports, each containing just twenty instances of usage, and my purpose has been to identify, within this limited object of study, the significant systematic usages. The few semantic elements which I have used – agent, recipient, consequence, threat – have been sufficient to pick out the major tendencies in usage. In line after line, one can see the same sort of usage of the sign and, following the Austin-inspired equation of usage with meaning, make interpretive observations of how the two groups conceptualise reality.

3.4.6 A pattern in the systematic usage

I have, then, a sound technique for comparing the way in which the two players use a *sign*. Referring back to Stubbs, my colour-shaded concordance reports reveal "discourse patterns [that] tell us which meanings are repeatedly expressed in a discourse community."[66] However, in the penultimate sentence of the methodological challenge, Stubbs makes a second claim to the effect that patterns in the usage of words "embody particular social values and views of the world." Whereas my paired concordance reports merely aim to reveal conceptualisation differences at the level of a single *sign*, the implications of this second claim are much more ambitious. I read Stubbs' claim as a conviction that it might be possible to identify patterns in the distinctive conceptualisations of a sufficient number of related *signs*, such that one could plausibly claim that this regular patterning was evidence of some particular "social value" or "view of the world."

I have tried to illustrate these two claims from Stubbs in figure 3.18 below. His more modest claim is represented by the "systematic usage of *sign* X" where, in the diagram below, I have represented five individual *signs*, each in its own box with a plain, white background. Here, the objective is to make statements about the probable conceptualisation of an

[66] Michael Stubbs, *Text and Corpus Analysis*, 158.

individual *sign*. Stubbs' more ambitious claim is represented by the entire illustration. Through studying the systematic usage of a group of signs, it is possible to identify a pattern, which I have illustrated with the arrows pointing to the box with a grey background. Following Stubbs, I will argue that this 'pattern in the patterning' is illustrative of the way in which the language community "views" some aspect of the world or some "social value" that it holds.

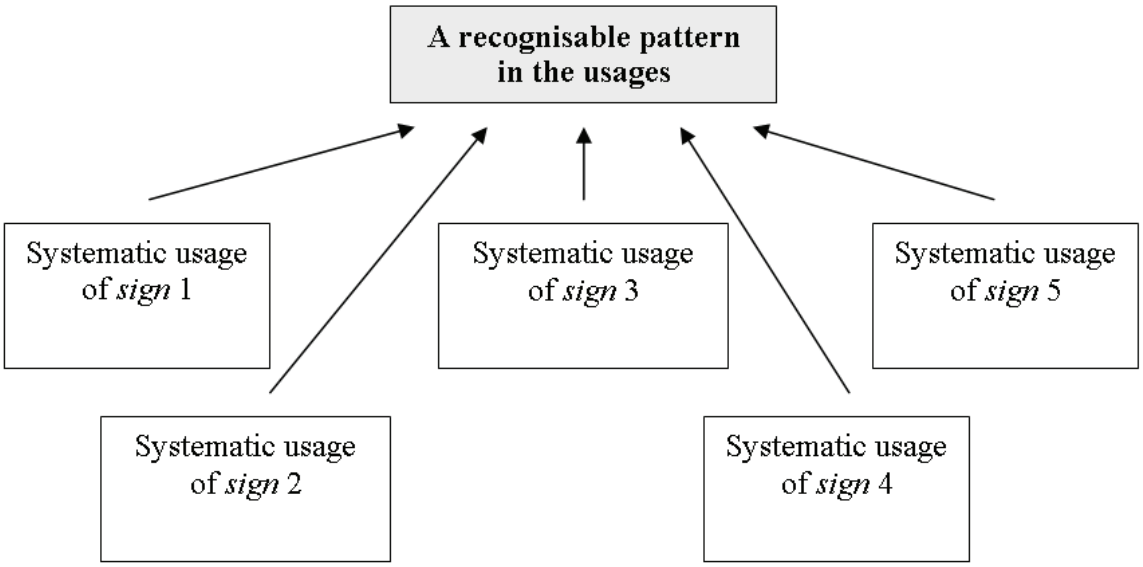


Figure 3.18: Patterns in the usage of words embody particular social values and views of the world

The difficulty, however, with grouping together a collection of *signs*, is the same as the challenge I faced in trying to characterise the corpus, on the basis of a list of keywords: the lack of a systematic correspondence between keywords and meaning. My response to this, which I presented in section 3.3.7, was to make interpretive links of meaning between the keywords, and thereby set up what I called *semantic fields of coherence*. I have also used this approach in trying to substantiate the suggestion made by the grey box in figure 3.18. In section 6.7 on page 242, I collect together fifteen different *signs* under the heading of *the semantic field of concern*. My interpretation describes how green business has responded, conceptually, to this important NGO-inspired field of meaning. Similarly, in chapter seven, I have sought empirical evidence to respond to the claim that green business incorporates knowledge of the natural landscape within its discourse of management. In section 7.5 on page 286, I present the *signs* that green business uses in what I call *the semantic field of the socially-constructed natural landscape*. I then show how these are used in systematic ways within green business's *semantic field of management*. As I stated in section 3.3.7, these semantic fields are my interpretive creations.

3.5 Theory and method - summary

It is appropriate that I should return, at the close of this chapter, to the unavoidable and vital role of interpretation. In my project I have been able to 'push' corpus linguistics further than I am aware it has been pushed before, in making a contribution to our understanding of meanings within cultural groups. In chapter six, I shall demonstrate that there are consistent systematic usages of *signs* in the linguistic plane, which confirm knowledge about the cultural plane. Conversely, in chapter seven I respond to the incorporation claim (which I developed in the cultural plane), with empirical evidence from the linguistic plane that substantiates it. As I have illustrated with the double-headed arrow in figure 3.19 below, movement in both directions is possible. But it cannot be done without the vital, *interpretive* role of the researcher in both planes.

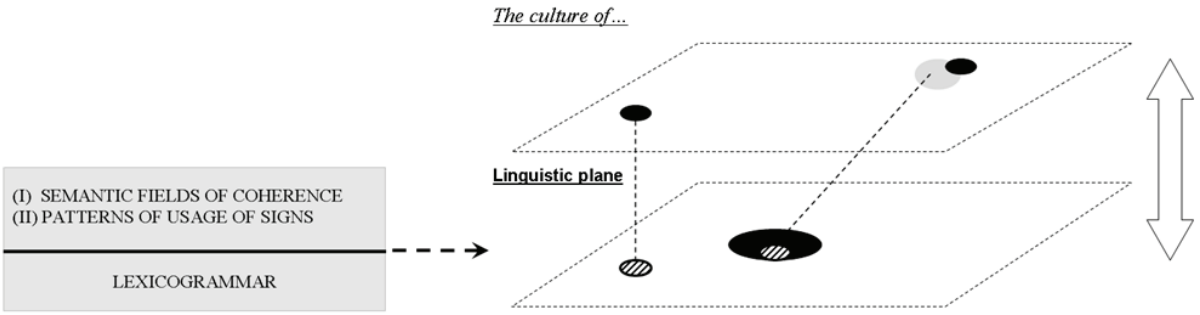


Figure 3.19: Interpretive movement between the two planes

In chapters one and two, I have set up the research questions which require this movement. In this chapter, I have presented the coherence in my conceptual model, as well as its strengths and weaknesses when compared against the empirical realities with which I have worked. In chapter four, I shall describe my project to build the object of study in the linguistic plane. Then, in chapters five, six and seven, I present my empirical responses to the research questions, before summarising the project in chapter eight.

4 Designing, building and preparing the corpora for discourse comparison

4.1 Introduction

The results from my empirical analysis of the linguistic discourse are presented in chapters five, six and seven. In chapter four, I describe the method by which I created the linguistic objects of study and prepared them for analysis. It has three major sections which reflect the chronology of the procedure: design, construction and final preparation for analysis. The starting point in the design process for any product must be an examination of the intended function for which the product will be used. I return, therefore, to section 2.6 with which I closed chapter two, and the conceptual model and research questions which I presented in summary form. Figure 2.20 on page 85, which is presented in that section, is repeated below as figure 4.1.

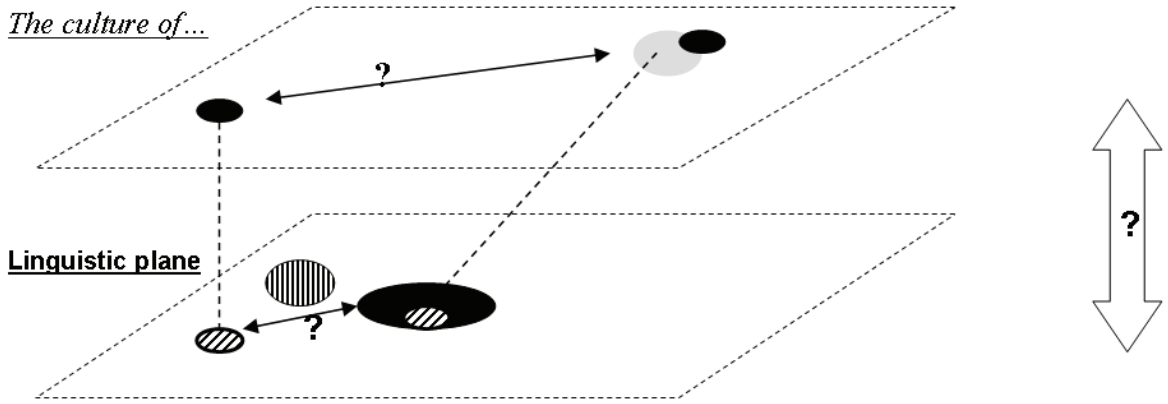


Figure 4.1: The two-plane conceptual model

If we first confine our attention to the linguistic plane, there are three players whose discourse we are interested in identifying for purposes of comparison: (i) British green business, (ii) the radical NGOs and (iii) the British government. First, I we find evidence that green business has, as Welford has suggested, adopted the language of the radical environmental debate? Second, when I compare the linguistic discourse of the radical NGOs and green business, with that of the British government, do I find evidence that the government talks more about the issues that green business talks about than it talks about the issues that the radical NGOs talk about, i.e. is there any linguistic evidence that green business might, in some way, be 'winning' the environmental debate?

Clearly, the empirical task had to begin with the design of three 'databases of text' or *corpora*. The text samples that each corpus contained had to be representative of the

institutional players, e.g. the texts in the radical NGO corpus had to have been produced by organisations all of which, I could plausibly argue, were radical NGOs operating in Britain. However, although the texts had to be representative, there was also a need for the three corpora to be capable of useful comparison. If all the texts which I selected for each player were so esoteric as to be unique to that player, then my comparison of the three corpora would simply reveal the obvious: that they had nothing in common whatsoever. Such an empirical discovery would present a serious problem for the rest of the empirical work. The reason is that the testing of both the appropriation claim, which I presented in section 2.4, and the incorporation claim, which I discussed in section 2.5, rest on an assumption that there is *some* common language between the corpora. A further design consideration with reference to figure 4.1, is illustrated by the vertical dotted line going from the linguistic discourse of the radical NGOs up to the cultural plane, and the diagonal dotted line from the linguistic discourse of green business up to its cultural equivalent – the grey shaded spot. For these two corpora, it was necessary to consider the extent to which the selected institutional representatives might plausibly be considered to be representatives of a common institutional culture, as the upper plane of figure 4.1 suggests.

A further design consideration was the question of the size of the corpora. The pilot project that I carried out in the preparation of the main project, demonstrated the feasibility that one could use corpus linguistic techniques to explore the usage and, on the basis of my discussions in chapter three, therefore, the meaning, of particular word *signs*. But it also underlined the importance of having very large volumes of electronic text, on which to base such work. In the pilot project the three corpora were each no more than 40,000 words in size. In such small corpora, the frequency of keywords that were common to each of the three corpora was no more than 30 to 40 instances. This number was nowhere near enough to compare spatial patterns in the wording around the occurrences. In the project proper, the design procedure had to ensure that corpora of over one million words could be built. To build corpora of this size it was necessary to choose from among texts which were available in electronic form.

Having sketched out the major design challenges, I now proceed to a more detailed discussion of several issues, with which I had to deal, as I got down to the nitty-gritty empirical work of examining Internet websites, the texts on these sites, and the question of whether or not I should download them into my corpora.

4.2 General issues in the design of the corpora

4.2.1 Indiscriminate building or pre-defined selection

There are two approaches one can take in downloading material. One can simply announce in advance the intention to download 'everything' so as to avoid the accusation of having been selective in order to produce better results. Alternatively, one can announce in advance of the process, what criteria one intends to use to decide what should be included and what should be excluded. The first option was not practical for my project. The websites of the green businesses are much too large and contain enormous amounts of financial and other business-related information which was of no interest. The same general comment applies to the radical NGOs and the government websites. So the only realistic option was to determine, in advance, what the appropriate criteria should be.

4.2.2 Representativeness versus comparability

In designing corpora for the purposes of comparison, there are two mutually-exclusive design objectives which must be reconciled as best one can. On the one hand, it is important that each corpus of linguistic discourse is *representative* of the organisations which have provided the material. On the other hand, one wants to be able to *compare* the linguistic discourses of the different corpora, with a view to saying something interesting about them.[1] If the agents who have produced the discourse have very different representations of experience, then one runs the risk of merely demonstrating that different people talk about different things. Of the top 200 keywords in the pilot project, only about 30 to 40 words were common to all three lists.[2] It was desirable to increase that number to reflect a greater degree of consistency across the three corpora. If that goal were achieved, any differences that were found between the corpora would have a greater significance. However, in pursuit of the goal of achieving a higher consistency of keywords between the two corpora, I would run the risk of excluding exactly those aspects of the radical environment debate, to which Welford refers in the hijack hypothesis. If the linguistic discourse boundary were to be drawn using one particular agent,

[1] This is a well-known dilemma in comparative corpus linguistics. The International Corpus of English (ICE) project had to deal with this problem in its compilation of different corpora of English, each one representing the version of English written and spoken in a particular area of the world. In the ICE project, the decision taken was to limit the representativeness of each corpus, in order to achieve greater comparability. "A corpus dealing exclusively with British English, for example, might include many more text types than are presented in ICE. We might wish to include electronic mail messages, faxes, and answer-phone messages, for example, in order to give a more complete view of British English in use in the 1990s. However, these text types are not available in all the ICE countries, and indeed still have restricted use even in Britain. For these reasons, they have been excluded from the general design." Sidney Greenbaum (ed.), *Comparing English Worldwide: The International Corpus of English*, (Oxford: Clarendon Press, 1996), 29.

[2] I shall explain my procedure for generating keyword lists in section 4.8.3.

say, green business's own representations of its greening, as the starting point, the *radical* discourse of the radical NGOs would probably be excluded.

Such an example of this difficulty occurred in the review of potential radical NGO websites. Having already set up a provisional definition of the discourse boundaries on the basis of my review of green business websites, I came across representations that were unquestionably radical, but which did not fall within the boundary of my working definition of 'business-in-the-biosphere' (see section 4.2.4). The texts in question challenge the economic and political framework within which business corporations operate. Institutions such as the World Bank and the International Monetary Fund are attacked, for enforcing liberalist solutions on vulnerable developing-world economies. Free trade and the World Trade Organisation (WTO) are criticised by certain radical NGOs, and "Fair Trade" is projected in their place. Economic growth, as the sole measure of progress, is rejected, and replaced by quality of life indicators. For some of the radical NGOs, there is a need to make fundamental changes to what I have termed *the ruling economic framework*, if the biosphere and its contents are to be protected. Clearly, the corporations assume the status quo for their business activity. They cannot be expected to make any representations of possible changes to the economic system within which they operate. This example illustrates the trade-off that had to be made in the design process. The material for the corpora was chosen in order to include one aspect of the linguistic discourse from the radical NGOs that does not appear in the green business texts. The accusation one faces in doing this, is that the analysis becomes a comparison of apples with pears. This unavoidable issue is explored in more detailed in section 4.2.4, where I shall discuss the external boundaries of the discourse.

4.2.3 Manual selection or restricted keyword search

It is possible to write a simple search programme and to draw up a list of words, one of which a document would need to contain in order to qualify for the corpus. This has the advantage of being entirely automatic and, since it takes 'subjective' human judgement out of the process, it allows one to argue that the selection has been impartial. But setting up the search criteria would not be without challenges. For example, it is very likely that a text representing the economic and/or social conditions of factory workers in Shanghai will have a different vocabulary, compared with a text about a tribe in Papua New Guinea which is threatened by mining activity. So the lexical search net would have to be cast wide. Assuming that all the search criteria could be identified with confidence, the process itself would be lengthy. It would require me to download all the potential texts and save each of them as a .txt file,

which would then be fed into Wordsmith to get the listing of words. This list would then have to be manually reviewed for the search words at which point the select/reject decision could be taken. My assessment was that I would be making the process of text selection unnecessarily lengthy and that I would run a risk of failing to select relevant material.

4.2.4 Drawing the external boundaries of the discourse

In the discussion in section 4.2.2, I argued that the boundaries of the linguistic discourse to be selected should be drawn in order that the three corpora were as comparable as possible, whilst still providing room for each corpus to be considered representative of the institutions which had produced it. The following external description of the linguistic discourse was employed in assessing the suitability of text for inclusion in all three corpora. I apologise to the reader for its legalistic style:

> Accounts of the damaging consequences of either business activity or the ruling economic framework on the condition of the biosphere or the economic and social conditions of people, and of (a) the activity that green business is taking/not taking, or (b) ought to be taking/not taking, or (c) the necessary changes to the economic framework, in order to reduce the damaging effects of business activities or the economic framework and improve the condition of the biosphere or people.

4.2.4.1 Commentary on the definition of the discourse boundary

There are several aspects of this definition which require some explanation. First, most 'hard' scientists understand the term *biosphere* to be that part of the planet's outer shell—including air, land, surface rocks and water within which life occurs, but not the life forms themselves. However, for the sake of notational convenience in this project, I use *biosphere* to refer to all life within it as well. Second, in order to make clear that this statement allows for the wider, CSR-style issues of social justice, I decided to bring *people* out of the umbrella *biosphere* term, and make an explicit reference to their economic and social conditions. Third, the potential object of the representations: *the biosphere* and *its contents*, i.e. all life, was extremely wide ranging. The volume of material available on *business* (on the 25 green business websites selected) and on the *biosphere and its contents* (on potentially hundreds of NGO websites) was enormous. However, for very practical reasons I had to place a limitation on the linguistic discourse. The selection criterion that I applied was an insistence that the text combined both a representation of the biosphere and/or its contents and a representation of the activity of business or economic growth. As an illustration of how this criterion functioned, I refer to the radical NGO, Surfers against Sewage.[3] This is a good example of a website with a

[3] Surfers against Sewage, *Who We Are*, http://www.sas.org.uk/about/who_are_sas.php, (accessed 4th February 2008).

lot to say about the problem of water pollution by sewage. But the cause of the problem is more in the category of the way we live today rather than being an overt criticism of the activity of business or the economic framework. The Pesticide Action Network (PAN-UK) is another example. According to its website, this radical NGO campaigns for better control of pesticides, but does not place the responsibility for the problem directly on business, so its material represents just the condition of the biosphere.[4]

A fourth point to note is that these criteria all demanded a representation of experience whether real or imaginary. All material describing what is happening, what is being done about it, what is planned and what is reported, qualified for the corpora. Documents under the general heading of "Our Approach" or "Policies" were classed as representations of desirable activity. Radical NGO discourse describing corporate activity was included, as was material which presents demands for action. The same applied to the government's experience of reality and desired action. However, the very small volume of texts under headings such as *Our Values*, *Ethical Standards* or *Business Principles* was classified as statements of the institutional culture of green business, and was not included in the corpus.[5] Fifth, although I have discussed how some of the radical NGOs' linguistic discourse was included by this definition, it does exclude the activity of most of the ecologist or deep greens to whom I have referred in chapter two. These are the people who do not believe that the future can be secured without radical personal changes in the way we live. Their websites, of which Sharing Sustainable Solutions is a good example, concern themselves with how individuals can change their lives in an ecological direction and have nothing to say about the greening of business.[6] Sixth, another group of organisations with another radical discourse promote acts of civil disobedience or even unlawful direct action, in order to protect the earth. An example of this is Earth first!, though it is not formally an organisation. Their campaigning style contains almost no representations of the ways in which business is damaging the biosphere but plenty of reports of direct action.[7]

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[4] Pesticide Action Network – *UK, About PAN UK*, http://www.pan-uk.org/About/index.htm, (accessed 5th February 2008).
[5] See section 3.2.1 of chapter three for my discussion of the treatment of these documents.
[6] Sharing Sustainable Solutions, *What's New – Winter 2007-2008*, http://www.sharingsustainablesolutions.org/, (accessed 5th February 2008).
[7] "Read all about occupations & lock-ons of big industrial places around the world, corporate & government blockades, squatting, airport invasions, subvertising, climate criminals locked & glued shut, trees climbed and chopped down, GM maize fields trashed, hunger strikes, burrowing under fences, jumping on whaling boats…" Earth First!, *Actions Reports – Capitalism/Globalism*, http://earthfirst.org.uk/actionreports/capitalism-globalisation, (accessed 5th February 2008).

My seventh comment is that there is a difficult dividing line to draw, between the consequences that derive from business activity or the ruling economic framework, and the consequences that derive from a vaguer phenomenon which I call *our modern way of living*. Is, for example, climate change being caused by business, and the economic framework in which it operates, or is it being caused by the way we (in the west) live? The answer of course is both, though a defender of business would argue that commercial interests are merely instruments designed to meet consumer demand, and that it is our modern lifestyles that are the real culprit. Another example would be the threat of poisoning from pesticides used in the cultivation of the food we eat. Are pesticides used by farmers trying to increase yields and improve their financial performance in a market economy which puts them under constant pressure to raise efficiency levels? Or are they simply responding to consumer demand for shinier, cheaper apples – an aspect of our modern way of living? My empirical problem was that, if I extended the discourse boundary to include a phrase such a "modern western-style consumerism," then I would open up the selection to all sorts of linguistic discourses, including, for example, the anti-vivisection websites.

One can see from my sixth and seventh comments above, that the boundary definition remained open to the accusation that I had set up the text selection criteria, so that they *excluded* significant sections of radical environmental debate. One could argue that what remains in the list of 'radical' NGOs that I present in table B.3 on page 356, are the critical but light green environmental organisations rather than the really radical, deep-green ecologists. The defence that I make to this charge is that, with this definition, I was still able to include texts from the NGOs which contained proposals for radical changes to the economic ground rules in which business operates. Once the economic goals have been augmented with, for example, "well-being" goals, a proposal from New Economics Foundation, the goals of the corporations will follow suit.[8] In this way, I could include the radical NGO discourse on what they claim to be the damaging effects of such phenomena as *international trade*, *globalisation* or *multinational corporations*, which, whilst it does not specifically criticise businesses *per se*, does attack the system in which the corporations are major actors.

[8] "Well-being is one of our most important ends, as individuals and as societies. But despite unprecedented economic prosperity we do not necessarily feel better individually or as communities. For example data shows that whilst economic output in the UK has nearly doubled in the last 30 years, happiness levels have remained flat."' New Economics Foundation, *Well-being*, http://www.neweconomics.org/gen/well_being_top.aspx?page=1038&folder=174&, (accessed 5th February 2008).

4.2.5 Text discourses that fall inside the boundary but were rejected

Having defined the boundaries of the linguistic discourse and clarified which topics fall inside or outside, there was a final problem to deal with. There remain a small number of topics that none of the self-defined green businesses has anything to do with. If I included material from radical NGOs on these topics, then all I would manage to demonstrate was that different organisations have different interests and issues that they want to talk about. There were three particular topics which fell within the boundary of the definition, but which have nonetheless been excluded. The first of these was *dams* – none of the green businesses included is involved in the construction or operation of dams. The second topic is *logging* - none of the green businesses included is directly involved in the logging of forests. Note that this did not exclude the issue of deforestation. I included the clear cutting of rain forest, in order to plant palm oil trees, for example, because they supply Unilever, one of my green corporations, with raw materials for its soaps and food stuffs. The third topic consisted of critical reports in which named companies are exposed for causing environmental degradation. The radical NGOs do have some reports which attack a particular company on my list of green corporations. These documents have been included. However, I did not think it was fair to include a document which attacks a specific corporation that was not on my list. ExxonMobil, for example, has the dubious distinction of having a whole website dedicated to protesting against it.[9] If a radical NGO report refers to business generically, as a destroyer of the biosphere, then I think it is legitimate to include it, but not when a company which is not on my list is used.

4.2.6 Age of material

The project assumes a synchronic study of language, so I had to consider the maximum allowable age for material that could be downloaded from the websites. Most of the radical NGOs have limited resources and they are rarely able to keep issues alive by constantly producing new material. Some of the documents I reviewed, for example, were as much as ten years old. However, I decided that instead of drawing some arbitrary age-limit that might well be difficult to enforce, everything published on an organisation's website would be interpreted as being relevant material for its representations, and therefore valid for inclusion in the corpus.

[9] "Campaign ExxonMobil is a shareholder campaign urging ExxonMobil to take a responsible position on climate change. Campaign ExxonMobil was founded by faith and environmental groups, and works with institutional investors, corporate governance activists, labor funds, and financial analysts to highlight the financial risks of ExxonMobil's current position." Campaign ExxonMobil, *About Campaign ExxonMobil,* http://www.campaignexxonmobil.org/about.asp, (accessed 5th February 2008).

4.2.7 Genre

This project has focussed on the link between language and culture and it did not aim to draw distinctions between particular genres. However, my pilot project had already given some indication that different organisations construct linguistic discourses with different genre profiles. Friends of the Earth, for example, is a prolific generator of press releases.[10] In contrast, another much smaller radical NGO – The Corner House, concentrates exclusively on producing detailed and closely-argued reports.[11] The government's linguistic discourse has a tendency to be more 'report-weighted' and contains fewer press releases. The green corporations produce a mixture of shorter news articles, press releases and longer reports. If one may be permitted to extend the genre concept beyond printed text, GreenPeace is an example of an organisation that prefers to include a large volume of pictorial representation within its discourse.[12] These genre differences introduce a variable into the corpus analysis that calls into question any conclusions drawn about lexical differences between the corpora. At the corpus-design stage of the project, I did not know whether it would be possible to conduct genre-specific analyses, so I had to assume that I *would* need this facility. It was, therefore, necessary to provide for a file-labelling system that allowed for later sampling of different genres within a corpus, with the objective of looking for genre-based lexical variation.[13]

4.2.8 Discussion of text types that fall outside the boundary

There were several text types which I tried to exclude from the corpus as I worked through the websites, and which I now mention here. First, I excluded the minutes of closed meetings because they were not intended as public representations of business in the biosphere. Second, I excluded documents that were from another source than the organisation which owned the website. The government, for example, publishes a great deal of EU-originated directives on its own websites. A trickier situation, that occasionally occurred, was where an organisation elected to post an external document, or a summary of it, on its website, with commentaries of its. An example of this was where Friends of the Earth published a summary of the objectives

[10] I have not counted them, but I would estimate that at least 2,600 files, of the roughly 3,000 that I have downloaded from the FoE website, are press releases.
[11] "The Corner House publishes regular briefing papers on a range of topics." The Corner House, *Briefings*, http://www.thecornerhouse.org.uk/briefing/index.shtml, (accessed 5th February 2008).
[12] "Watch our latest campaign promos, animations and video blogs." GreenPeace UK, *GreenPeace Videos*, http://www.greenpeace.org.uk/video/greenpeace-videos, (accessed 5th February 2008).
[13] This is explained in section 4.3.2, although the subsequent empirical challenges of the projected have precluded me from carrying out such work.

of the EU Landfill strategy with its own comments included.[14] Here, the volume of commentary was usually so small that the document was also rejected. Another example is available on the website run by the radical NGO, Mines and Communities, where there is a section devoted to one of the green corporations – Rio Tinto. It contains a lot of articles which have been copied from newspapers that are local to the scene of Rio Tinto's mining operations. I tried to avoid copying these, but it was not always obvious at first glance – certainly not from the title on which I clicked – that the material was not, in fact, produced by the radical NGO. Sometimes it seemed as if it was their material, but in fact there were simply a couple of lines of introduction or summing up, before the third party's material followed on seamlessly. I also excluded material for which a charge was made. The New Economics Foundation has a lot of good material under the category of criticisms of the economic framework and suggestions for changing it. But it was not possible to buy the ones for which they take a charge.

4.2.9 Links to other websites

Every website has links to other, related websites which might contain relevant discourse. The technique for dealing with this was to insist that only material resident on a particular website could be downloaded. This rule avoided the potential confusion that could arise in pursuing an audit trail back from a document to its origin on a website. During the design process other, linked websites were examined, to decide whether they ought to be included in the list of relevant websites for the corpus. This was an extremely time-consuming and detailed job, but also important for the credibility of my empirical method. I have included a selection of the rejected websites in tables A.1, A.2 and A.3 (pages 335, 343 and 350), in order to illustrate some of the typical reasons for exclusion, and to act as a warning to anyone considering doing this sort of work.

4.2.10 Topics that fall within the boundary and were accepted

Finally, I come to a summary of the topics that *were* included in the three test corpora. The list, in table 4.1 below, was compiled during the downloading process. It is intended to be illustrative of the semantic content of the linguistic discourse, but has no function beyond giving an impression of the variety of topics that are represented.

[14] Friends of the Earth, *Fact Sheet – EU landfill directive and waste strategy*, http://www.foe.co.uk/resource/factsheets/eu_landfill_directive.pdf, (accessed 5th February 2008).

Table 4.1: Summary of 'business-in-the-biosphere' topics that have been included in the linguistic discourses of the three test corpora

Trade, Make trade fair	Corporates, multinational corporations	Chemicals, Toxics - production, trade, disposal and health
The G8 summit	Child labour	Minerals and quarrying
Economic globalisation and human rights	International finance	Sustainable development
Economics, poverty and economics	Planning and development	Industrial pollution
Trade and environment	Telecommunications development	Waste
The economic system	Biodiversity	Incineration
Transforming markets	Ancient forests	Water resources
International Financial Institutions	Save our oceans	Local food and farming/agriculture, real food, GM food
GATs	Climate	Oil and gas,
WTO	Wind turbines	Diamonds
Globalisation	Nuclear	Worker exploitation
Global environment, global trade	Aviation	Indigenous peoples
3rd world debt	Roads	
Society	Transport	
	Renewable/Use of Energy	
	Fuel	

4.3 Design of the three test corpora

In addition to the general text-selection issues reviewed in the previous sections, each of the three test corpora presented its particular design challenges. These are the unavoidable 'messy' issues of all empirical work, and, for anyone considering an attempt to do similar corpus-linguistic work, they provide a useful list of things about which to think. In the interests of space, however, I have placed this material in appendix A on page 331, together with the tables of examples of websites and material which I did not include.

4.4 The selection of a control corpus

It is pertinent to emphasise that the overall design concept, outlined in section 4.1, was that I should be able to make comparisons across the three test corpora, rather than between a single test corpus and 'typical English'. In this project, the key requirement of the control corpus was that it should not favour the discourse of any one of the three test corpora, either by being too similar or too dissimilar. The British National Corpus (BNC) was identified as having several advantages as the benchmark.[15] First, it was produced by a group of highly-respected project partners, including the British Library Research and Development Department,

[15] British National Corpus, *Home*, http://www.natcorp.ox.ac.uk/, (accessed 6th February 2008).

Oxford University Computing Services, Lancaster University, Oxford University Press and Longman Group Ltd. Second, since one of its design goals was the wish to construct a corpus which is typical of British English, it would provide a very good simulation of Welford's British English experience, of being exposed to the linguistic discourse of green business. A third advantage with the BNC, was its ready availability. Finally, the 90 million words in its written corpus were the best guarantee available that it would not favour any of the three test corpora.

The written section of the BNC is divided into nine different *domains,* which may be thought of as broad subject areas. A design consideration for the control corpus was whether to include all of the nine domains. The non-fiction ones have subject contents which are not dissimilar from material in the three test corpora. However, there are three domains, described as *Imaginative*, *Arts* and *Leisure*, whose subject matter has little or nothing in common with the three test corpora.. The argument in favour of retaining these three was that their retention preserved a balance of British English 'typicalness' in the control. Without them, the Commerce domain, with its stronger business-oriented discourse, would take on a greater significance in the overall control. This greater 'keyness' of business discourse, in the BNC control, would lead to a corresponding reduction in the observed 'keyness' of the business discourse, in the green corporations' corpus. It is reasonable to suppose that this corpus, of the three, would be likely to have a greater emphasis on business than the other two. A decision to reduce the size of the BNC control by removing the three domains would, therefore, probably lead to an undesirable weighting on just one of the three test corpora. As a result, all nine of the domains were selected for inclusion.

4.5 The overall design

In figure 4.2 below, I present the overall design concept consisting of the three test corpora and the BNC control. By comparing each of the test corpora with the BNC control, it is possible to see how their respective linguistic discourses differ from 'typical English'. Having used the BNC in order to identify the distinctiveness of the three linguistic discourses of (i) green business (ii) the radical NGOs and (iii) the UK government, it would then be possible to make comparisons between the three profiles of distinctiveness, in order to respond to the research questions which I repeated in connection with the presentation of figure 4.1 in this chapter. My account of the design phase of the project now completed, I continue, in section 4.6, with the building process.

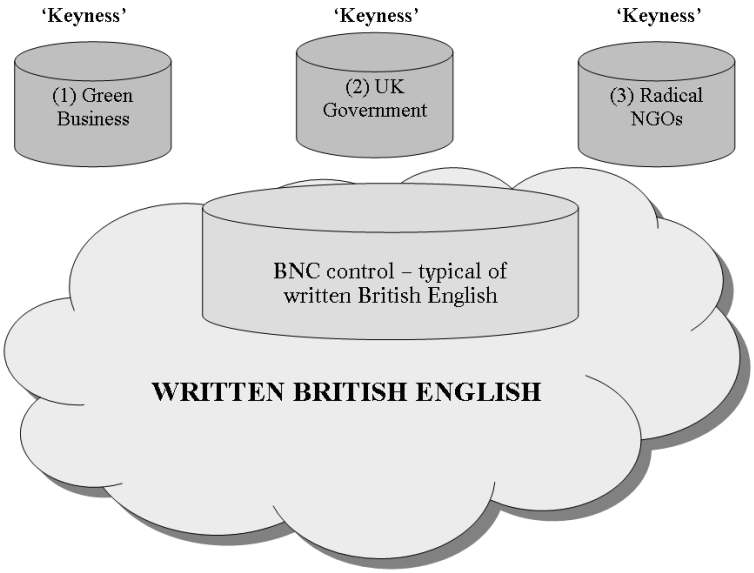


Figure 4.2: Schematic of the three test corpora and the BNC control corpus

4.6 Building the corpora

4.6.1 Introduction

Once the websites had been identified and the major design decisions taken, I began the process of constructing the three test corpora and the BNC control. The work started at the end of June 2005 and was completed by the end of November the same year. Taking account of other work, I estimate that the process required four months of intensive work. The three test corpora were constructed one at a time; the green business corpus was first, the NGOs second and the government corpus third. Section 4.6.2 explains the method that was used for downloading material and preparing it for use in a language corpus. Section 4.6.3 presents those difficulties that were a common experience for the downloading process, as well as the solutions that I found to address them.

In order to save space, I present the results of these four months of work in appendix B. Tables B.1, B.3 and B.5 on pages 353, 356 and 364 contain a list of the organisations and their website addresses, which were accessed during the construction of the three test corpora. Here, too, I have included my notes from each website's downloading process, which describe the sections of the website I downloaded and why I selected them. The tables are preceded by any comments on the process which are specific to the construction of the particular test corpus. The three tables, B.2, B.4 and B.6 present a summary of the volume of text material downloaded from the different organisations. In section 4.6, I make some observations on the respective contributions to, and characteristics of, each corpus. Section

4.6.7 contains a brief account of the simple task of constructing a control corpus, based on texts from the British National Corpus.

4.6.2 Method

The procedure I used was to set up a single folder in MS-Word to represent one corpus. Within the one folder, a number of folders were set up, each one representing a single organisation; 25 for green business, 37 for the NGOs and 29 for the government. From the homepage of the organisation, the material that ought to be copied was identified and then copied, by swiping over the relevant text on the screen. The 'blacked out' text was then pasted into an empty MS-Word document, which was saved into the organisation's folder.

The naming convention I adopted for the saved documents, consisted of a (maximum) four-level numeric coding system, e.g. (01.06.02.05), followed by a parallel four-level set of names, intended to help with the identification of the screen or document, from which the text had come. For example, one single file within the Amnesty International folder is called (02.02.03.13) Library – EC Globalisation News – 2003 – PR13 HR and business. The four-level numbering system ensures that the file is presented in the same logical position in its folder in my computer, as it was originally copied down from the website, i.e. immediately after (02.02.03.12) and immediately before (02.02.04.01). The four-level naming system provides a comprehensible audit trail, from the document in the corpus back to the website. From the Amnesty International homepage, it is necessary to access the "Library" that was in operation in 2005, when I conducted the downloading.[16] Within the "Library," there is a news section broken down by themes.[17] One of the themes is "Economic Globalisation."[18] The documents under this theme are presented by their year of publication, and, going back to 2003, there is a series of press releases, of which the thirteenth in the list has title *G8: No trade off for human rights*, which I have summarised in my file name as "HR and business."[19] The audit trail is not, of course, foolproof. Organisations change the organisation of their websites periodically, just as Amnesty International has done. But the use of recognisable English in the file names did provide significant help in returning to the website at a later date, on the occasions when there was a need to do follow up concordance reports by finding

[16] Amnesty International, *LIBRARY*, http://archive.amnesty.org/library/engindex, (accessed 6th February 2008).
[17] Amnesty International, THEMES, http://archive.amnesty.org/library/engthemes, (accessed 6th February 2008).
[18] Amnesty International, ECONOMIC GLOBALIZATION, http://archive.amnesty.org/library/eng-398/index, (accessed 6th February 2008).
[19] Amnesty International, *G8: No trade off for human rights*, http://archive.amnesty.org/library/Index/ENGPOL300022003?open&of=ENG-398, (accessed 6th February 2008).

the entire document, in which a line appeared. And the naming system is not as cumbersome to use as might appear. In practice the 'Save file as' process follows on logically from document to document. Clicking on the previously saved file in the dialog box brings up its name in the 'Save as' field. A few key strokes were then all that was necessary to adjust the new file's number by plus one, and to modify the last word in the name section.

The website text was either in html or pdf format. The html format presented no problems at all in copying down to an MS-Word document. The pdf documents also, overwhelmingly, allowed for the extraction of text and its transfer into an MS-Word document. This latter procedure generated much larger volumes of text, the 'Select all text' process being electronic, compared with my manual process of swiping over text with the mouse-controlled cursor. There were a relatively small number of cases where this proved to be technically impossible, and these are explained in more detail in the following section. The speed of downloading material into MS-Word documents varied enormously, from website to website and section to section. At its simplest and most monotonous, say, the copying of large numbers of press releases organised by topic and year, it was possible to construct about 400-500 files per day. However, this figure sank to as few as 150-200, where the material was more fragmented in its presentation or questions about its eligibility for the corpus were raised.

The reason for saving the material from websites, in an MS-Word document, was that the 2005 version of Word retains much of the original formatting from the website. This means that a copy of the html-based webpage has a similar appearance in the MS-Word document, an advantage in the audit trail, when there is a need to search back for the text on the website. Wordsmith, however, will only work on .txt files. Once a test corpus was complete in its MS-Word .doc format, therefore, it was necessary to undertake a second stage of processing, in which each individual file was opened and resaved in a parallel folder, but with a .txt format. This work was extremely tedious, but an achievable target rate for the conversion was 800 files per day.

4.6.3 Common problems

A few of the Adobe documents were locked, prohibiting the extraction of the text. Another small selection of documents proved to have some sort of ciphering system implemented within them, so that although it appeared to be possible to 'Select all text' and then to 'Copy to clipboard', the result, when pasted into an MS-Word document, was indecipherable. These

cases were recorded in the reports on downloading that appear in appendix B on page 353, but the overall size of the problem was very small, and did not jeopardise the representativeness.

It was quite common on websites to lead the reader to the same document or screen, from two or more different locations. There was, therefore, a danger of double downloading; the same document, from the same organisation, being copied into the corpus twice. This problem was not as difficult to deal with, as I had originally anticipated in the design phase. In practise, I registered a sense of *déjà vu* and, by cross-checking the hierarchical position in the website with the copying work already completed, I could confirm whether or not the material had already been down loaded.

Several of the larger organisations in the three corpora have "libraries," "archives" or "media centres." Usually the material they contained was made available by its categorisation into topics and year, but a few sites provided access to the texts just by the use of a search facility.[20] This keywords search process introduced an element of uncertainty into the downloading process. First, there was a question mark with respect to the thoroughness of the keyword-based searches. I cannot be sure that all the relevant documents were found, using the keywords I chose for the searches. Second, there was the possibility of double downloading, because a document appeared in another keyword-based search list. This problem could only be addressed by the *déjà vu* method referred to above. Third, the keyword search process could produce a large number of frustratingly irrelevant hits. For example, when I searched through the speeches of Tony Blair with the two search words *environment* and *business*, the resulting hit list contained a very large number of documents explaining how successful the government was in creating an *environment* which was conducive to the growth objectives of *business*! Wherever possible, the sound approach was to work methodically through the "issues" or "topics," studying the title of the document to assess its suitability.

4.6.4 The green business corpus

After the qualifying corporations had been identified, the process of constructing the green business corpus proved, with the benefit of hindsight, to be the easiest exercise of the three. The corporations' websites were all well organised for the purpose of selecting the qualifying texts, so the downloading proceeded smoothly. The general design dilemma of representativeness versus comparability became a serious issue, only when the construction

[20] My impression is that this is increasingly common. The Amnesty International example I used in the previous section shows that its library has moved over to a keyword search procedure for finding documents.

process moved on to the second corpus of the radical NGOs. The green business corpus was easiest, because I had allowed all *business-in-the-biosphere* text into the corpus. If a green corporation regarded a particular issue as part of its greening discourse, then this was enough for its inclusion. The list of websites from which I downloaded the green business corpus may be found in table B.1 on page 353, together with any notes on the downloading process. Then in table B.2, I present the size of the corpus, broken by corporation.

A quick glance, down the list of contributions in table B.2, is all that is necessary to see that several of the companies' contributions are very small, in relation to the overall corpus. Land Securities is the eighth smallest 'member' of the corpus and its contribution amounts to just 1% of the total. The seven corporations which are below Land Securities in the word-count ranking could have been excluded, without serious concerns for the representativeness of the green business discourse. However, their names were included in the design phase because they satisfied the qualification criteria, and the work involved in including them was marginal.[21] There was, therefore, nothing to be gained by excluding them because they are so small, and they remain in the corpus for the sake of completeness. At the other end of the table, the top five corporations contribute 56% of the total corpus, but no single organisation could be said to dominate. Five of the corporations: BG Group, BP, E-ON UK, ScottishPower and Shell, are energy companies. Between them, they contribute approximately 41% of the total, so it is likely that energy-related issues have a significant weighting in my green business corpus.

4.6.5 The radical NGOs' corpus

Unlike the downloading process for the green corporations, the construction of the radical NGO corpus followed an iterative pattern. The downloading began with an initial list of websites developed during the design stage. Under the more detailed trawling through websites which was required by the downloading, certain documents generated new, unanswered questions about the qualification criteria for the linguistic discourse. The answers to these questions had clear implications for the possible inclusion of other NGO websites. In addition, the downloading process unearthed a number of other potential websites, which were noted separately. It also became clear that a few of the websites on the initial list did not, on closer study, qualify for the discourse. They were rejected. Upon completion of the initial downloading, it was, therefore, necessary to return to the design phase, in order to confirm the

[21] The rth group, a very small consultancy in Bristol, was included at the design stage, but by the time construction began it had decided to produce a new website and had no material available.

markers of the discourse boundary and examine new websites, before moving into a second downloading process.

The radical NGO corpus contains a special variation on the double-counting problem, previously discussed in section 4.6.3. Probably for financial and resource reasons, several of the radical NGOs choose to enter into co-operation agreements, when working on particular campaigns where they all have a common interest. The Trade Justice Movement (TJM) is an example of such an 'umbrella NGO'. Christian Aid, Oxfam and Save the Children, all organisations that are in the radical NGO corpus, are three of the many sponsors of the TJM. The possibility that a TJM-produced document is also publicised by a host NGO is probably quite high, and, given the time interval between the downloading from two separate sites, my *déjà vu* safety net was not such a realistic defence against double counting. Therefore, I decided that such occurrences of double downloading should be allowed, on the grounds that the document came from two different radical NGOs. Very occasionally, two or more NGOs worked together on the writing of a large report. This was also double counted, if it came from different websites.

The NGO downloading process was the only one to experience the total failure of a website, Attac UK, already referred to in the design section. The list of websites from which I downloaded the radical NGO corpus may be found in table B.3 on page 356, together with my notes on the downloading process. In table B.4, I present the size of the corpus, broken down by radical NGO. The radical NGOs' corpus displays a greater domination by the top five organisations than is the case for green business. These five contributors account for 62% of the total corpus, and special mention needs to be made of Friends of the Earth, which alone contributes almost one quarter of the material. Nineteen of the 37 radical NGOs each make a contribution, to the corpus, of less than 1%. However, they were retained in the corpus for the same reason as the green corporations.

4.6.6 The UK government corpus

Like the experience of downloading material from the radical NGO websites, the construction of the government corpus was also an iterative process. A unique issue, for the government corpus, was the decision to divide the enormous website belonging to the Department of the Environment, Food and Rural Affairs (DEFRA), into several separate folders. This decision was taken in order to simplify the administration process, and it had no practical consequences for either the analysis or the results. The government websites also contained material from the European Union, such as EU directives, which was not downloaded into the

corpus on the grounds that it is not British in origin. The process by which government policy develops and is turned into legislation is hugely complicated, and the downloading process was slowed down by the frequent need to decide if a particular document should be considered as belonging to the government's discourse, or whether it belonged to the discourse of some external agency which wished to influence the government. Responses by say, an industry lobby group, to a government consultation initiative were, therefore, excluded from the corpus, whilst the government's own summary position paper at the end of the process, was included.

A recurrent issue, in the examination of the UK government's linguistic discourse, was that government texts rarely made an explicit link between the degradation of the biosphere and the causative role of business in this process. For good political reasons, its stance was usually one of conciliation between the opposing forces of business and the NGOs. This recognition led to a relaxation, for the government's texts, of the requirement that qualifying discourse needed to draw an explicit link between business and the biosphere. Instead, material was downloaded in which the government represented the condition of different aspects of the biosphere. Similarly, discourse on the greening process of business was also included. The downloading into the government corpus produced the first and only occurrence of a website that performed so slowly, that the downloading of material had to be curtailed on the grounds that the computer response times from the server were unacceptably slow. The Environment Agency website responded satisfactorily with html-formatted material, but documents in Adobe .pdf format proved impossible to download and were, regrettably, excluded from the corpus.

The list of websites from which I downloaded the UK government corpus may be found in table B.5 on page 364, together with my notes on the downloading process. In table B.6, I present the size of the corpus, broken down by government department. The top five contributors to the government corpus account for 54% of the total – almost exactly the same as in the green business corpus. However, bearing in mind my splitting of DEFRA into several sections, it is more pertinent to point to the role played by this one unit of government. DEFRA's total contribution, including the Government Sustainable Development Unit (also a part of DEFRA), is over one third of the total. Ten of the 29 units of government each contribute less than 1% of the total government discourse.

4.6.7 The BNC control corpus

On the basis of the design discussion outlined in section 4.2.5, I decided to construct a control corpus based on the entire BNC written corpus. The material, available through the faculty's Text Laboratory, was therefore processed through a simple programme written by Anders Nøklestad of the Department of Linguistics. This programme removed all the linguistic tagging information from the documents so that only the simple text remained. The results are presented in table B.7 on page 372, together with an account of their quality assurance.

4.7 Summarised results from the building process

Table 4.2 below, provides a simple overview of the three test and one control corpora that were the result of the building process. These large 'databases' of electronic texts in simple .txt format formed the 'raw' object of study for this project. The sizes of the corpora which I built certainly satisfied the design objectives. Although one can always find criticisms of empirical work, the enormous quantity of text that is contained in each of these corpora does lend my results a high degree of statistical reliability.

Table 4.2: Summary comparison of the three test corpora and the BNC control corpus

	Number of text files	**Wordsmith word count[22]**	**Pages equivalent of A4[23]**
Green Business (25 folders)	1,655 files (20.5 MB)[24]	3,329,000	6,658
The radical NGOs (37 folders)	6,337 files (69.3 MB)	11,569,000	23,138
Government (29 folders)	893 files (42.8 MB)	7,102,000	14,204
BNC Control Corpus (9 folders)	2,662 files (410 MB)	72,959,000	145,918

[22] I have rounded this figure up or down to the nearest thousand words.
[23] I have assumed 500 words per page which corresponds to a page of A4 such as this one, covered with text without paragraphing, in Times Roman 12 point font and 1½ line spacing. A package of copy paper contains 500 sheets and a box of five packages is therefore 2,500 pages.
[24] The storage requirement figures were obtained from MS Word, by selecting the main folder in which all the sub-folders and files were stored, 'right' clicking, and selecting the "Properties" option. The figure I have used is the assessment of "size" rather than the slightly higher figure of "size on disk." The Wordsmith wordlist programme also provides a report of the size of the files and this figure is also slightly higher than the one I have provided. A comparison of the Wordsmith word count for each corpus with the amount of disk space taken up by the files produced a reasonably consistent result. The number of words per megabyte varied between a low of 161,000 for the green business corpus to 168,000 for the NGO corpus.

I have now described the design and building procedures by which I prepared the raw objects of study for my corpus-linguistic analysis. Table 4.2 above, presents the overall size of the three test corpora and the BNC control corpus, in terms of the number of files, the word count, their computerised storage space and a rough approximation of the number of pages of A4 text to which they correspond. But these 'raw' objects of study required further processing, before they were ready for useful comparison. In section 4.8, I explain the Wordsmith-based procedure I followed, to identify the corpus-based keywords in each of the three test corpora, and then my refining of the results in order to carry out a useful comparison of the keywords. In section 4.9, I present different comparisons of the keywords, in order to make some observations about the consistency and variation between the three test corpora. I conclude section 4.9 with my assessment of what number of keywords I decided it would be sensible for me to use as my object of study. For reasons of space, the tables containing these keywords are placed in appendix D on page 381.

4.8 Generating and editing the one-word keyword lists of the three test corpora

4.8.1 Introduction

In section 3.3.6 on page 111, I presented the concept of *keyness,* as it is understood in corpus linguistics, and concluded by settling on the concept of corpus-based keywords as my preferred method for characterising the linguistic discourse. In section 4.8, I shall outline the method I used to process the 'raw' text data presented in section 4.7, into the keyword lists for the three corpora. I then describe the editing of these three corpora so that they could usefully be compared with each other. I begin, in sections 4.8.2 and 4.8.3, with an account of the process of generating the lists of edited *one-word* keywords.

4.8.2 Generating the one-word wordlists

Once I had set up the corpora, each one consisting of a large number of text files organised in a two-level hierarchy of folders, the procedure for generating listings was taken over by Wordsmith, and became a matter of making the desired selections of texts and choosing the settings that would have an effect on the report produced. The first procedure was to create wordlists for each of the organisations in each of the corpora. This meant setting up Wordsmith's Wordlist programme to count its way through all the text files in one particular organisation's folder, and then to rank the words in order of frequency. Each report was saved

with a numeric marker and the organisation's name. Using exactly the same process, it was also possible to produce a single list for each of the three corpora.

An endemic challenge in corpus linguistics is data overload, and it is desirable for the researcher to clear away as much of the chaff as possible in order to sift out the wheat. Wordsmith, therefore, requires the operator to choose a value for the minimum number of occurrences that a word needs to have, in order to be eligible for inclusion in the wordlist. If one sets the lower limit at one word, in effect allowing every single word in the corpus to be eligible for inclusion in the wordlist, then the result is a list with an exceptionally long 'tail' of highly unusual words, which occur just once and are of no interest whatsoever. If one sets the lower limit for inclusion at three occurrences, then the list is considerably reduced. For example, all the obscure proper nouns, which are mentioned just twice in a single file, are rejected. If one increases this lower limit to insist on more occurrences, the wordlist gets progressively shorter and, arguably, easier to deal with. However, the risk that one runs, in setting too high a minimum number of occurrences, is that a word which is very rare in the test corpus is, nonetheless, a keyword, because it is extremely rare in the BNC. My intention was to be able to generate wordlists, and then keyword lists, for comparison of the top 500 keywords in each corpus. So I carried out some simple testing using the BP corpus, in order to see at what level of minimum hits the ranking of the top 500 keywords began to be affected. My procedure is described in detail in section C.1 on page 373. On the basis of the results I obtained, it was clear that an absolute minimum level of three occurrences of a word was, after all, the best setting to use. This would filter out the obscure proper nouns and I would still feel sure that I would not be compromising the reports in the keyword listings.

Once the text files of each one of the organisations in the three corpora had been processed and saved, the process was repeated once more for each of the three corpora, this time processing every file for every organisation in the corpus. This generated three overall word lists, one for each corpus, which was the necessary interim stage for generating a report of the corpus-based keywords for each one. At the same time, I ran the wordlist for the BNC control which would act as a reference in the next stage – the generation of the keyword lists.

4.8.3 Generating and editing the corpus-based keyword lists

Wordsmith's KeyWords programme generates a report of the keywords in a corpus, by a process of comparing the wordlist of the test corpus against a reference wordlist from a control corpus. It was a simple procedure to generate the three corpus-based keyword lists.

For purposes of illustration, I include a very short extract from the keyword list of the UK government, in table 4.3 below.

Table 4.3: The top fifteen unedited keywords of the UK government corpus

UK Government - unedited keyword list							
	Key word	**Freq.[25]**	**%**	**RC. Freq.**	**RC. %**	**Keyness**	**P[26]**
1	**#**	555 948	7,26	1 606 417	1,89	604 929,88	0
2	**UK**	21 506	0,28	17 662	0,02	56 395,27	0
3	EMISSIONS	12 340	0,16	1 416		52 664,39	0
4	ENERGY	18 116	0,24	11 915	0,01	52 067,91	0
5	SUSTAINABLE	10 219	0,13	637		46 221,39	0
6	ENVIRONMENTAL	14 666	0,19	7 813		45 450,69	0
7	WASTE	11 789	0,15	6 167		36 752,39	0
8	GM	6 955	0,09	342		31 978,44	0
9	ENVIRONMENT	12 874	0,17	12 207	0,01	31 555,92	0
10	**DEFRA**	4 949	0,06	0		24 676,56	0
11	CARBON	6 715	0,09	2 404		23 378,19	0
12	IMPACTS	4 951	0,06	248		22 736,11	0
13	DEVELOPMENT	14 545	0,19	30 367	0,04	21 207,26	0
14	CLIMATE	6 246	0,08	2 685		20 686,76	0
15	**WWW**	4 087	0,05	2		20 343,91	0

A glance at these first fifteen keywords, ranked in descending order of their keyness, confirms that we are looking at the results from a linguistic discourse of the environment. However, it also shows one of the difficulties with the computer-based nature of corpus linguistics; the computer counts absolutely everything, even 'data' that the intelligent, but much slower working human being, would reject as simply irrelevant. Top of the list is the # symbol, used by Wordsmith to register the existence of any sort of numerical item that it comes across. Thus we learn that numbers are an extremely key part of the UK government's linguistic discourse of the environment when compared with the BNC corpus of 'typical' British English. This is neither surprising nor interesting, and it applies to the other two corpora as well. Similarly, items 2 "UK", 10 "DEFRA" – the abbreviation for the Department of Environment, Food and Rural Affairs, and 15 "WWW", are all present for obvious, but uninteresting reasons.

[25] This column records the absolute number of occurrences in the Wordsmith search and he RC Freq. column provides the same information for the Reference Corpus, in this case the BNC.

[26] Corpus linguists will recognise that this stands for *p value*. The p value provides an indication of being wrong in claiming a relationship and it is a variable setting in Wordsmith. The standard setting, and the one which I used throughout, is 0.000001, i.e. one millionth. This means that there is a one in a million possibility that the keyness of the word is due to chance circumstances in the test corpus. The figures in table 4.3 above, have come by way of an Excel spreadsheet which has rounded down the Wordsmith-provided figure to zero.

In order to work further with these keyword lists, especially in order to compare the lists of different corpora, it was necessary to edit out the special, but uninteresting lexical items. The reader will appreciate that this process of 'refining' the keyword lists is another of the empirical challenges that requires interpretive judgement on the part of the researcher. Deciding what is 'irrelevant' or 'uninteresting' is a subjective evaluation. In section C.2 on page 375, I describe the procedure which I used to edit the 'raw' keyword lists. I started from the listings of the top 650 keywords for the radical NGOs and the UK government and used the top 700 keywords of green business, because my impression was that this list contained a higher proportion of the special and uninteresting words. From the green business list, I edited out 157 different words whose presence would have confused the corpus comparisons, and whose absence did not detract from the representativeness. For reasons of space, I have not included this list of rejected words or the equivalents for the radical NGOs and the UK government. However, table C.3 on page 376, contains a summary which describes the different categories of rejected words and provides some illustrative examples from each category and corpus. Using the technique described in section C.2, I was able to set up the edited keyword lists of the three corpora. Although Wordsmith is capable of reorganising the lists in several different ways, the most useful, and therefore the most usual method of display, is to rank the words in descending order of their statistical keyness. For illustrative purposes, I present in table 4.4 below, the top fifteen edited keywords for each of the three test corpora.

Table 4.4: The top fifteen edited one-word keywords for the three test corpora

The top 200 edited corpus-based keywords in the three corpora			
	Green Business	**The radical NGOs**	**UK Government**
1	ENVIRONMENTAL	COUNTRIES	EMISSIONS
2	BUSINESS	GM[27]	ENERGY
3	ENERGY	ENVIRONMENTAL	SUSTAINABLE
4	SUSTAINABLE	CLIMATE	ENVIRONMENTAL
5	EMISSIONS	WASTE	WASTE
6	EMPLOYEES	GLOBAL	GM
7	SAFETY	TRADE	ENVIRONMENT
8	MANAGEMENT	DEVELOPMENT	CARBON
9	WASTE	INTERNATIONAL	IMPACTS
10	PERFORMANCE	GOVERNMENT	DEVELOPMENT

[27] The only 'word' in table 4.4 which might present an interpretive problem is GM. It is an acronym for Genetically Modified, and it functions syntactically as an adjective in such noun phrases as *GM food, GM crops* and *GM organisms*. Note that as well as ranking second in the keywords of the radical NGOs, it is also sixth in the UK government's corpus.

11	ENVIRONMENT	ENVIRONMENT	CLIMATE
12	BIODIVERSITY	SUSTAINABLE	STRATEGY
13	COMPANIES	IMPACTS	CROPS
14	DEVELOPMENT	COMPANIES	BIODIVERSITY
15	GLOBAL	EMISSIONS	LANDFILL

4.9 Comparing the edited one-word keyword lists

4.9.1 Introduction

I introduced chapter four with my schematic illustrating the conceptual model which steered the empirical work. In sections 4.2 to 4.8, I have described the procedures by which I sought to emulate the arrangement in the linguistic plane, and I repeat this lower section of the schematic in figure 4.3 below, labelling the three spots to avoid any possibility of confusion. At the close of the previous section, I arrived at a point at which I had identified each corpus's statistically distinguishing one-word keywords as compared with the 'standard' British English provided by the BNC. Further, my process of editing out irrelevant words had also created the conditions for me to make some useful comparisons between the three corpora, as I am required to do by the research questions. Can we find evidence that green business has, as Welford has suggested, adopted the language of the radical environmental debate? Second, when we compare the linguistic discourse of the radical NGOs and green business with that of the British government, do we find evidence that the government talks more about the issues that green business talks about than it talks about the issues that the radical NGOs talk about, i.e. is there any linguistic evidence that green business might in some way be 'winning' the environmental debate?

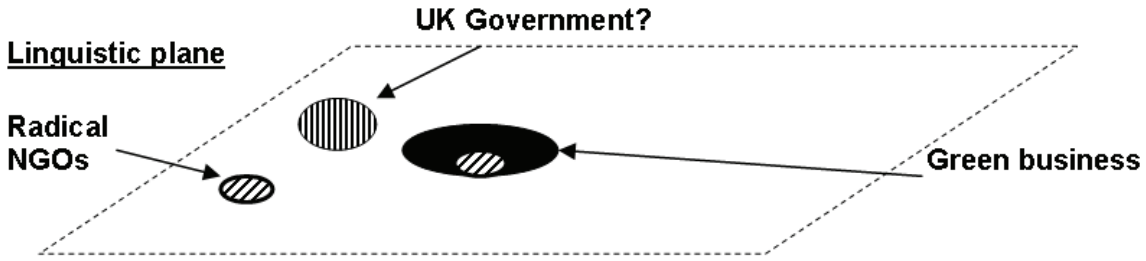


Figure 4.3: Comparison within the linguistic plane

In figure 4.3, I have illustrated the linguistic discourse of green business as having absorbed the language of the radical NGOs. This reflects the sense of Welford's original complaint that "the more radical environmental debate" had been taken over by green business and placed "in a liberal-productivist frame of reference."[28] If this speculative

[28] Richard Welford, *Hijacking Environmentalism,* x.

illustration is correct, then it ought to be possible to find overlap between the keyword listings of the radical NGOs and green business. In a similar vein, a larger overlap between the keywords of green business and those of the UK government, than that between the radical NGOs and the government, might provide supporting evidence that government talks more about what green business wants it to talk about than what the radical NGOs want it to talk about. Before studying the particular keywords of each of these three corpora, therefore, I decided to conduct a simple quantitative comparison, in order to get a feel for their similarity and variation purely in terms of the linguistic signs. I was able to manipulate the keyword listings within Wordsmith, in order to provide a set of results that could be structured in a Venn diagram such as the one in figure 4.4 below.

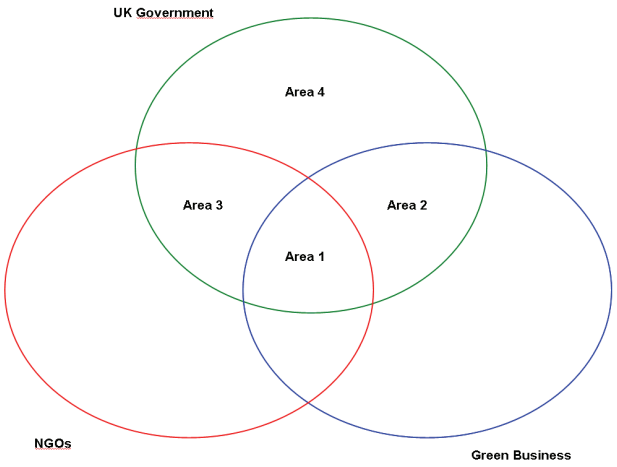


Figure 4.4: Venn diagram for illustrating consistency and variation between three corpora

The reader will, I hope, register a certain similarity between the topology of the Venn diagram and the arrangement of the three spots in the linguistic plane of figure 4.3. The difference between the two diagrams is that, in the Venn diagram, the spots overlap with each other. It provides a technique for illustrating overlap and uniqueness between different groups. In this case I had the listings of one-word keywords: top 100, top 200 etc., of the three corpora, which I wished to compare. For example, taking the top 100 list of the UK government, I wanted to know how many of the words it shares with both the green business list and also the radical NGO list. This number went into the central section of the Venn diagram (area 1). I also wanted to know how many words it shares with just the green business list (area 2), and how many words it shares with just the NGO list (area 3). Finally, I wanted to know how many of the keywords in its top 100 list are only found in this list and neither of the other two (area 4), what I inaccurately dub its ‘unique’ keywords – the word

will almost certainly also be found somewhere lower down the ranking of the others' lists. In the Venn diagram for the top 100 keywords the sum of the numbers in areas one to four, adds up to 100 and, by repeating the process for the other two corpora, the Venn diagram display can give us a numeric overview of the extent to which there is a basis for some useful comparison of the linguistic discourses of the three corpora.

My detailed description of the procedure I used to make this three-way comparison, is presented in section C.3 on page 377, while here, in section 4.9, I present the results and discussion. The Venn diagram in figure 4.5, below, presents the summary results that I obtained, by a comparison of the top 100 edited one-word keywords in each of the three corpora.

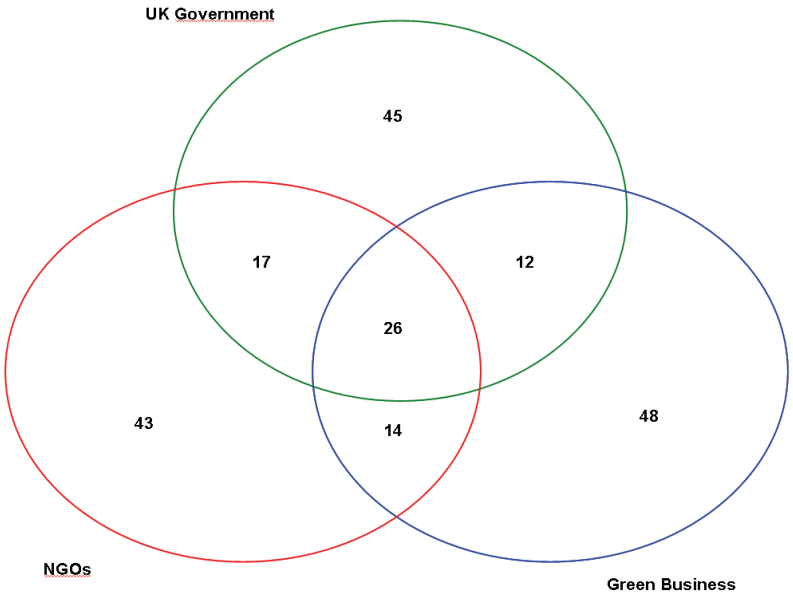


Figure 4.5: Venn diagram presentation of keyword consistency in the top 100 edited keywords

Here, we can read that in the intersection of all three circles there are 26 words. This means that 26 words appear in all three of the lists of the top 100 one-word keywords. In addition to these 26 words, we can see, from the area of overlap between the government circle and the NGO circle, that there are seventeen words that are common to just their two lists. As we move out to the three non-overlapping areas, we can read that green Business has 48 words in its top 100 one-word keywords which are unique. With reference, then, to the linguistic plane in figure 4.3, we can see that, for the comparison of the top 100 keywords, the linguistic discourse of green business contains 40 (= 26 + 14) of the keywords that the radical NGOs

also have in their top 100 keywords. There is also overlap, in these one-word keywords, between the UK government and both green business and the radical NGOs. On the strength of this first overview, therefore, it appeared that my three test corpora provided some possibilities for making useful comparisons. In order to save on space, the rest of the results are presented in summary tables along with a commentary.

4.9.2 'Common-to-all-three' keyword consistency

A surprising observation is that the proportion of "common-to-all-three" keywords does not increase very much, as the overall number of keywords under consideration increases. Table 4.5, below, summarises the trend.

Table 4.5: Comparison of common-to-all-three keyword consistency

Number of keywords	Number of common keywords	Common keywords as a percentage of total
100	26	26%
200	56	28%
300	90	30%
400	116	29%
500	150	30%

One might anticipate that, within the overall discourse of 'business in the biosphere', the different players would have their favourite themes and issues so that, among the very top keywords, there would be a considerable variation between the corpora. But as the number of keywords being compared was increased, my intuitive expectation was that there would be a convergence tendency towards greater lexical similarity in the three listings, as each player also chose to say something about the favourite themes of the other two. Although the trend does start in the upwards direction that would confirm my intuition, it flattens out at 30%, from the 300 keywords comparison to the 500 keywords comparison. It would be interesting to see whether this is a temporary flattening out or whether, when one increases the number of keywords being compared to, say, 1,000, the consistency increases. The difficulty with doing this work is that the process of weeding out the unnecessary, corpus-specific keywords, as described in section 4.8.3, is a detailed and time-consuming process.

4.9.3 'Common-to-two' keyword consistency

The proportion of keywords that are common to the UK government and radical NGO corpora starts and remains consistently higher, than the proportions for the government and green business and green business and the radical NGOs. Table 4.6 below, summarises this. The percentages of keywords that are shared by the UK government and green business starts at a level of 38% in the top 100 keywords, rises slightly and then flattens out at around 41 – 43 %. The percentage of keywords shared by green business and the radical NGOs is almost the same, and one should not read any significance into marginal differences of a couple of percentage points. Although these first macro-level results are a long way from characterising the linguistic discourses of players, if one was to hazard an interpretation of them, they suggest that the discourse of the UK government may have marginally more in common with the discourse of the radical NGOs than with the discourse of green business. This finding does not support Welford's claim that green business is starting to sideline the radical NGOs.

Table 4.6: Comparison of 'common-to-two' keyword consistency

Nr. keywords		**Nr. Gov & NGOs**	**% Gov & NGOs**		**Nr. Gov & Gr. Bus**	**% Gov & Gr. Bus**		**Nr. Gr. Bus & NGOs**	**% Gr. Bus & NGOs**
100		43	43%		38	38%		40	40%
200		94	47%		85	43%		84	42%
300		147	49%		123	41%		123	41%
400		195	49%		167	42%		158	40%
500		243	49%		222	44%		198	40%

4.9.4 Unique keywords

In table 4.7 below, we can see that, over the entire range of measurements, from the top 100 keywords to the top 500 keywords, the impression is of green business having a slightly larger proportion of unique keywords. The percentage of green business keywords holds itself consistently in the higher forties, whereas the UK government and the radical NGOs are around the 40% mark.

Table 4.7: Comparison of unique keywords

Nr. KWs		Nr. Unique Gr. Bus KWs	% Gr. Bus KWs		Nr. Unique Gov KWs	% Gov KWs		Nr. Unique NGO KWs	% NGO KWs
100		48	48%		45	45%		43	43%
200		87	44%		77	39%		78	39%
300		144	48%		120	40%		120	40%
400		191	48%		154	39%		163	41%
500		230	46%		185	37%		209	42%

4.9.5 Summary

One must be very careful not to attach too much significance to these results. However, there is a stability about them which does suggest that we can look at these figures with a degree of confidence. They demonstrate that there is a good deal of *one-word* keyword overlap between the three corpora, and that each of the players shares a selection of *one-word* keywords with each of the other two players. However, the obvious weakness with this work is that the analysis has confined itself to studying the frequency of appearance of just single words. If single words were the exclusive bearers of meaning in textual communication, then these results would have provided more solid evidence of the semantic 'profiles' of the players' linguistic discourse. But, of course, they do not. In the next sections, I present further analysis of keywords, which discusses this problem and attempts to provide a more comprehensive description of the keywords in the corpora.

4.10 Comparing the edited *two-word* keyword lists

Wordsmith is unable to distinguish between the character string CLIMATE, standing alone in a sentence such as "The *climate* in this part of the world is very arid," and the character string CLIMATE CHANGE in the sentence "The greatest threat we face in the 21st century is *climate change*." In both cases it will simply register another occurrence of CLIMATE. One, only partially successful, technique for dealing with this problem, is to ask Wordsmith to search for two-word strings. I say *partially* successful, because what I really want it to do, is register the frequency of occurrence of *units of meaning*. These can contain a variable number of words, from one upwards, and their identification by Wordsmith is, unfortunately,

impossible. Asked to generate a list of two-word keywords in the two sentences above, Wordsmith would actually register a total of four two-word strings containing CLIMATE as follows: THE CLIMATE, CLIMATE IN, IS CLIMATE and CLIMATE CHANGE. So the Wordsmith-generated two-word keyword listings contain a large proportion of irrelevant two-word 'keywords'. They require a lot of editing, in order to arrive at the semantically interesting two-word keywords. As an illustration of this, the 50th-ranked two-word keyword, in my edited keyword list for green business, is SOCIAL PERFORMANCE, but its ranking in Wordsmith's original, unedited list is 206th, a rough rejection rate of three out of four.

The procedure I used to generate the two-word keyword listings was identical to that already explained in section 4.8. Similarly, the editing process involved the removal of words in the same categories as I outlined in section C.2 on page 375. But in addition, a large quantity of two-word keywords had to be rejected, because they contained a function word alongside a word with semantic content. The objective of the editing exercise was to arrive at a list of two-word keywords, where both of the words had semantic content. Even then, there remained some difficult editing decisions, to decide whether the two words with semantic content actually created a unit of meaning or were simply juxtaposed, either by coincidence or in a longer, multi-word unit of meaning. This was often a difficult call to make and, whenever in doubt, I erred on the side of caution in retaining the keyword. One probable consequence of this would be to exaggerate the divergence between the corpora as shown in the 'consistency and variation' Venn diagram in figure 4.6, below.

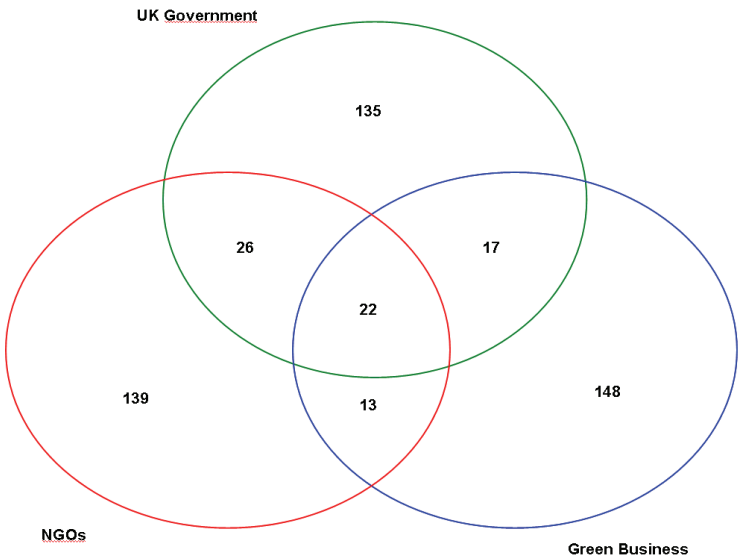


Figure 4.6: Two-word keyword consistency in the top 200 two-word keywords

In figure 4.6, we can see that the absolute number of two-word keywords which appear in all three corpora is just 22, which is marginally over 10% of the total. The corresponding figure for the top 200 one-word keywords is 28% (see table 4.5). The divergence tendency, which is suggested by the Venn diagram in figure 4.6, is further illustrated in the next section, where I present a comparison of the *three-word* keywords in the corpora.

4.11 Comparing the edited three-word keyword lists

The procedure used for one-word and two-word keywords was also used to generate the three-word keyword listings, and then to edit them down. However, three-word units in which the word in the middle was a function word that contributed to the creation of a unit of meaning were retained in the edited list. For example, CLIMATE CHANGE IS and BY DEVELOPING COUNTRIES were rejected, on the grounds that they had already been identified in the two-word listings, but ACTION ON CLIMATE was retained, on the grounds that it created a unit of meaning which would not have been seen before by the two-word keyword procedure.

The rejection rate was even higher in this procedure than in the editing of the two-word keywords. As an illustration, starting from the UK government's unedited list of the top 100, only eleven three-word keywords were retained in my edited list. The first three-word keyword to be retained was CARBON DIOXIDE EMISSIONS, which is ranked 21st in the unedited list and the eleventh-ranked keyword in the edited list, CORPORATE SOCIAL RESPONSIBILITY, has a ranking of 91st in Wordsmith's original list. This is a rejection rate of approximately 90%, i.e. one in ten entries is accepted for the edited list, and it compares with a rate of approximately 75%, i.e. one in four acceptance, for the editing process of two-word keywords. With a nine out of ten rejection rate, I moved quickly down the rankings to a level at which both the absolute number of occurrences and their keyness, as calculated by Wordsmith, was fairly low. As an illustration of this, the 200th-ranked one-word keyword, in the radical NGO corpus, is CHEMICAL. It has a calculated keyness coefficient of 2,944 and an absolute number of occurrences of 2,691. By comparison, only the 1st-ranked three-word keyword, ENVIRONMENTAL AND SOCIAL, has a greater 'keyness' coefficient of 3,271. By the time one gets down to the 100th-ranked three-word keyword, ASIAN DEVELOPMENT BANK, the Wordsmith keyness coefficient is down to 257 and the number of occurrences is just 90. Both of these factors suggested to me that, at the level of three-word keywords, I was witnessing a very marked divergence in the linguistic discourse, and that a comparison of the top 200 three-word keywords would merely take unnecessary time in

confirming this. I decided, therefore, to satisfy myself with compiling the top 100 three-word keywords in each corpus and comparing these. The overall results are shown in figure 4.7, below and the numbers presented in the Venn diagram confirm the impression I gained during the editing procedure. We can see, for example, that among the top 100 three-word keywords, there are only three keywords that occur in all three lists.

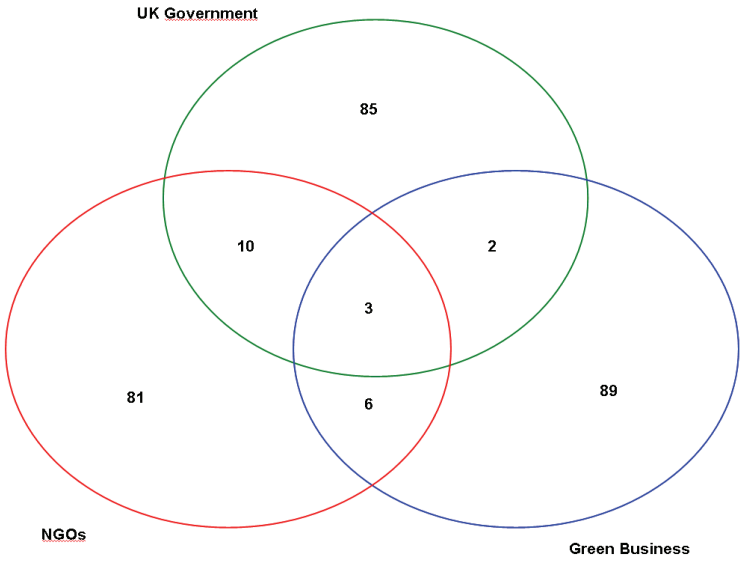


Figure 4.7: Three-word keyword consistency in the top 100 three-word keywords

From my descriptions of the manual editing process involved in the generation of the two-word and three-word listings, it will be clear that searching for four-, or even five-word, units of meaning was not be feasible, within the time constraints under which I worked. However, the amount of information, provided by just these three sets of listings, is considerable and requires some interpretation and discussion. In the next section, therefore, I shall take up several issues related to the interpretation of the reports that I generated with the assistance of Wordsmith.

4.12 Discussion of the one-, two- and three-word keyword lists

4.12.1 Introduction

In this section, I would like to discuss some of the differences between the one-, two- and three-word, keyword listings, which I produced. By using concrete examples, I hope the issues will be clearer. Table 4.8 below, contains the top ten one-, two- and three-word keywords for green business. In order to give an accurate sense of the output reports from

Wordsmith, I have included all of the columns that it normally presents. However, I shall only describe the significance of those columns, which are important, in the context of this project.

Table 4.8: The top ten one-, two- and three-word keywords in the corpus of green business

N	Key word	Freq.	%	RC. Freq.	RC. %	Keyness
1	ENVIRONMENTAL	11 763	INF	7 813	INF	50 282,01
2	BUSINESS	13 319	INF	32 816	INF	33 236,84
3	ENERGY	9 428	INF	11 915	INF	32 561,70
4	SUSTAINABLE	5 053	INF	637	INF	28 694,50
5	EMISSIONS	5 389	INF	1 416	INF	27 957,12
6	EMPLOYEES	5 631	INF	5 527	INF	21 345,17
7	SAFETY	6 113	INF	7 770	INF	21 059,48
8	MANAGEMENT	8 308	INF	20 801	INF	20 525,46
9	WASTE	5 494	INF	6 167	INF	19 852,47
10	PERFORMANCE	6 679	INF	12 903	INF	19 044,42
N	**Key word**	**Freq.**	**%**	**RC. Freq.**	**RC. %**	**Keyness**
1	SUSTAINABLE DEVELOPMENT	2 860	0,08	159		18 026,69
2	CLIMATE CHANGE	1 418	0,04	231		8 229,32
3	ENVIRONMENTAL PERFORMANCE	1 118	0,03	47		7 138,26
4	CORPORATE RESPONSIBILITY	1 073	0,03	14		7 077,07
5	ENVIRONMENTAL MANAGEMENT	1 057	0,03	70		6 598,33
6	BUSINESS PRINCIPLES	929	0,03	0		6 256,01
7	GREENHOUSE GAS	905	0,03	110		5 405,60
8	ENERGY EFFICIENCY	976	0,03	261		5 316,06
9	SOCIAL RESPONSIBILITY	876	0,02	95		5 283,72
10	GROUP COMPANIES	790	0,02	61		4 885,16
N	**Key word**	**Freq.**	**%**	**RC. Freq.**	**RC. %**	**Keyness**
1	HEALTH AND SAFETY	1 890	0,05	859		9 373,65
2	ENVIRONMENTAL AND SOCIAL	708	0,02	24		4 558,15
3	CORPORATE SOCIAL RESPONSIBILITY	624	0,02	6		4 134,68
4	GREENHOUSE GAS EMISSIONS	590	0,02	44		3 656,53
5	CORPORATE RESPONSIBILITY REPORT	426	0,01	0		2 868,68
6	OIL AND GAS	610	0,02	460		2 677,82
7	ENVIRONMENTAL MANAGEMENT SYSTEMS	266		0		1 791,23
8	LOST TIME INJURY	255		0		1 717,16
9	BIODIVERSITY ACTION PLAN	223		0		1 501,67
10	ENVIRONMENTAL MANAGEMENT SYSTEM	221		0		1 488,20

"**N**" is a counter in the spreadsheet which enables the user to see where the word is, and it is independent of the "**Keyword**" next to it. For example, if one instructed Wordsmith to present the keywords alphabetically, it would reorganise the keywords and all the information, in the row to the right of each keyword, would also be moved. But the "N" column would remain unchanged. Wordsmith's default search procedure makes no distinction between upper case

and lower case versions of the same character string. It reminds us of this by presenting all the keywords in upper case, in the report listing. The "**Freq**" column reports on the absolute number of occurrences, in the test corpus, of the keyword. For example, if we look at the keyword EMISSIONS, we can see that Wordsmith has counted 5,389 occurrences. The "**RC. Freq**." column reports on the absolute number of occurrences of the keyword that Wordsmith has counted in the reference corpus, in my case, the BNC. For the same keyword, EMISSIONS, it has registered 1,416 occurrences in the BNC. Based on these two statistics and also the overall size of both the test corpus and the reference corpus, Wordsmith then makes a standard calculation of the keyness of this keyword in the test corpus. In the case of EMISSIONS, we can see from the "**Keyness**" column that it has been calculated to 27,957.12. Using examples from table 4.8 to illustrate my argument, I shall now make some observations and advance some claims about the usefulness of these views.

4.12.2 Semantic content up - statistical 'keyness' down

The results, from the two-word and three-word keyword generation procedures, provide views of the linguistic discourse that have more 'graspable' semantic content than the one-word listings. I experience much more confidence in the process of interpreting a three-word keyword, such as GREENHOUSE GAS EMISSIONS (ranked 4th in the three-word listing), than in speculating on the occurrence of a single word string such SUSTAINABLE (ranked 4th in the one-word listing). The reason why this is so, presumably lies in the processes by which more sophisticated concepts are formed by structures of wordings. For example, the three separate words LOST, TIME and INJURY are linked in a unit of meaning, (ranked 8th in the three-word listing), describing an abstract class of injury to an employee which has caused the individual to be away from work. It is extremely unlikely that a review of the one-word keyword lists would enable the reader to see this possibility. I found INJURY ranked at 204th in the edited one-word keyword listing of green business. In order to find LOST, I had to go back to the unedited listing where it is ranked at 2,428, and in this listing, of the top 6,000(!) keywords, I could not find TIME.

Whilst my intuition tells me that the interpretable semantic content of the keyword listing *increases,* as the number of words in the semantic unit increases, Wordsmith calculates that their statistical keyness *decreases*. According to Wordsmith's statistical calculation of 'keyness', the 10th most key one-word keyword, PERFORMANCE, is more key than the 1st ranked two-word keyword: SUSTAINABLE DEVELOPMENT. Similarly, the top ten three-word keywords have, with the exception of HEALTH AND SAFETY, lower statistical

'keyness' values than the two-word keywords. This inverse relationship, between what I have dubbed the 'graspable' semantic content and the statistical 'keyness', invites speculation as to the characteristics of the one-word keywords that reach the very top of the keyword ranking. Although one can certainly discern the discourse of business-in-the-biosphere in the top ten one-word keywords, my impression is that the words are semantically bland. This quality, however, may make them most adaptable for inclusion in a wider range of multi-word units of meaning. The most obvious examples of this flexibility are the two adjectives ENVIRONMENTAL and SUSTAINABLE. Both of these lend themselves extremely well to describing nouns within the business-in-the-biosphere discourse, so we have good reason to expect that they would be here at the top of the list. But in themselves they communicate no useful semantic information; whenever I come across them I must immediately ask with which other words they combine, in the formation of larger units of semantic coherence. This question is partly answered by looking for, and finding, their appearance, within the two- and three-word keywords in the tables immediately below them: **SUSTAINABLE** DEVELOPMENT, **ENVIRONMENTAL** PERFORMANCE, **ENVIRONMENTAL** MANAGEMENT, **ENVIRONMENTAL** AND SOCIAL, **ENVIRONMENTAL** MANAGEMENT SYSTEMS, and **ENVIRONMENTAL** MANAGEMENT SYSTEM.

Of the remaining eight one-word keywords, six also appear in the top ten two- or three-word keywords combining in larger units of meaning. WASTE is one of the two exceptions, but may be found just outside the top ten rankings in WASTE MANAGEMENT (29th), HAZARDOUS WASTE (31st) and NON HAZARDOUS WASTE (11th). Of all the top ten one-word keywords of green business, only EMPLOYEES has an unambiguous referent, which provides the reader with an unequivocal semantic message. Interestingly, the only two- or three-word units of meaning in which I can find this word, is EMPLOYEES AND CONTRACTORS, which accounts for just 171 occurrences out of its total of 5,631. The consequences for interpreting statistical keywords are twofold. First, the one-word keyword listings certainly ought to be supplemented with two-word and three-word rankings. Second, the study of clusters, around the one-word keywords, will assist in teasing out the different semantic units, within which the one-word keywords have the greatest tendency to appear.[29]

A third consequence that we must not overlook, is the potential to mislead of the statistical keyness coefficient that is presented for the one-word keywords. The problem really

[29] Reporting on the frequency of multi-word clusters, within which a particular keyword appears, is a very simple procedure within Wordsmith's Concord programme.

lies in our tendency to think of *a word* as being the same thing as *a unit of meaning*. As Mike Scott constantly reminds us, the software is only capable of registering the occurrence of character combinations on the electronic page and not units of meaning. We see the results of this in the one-word keyword listing where the sign ENVIRONMENTAL ranks highest of all, but tells us nothing new of semantic value. The two-word and three-word keywords, however, represent my efforts to identify the 'key-units-of-meaning' in the linguistic discourse of green business. Their statistical keyness is significantly lower than the single words. However, because I have made the interpretive decision that the character string has meaning, it is a statistical keyness of a *unit of meaning* rather than of a *token* on the page. One can speculate that if all the occurrences of a one-word keyword, when it appeared within a multi-word unit of meaning, were subtracted from its total number of occurrences as a character string, then the resulting calculation of keyness would give a more accurate assessment of the statistical significance of the single word *as a unit of meaning*. This is, unfortunately, impossible for the software to manage and, currently, I can see no other workable procedure than to manually review the lists. The temptation to disregard the one-word keyword listings has to be tempered by the example of EMPLOYEES, which reminds us that it is, of course, possible for a single word to be a unit of meaning.

4.12.3 Searching for units of meaning reveals the fragmentation of the linguistic discourse

In section 2.2 on page 41, I discussed the characteristics of the linguistic plane. One of my observations was that, viewed from the perspective of culture studies, the linguistic plane does not contain a discourse. I argued that in order to have *a discourse,* in the culture studies sense of the term, there needs to be a common language of meaning and a mutual desire on the part of all the protagonists to communicate meaning between them. If we now compare the degree of overlap for the top 100 one-word keywords with the overlap for the top 100 three-word keywords, one could argue that they provide evidence to support this culture-studies point of view.

In figure 4.8 below, I have placed modified copies of figures 4.5: One-word keywords, and 4.7: Three-word keywords, next to one another. The copies have both been adjusted so that the physical overlap of the three circles is roughly proportional to the numbers in each area. In the case of the copy of figure 4.5: One-word keywords, I have had to bring my three circles in towards the centre to create more overlap, and also to distort their shape somewhat, in an effort to make the area of each section reflect the number of common words. If we now

compare this figure, on the left, with the copy of figure 4.7: Three-word keywords, on the right, we can see the divergence trend, indicated by the three grey arrows, as the three circles of keywords move away from each other.

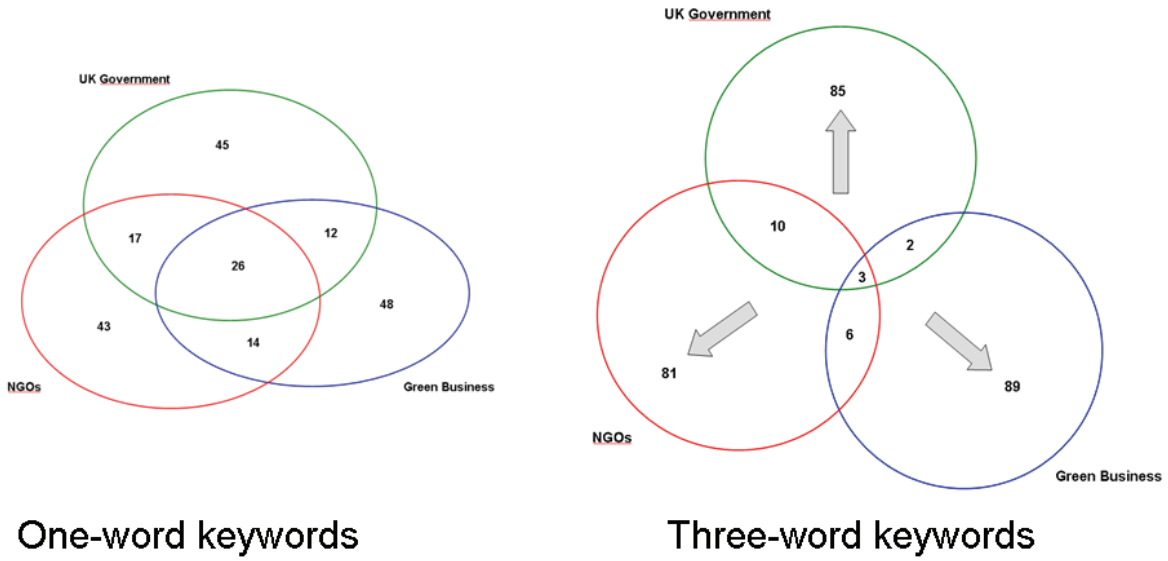


Figure 4.8: Comparison of one-word with three-word consistency in the top 100 keywords

An unfortunate confusion is created, in my opinion, by our corpus-linguistic practice of using the term, *word* in such phrases as "one-word keywords." From the results and discussions presented so far, it is clear that the term "one-word keywords," with which I have been working could be more accurately rephrased as "one-*character string* key*sign*." This is a clumsy form which nobody would wish to use, but by replacing the usage of *word* with *character string* and *sign,* we would remind ourselves of two facts. First, that Wordsmith only recognises characters on a page. Second, that these strings of characters are simply signs which can refer to something, but that the something – the referent – is a semantic interpretation made by the reader of the sign.[30] In my usage of the term "three-word keywords," I have been at pains to emphasise my involvement in the selection of units of meaning from among the "three-*character string* key*signs.*" I might justly claim to be presenting "three-*character string* key*words,*" because here my usage of *word* reflects the fact that they are units of meaning. But a continuing problem with the usage of *word,* even here, is that it is all too easy to associate *a word* with *a meaning*. The fact that this sign-on-the-page has nuances of interpretation and usage among different cultural communities, as I argued in section 3.3.1 on page 103, is a fundamental quality of language which I wish to demonstrate. In order to emphasise my insistence on this indeterminacy between linguistic sign and

[30] This comment repeats my discussion in section 3.3.8 of chapter three.

interpreted meaning, I shall continue to use the term *sign* or *linguistic sign* when I am referring to the linguistic plane. However, granting myself permission to change Wordsmith's own terminology would merely create more confusion, so I shall continue to refer to key*words,* despite my reservations.

My earlier optimism in section 4.9.1 that, on the basis of the one-word keywords, there seemed to be a solid basis for comparing the linguistic discourses, now needs to be tempered. We can affirm that the significant overlap of the linguistic *signs,* used by the three protagonists to communicate their messages, gives us a useful basis for comparing the different ways in which these players use the same linguistic signs. But the evidence, from my process of editing out meaning*less* signs and retaining meaning*ful* signs, from among the two- and three-*character string signs,* supports my contention that the linguistic discourse is, semantically, highly fragmented. A considerable proportion of the linguistic signs that the protagonists have in common, appear to be combined into different multi-word units of meaning. The very high degree of divergence, in these units of meaning, suggests that the ideas, which the protagonists wish to communicate, are not the same.

4.12.4 Semantic content up - interpretation and editing of data up

Reading through the description of my methods of data manipulation provided in sections 4.8, 4.10 and 4.11, it will have become apparent that, at each stage of refinement of the results, I have made unavoidable decisions about what to accept and what to reject. This process of human intervention reached its most active point with the three-word keywords, in which I rejected approximately 90% of the results, presented to me by Wordsmith, in order to isolate those units that had some semantic coherence. Although I have striven to retain some form of objectivity by organising the editing in a principled way, a process of interpretation is as desirable as it is unavoidable. I have, hitherto, described the process as *editing,* in order to produce a list of two- and three-word keywords that were both semantically coherent and statistically significant. But I could also have nested the process within the overall statistical procedure, and described it as an identification of the *semantically coherent* multi-word keywords. Within an overall statistical framework, I have used an interpretive approach. This is an integral part of corpus linguistic work. The computer is capable of manipulating massive volumes of text in order to show us certain patterns in the signs of the language. The researcher's role, as an interpreter of the information, is always present.

4.13 Semantic coherence

Time prevented me from pursuing such a time-consuming process, but there was no logical reason for stopping with the three-word units of meaning. Nor, given more time, would there have been any practical limitations in carrying it out. Both intuition and the evidence from the three-word *semantically-coherent* keyword listing, indicate that such reports would have produced useful results. However, I shall have to trust that the two- and three-word reports provide a comprehensive enough view of the linguistic discourses' semantic content.

But having once ventured down the path of multi-word analysis, a further implication to be considered is that meaning in the texts is interpreted, not just by juxtaposed groupings of one, two, three or even more words, but rather by 'strands' or 'links' of meaning, which are made by the reader's recognition of the semantic coherence between disparate signs appearing in the texts. Units of meaning do not need to appear sequentially in texts, in order for the human mind to interpret a semantic coherence between them. CARBON may appear often with DIOXIDE and this phenomenon may be identified by Wordsmith (33rd in the two-word keyword list). Similarly, GREENHOUSE will often co-occur with GASES and Wordsmith will also spot the pairing (58th in the two-word keyword list). But there is no guarantee that CARBON DIOXIDE will appear in close proximity with GREENHOUSE GASES, or that either of these pairings will appear juxtaposed with CLIMATE CHANGE (2nd in the two-word keyword list). Regardless of their relative position in the text, the educated human mind makes the semantic coherence between these three terms.[31] This observation is a useful lead-in to chapter five, in which I interpret the keyword lists with the objective of identifying semantic fields of coherence. With these, I can characterise the linguistic discourses of the three players.

4.14 Summary – which linguistic results to interpret?

In sections 4.8, 4.10 and 4.11, I provided an account of various processes of data manipulation, which I developed and undertook. My overall objective was to convert the raw linguistic 'data' – the three test corpora, into semi-refined objects of study, which would provide more promising material for interpretation. I conceptualise this process as an attempt to convert meaningless 'data' into results with some meaning potential. The first word listings, which Wordsmith generates from the corpora, have little semantic value. But in section 4.12, I demonstrated that the two-word and three-word keyword listings and also the

[31] See section 3.3.7 of chapter three, for my discussion of semantic fields of coherence.

consistency and variation comparisons, offer the possibility of fruitful interpretation. In chapter five, my intention is to make useful observations about the characteristics of the linguistic discourse of the three players, on the basis of the listings which I have generated from their respective corpora. In order to make justifiable observations about the characteristics of each corpus, I need to study views of the whole corpus. The methods I have outlined thus far are certainly capable of manipulating the data of a whole corpus. But the interpretation must come from a human brain, so the results need to be restricted to a volume over which I am capable of gaining an overview. For this reason, I elected to focus my attention on the top 50 three-word and the top 100 two-word keywords in each corpus, using the top 200 one-word keywords of each corpus as a supplement. These listings are presented in appendix D on page 381.

5 Comparisons in the linguistic plane – response

5.1 Introduction

Chapter four and its supporting appendices, A to D, provide an account of the empirical procedures by which I arrived at the point, at which analysis of an object of study was possible. Chapter five is the first of the three chapters which respond to the various research questions which I posed in chapter two. Chapters six and seven contain my replies to the appropriation and incorporation claims. Here, in chapter five, I shall respond to the two questions which I formulated in section 2.2 on page 41. For ease of reference, I repeat figure 2.4 from page 45 as figure 5.1 below, and reiterate the research questions, which I seek to address in this chapter.

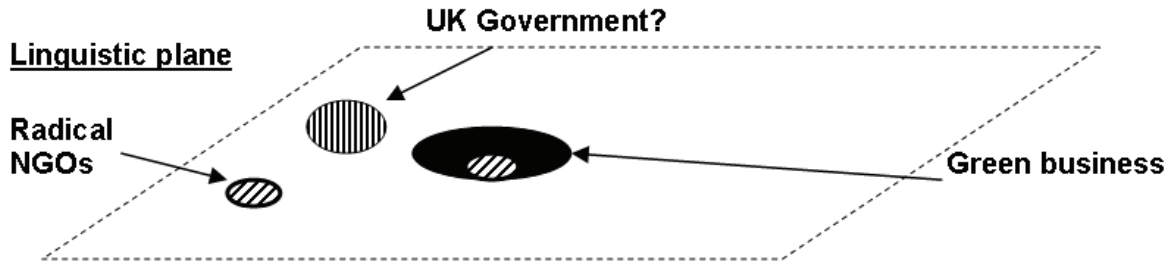


Figure 5.1: Comparison within the linguistic plane

Research question one asks how the linguistic discourse of green business compares with that of the radical NGOs. Can I find evidence that green business has, as Welford has suggested, adopted the language of the radical environmental debate? His claim ought not to raise any eyebrows. Business has been placed under pressure to address itself to the environmental critique. Given that green business has made some genuine attempts to modify its operations, in order to be more environment-friendly, it is only to be expected that it should adopt the language of the environment, in order to represent these environmental activities. We cannot accuse the green corporations of behaving in an underhanded fashion, when they use the language of the environment in order to talk about the environment.

The empirical confirmation that green business has adopted the language of the environment will not, therefore, be very surprising. Of more interest will be the results of a three-way analysis, which is required by research question two. When I compare the linguistic discourse of the radical NGOs and green business with that of the British government, do I find evidence that the government talks more about the things that business talks about, than it talks about the things that the radical NGOs talk about? Can I find evidence that the

government talks about these things in similar ways to green business or the radical NGOs, or does it have its own ways of talking about these things?

My end product from chapter four consisted of the three objects of study in the linguistic plane. The one-, two- and three-word keywords of the three players are listed in tables D.1, D.2 and D.3 on pages 382, 386 and 390, and the results I shall present in this chapter are based on my analyses of these keyword listings. The need to economise on space has prevented me from including the twelve pages of keywords in the main body of the thesis, but I hope the reader will devote a few minutes to appendix D. There are two reasons why such an effort is worthwhile. First, I hope that the process of skim reading the twelve pages will introduce some substance into what has hitherto been a theoretical treatment of the linguistic plane. As one runs one's eye down the lists there is no difficulty in recognising that these are words and phrases which could be useful ingredients in a language of 'business in the biosphere'. The corpus-linguistic techniques of data collection and processing into more useful information, which I described in sections 4.8, 4.10 and 4.11, provided me with a promising object of interpretive study. Second, the same skim reading exercise always leaves me with a sense of being overpowered, by the sheer mass of information which is made available by this computer processing. Even though the stages I have described each made a contribution in narrowing down or refining the material, and I then set an arbitrary minimum cut-off point for my lists, the 350 words and phrases, in each of the three lists, is still more information than my brain is capable of comprehending simultaneously. In this chapter, therefore, I shall continue with a process of refining, in order to provide different interpretive views which respond to the two research questions.

5.2 Response to research question one

5.2.1 Introduction

In this section, I will deal with the first question which would like to see what evidence exists, to support Welford's claim that the language of the radical environmental debate is also used by green business. Figure 5.2 below, is a slightly simplified copy of figure 5.1. I have made two changes, in order to highlight the focus of the empirical response. First, I have removed the UK government's spot from the linguistic plane, because it has no role to play in research question one. Second, I have increased the size of the radical NGOs' spot to reflect the fact that, in my object of study at least, its discourse is just as big as the green business one. I have also labelled the smaller cross-hatched spot as "common discourse?" to underline that this is

what I am trying to identify and describe. I have drawn it within the larger black spot which represents the discourse of green business, and in the schematic it is separate from the larger cross-hatched spot of the discourse of the radical NGOs. However, I hope that the cross-hatching is suggestive of the possible overlap for which I am seeking evidence.

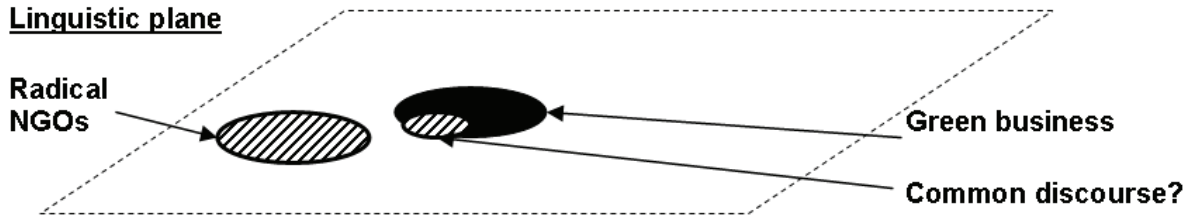


Figure 5.2: Comparison of radical NGO and green business discourse within the linguistic plane

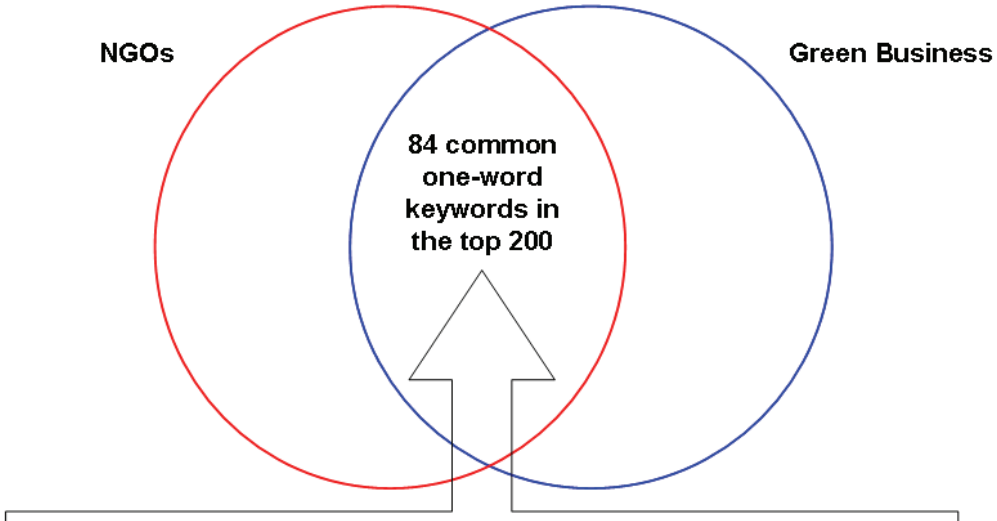
I shall begin, by presenting a view of the common words and phrases. These were obtained by matching the lists in tables D.1 and D.2. The procedure I used, to identify them, was the same as the comparative procedure I described in section C.3 on page 377, except that, with just two lists to be compared, the process was much more straightforward.

5.2.2 Keyword comparison

Figure 5.3 below, shows a simple two-way Venn diagram intended to represent the respective linguistic discourses of the radical NGOs and green business. The area of overlap in the Venn diagram corresponds to the smaller cross-hatched circle in figure 5.2 above. The 84 one-word keywords, which are organised alphabetically in five columns underneath it, should really be placed inside the overlapping area of the Venn diagram, as I have tried to suggest with the arrow head. In keeping with the encouraging statistics of section 4.9 on page 165, in which I reported the numerical comparison of one-word keywords between the three corpora, we find here that in a comparison of their top 200 one-word keywords, 42% (=84/200) of the radical NGOs' keywords are also used by green business. However, and also in keeping with my comments in section 4.12.3 (page 177) on the fragmented nature of the linguistic discourse, when we look at the same picture for common two- and three-word keywords, the degree of overlap declines very significantly. In this view, which I present below in figure 5.4, the percentage overlap is just over 17% (=26/150). This combines a percentage overlap of 20% (=20/100) for two-word keywords, and 12% (=6/50) for three-word keywords.

If one reads quickly through the list of the 84 common one-word keywords, in figure 5.3, and then does the same with the list of the 26 common two- and three-word keywords, in figure 5.4, it is this latter collection which communicates more meaning. I experience a sense

of frustration in reading the solitary linguistic signs in figure 5.3, which is probably caused by each individual word lacking a context within which its meaning would become clearer.[1]



ACTION	CORPORATE	HEALTH	NGOS	RESOURCE
ADDITION	COUNTRIES	HUMAN	ORGANISATIONS	RESOURCES
AREAS	DEVELOPING	IMPACT	PLANT	REVIEW
ASSESSMENT	DEVELOPMENT	IMPACTS	POLICIES	SAFETY
BENEFITS	DIOXIDE	IMPLEMENTATION	POLICY	SITES
BIODIVERSITY	EMISSIONS	INCLUDING	POTENTIAL	SOCIAL
BUSINESSES	ENERGY	INDICATORS	PROCESS	STAKEHOLDERS
CARBON	ENSURE	INDUSTRY	PRODUCTION	STANDARDS
CLIMATE	ENVIRONMENT	INFRASTRUCTURE	PRODUCTS	STRATEGY
COMMITMENTS	ENVIRONMENTAL	INTERNATIONAL	PROJECT	SUPPLIERS
COMMUNITIES	ETHICAL	INVESTMENT	PROJECTS	SUPPORT
COMMUNITY	EXAMPLE	ISSUES	RECYCLING	SUSTAINABILITY
COMPANIES	GLOBAL	KEY	REDUCE	SUSTAINABLE
COMPANY	GOVERNANCE	LANDFILL	REDUCTION	TARGETS
COMPLIANCE	GOVERNMENTS	LOCAL	RENEWABLE	TRANSPARENCY
CONSULTATION	GREENHOUSE	MINING	RENEWABLES	WASTE
CONSUMERS	HAZARDOUS	MONITORING	REPORT	

Figure 5.3: The 84 common one-word keywords in the top 200 one-word keywords of green business and the radical NGOs

The experience varies from word to word. Some words seem to carry more meaning, when standing on their own, than do others. Words such as BIODIVERSITY, HEALTH and STAKEHOLDERS do communicate a fairly well-defined meaning to me. AREAS, IMPLEMENTATION and SUPPORT, on the other hand, do not. With another group of 'words' in the list my tendency is to immediately look for a semantically-related partner with which, my intuition tells me, it 'ought' to appear. Thus SUSTAINABLE 'ought' to be paired off with DEVELOPMENT, CARBON with DIOXIDE and RENEWABLE with ENERGY. Frustratingly, although I find CLIMATE in the list, CHANGE is absent, and although both CORPORATE and SOCIAL are there, RESPONSIBILITY is not. The sense of frustration is much less frequent, when I read the list of 26 two- and three-word keywords in figure 5.4, and

[1] I have discussed this issue previously in section 4.12 of chapter four.

the frustration I do experience, on two occasions, is a consequence of my own inconsistency in not ensuring that I only retained whole units of meaning, during the editing process. CORPORATE SOCIAL – two adjectives, begs the question "corporate social *what*?" but is answered in the next entry: CORPORATE SOCIAL RESPONSIBILITY. Similarly, ENVIRONMENTAL AND SOCIAL – two adjectives connected by a conjunction, begs the same question, but this time it is not answered because I don't have the four-word keywords. But apart from these two exceptions, I am able to construct a satisfactory sense of meaning from the remaining keywords.

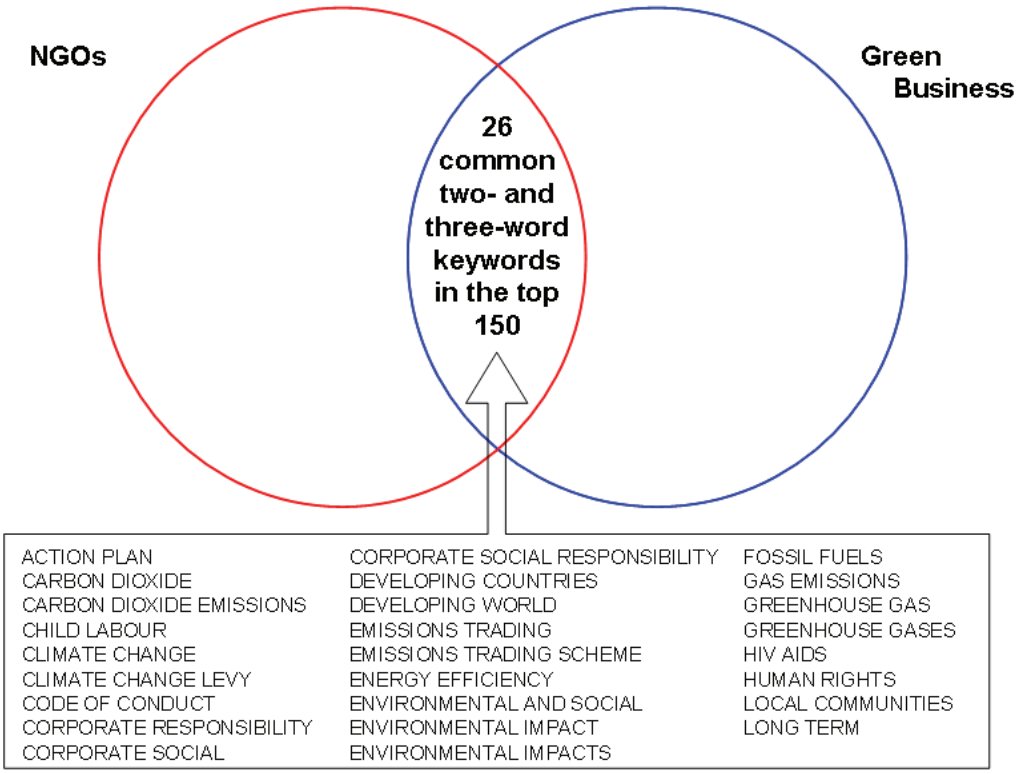


Figure 5.4: The 26 common two- and three-word keywords in the top 100 two-word and top 50 three-word keywords of green business and the radical NGOs

The experience I have just described is a confirmation of the discussion in section 4.12.3 on page 177. It takes me back to the suggestion I made there, that the "one-*word* key*words*" might more accurately be considered to be "one-*character string* key-*linguistic signs*." The two-word and three-word keywords, however, can retain their Wordsmith-provided naming convention, because I have made sure in my editing process that they have meaning, and therefore satisfy this important characteristic of what we expect a word to have. What this tendency also reveals, is our instinctive wish to construct meaning from the linguistic signs. We want to understand what the linguistic discourse is *about*.

5.2.3 Semantic fields of coherence

I come, now, to my next interpretive move in the progression from the *linguistic signs*, with which Wordsmith operates so efficiently, but so ignorantly, towards *meanings*, which are the goal of the project. In my lists of two- and three-word keywords, I claim to have the statistically key *individual units of meaning* of the two protagonists. Can I now use them to interpret the statistically key *issues* in their respective linguistic discourses? At this point, the culture-studies reader may be tempted into making an ironic snort. After all, the corpus linguistic procedure works by pulverising meaning*ful* texts into a mountain of atomised, meaning*less* character strings, and now I am struggling to stick the bits back together again. "Why" the culture-studies reader may ask, "bother to break them up in the first place?" The answer from the corpus linguist, to this question, is that the process creates views on linguist discourse that one would not otherwise see, and that these views prompt questions, which might not otherwise have occurred to the researcher. My empirical findings, in sections 5.2.4 to 5.2.7, will both substantiate the response of the corpus linguist, as well as the scepticism of the culture-studies reader.

The interpretive technique which I now use is based on an idea which I have dubbed *semantic fields of coherence*. It consists of reviewing the lists of keywords with a view to identifying individual units of meaning which have some semantic connection, and then grouping these units of meaning into a single field. The field has to have a description of its semantic content, which may reasonably be applied to all the units of meaning which I have placed in it. In this way, I can argue that there is semantic coherence between all the individual items in the field. Rather than rely on the one-word keywords, I used the 26 common two- and three-word keywords as a starting point in this exercise. From the discussion at the end of the previous section, it will be clear that I have serious reservations about making semantic assumptions regarding "one-*character string* key-*linguistic tokens*." However, by starting with building blocks that are already units of meaning, I may, more confidently, search for groupings which do have some semantic coherence, and propose a view of these key 'aboutnesses' in the linguistic discourse. Then, I can ask the question "Is it likely that this issue would originally have been the preserve of the radical NGOs, or may we safely assume that this is a new representation in the debate which green business wishes to make?"[2]

[2] In asking this question I need to recognise the problem, already pointed out in section 2.2 of chapter two, that the corpus testing is a synchronic exercise and cannot really tell us anything of a process underway.

This procedure is my intellectual response to one empirical challenge which the listings presented. It is interpretive and I make no claims that the views I present, of the linguistic discourse, are the result of any 'objective' analysis. Wordsmith provides comprehensive reports on the immediate neighbours of particular words, but not on the co-occurrence, say, of two, operator-selected units of meaning, within larger stretches of text, such as paragraphs or documents. However, it is not inconceivable that, at some future date, the programme might be able to statistically validate or repudiate such interpretive fields, by reporting on the tendency of individual units of meaning to 'clump' together in some geographic proximity. Until such time, the reader will have to judge the plausibility of my semantic fields of coherence, and consider whether other views might just as plausibly be constructed from the evidence.

I shall now present some different 'views' of the objects of study, using my concept of a semantic field of coherence, and with the aid of the inter-corpus distribution of keywords, which Wordsmith is capable of demonstrating. I begin by examining the 26 common two- and three-word keywords which are presented in figure 5.4, and attempt to identify semantic fields of coherence that both the radical NGOs and green business appear to share.

5.2.4 Semantic field one: the challenge of climate change

Between eleven, of the 26 units of meaning, there is an obvious semantic link of climate change, and the need to address this challenge. I have shaded the background to the eleven words in table 5.1 below.

Table 5.1: Semantic field one: the challenge of climate change, in the 26 common two- and three-word keywords

ACTION PLAN	CORPORATE SOCIAL RESPONSIBILITY	FOSSIL FUELS
CARBON DIOXIDE	DEVELOPING COUNTRIES	GAS EMISSIONS
CARBON DIOXIDE EMISSIONS	DEVELOPING WORLD	GREENHOUSE GAS
CHILD LABOUR	EMISSIONS TRADING	GREENHOUSE GASES
CLIMATE CHANGE	EMISSIONS TRADING SCHEME	HIV AIDS
CLIMATE CHANGE LEVY	ENERGY EFFICIENCY	HUMAN RIGHTS
CODE OF CONDUCT	ENVIRONMENTAL AND SOCIAL	LOCAL COMMUNITIES
CORPORATE RESPONSIBILITY	ENVIRONMENTAL IMPACT	LONG TERM
CORPORATE SOCIAL	ENVIRONMENTAL IMPACTS	

This first interpretive view ought not to raise any eyebrows and provides ammunition to the sceptical culture-studies researcher. There is a consensus that the issue of climate change is environmental problem number one, and a subject on which everyone ought to have something to say. In addition, I pointed out, in section 4.6.4 on page 156, that five of the

contributing green businesses are energy corporations. It is only to be expected that they should have something to say on the subject of carbon dioxide emissions and climate change.

I had identified eleven keywords of the semantic field of climate change, which were common to both the radical NGOs and green business. In the next stage of my procedure, I searched for this semantic field among the top 150 two- and three-word keywords, of both the radical NGOs and green business. This was to see whether the two players have other words, which only appear in their list of keywords. In the interests of space, I have consigned the two tables of the 150 keywords with the red-shaded backgrounds to tables E.1 and E.2 on pages 396 and 398. My presentation of the distribution of the keywords is shown in figure 5.5 below.

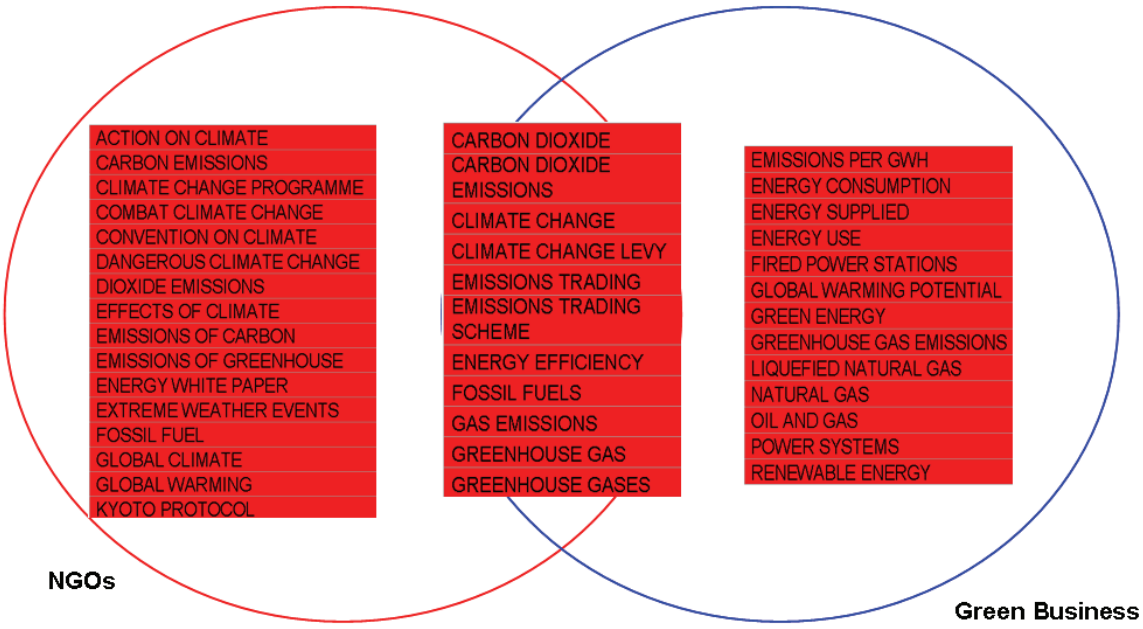


Figure 5.5: The distribution of keywords in the semantic field of climate change

My interpretation of the distribution of keywords across the two corpora is that this reflects different interests on the part of the protagonists, about what are the important aspects of the issue to represent. The eleven common keywords in the middle of the Venn diagram refer to the problem itself: CLIMATE CHANGE, and the direct cause which is the increased emission of so-called GREENHOUSE GASES, chief of which is CARBON DIOXIDE, caused by the combustion of FOSSIL FUELS. There is also reference to possible measures to address the problem: EMISSIONS TRADING, the introduction of a CLIMATE CHANGE LEVY on certain activities, and a focus on improving ENERGY EFFICIENCY.

If we now review the radical NGOs' list, on the left side of figure 5.5, we can see that, in addition to these central issues, they wish to present two other aspects which seem not to be

a major concern of green business. First, they wish to draw attention to the dangers of climate change. There are the EFFECTS OF CLIMATE (change), DANGEROUS CLIMATE CHANGE, and the possibility of EXTREME WEATHER EVENTS. They also retain the usage of the more threatening phrase: GLOBAL WARMING, in addition to the anodyne term: CLIMATE CHANGE. A second area of the semantic field, which one can discern from these keywords, is an appeal to governmental and international action in order to address the issue. KYOTO PROTOCOL, ENERGY WHITE PAPER and CONVENTION ON CLIMATE are all suggestive of the need for government action.

Green business, on the other hand, appears to be more focused on quantifying the problem with such phrases as EMISSIONS PER GWH, ENERGY CONSUMPTION, ENERGY SUPPLIED and ENERGY USE. Rather than simply talking just about fossil fuels, there seems to be more detail here too: OIL AND GAS and LIQUEFIED NATURAL GAS are examples here. Finally, there is also reference to RENEWABLE ENERGY and GREEN ENERGY, presumably as replacements for fossil fuels, which might meet energy demands. One can discern, here, the green business focus on what are, presumably, their own specific efforts to quantify the problem, and to take action to reduce their climate gas emissions.

5.2.5 Semantic field two: 'management' - damage to the biosphere, corporate responsibility and implementation

In contrast to semantic field one, this second view probably requires more explanation of my interpretation of the coherence. Among the 26 common keywords, there are three phrases referring to corporate responsibility. The other shaded keywords all belong to a semantic field which lies so close to the first, that I prefer to interpret them all as belonging to one larger combined semantic field, which I present below in table 5.2.

Table 5.2: Semantic field two: 'management' - damage to the biosphere, corporate responsibility and implementation, in the 26 common two- and three-word keywords

ACTION PLAN	CORPORATE SOCIAL RESPONSIBILITY	FOSSIL FUELS
CARBON DIOXIDE	DEVELOPING COUNTRIES	GAS EMISSIONS
CARBON DIOXIDE EMISSIONS	DEVELOPING WORLD	GREENHOUSE GAS
CHILD LABOUR	EMISSIONS TRADING	GREENHOUSE GASES
CLIMATE CHANGE	EMISSIONS TRADING SCHEME	HIV AIDS
CLIMATE CHANGE LEVY	ENERGY EFFICIENCY	HUMAN RIGHTS
CODE OF CONDUCT	ENVIRONMENTAL AND SOCIAL	LOCAL COMMUNITIES
CORPORATE RESPONSIBILITY	ENVIRONMENTAL IMPACT	LONG TERM
CORPORATE SOCIAL	ENVIRONMENTAL IMPACTS	

In order to ensure that business takes its responsibility towards the biosphere and its contents seriously, these green corporations have implemented very detailed and comprehensive procedures. I present below, in figure 5.6, a detailed schematic of the iterative business process, by which green business seeks to make its operations greener.

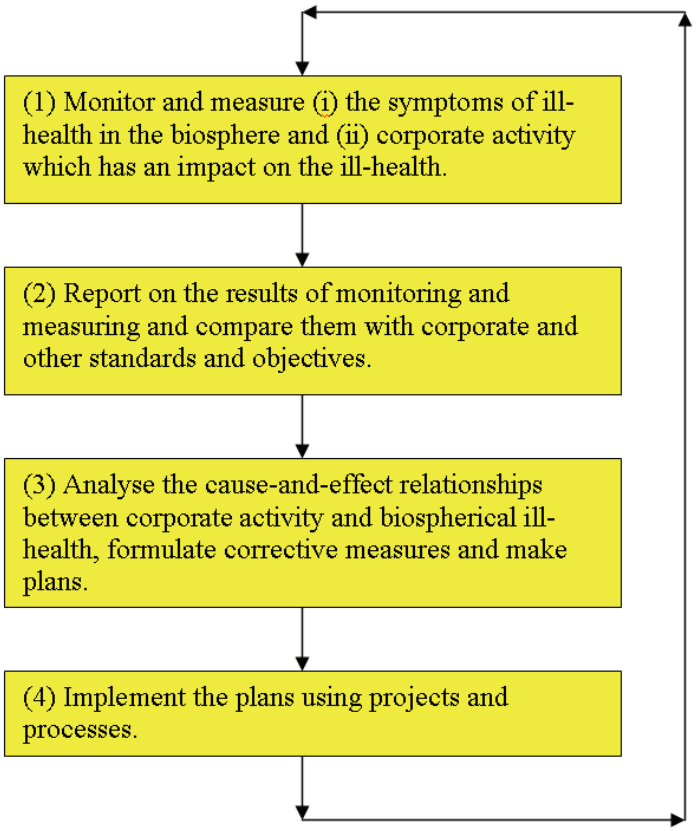


Figure 5.6: 'Management' - the business process by which green business works to make its operations greener

The corporations need to be able to monitor their own effects on the biosphere, hence my inclusion of ENVIRONMENTAL IMPACT(S). They also need to formulate the standards of operation to which they should aspire, if they are to take their responsibilities seriously, hence my inclusion of CODE OF CONDUCT. Finally, they need to set themselves objectives, make plans (hence ACTION PLAN), implement the plans, and then report back on the progress that is being made towards the objectives and the, hopefully, reduced impacts on the biosphere.

The flowchart of figure 5.6, with its feedback loop, suggestive of the endless process of management in a business environment of flux, is a staple of business studies teaching. I hope my shortened label of 'management' will be acceptable for this semantic field. I hope, too, that the rationale for my word selection will be clear. I now search for words belonging to

this semantic field, among the top150 two- and three-word keywords of the radical NGOs and green business. Their distribution across the two corpora is shown in figure 5.7 below.

Figure 5.7: The distribution of keywords in the semantic field of management

The first impression one gains from figure 5.7, is the enormous number of keywords in the green business discourse. Here, the corpus linguist may claim some justification for her point of view. It is unlikely that many of the texts in the two corpora have a title such as 'management'. But the view on the discourse, which is provided by corpus linguistics, reveals the pervasiveness of this semantic field. It is heavily represented in both linguistic discourses, but massively so in that of green business. I will not claim that the culture-studies researcher would have been unable to discern such a field of meaning, through a process of informed and thorough reading, but I will venture the opinion that only corpus linguistics is capable of delivering such a comprehensive view, as the one I present in figure 5.7.

I shall begin with a discussion of the words of green business, on the right hand side of the Venn diagram. Including the seven common two- and three-word keywords, this semantic field accounts for 43% (=64/150) of the top 150 green business keywords. A few of the keywords, such as DOW JONES SUSTAINABILITY, GLOBAL REPORTING INITIATIVE and INTERNATIONAL MARKETING STANDARDS, refer to standards and objectives that have their origin in agencies external to the green businesses. In addition, concepts such as a CODE OF CONDUCT, CORPORATE (SOCIAL) RESPONSIBILITY and ENVIRONMENTAL IMPACT(S) are shared with other groups, such as the radical NGOs,

which are also external to the green corporations. But the vast majority of the keywords are representations of the internal business processes, by which the corporation manages itself, with the objective of improving its operating efficiency. In the linguistic discourse of green business there is, clearly, a very keen interest in representing the concrete actions which the corporations are taking, in order to make themselves greener.

If we now turn our attention to the left hand side of figure 5.7, and its shorter list from the radical NGOs, there are two areas, in this semantic field, which are evident. First, as is the case with semantic field one, there is evidence of an appeal to government and international agencies, to find ways of controlling the activity of international business: AGREEMENT ON AGRICULTURE, AGREEMENT ON TRADE and CODE OF PRACTICE, as well as a moral appeal to the concept of ENVIRONMENTAL JUSTICE. The need for corporate control is revealed by the terms CORPORATE ACCOUNTABILITY, EVALUATION OF COMPLIANCE and EXTENT OF COMPLIANCE. Second, also in parallel with semantic field one, the radical NGOs seem to focus more on the damaging effects on the biosphere. Once again, we find the anodyne term ENVIRONMENTAL *IMPACT* among the common keywords in the middle, just as CLIMATE CHANGE was favoured in place of GLOBAL WARMING. On the left, we find that the radical NGOs repeat this term four times in different formulations, and have supplemented it with terms such as EFFECTS and DAMAGE.

5.2.6 Semantic field three: the problems of people and communities in the developing world who are affected by business activity

The third and final semantic field of coherence which, on the basis of these 26 common keywords, is shared by both the radical NGOs and green business, concerns the plight of people who are adversely affected by the activities of business, or, as I argued in chapter four, by the unfairness of the 'rules' for international trade.

Table 5.3: Semantic field three: the problems of people and communities in the developing world who are affected by business activity, in the 26 common two- and three-word keywords

ACTION PLAN	CORPORATE SOCIAL RESPONSIBILITY	FOSSIL FUELS
CARBON DIOXIDE	DEVELOPING COUNTRIES	GAS EMISSIONS
CARBON DIOXIDE EMISSIONS	DEVELOPING WORLD	GREENHOUSE GAS
CHILD LABOUR	EMISSIONS TRADING	GREENHOUSE GASES
CLIMATE CHANGE	EMISSIONS TRADING SCHEME	HIV AIDS
CLIMATE CHANGE LEVY	ENERGY EFFICIENCY	HUMAN RIGHTS
CODE OF CONDUCT	ENVIRONMENTAL AND SOCIAL	LOCAL COMMUNITIES
CORPORATE RESPONSIBILITY	ENVIRONMENTAL IMPACT	LONG TERM
CORPORATE SOCIAL	ENVIRONMENTAL IMPACTS	

In table 5.3 above, I have also included HIV AIDS because it is a very important problem in many developing countries, and HUMAN RIGHTS, because many of the radical NGOs argue that some business activity supports political regimes which abuse the human rights of their people. The application of this semantic field to the top 150 keywords of the two players resulted in my representation of the distribution of the keywords in figure 5.8 below.

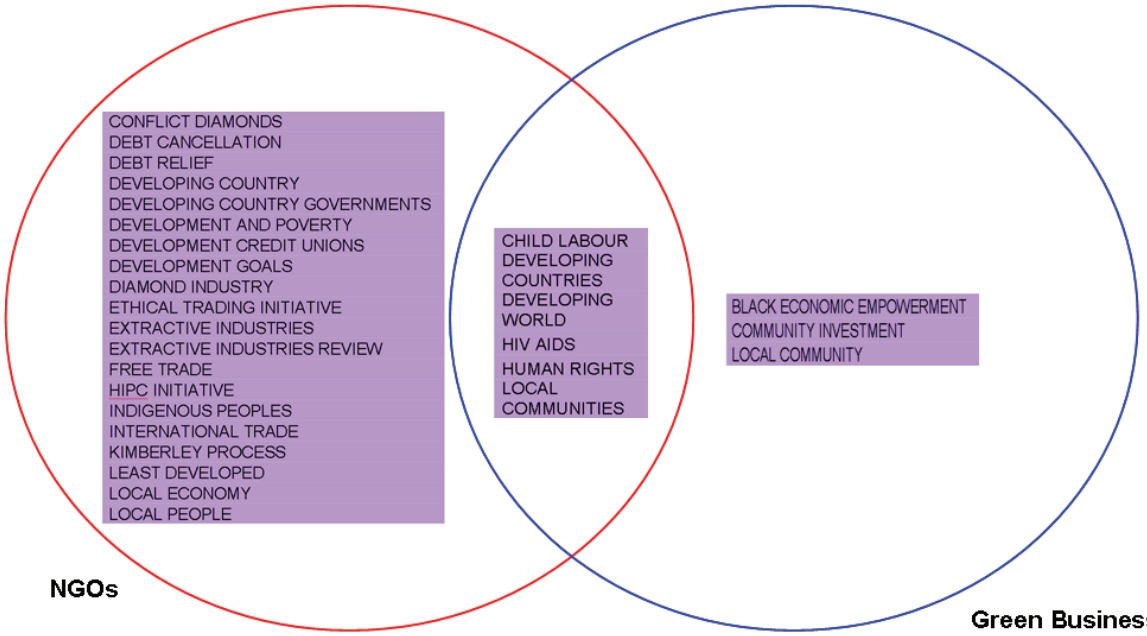


Figure 5.8: The distribution of keywords in the semantic field of the problems of people and communities in the developing world who are affected by business activity

The first impression from this Venn diagram, is the same one as for semantic field two, except reversed; the radical NGO discourse is, clearly, more concerned with this semantic field. Green business seems to augment the common keywords with a focus on the LOCAL COMMUNITY, presumably in the vicinity of its corporate operations, as well as INVESTMENT in those communities. On the basis of this evidence, we may expect green business linguistic discourse to represent specific 'investments' that the corporations are making, in specific local communities in specific developing countries. The radical NGOs use the terms: DEVELOPMENT and DEVELOPING a great deal more, and I interpret different areas of the semantic field, all of which are closely connected with this theme. First, the level of third world debt is an issue on which they wish to focus attention. They have DEBT CANCELLATION and DEBT RELIEF as well as HIPC INITIATIVE.[3] Second, there are

[3] The World Bank, *(HIPC) The Enhanced Heavily Indebted Poor Countries Initiative*, http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTDEBTDEPT/0,,contentMDK:20260411~menuPK:64166739~pagePK:64166689~piPK:64166646~theSitePK:469043,00.html, (accessed 11th February 2008).

three references to trade: ETHICAL TRADING INITIATIVE, FREE TRADE and INTERNATIONAL TRADE. Third, there are several keywords which are concerned with the, presumably, negative consequences, of mining activity: CONFLICT DIAMONDS, DIAMOND INDUSTRY, EXTRACTIVE INDUSTRIES (REVIEW) and KIMBERLEY PROCESS.[4]

5.2.7 Distinctive semantic fields of coherence

The procedure, which I described in section 5.2.3, started by looking at the common two- and three-word keywords, identified three common semantic fields of coherence, and used these as a method of interpreting three views on the linguistic discourse, in which the radical NGOs and green business had something in common. Only in the case of the first semantic field of coherence, that of climate change, could one claim that the players' 'representational need' was broadly in balance. Green business displayed a very strong representation of semantic field two, whereas the radical NGOs' representational need over green business was, proportionately, even greater in the case of semantic field three. So, even when considering the three semantic fields that the radical NGOs and green business have in common, we can see that there is a great deal of representational divergence.

But what of the remaining keywords that have not been considered? The words I have allocated to the three common semantic fields, accounted for two-thirds of the keywords on the green business list, and one half of those on the list of the radical NGOs. In tables E.1 and E.2 on pages 396 and 398, the remaining 53 keywords of green business and the remaining 74 keywords of the radical NGOs, are revealed by their white (i.e. non-shaded) backgrounds. In table 5.4 below, I present a summary of the various semantic fields of coherence that the two players do not have in common.

Table 5.4: Semantic fields of coherence that the players do not have in common

Semantic fields of the radical NGOs	Semantic fields of green business
(1) Food quality and (the threat of?) genetic modification of food	(1) Water quality

[4] "The Kimberley Process is a joint government, international diamond industry and civil society initiative to stem the flow of conflict diamonds - rough diamonds that are used by rebel movements to finance wars against legitimate governments. The trade in these illicit stones has contributed to devastating conflicts in countries such as Angola, Cote d'Ivoire, the Democratic Republic of Congo and Sierra Leone." Kimberley Process, *What is the Kimberley Process*?, http://www.kimberleyprocess.com/, (accessed 11th February 2008).

(2) International trade and financing	(2) Air quality
(3) Community-based organisations and civil society groups	(3) Health
(4) Waste	(4) Employees/people
(5) Smaller semantic fields – arms control, forest protection, cities, flame retardants	(5) The internal organisation and structure of the corporation and its subsidiaries
	(6) Biodiversity

5.2.8 Research question one - conclusions

Research question one seeks evidence, in the linguistic plane, to support Welford's claim that the language of the radical environmental debate is also used by green business. In the context of my schematic of the linguistic plane, shown below in figure 5.9, the question asks for a characterisation of the small cross-hatched area. The evidence from this empirical exercise has been based on the two- and three-word keywords. The argument I have advanced is that these keywords provide a much more solid foundation for meaning construction, than the lists of one-word keywords. I have used this quality to justify my interpretive views of the discourse, which I have called *semantic fields of coherence*. The results, presented in sections 5.2.4 to 5.2.7, are based on these semantic fields of coherence, and they point to there being a good deal more divergence than convergence, between the two players.

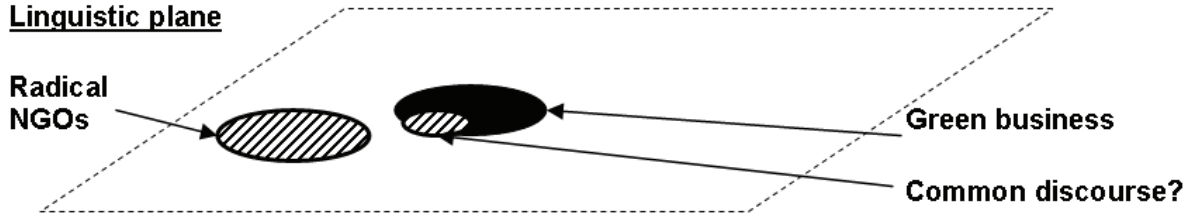


Figure 5.9: Comparison of radical NGO and green business discourse within the linguistic plane

Using this technique, in order to create views of the discourse, demonstrates the fragmentation of the linguistic plane, which I discussed in section 4.12.3 on page 177. It has demonstrated the very obvious point that different players have different representational priorities. It also shows that, even when they prioritise discussion of the same issue, corresponding to my *semantic field of coherence*, there are different aspects of the issue which each wishes to stress. Note that, in this conclusion, my emphasis is on what the players *prioritise* for representation. The results are based on just the top 100 two-word keywords and

the top 50 three-word keywords. When viewing the semantic field of climate change, we cannot conclude that, for example, green business is not interested in representing its views on international climate agreements. We can only conclude that, if it does so, then it must receive less representational priority, than the need to describe how green business is measuring its own climate gas emissions and planning for the use of more renewable energy.

In applying the technique, I have not experienced any significant difficulties in attempting to make my links of semantic coherence, between the two- and three-word units of meaning. Nor has there been a problem with accounting for the semantic fields, knowing what I already know from my reading of reports, campaign pages and press releases from the two players. But, in making this observation, I would not wish to imply that these corpus linguistic views are superfluous in terms of new knowledge. The most powerful example of their usefulness was provided by my Venn diagram in figure 5.7, in which I presented the domination of the semantic field of management in the linguistic discourse of the green corporations. Although I am conversant with the way in which business manages itself, this is a semantic field which would normally take second place in my interest, when reading green business texts. When studying what the corporations have to say about some aspect of 'business in the biosphere', my primary interest is in *what effect* business is having on *what part* of the biosphere. Figure 5.7 helps me to see the pervasiveness of the business processes, by which green business seeks to manage its environmental relationships with the biosphere.

Considered, then, as a tool for providing a view on linguistic discourse, these two- and three-word keyword-based semantic fields of coherence bring *some* useful knowledge to our processes of interpretation. But, as a response to research question one, they have demonstrated that the two discourses of the radical NGOs and green business have little in common. Considered in terms of their representational priorities, we must conclude that there is no evidence, in their *language*, to support Welford's claim that the more radical environmental debate is also used by green business.

However, every tool of measurement is designed to measure some specific characteristic of the object of study and, in doing so, it ignores others. In this case, I have sought to identify units of meaning and to link them together into fields of semantic coherence, hence my italicising of *language* in the previous paragraph. In doing this, I made a virtue of my ignoring the 84 common one-word keywords. I referred to them as linguistic *signs* on the grounds that, individually, many of them were insufficient to construct a reliable sense of meaning; they needed to be combined with other signs, into units of meaning of two,

three or more signs in length, in order for me to be able to construct meaning with them. But this semantic 'weakness', for which I dismissed them, might provide some support to Welford's claim. Figure 5.7 does substantiate his misgivings that, around the language of the environment, he was hearing a great deal of business terminology. And figure 5.3 does show that green business discourse has a large proportion of linguistic signs in common with the radical NGOs, some of which might correspond to Welford's more radical environmental debate. If the semantic field of management, shown in figure 5.7, is, in some way, combining with some of the radical environmental linguistic signs of figure 5.3, then Welford's claim may yet be substantiated.

If some of the 'one-word keywords' in figure 5.3 are being combined into longer units of meaning along with green business's pervasive discourse of management, then it is the usage of linguistic *signs* that I ought to be considering as a response to research question one. On this interpretation, the 42% (=84/200) overlap in the top 200 one-word keywords of the radical NGOs and green business, provides a promising object of study, with which to test Welford's claim further. In addition, on this reading, it is the group of 84 common one-word keywords which provides a good starting point, from which to explore Welford's claim of appropriation which I discussed in section 2.4 on page 60. I shall, therefore, now proceed on the assumption that business has adopted, not some of the *language* of the radical environment, but rather some of its *linguistic signs*. However, before I proceed to the testing of the appropriation claim, I must address research question two.

5.3 Response to research question two

5.3.1 Introduction

At the close of the section 5.2, I resurrected the value of studying Wordsmith's one-word keywords, as a possible method of testing the appropriation claim. However, in making a response to research question two, in this section, I shall need to retain my usage of the two- and three-word keywords, as the primary tool of analysis.

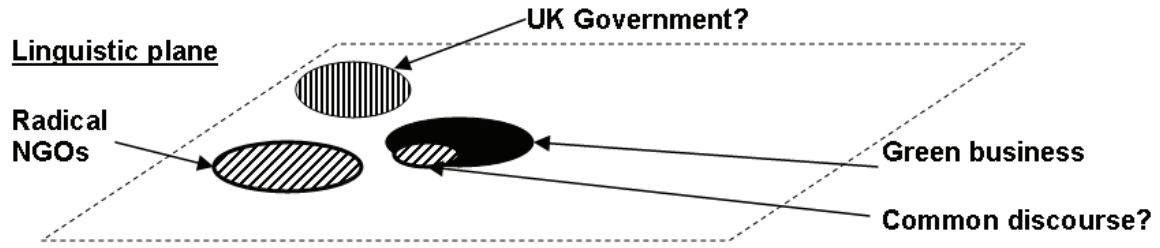


Figure 5.10: Is there evidence of political influence in the linguistic plane?

With research question two, I embark on a three-way analysis, as I have attempted to suggest in figure 5.10, above. Research question two requires me to compare the linguistic discourse of the radical NGOs and green business, with that of the British government. It asks if there is evidence that the government talks more about the things that business talks about, than it talks about the things that the radical NGOs talk about. Further, can I find evidence that the government talks about these things in similar ways to green business or the radical NGOs, or does it have its own ways of representing them? The first of these questions will require the same two- and three-word comparison that I conducted for research question one. I wish to find if there are semantic fields of coherence in common. This will tell me whether there is any aspect of the environmental debate that they all 'talk about'. Then, by applying the description of any such semantic fields of coherence to each of the discourses in turn, I will be able to compare the aspects of the issue to which each player wishes to direct attention, and, thereby, make some response to the first question. Whether or not this analysis will then enable me to respond to the second question, of *how* the different players represent the issue, I shall leave until after I have presented this analysis.

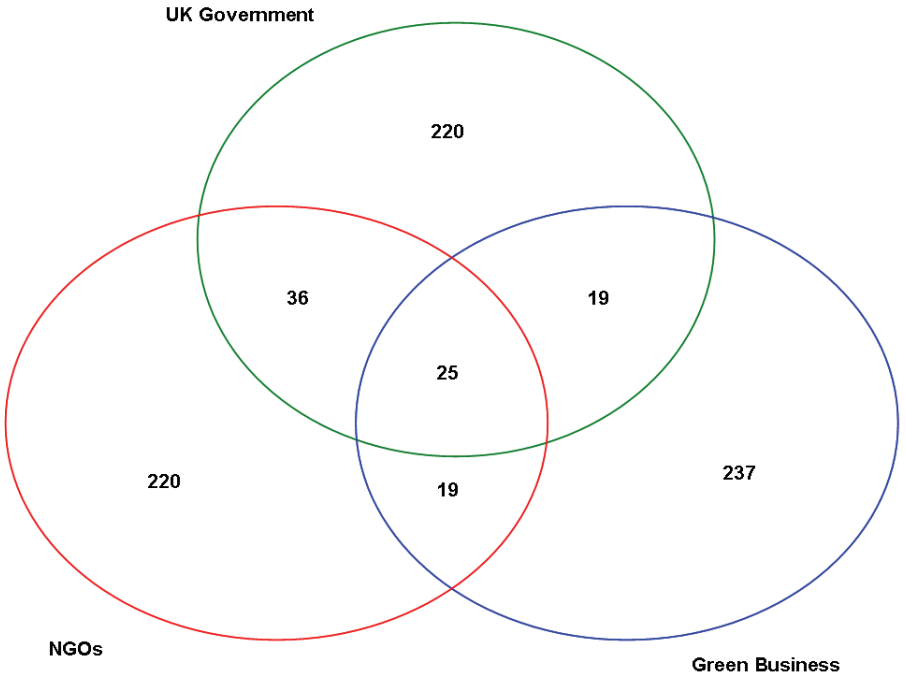


Figure 5.11: Combined keyword consistency in the top 200 two-word and top 100 three-word keywords

The inter-corpus distribution of keywords between my three objects of study is shown above in figure 5.11. The total number of keywords in each circle adds up to 300, rather than the 150, which I took as my 'base data' in section 5.2.4. In deciding how many words to

include in this three-way comparison process, I considered the experience from the two-way comparison, described in section 5.2.2. Figure 5.4 shows that the linguistic discourses of the radical NGOs and green business share only 26 keywords, among their respective top 150 two-word and three-word keywords. Clearly, with the introduction of the UK government's top 150 keywords, this number would most probably shrink significantly. Anticipating the likelihood of this, and wishing to have a reasonable number of common keywords with which to work, I decided to cast my net wider. So I doubled the total number of words under consideration in each corpus from 150 to 300, consisting of 200 two-word keywords and 100 three-word keywords. I present these words in tables F.1, F.2 and F.3 on pages 402, 405 and 408. The numerical comparison of these three lists followed exactly the same procedure as that already described in section C.3 on page 377. My empirical starting point was to look for those semantic fields of coherence that the three players have in common, so the initial focus of attention had to be on the 25 keywords in the centre of the Venn diagram. These are presented below in table 5.5.

Table 5.5: The 25 common two-word and three-word keywords

ACTION PLAN	CORPORATE SOCIAL RESPONSIBILITY	GREENHOUSE GAS
AIR QUALITY	DEVELOPING COUNTRIES	GREENHOUSE GASES
BEST PRACTICE	DIOXIDE EMISSIONS	HAZARDOUS WASTE
CARBON DIOXIDE	EMISSIONS TRADING	IMPACT ASSESSMENT
CARBON DIOXIDE EMISSIONS	ENERGY EFFICIENCY	KYOTO PROTOCOL
CASE STUDY	ENVIRONMENTAL IMPACT	LONG TERM
CLIMATE CHANGE	ENVIRONMENTAL IMPACTS	NATURAL RESOURCES
CLIMATE CHANGE LEVY	FOSSIL FUELS	
CORPORATE SOCIAL	GAS EMISSIONS	

Simple logic tells us, and a cursory examination of table 5.5 confirms to us, that these 25 keywords must include some of those, that were previously studied in connection with research question one. There, we were looking at the keywords that were common to just the radical NGOs and green business. Here, a keyword also had to be used by the UK government, in order to qualify for consideration. The semantic fields of coherence that I have already identified will, therefore, provide the first three views of the distribution of linguistic discourse between the three players. But I shall then examine the three two-way areas of the Venn diagram of respectively 36, 19 and 19 in figure 5.11 above. These represent the keywords which are common to just two of the players but not the third. The identification of new semantic fields of coherence, in any of these three sections, might point to just two of the players sharing a linguistic discourse and the third player not being as actively involved. Such a finding would be of interest to research question two. In the interests of space I present, in

the following sections, just the Venn diagrams which summarise my results. The complete listings of semantically-organised keywords are presented in section F.4 from page 81.

5.3.2 Semantic field one: the challenge of climate change

Figure 5.12 below, illustrates the distribution of keywords within the semantic field of climate change. Once again, the dispersion gives a visual impression that the three players have their different issues on which they wish to focus attention. When compared with the two-way distribution, shown in figure 5.5, the introduction of the UK government's linguistic discourse has had the effect of moving some of the keywords of the radical NGOs and green business into the areas of overlap with government. For example, the radical NGOs' appeal to governmental and international action, which I identified earlier, receives some response. CLIMATE CHANGE PROGRAMME and CONVENTION ON CLIMATE appear in the area of overlap between the radical NGOs and the UK government. We can also see evidence of the government's interest in this issue, with keywords such as CHANGE PROGRAMME, CLIMATE CHANGE AGREEMENTS, and CLIMATE IMPACTS PROGRAMME. This aspect of the semantic field seems to be primarily of interest to just the radical NGOs and the UK government – only KYOTO PROTOCOL can also be found among the keywords of green business.

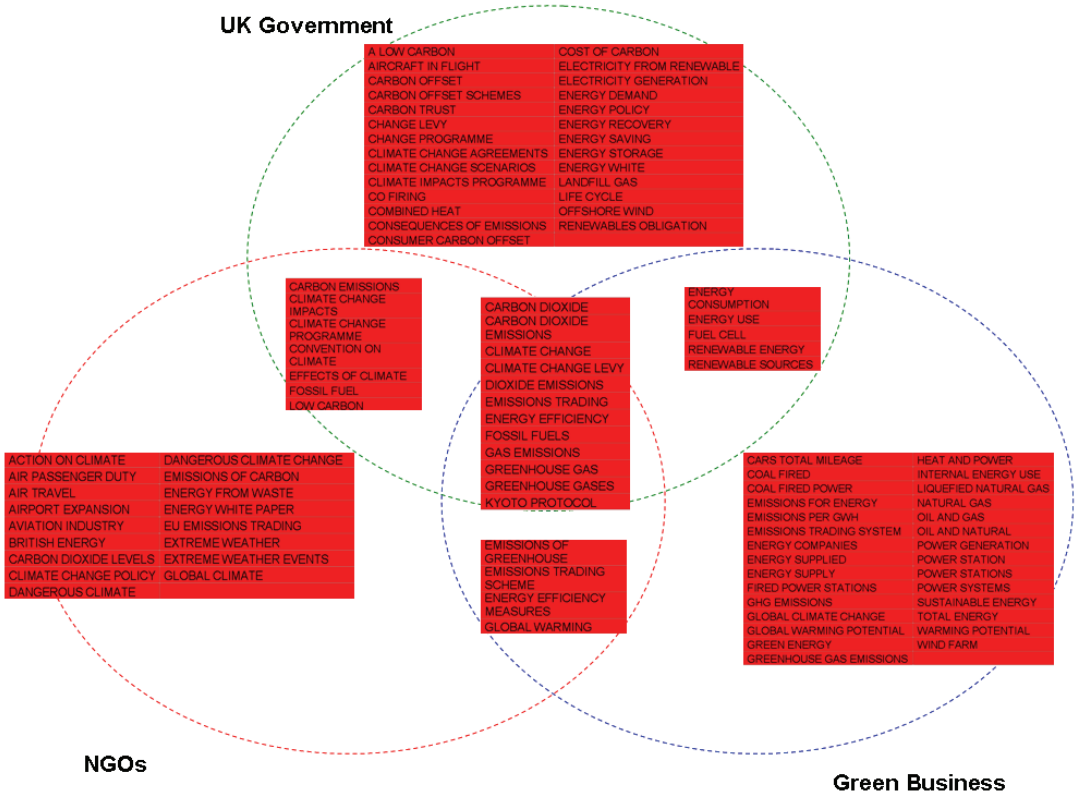


Figure 5.12: The distribution of keywords in the semantic field of climate change

But green business has its own area of shared interest with the government. From the latter's own 'unique' keywords the interest in energy is very clear. For the government, the problem of climate change must be considered in the context of ENERGY POLICY. Part of this policy will require policies for making greater use of renewable energy. Here, we can see an area of overlap with green business with RENEWABLE ENERGY and RENEWABLE SOURCES, and then, in the green business 'unique' keywords GREEN ENERGY, SUSTAINABLE ENERGY and WIND FARM.

The increase, from 150 to 300, in the number of keywords being compared, also illustrates that these interpretive views of the semantic fields show which issues are *prioritised* for representation, rather than a comprehensive picture. Among the 'unique' keywords of the radical NGOs are four new ones, which share the common theme of air travel: AIR PASSENGER DUTY, AIR TRAVEL, AIRPORT EXPANSION and AVIATION INDUSTRY. From this evidence we may surmise that, within the NGOs' discourse on climate change, they have a minor campaign on the threat caused by carbon dioxide emissions from air travel.

5.3.3 Semantic field two: management

As is the case with the semantic field of climate change, shown in the previous section, figure 5.13 below, suggests that all three players have their own issues whose representation they prioritise. Obviously, the role of government within society is different from that of business, and the UK government's discourse reflects this. The reference to nine COMMITTEES whose members are respected, government-appointed experts in their fields, reflects the government's desire to emphasise that it seeks the most accurate and reliable knowledge possible. Other players, including both the radical NGOs and green business, will assuredly attempt to exert influence by providing the government with information on environmental issues. But the government wishes to secure for itself information that is, hopefully, unbiased. Allied with the work of these committees, we have keywords related to monitoring and procedures: ASSESS AND ADAPT, ASSESSMENT OF INDICATOR, BEST AVAILABLE TECHNIQUES, BEST PRACTICE PROGRAMME, CASE SPECIFIC MONITORING, HEADLINE INDICATORS and RESEARCH QUANTIFICATION. Also reflecting the government's role, there are several references to the various levers of state management: (AIR QUALITY) STANDARDS, (DELIBERATE RELEASE) REGULATIONS, ECONOMIC INSTRUMENTS, (FOOD) STANDARDS, FRAMEWORK DIRECTIVE,

(LANDFILL) DIRECTIVE, POLICY MEASURES, and (PPC) REGULATIONS.[5] In addition, it shares three keywords with the radical NGOs: CODE OF PRACTICE, CONVENTION ON BIOLOGICAL and CONVENTION ON CLIMATE.

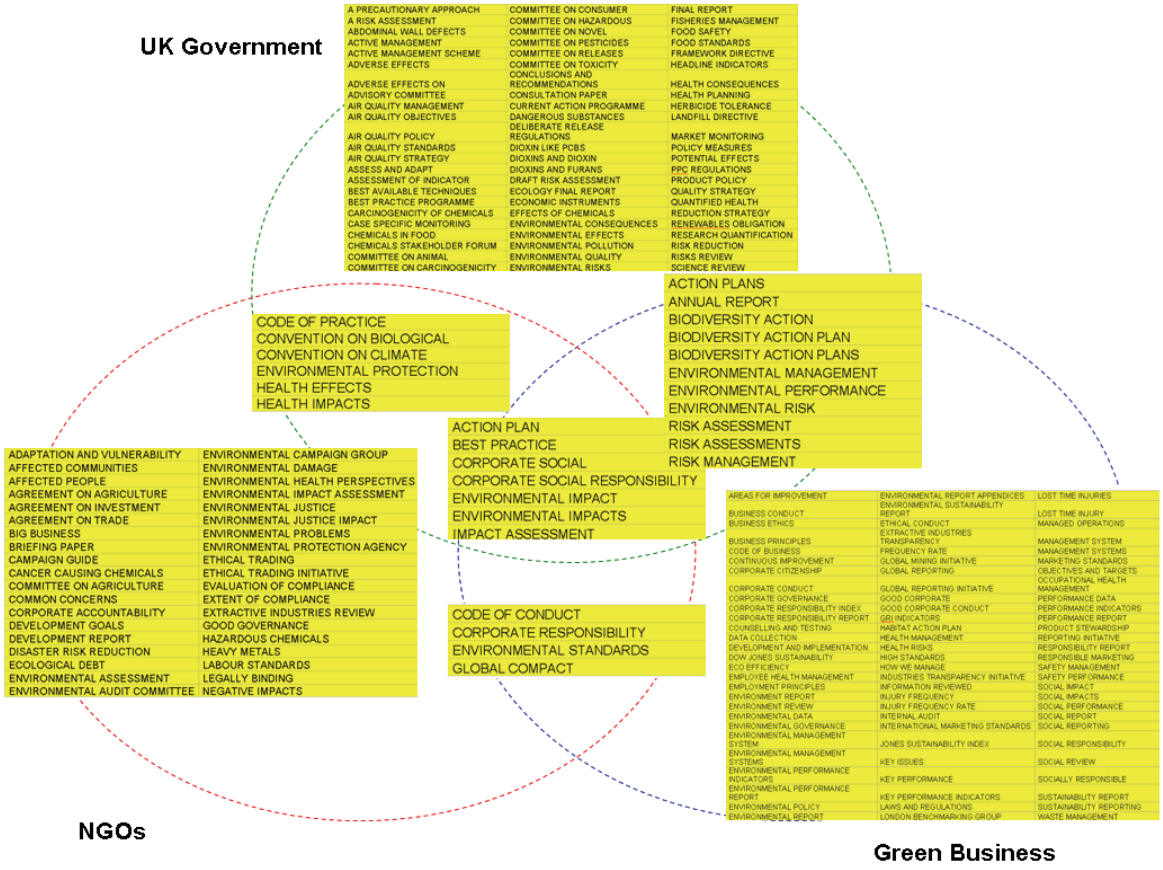


Figure 5.13: The distribution of keywords in the semantic field of management

However, the most striking evidence of this view of the government's discourse, is the extent to which it represents its measurement or monitoring of damage to the biosphere. It shares this aspect of the semantic field with the radical NGOs, but appears to prioritise it even more strongly than the traditional guardians of the environment. The government expresses its concerns and fears for many different areas of the biosphere which it monitors: ABDOMINAL WALL DEFECTS, ADVERSE EFFECTS (ON), CARCINOGENICITY OF CHEMICALS, CHEMICALS IN FOOD, DANGEROUS SUBSTANCES, DIOXIN LIKE PCBS, DIOXINS AND FURANS, EFFECTS OF CHEMICALS, ENVIRONMENTAL CONSEQUENCES/EFFECTS/POLLUTION/QUALITY/RISKS, HEALTH

[5] PPC is an acronym for Pollution Prevention and Control.

CONSEQUENCES, HERBICIDE TOLERANCE and POTENTIAL EFFECTS.[6] As I have already observed, this concern is shared with the radical NGOs. Here we can see AFFECTED COMMUNITIES, AFFECTED PEOPLE, CANCER CAUSING CHEMICALS, COMMON CONCERNS, ENVIRONMENTAL DAMAGE, ENVIRONMENTAL PROBLEMS, HAZARDOUS CHEMICALS and HEAVY METALS. Making the not-unreasonable assumption that the discourse of concern for the natural environment has its origins among the radical NGOs, the evidence from this view is that the government has most certainly been influenced by them, into expressing its fears for damage being inflicted on the biosphere.

As regards green business and government, the shared aspect of the semantic field appears to be in the area of planning, implementation and management. From the discussion of the two-way comparison in figure 5.7, we have seen how green business prioritises its process of 'management'. From figure 5.13 above, we can see that, to a limited extent, the UK government also chooses to represent the processes of implementation. I have already referred to the committees, by which government will obtain access to the best information possible. There are references to consultations and reporting: CONSULTATION PAPER, CONCLUSIONS AND RECOMMENDATIONS, DRAFT RISK ASSESSMENT, (ECOLOGY) FINAL REPORT, RISK REVIEW, and ANNUAL REPORT. There are keywords relating to the setting of standards and plans: (AIR QUALITY) STANDARDS, CURRENT ACTION PROGRAMME, (HEALTH) PLANNING, RISK REDUCTION STRATEGY, ACTION PLANS, and (BIODIVERSITY) ACTION PLAN(S). Finally, there are references to management: ACTIVE MANAGEMENT SCHEME, (AIR QUALITY/FISHERIES/ENVIRONMENTAL/RISK) MANAGEMENT and ENVIRONMENTAL PERFORMANCE. There is, therefore, evidence of the government's concern with the process of implementation by which environmental issues will, hopefully, be successfully addressed.

5.3.4 Semantic field three: the problems of people and communities in the developing world who are affected by business activity

The distribution of keywords, shown in figure 5.14 below, provides a reminder that these interpretive views are drawn from objects of study, which I have constructed, and they are only as representative as that sampling process allows. The British government has plenty it wishes to say on this subject. However, it has chosen to place its discourse in this semantic

[6] *Dioxins* is an umbrella term for a class of chemical compounds which are chlorinated derivatives of fused benzene rings. In common with PCBs, (Polychlorinated biphenyls), they accumulate in human tissue and are harmful to health. Furans are another class of compound which are suspected of being carcinogenic.

field on the website for the Department for International Development, and this was not included among the websites that I selected for the downloading of material.[7] The majority of the texts, which have been downloaded to represent the British government's discourse on 'business in the biosphere', are taken from the Department for the Environment, Food and Rural Affairs (DEFRA). Clearly, DEFRA has agreed with the Department for International Development, that the latter will handle all such matters. This semantic field is, therefore, unable to make a response to research question two.

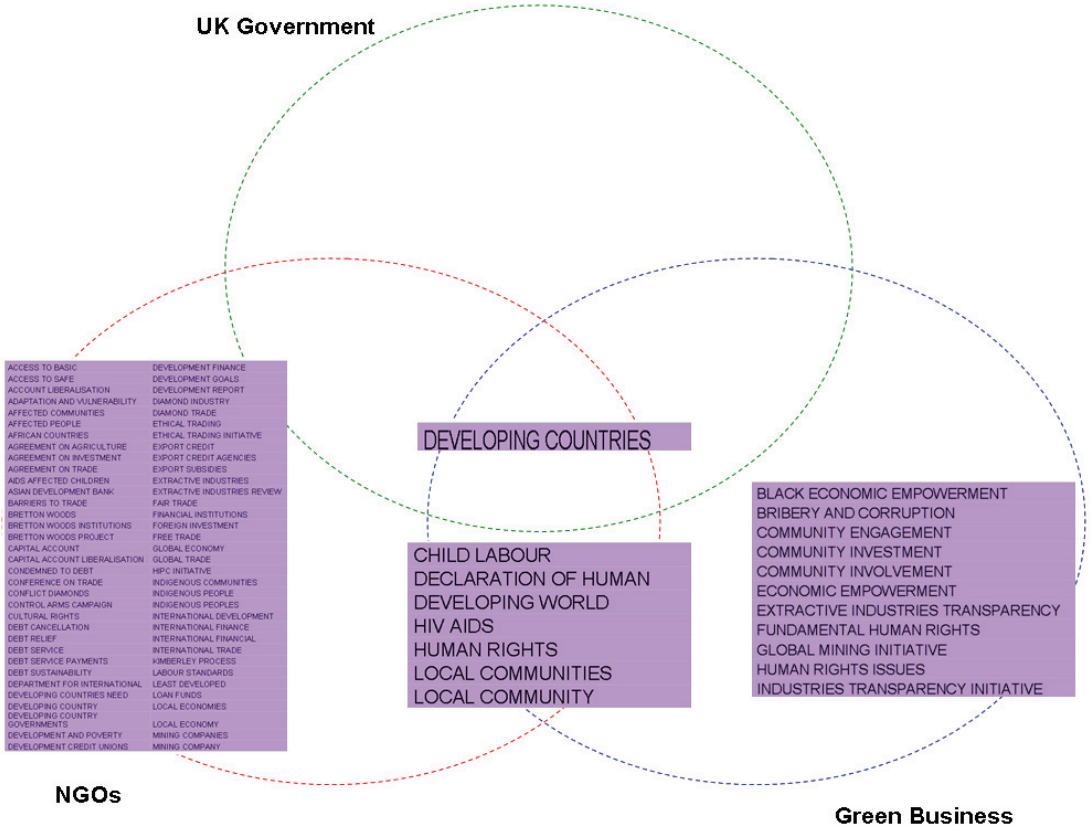


Figure 5.14: The distribution of keywords in the semantic field of the problems of people and communities in the developing world who are affected by business activity

Having exhausted the interpretive possibilities provided by the 25 keywords which are common to all three players, I now proceed to other sections of the Venn diagram which I presented in figure 5.11. In the introduction, I referred to the three two-way sections of this Venn diagram, which contain the words which are shared by just two of the players. As I suggested in the introduction, they are of interest in making a response to research question two, because they may suggest semantic fields that, say, just green business and the UK

[7] Department for International Development, *About DFID*, http://www.dfid.gov.uk/aboutdfid/, (accessed 12th February 2008).

government share. The next three semantic fields are based, then, on an interpretation of these three lists of 36, 19 and 19 keywords. My procedure was to look for semantic links within just one list. Having found a minimum of three keywords which shared a clear semantic coherence within one list, I then followed up the search for this semantic field in the other areas of the Venn diagram. In this way, I produced the same style of inter-corpus views of keywords that I have already presented.

5.3.5 Semantic field four: waste

The initial review of the three two-way areas of overlap, suggested that this semantic field would be shared by the radical NGOs and the UK government. In the distribution of keywords shown in figure 5.15, below, there are six keywords which are shared exclusively by these two players. Green business and the UK government, on the other hand, share just one keyword: REDUCE EMISSIONS. However, when the search was extended into the three outer areas of the 'unique' keywords, the view of the distribution changed dramatically. From the diagram below, we can see that the representation of this semantic field is prioritised to a greater extent by green business and the UK government, than it is by the radical NGOs.

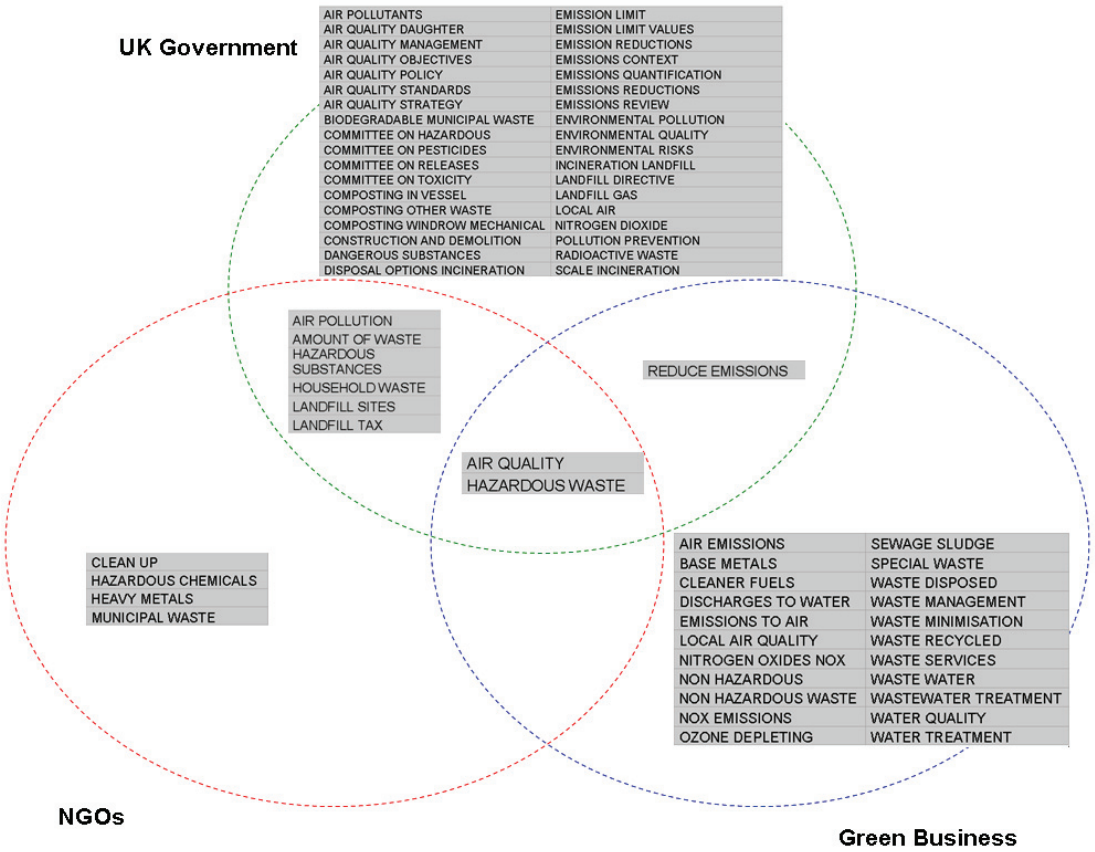


Figure 5.15: The distribution of keywords in the semantic field of waste

From the few keywords that fall within the discourse of the radical NGOs, one cannot surmise anything much more than that they wish to make an issue out of waste, but that they do not prioritise more than this. The government, however, represents the importance it places on knowing exactly what the scale of the pollution is: EMISSIONS REVIEW and EMISSIONS QUANTIFICATIONS. Further, it sets standards on what shall be permitted, and action that must be taken where limits are exceeded: EMISSION LIMIT, (AIR) QUALITY STANDARDS, EMISSION LIMIT VALUES, EMISSION(S) REDUCTIONS. However, the government does not only concern itself with knowing the amount of pollution entering the biosphere. There is also a very clear representation of wishing to understand the consequences of this pollution, on the health of the biosphere; witness all the specialist committees. Finally, there are references to alternative ways of dealing with waste: LANDFILL, COMPOSTING and INCINERATION. Not surprisingly, green business represents the semantic field of waste in terms of what is being done to deal with the problem. The keywords EMISSIONS and DISCHARGES are used, and the keywords: MANAGEMENT, MINIMISATION, RECYCLE(D), and TREATMENT represent how waste is being dealt with.

5.3.6 Semantic field five: food security

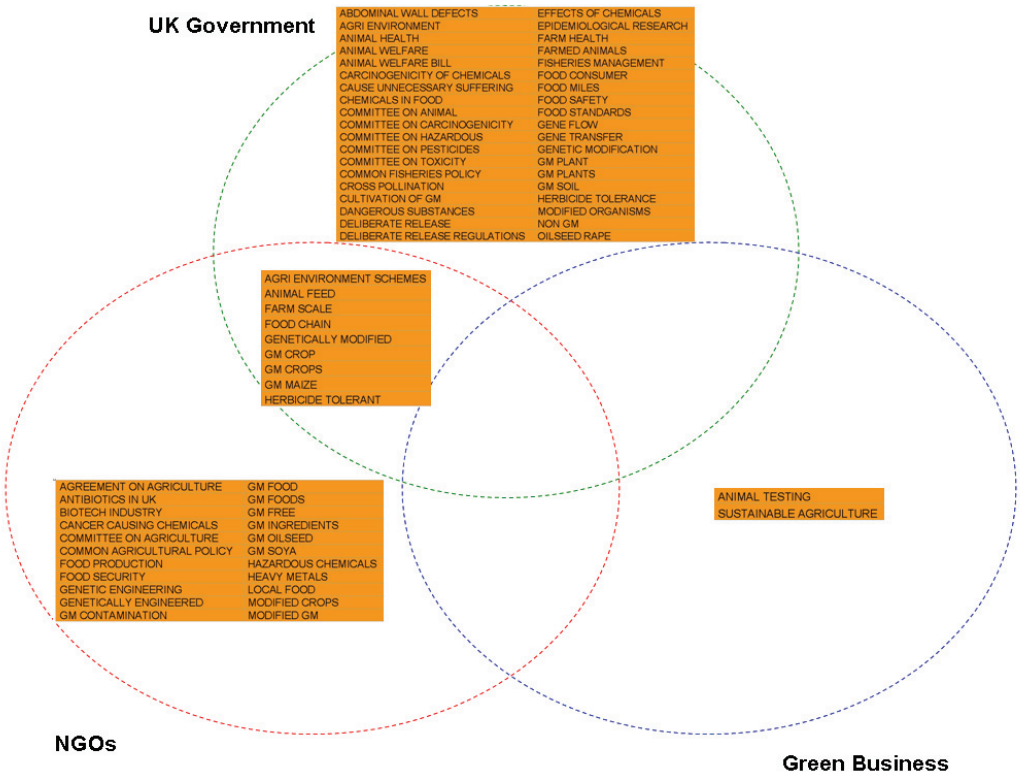


Figure 5.16: The distribution of keywords in the semantic field of food security

The distribution of this semantic field, shown in figure 5.16 above, reveals very clearly that food security is, almost exclusively, the preserve of the radical NGOs and the UK government. Among the 25 green corporations, only Unilever is involved in the processing of food. According to a corporate presentation from February 2007, which is available on its website, 53% of the corporation's annual turnover is food related.[8] From table B.2 on page 355, we can see that Unilever's texts amount to 6% of the overall green business corpus. Therefore, we can get a rough idea of how little of the text, in the total amount of the green business corpus, might have something to say about the subject of food. If only 3% of the total volume of text might conceivably have something to say on the subject of food, it is not surprising that this semantic field is so poorly represented in the green business corpus.

The radical NGOs profile the issue of genetic modification very strongly in their semantic field of food security. Including the keywords they share with the UK government, sixteen of a total of 31 keywords refer directly to, or are related to, genetic modification. But the UK government is also very strong on this aspect of food security. Its keywords, however, point to a strong focus on the challenges associated with the cultivation of GM crops: CULTIVATION OF GM. There are dangers of CROSS POLLINATION and some unscrupulous operators might be tempted to engage in DELIBERATE RELEASE of GM PLANTS or GM SOIL into NON GM areas. Otherwise, I have once again included the government's COMMITTEES to illustrate its reliance on obtaining the most reliable knowledge on which to base the formation of policy.

5.3.7 Semantic field six: biodiversity 'activity'

The semantic field of biodiversity 'activity' just managed to achieve the lower, three-keyword threshold for consideration, though BIODIVERSITY ACTION looks like a dubious candidate for independent occurrence. I have described the semantic field with *activity* in inverted commas for two reasons. First, it draws attention to the occurrence of ACTION in conjunction with BIODIVERSITY. I found four keywords which do not include ACTION, but five, of the total of nine, green business keywords do represent action being taken in connection with biodiversity. Second, it emphasises a distinction with simple *biodiversity*. The distribution shows that biodiversity 'action' is, almost exclusively, a semantic field of green business

[8] On page seven, which is called *Portfolio of Categories*, they present a pie-chart of their different business areas. "Savoury, dressings and spreads" account for 34% and "Ice Cream and beverages" for 19%. Unilever, *Introduction to Unilever February 2007*, http://www.unilever.com/Images/ir_Introduction_to_Unilever_Update_February_2007_NXPowerLite_tcm13-15184.pdf, (accessed 12th February 2008).

concern, the radical NGOs having not prioritised this semantic field at all in their top 300 keywords. But BIODIVERSITY does occur as a one-word keyword, which is common to all three corpora. If the distribution had also included one-word keywords and I had looked for the wider semantic field of biodiversity, then we would probably have seen more of a spread across the Venn diagram, in which we could interpret the sorts of semantic contexts, in which the radical NGOs and the UK government tend to place biodiversity. In making this speculation I am, however, anticipating the empirical evidence of chapter six and the testing of the appropriation claim, so I shall not pursue it further here.

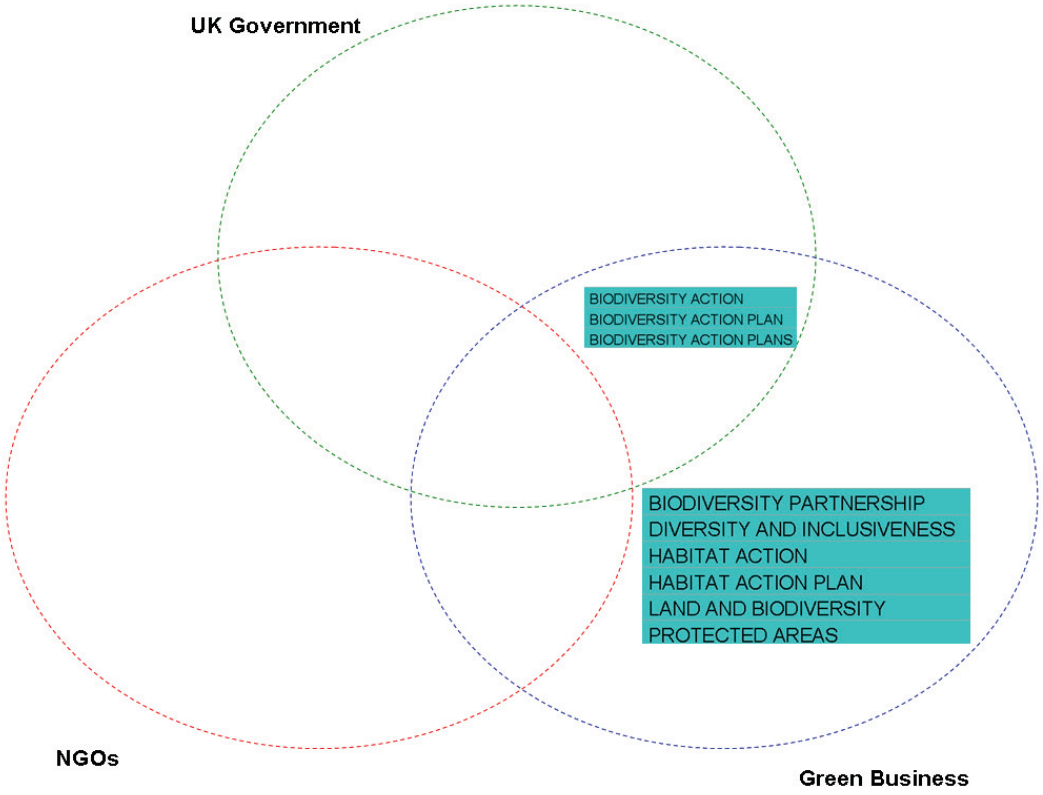


Figure 5.17: The distribution of keywords in the semantic field of biodiversity 'activity'

Little can be surmised from green business's keywords, other than that they are entering into PARTNERSHIPS and drawing up PLANS to do something about BIODIVERSITY in certain HABITATS.

5.3.8 'Unique' semantic fields

The overwhelming impression from my presentation of these six different semantic fields, is that the three players have their different representational priorities, to which they wish to draw the attention of their audience. Having presented these six interpretive views of semantic

fields, there still remain a sizable number of unused 'uniques' among their top 300 keywords. As a final view, therefore, I have reviewed those unused keywords and tried to find semantic links of coherence between them. I have collected these together in one Venn diagram, and they are presented below in figure 5.18.

Among the remaining keywords of the radical NGOs, the larger of the two semantic fields that I have identified, is that of social agents of all different descriptions. Within this semantic field there is a predominance of references to CIVIL SOCIETY and to COMMUNITY organisations. But there are also representations of GOVERNMENT, BUSINESS, and different international references, such as EU MEMBER STATES, INTERNATIONAL COMMUNITY and INDUSTRIALISED COUNTRIES. The second semantic field is represented by the smaller list of keywords, and it refers to forests, logging and natural resources. Logging is not a business activity in which any of the 25 green corporations are involved. Neither is it a serious environmental problem, within the geographic boundaries of the UK. It is not surprising, therefore, that the representation of this semantic field is being carried alone by the radical NGOs.

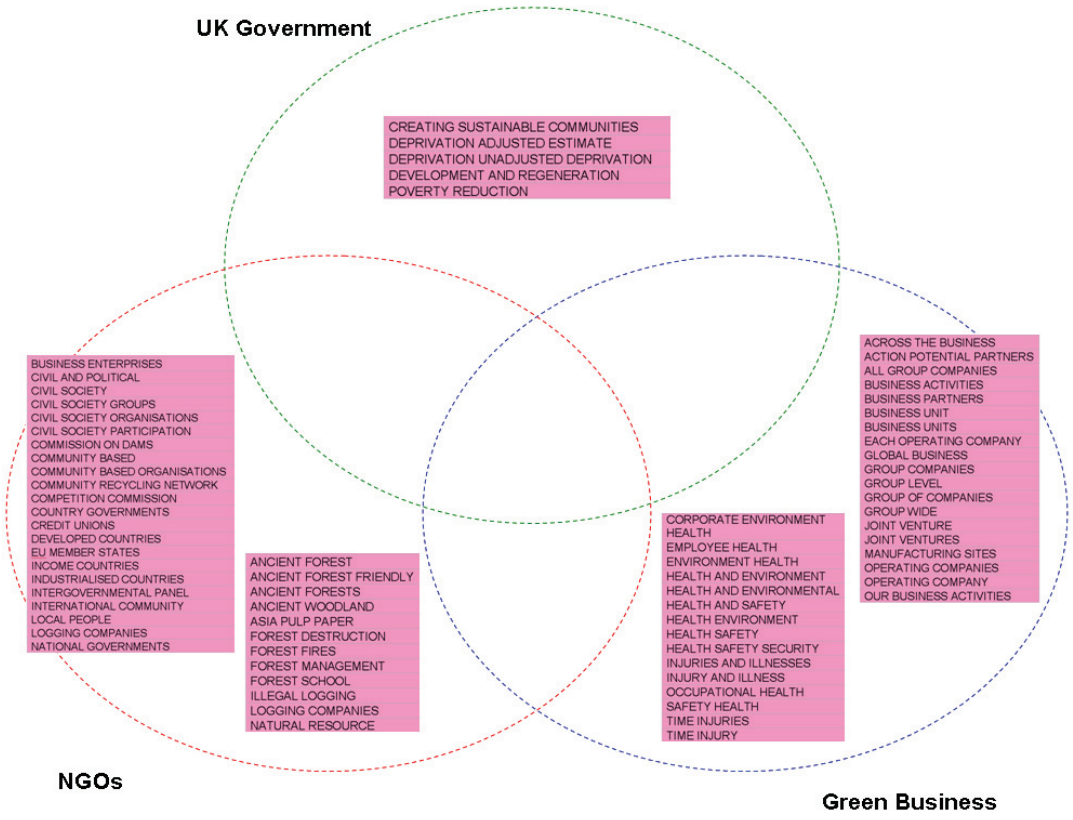


Figure 5.18: 'Unique' semantic fields of the three players

Within the remaining keywords of green business, I have also identified two discrete semantic fields of coherence. The slightly smaller list, on the left, is a collection of keywords which are related to the subject of health, injuries and the workplace subject of "Health and Safety", to which corporations often choose to append the subject of "Environment." The second semantic field of coherence, represented by the list on the right, reflects the corporations' references to their structural organisation. Here, I have included the representations of the internal organisation of the corporation, with terms such as BUSINESS UNITS, GROUP COMPANIES and MANUFACTURING SITES. But I have also included representations of business agents external to the corporation, with examples such as (ACTION) POTENTIAL PARTNERS and JOINT VENTURES.

The remaining keywords of the UK government, although numbering just over 80, presented a problem in trying to identify sufficient words to form any semantic field of coherence. One, which I did manage to identify, is concerned with poverty and deprivation. This is an interesting observation to make about the government's representations, because it introduces an issue that it alone wishes to include as an environmental problem: tackling poverty and deprivation among the less fortunate members of the British public. Other than this semantic field, the remaining words were so disparate as to defy my attempts at making semantic connections. This apparent dispersion may, however, be illustrative of the breadth of environmental issues with which the government must occupy itself. The green corporations' representational priorities are, presumably, steered by their business activities, and the radical NGOs can choose to campaign on specific issues, in order to make the greatest public impact. But the UK government must try to respond on all fronts, with a representation of what it thinks and what it wants to do or see done.

5.3.9 Research question two - conclusions

The empirical evidence, which I have presented in response to research question two, does not support a claim that the linguistic discourse of the UK government is being steered, in some way, so that it converges with a green-business representation of the world. Rather, my tool of analysis, semantic fields of coherence, creates views of the linguistic discourse which suggest that each of the three players makes its own preferred representations in language. The two largest semantic fields, measured in terms of number of keywords, do illustrate that the three players have something in common. For example, there are some central keywords within the semantic field of climate change: CARBON DIOXIDE, EMISSIONS, CLIMATE CHANGE and GREENHOUSE GASES. These give grounds for thinking that the three players agree

that here, at least, is one issue that they need to address. But the large number of related keywords, which are spread out over the Venn diagram in figure 5.12, provides a view of three players with different representational priorities within the field of climate change. The same general comment may be made about the semantic field of management, and also the semantic field of waste. Although there are areas of overlap in the keywords, there is no systematic evidence of similarities between the government's representations and those of green business. In the views I present of semantic fields four, five and six and then the 'unique' semantic fields, the impression of fragmentation becomes even stronger. The conclusion, I draw, from this evidence is that there are three independent players making their own independent representational priorities. Without clear evidence of a particular issue in which the players all make similar representations, my follow-up to research question two, which asked me to compare *how* the players talk about a particular issue, cannot be answered. The views provided by my semantic fields of coherence do not enable me to make any progress on this question.

5.4 Discourse comparisons in the linguistic plane – summary

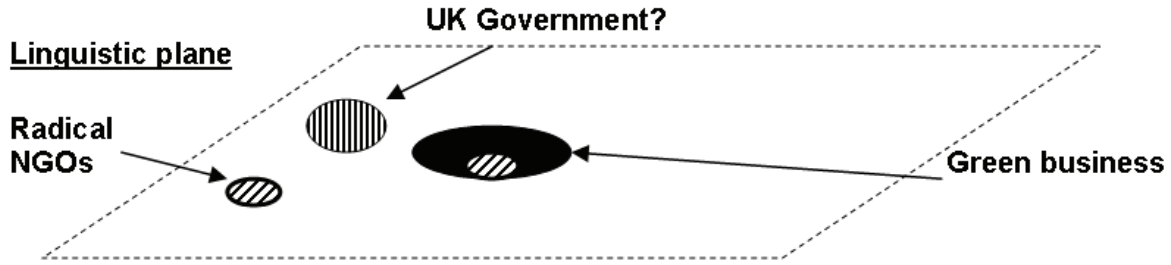


Figure 5.19: Comparison within the linguistic plane

The process by which I have used corpus linguistic techniques to create a view of the linguistic plane, has presented evidence of discourse fragmentation, in which different players 'compete' by projecting their own representations, rather than trying to establish a genuine dialogue of meaning with each other. The semantic fields of coherence, which I have interpreted from the two-word and three-word units of meaning, tell us something about the different representational priorities of the players. Using these units of meaning, identified by my interpretive editing of Wordsmith's 'raw' lists, the overall picture of the linguistic plane is fairly close to the isolation suggested by figure 5.19, above. The Venn diagrams have shown *some* overlap for *some* semantic fields, but not much.

But if we lower our gaze, from a linguistic plane which consists of individual units of meaning, down to its cruder twin, composed of individual linguistic signs, the three, relatively isolated discourses move in towards each other. We have seen from table 4.5 on page 168 that, at the level of single linguistic signs, the proportion of three-way overlap is about 30% for the top 300 to 500 'keywords'. So, as I have already mentioned in my summary to research question, in section 5.2.8, the representational fragmentation, shown by the semantic fields of coherence, is constructed using linguistic signs – Wordsmith's one-word 'keywords' – many of which are shared by the players. This fact suggests that some of the common one-word 'keywords' might be being *used* by the three players, in the creation of their different representations. In adopting eco-radical terminology, green business may be appropriating some of these linguistic signs to suit its own representational needs. In chapter six, I shall address this appropriation claim.

6 The appropriation claim – response

6.1 Introduction

In chapter five, I presented evidence which responded to two research questions that were concerned exclusively with the linguistic plane. In chapters six and seven, the level of ambition is raised, as I try to respond to the project's methodological challenge: movement between the linguistic plane and the cultural plane. In chapter six the direction is upwards, from the linguistic, to the cultural, plane. I shall present evidence, obtained in the linguistic plane, which responds to the appropriation claim that I first presented in section 2.4 on page 60. This claim, originally made by Welford and then interpreted by me, argues that green business has adopted what has traditionally been the vocabulary of eco-radicalism, and is now putting it to use in its own (liberal-productivist) context to represent its activities. One clear finding that I have presented in chapter five, is that, if there is any chance of finding supporting evidence for Welford's appropriation claim, then it must lie in an analysis of the one-word 'keywords' that are common to the linguistic discourses of the radical NGOs and green business. So the word *vocabulary*, in the phrase "the vocabulary of eco-radicalism," is now understood as meaning single character strings. It is at the level of these linguistic signs that we may find evidence of particular signs being put to use in different ways.

In my interpretation in chapter two, I made a confident assertion of the appropriation claim. I argued that a cursory reflection over the institutional history of the environmental movement, and the subsequent rise of green business, provided a strong rationale for its validity. Recapitulating some of my discussion from section 2.4 on page 60, 'non-green' business corporations, under pressure from outside forces, decide to introduce environmental objectives into their operations. In the transition to becoming new green corporations they wish to represent, to a sceptical outside world, their newly-acquired awareness of the natural environment within which they operate, and their new institutional ways of working. In order to differentiate their new status as green corporations, from their old liberal-productivist culture, they *adopt* the language of the environment and start using it in their standard, liberal-productivist-inspired linguistic discourse. But the green corporations have a very different frame of experience compared with the traditional 'guardians' of the environment: the radical NGOs. The representations, in language, which they make of their corporate experience, will be correspondingly different. Their usage of the newly-adopted vocabulary of the environment must differ, therefore, as they use it to represent their own experiences.

In practice, then, *adoption* of a vocabulary by members of a different culture with different experiences of the world 'out there', must inevitably lead to its *appropriation*. The representatives of the new culture can only adopt *words,* in the sense that they are signs on a page, or sounds in a speech or conversation. In the act of writing or talking with them, the users must inevitably *appropriate* their meaning, as they put them to use in new contexts that represent their particular experience of the world. The members of green business culture: the executives and employees of the corporations, absorb the contexts of use of their new vocabulary of the environment. Then, they repeat them, in a self-reinforcing process of interpretation and usage that reflects the way in which they experience their relationships with the world 'out there'. For members of other cultures who try to communicate with them, such as Welford, the new usages of words (for which they have long since developed their own conventions of usage) appear strange and awaken suspicions of a hijack. The first objective of chapter six, therefore, must be to present evidence which tests out this confident claim, of differences in the usage of linguistic signs. In the context of figure 2.11 on page 64, repeated below as figure 6.1, I have illustrated this process with the short, double-headed arrow and its attendant question mark that are drawn in the linguistic plane.

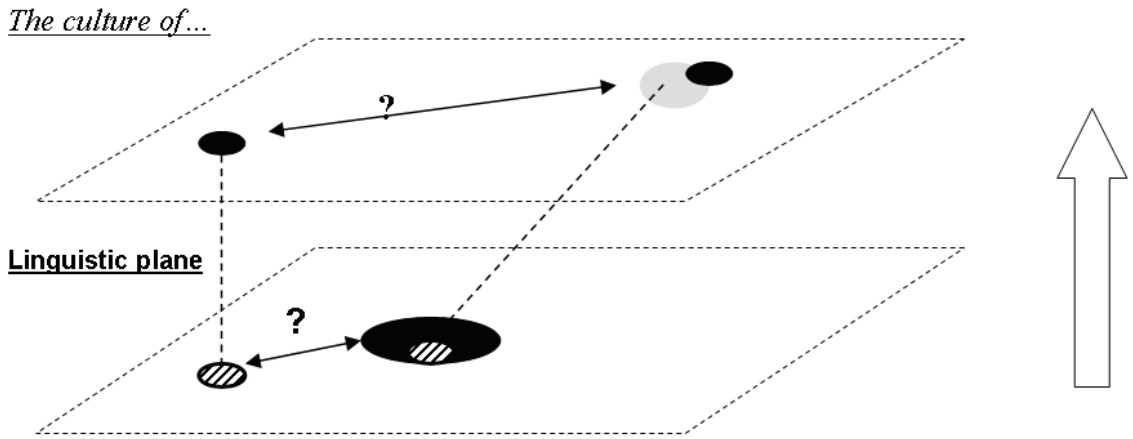


Figure 6.1: Is there appropriation of language in the linguistic plane and what effects might it have on the cultural plane?

From reading chapter five, it will come as no surprise that the illustrative simplicity of the comparison in my schematic conceals a number of serious empirical challenges. First, the enormous quantity of text, so necessary for spotting patterns of usage, makes the objects of study insurmountable for a human brain. It is quite impossible to approach them manually with any ambition of making plausible comparative observations. For example, *sustainability* is one of those single linguistic signs, over which we might reasonably expect there to be

some divergence in usage between the radical NGOs and green business. However, there are 1,872 instances of its usage in the linguistic discourse of the radical NGOs and 1,957 in the linguistic discourse of green business. If I were to approach this challenge manually, I could take twenty random examples of usage and carefully study the sentence, paragraph or text in which each of them was used. My objective would be to make some tentative comments comparing the random sample of twenty green business usages and twenty radical NGO usages. Assuming I was fortunate enough to identify some possible variations in usage, among the two groups of twenty examples, I would then have to recognise that my sample size comprised just 1% of the total and was, therefore, very far from being representative. So I would repeat the process, to see if a second random sample of twenty produced the same findings as the first. In the likely event of discovering that there was some divergence between the first and second samples of twenty, I would then be faced with the prospect of repeating the process again (and again?) in the hope of ultimately achieving some consistency in my samples. Only then, might I plausibly argue that I had identified distinct patterns of usage, which were representative of my language communities. In my own experience of trying this procedure, it was difficult to see trends in the samples of twenty examples of usage and, without a clear summary of the usage, from the first twenty, the comparison with a second sample of twenty is made more difficult. And always, one is left with a nagging doubt about the representativeness of the samples. Rather than diving straight down to the level of single occurrences in single contexts, therefore, it is necessary, first, to gain some overview on the linguistic signs whose appropriation I wish to study. On the basis of this overview, one can examine individual examples of usage with much greater confidence that they are representative.

The interpretive move by which I equated *meaning* with *usage* opened up the possibility for me to attempt movement between the two planes. But it also created an opening for me to bring the processing power of the computer to bear on the object of study. Whereas *meaning* is the product of a human brain's creative process, *usage* can be examined in different ways. In section 6.2, therefore, I present a computer-based empirical technique, which I have developed, that shows a pattern in the way a word is used by a language community. I shall argue that this technique, which I have dubbed *collocate contextualisation*, provides an indication of the extent to which a language community uses a particular linguistic sign in unusual ways. I emphasise that I consider evidence of variation in collocate contextualisation to be no more than *an indicator* of possible variations in the usage of a

linguistic sign. Such indications must always be followed up, by closer examination of individual examples of usage, a process to which I shall return in a moment. In section 6.3, therefore, I shall present some comparisons of the collocate contextualisation of particular one-word 'keywords', and I shall discuss their usefulness *as indicators* of possible variation in the usage of a word.

The second serious empirical challenge, which I must address, is to identify the "language of the radical environment debate," which Welford believes has been the victim of appropriation. I shall discuss this in section 6.4 and conclude the section by presenting my selection of one-word keywords which I intend to test for appropriation. In section 6.5, I present the comparisons of collocate contextualisation for this "language of the radical environment debate" and discuss the results, making a first, tentative assessment of whether Welford's appropriation claim is supported by the evidence. As I have just emphasised, I look upon these results as no more than indicators of possible variation in usage. In section 6.6, therefore, I present a second technique which I have developed for following up on these indicators. I have dubbed this technique *contextualised concordancing*. Its purpose is to deliver samples of the usage of the linguistic sign, which are representative, not of *all* the occurrences of usage of the linguistic sign, but rather of a *subset* of occurrences of usage of the sign, in which the usage is significantly different from some norm. I then follow up my presentation of this technique with some results and discussion in section 6.7. Here, I shall make the final judgement on my attempt to test out the appropriation claim by this empirical testing of the linguistic plane.

In overview, then, from section 6.2 up to and including section 6.7, I shall make an attempt to demonstrate that the same items of environmental vocabulary are used differently by respectively the radical NGOs and green business. In chapter three, I have argued that we may fairly assume that there is a correlation between the *usage* of a word and its *meaning*. I am hoping, therefore, that the evidence of the linguistic plane will suggest that the different cultural representatives: green business and the radical NGOs, have different conceptualisations of the environmental vocabulary which they both use. Following my argument from chapter three, the additional challenge of chapter six is to identify possible consistencies in the contextualisations in the linguistic plane. If I can convincingly present evidence of a similar 'type' of contextualisation, appearing again and again in the linguistic discourse of green business, then I might be able to project these onto the cultural plane as conceptual tendencies or patterns that, in sum, indicate cultural differences. In the context of

figure 6.1, this would amount to the large, vertical arrow signifying the upward movement from the linguistic to the cultural plane, and it is a discussion which I shall take up in section 6.8, where I conclude the chapter.

6.2 Collocate contextualisation

6.2.1 Introduction

One of my objectives, in this project, is to present persuasive empirical evidence that different cultural groups may conceptualise words differently. Below, I repeat the view of Michael Stubbs, which I first presented in section 1.1.2 on page 2. This assertion has functioned as some sort of standard bearer for my methodological ambitions:

> Vocabulary and grammar provide us with the potential and resources to say different things. But often this potential is used in regular ways, in large numbers of texts, whose *patterns* therefore embody particular social values and views of the world. Such discourse *patterns* tell us which meanings are repeatedly expressed in a discourse community [emphasis added].[1]

As I have insisted in the previous section, if I want to make claims about the *meaning* which a cultural group, what Stubbs refers to as a "discourse community," attaches to a word, then I must do so by interpretation of individual instances of the usage of the word by the group. The challenge, however, is to know with confidence which of the many examples of usage to select for the process of a sympathetic interpretation of the meaning(s) with which the group uses a word. In chapter three, I have made a distinction between patterns of usage and patterns of wordings, assigning the former to the cultural, and the latter to the linguistic, plane (see especially, figure 3.9 on page 121). I have argued that the immediate 'neighbours' of a word, termed *collocates* by corpus linguists, can give an indication of the meaning of that word. By looking for patterns of which collocates appear with a particular word, in the texts of a language community, we can gain an indication of possible conceptualisations of that word made by the community. In section 6.2, then, I shall describe the development of *a comparative view of collocate contextualisation,* as my method for identifying what Stubbs refers to as a "discourse pattern," which can act as an indicator of "which meanings are repeatedly expressed in a discourse community."

6.2.2 MI-based collocate contextualisation

The tool that I have developed, presents just one view of the significant collocates which contextualise a particular key word. In the course of the development process I have had to

[1] Michael Stubbs, *Text and Corpus Analysis*, 158.

make decisions about what *significant* means, in selecting the significant collocates of a keyword. Clearly, different decisions about how to identify the significant collocates will lead to different views on the contextualisation of a keyword. As has often been the case in this empirical work, I can only present the method which I have selected, and defend it with the logic that I applied in the selection process. The method I chose to use is based on a statistical correlation known as *specific mutual information*, often referred to with the acronym, MI. In order to illustrate the way in which I have used MI, to identify the *significant* collocates around a particular keyword, I present, in section G.1 on page 435, an account of the procedure for showing the significant contextualisation of one keyword: BIODIVERSITY.

The MI-based approach has the advantage that it is comparative. In order to calculate the MI for a collocate of BIODIVERSITY, Wordsmith compares the occurrences in the test corpus against those in a reference. Using the BNC as my reference corpus, I can argue that the views on the test corpora are always from the same position and that the position is a publicly recognised standard. This approach also attempts to emulate the experience of Welford. His experience was also comparative – he heard the language of the environment being used by green business, and it wasn't contextualised as he expected it to be. Table 6.1 below, is a copy of table G.4 on page 444, with some formatting changes to save space.

Table 6.1: The edited lists of significant collocates of BIODIVERSITY in the corpora of (i) green business and (ii) the radical NGOs

Green Business			**The radical NGOs**			
Word	**Relation**		**Word**	**Relation**	**Word**	**Relation**
SITES	17,69		DEGRADATION	13,506	PEOPLE	5,902
PARTNERSHIP	8,844		GM	12,013	ENVIRONMENTAL	5,692
ENHANCE	8,677		INDICATORS	11,385	THREAT	5,682
CONSERVATION	8,559		FOREST	10,253	IMPACT	5,505
THE	7,789		SUSTAINABILITY	10,041	AGRICULTURAL	5,297
STRATEGY	7,648		IMPACTS	9,921	ENVIRONMENT	5,288
ENERGY	6,729		CHANGE	9,413	SOIL	5,086
IMPACTS	6,399		FARMLAND	9,321	ASSOCIATED	5,068
PLANS	6,265		CONSERVE	9,21	DESTRUCTION	4,983
AREAS	5,832		WOODLAND	8,438	SUSTAINABLE	4,891
LAND	5,463		ISSUES	8,301	BUT	4,35
ENVIRONMENTAL	5,263		GLOBAL	7,81	BIRDS	4,235
IMPACT	4,774		CLIMATE	7,601	DAMAGE	4,147
ISSUES	4,412		UNDER	7,568	INCLUDING	4,12
ACTIVITIES	4,057		MARINE	7,194	HABITATS	3,96
AN	3,199		THE	6,931	INTERNATIONAL	3,764
			ACTION	6,689	LANDSCAPE	3,471
			COMMUNITY	6,159	NATURAL	3,128
			RESOURCES	6,032	HAS	3,11
			CROPS	5,941		

Assuming that my empirical procedure is sound, the two lists in table 6.1 contain those words which, considered from the viewpoint of the written section of the BNC, are the significantly unusual collocates of BIODIVERSITY. They are not necessarily the most frequent, in terms of the absolute number of their co-occurrences with BIODIVERSITY. Rather, the frequency of their co-occurrence with BIODIVERSITY is most striking, when compared with the BNC standard. If I make the rather tenuous assumption that Richard Welford's usage of the English language is exactly the same as the written corpus of the BNC, then these are the words that he would pick out as being the most unexpected close neighbours of BIODIVERSITY.

6.2.3 A comparative view of collocate contextualisation

The first impression one gains, from looking at the two lists in table 6.1, is that the radical NGOs' list of collocates is longer than that of green business. This suggests that, viewed from the perspective of the BNC, the radical NGOs contextualise BIODIVERSITY in more striking ways than the green corporations do. However, I have been fortunate with this particular example that the two lists vary in length and create such a visual impact. My experience, of working through this procedure on many different node words, prompted me to devise a method of presenting these lists, which would communicate more information. My solution was to use a variation on the Venn diagrams that I have already presented in chapter five. By taking advantage of Wordsmith's "stoplists" and the "Compute matches" functions, (already described in section C.3 on page 377), it was a relatively easy operation to compare the two lists of collocates. I divided them according to whether they were (i) only found in the green business list, (ii) only found in the radical NGOs list or (iii) common to both lists. Having organised the words into these three categories, I transferred them to a Venn diagram.

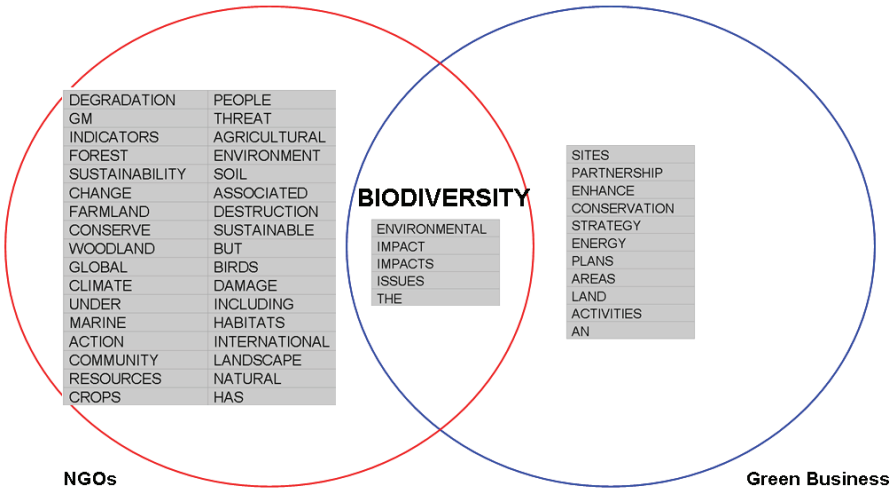


Figure 6.2: The comparative collocate contextualisation of BIODIVERSITY

Figure 6.2, above, has been produced by following the procedure, using the two lists in table 6.1. This is my presentation of the *comparative collocate contextualisation* for BIODIVERSITY.

Bearing in mind that the function of this tool is to provide a corpus-level *indication,* of the possible unusual usage of a word by a discourse community, my Venn diagram presentation has a number of advantages. First, by presenting the information as a diagram, rather than a table of words, there is less pressure on the eye and brain to engage with the individual words in the lists. This makes it easier to keep one's focus on the overview of the corpora that is desired, at this stage, as one searches for broad patterns of usage. Second, just like the relative length of the two lists in table 6.1, a comparison of the sizes of the left-hand and right-hand grey-shaded rectangles, gives an *indication* of which community is using the node-word in the most unusual ways. In this case, we can see that the radical NGOs have substantially more significant collocates clustered around BIODIVERSITY, than does green business. Third, unlike the presentation in table 6.1, a comparison, of the central grey-shaded rectangle with the outer two, provides an *indication* of the extent to which the two discourse communities share their striking contextualisation of BIODIVERSITY with each other.

Strictly speaking, the Venn diagram display in figure 6.2 ought to be called "a *comparison of* comparative collocate contextualisation." The two lists of significant collocates have already been generated by a process of *comparison* between their respective corpus and the BNC. In the Venn diagram they are now *compared* with each other. However, I hope the single usage in the term *comparative collocate contextualisation* will suffice. I consider this visual impression to be a crude example of the "discourse patterns" to which Stubbs refers in the quote that appears in section 6.2.1. Although I am quite pleased with the result, it is, nonetheless, a trade-off. As I pointed out in section 6.1, a careful, sympathetic reading of words, in their context, is the only way we have available for making statements about their usage. But with the huge volumes of text with which corpus linguistics works, such a task would be insurmountable. By looking for corpus-level, spatial patterns in the contextualisation of words, I must forgo, for the time being, the interpretation of usage which is my objective. But in the space of roughly 45 minutes' work in manipulating Wordsmith reports, stoplists, Excel spreadsheets and a PowerPoint Venn diagram, I can gain a rough *indication,* of the extent to which a particular word is contextualised in a significant way by one or the other player. This gives me a basis on which to judge whether the keyword provides an interesting object for further interpretive assessment of its usage and meaning. In

the next section, I shall present several of these Venn diagrams and discuss their advantages, disadvantages and significance in more detail.

6.3 The reliability of the collocate contextualisation tool

As far as I am aware, my development of this tool for viewing the corpus-level patterns of contextualisation of a word is breaking new ground. At each stage in the process of manipulating the data into what, I hope, will be more useful forms, decisions have had to be taken on what to include and what to discard. The 'MI ≥ 3' rule of thumb, which I describe in section G.1.3 on page 439, is just one such example of many. Often, however, lacking the time to test out the sensitivity of my results to different settings, I have simply accepted the default option that Mike Scott has programmed into Wordsmith. With no sound empirical grounds for choosing any other option, it is wisest to rely on the judgement of more experienced researchers. For example, when Wordsmith registers which words are the neighbours of a particular node word, such as my example of BIODIVERSITY, it must set an 'horizon', measured by the number of words from the node beyond which it is not interested in registering. How far away from the node word can a collocate be and still influence the usage of the node word? Clearly, the question cannot be answered categorically. In due course, studies by corpus linguists will no doubt shed light on this question and many others as well. But for the time being, the sensible course of action has often been to rely on the experts in the field and hope for the best. In this case, the default setting that Mike Scott has programmed into Wordsmith is five words to right and left of the node word.[2]

Another more recent, and more worrying, example of the reliance of my findings on other researchers' work, concerns the algorithm for the calculation of the specific mutual information (MI) value. In the period during which I conducted my empirical analyses of the data, Mike Scott made a new software release of Wordsmith available on his website, as is his normal practice. I downloaded this newer version and, having already produced some of my results with the 'old' version of Wordsmith, saw, immediately, that the results from the calculation of MI with the 'new' version of Wordsmith were very different. I returned to the collocate contextualisation of BIODIVERSITY, which I used to illustrate my procedure in the previous section, and repeated the same procedure with the 'new' Wordsmith. The MI values, which were calculated for the 809 collocates of BIODIVERSITY in the green business

[2] In footnote 45 of chapter three, I have referred to an interview of John Sinclair in which he expressed the view that the most appropriate horizon was probably +4 and -5. See Ramesh Krishnamurthy (ed.), *English Collocation Studies: The OSTI Report* (London: Continuum, 2004), xix.

corpus, were, as I had surmised, very different. Table 6.2, below, provides an overview of these substantial differences, calculated using 'old' and 'new' Wordsmith.

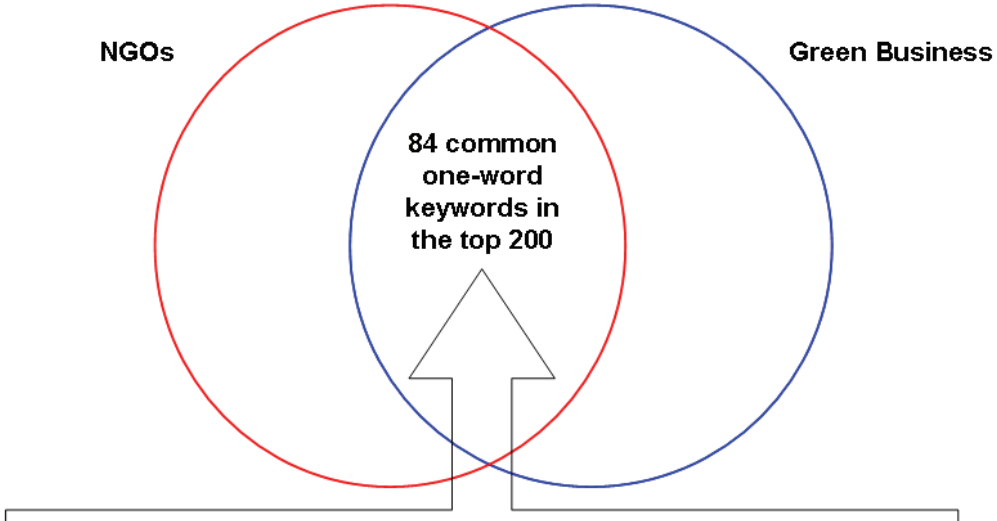
Table 6.2: Comparison of the MI calculation by 'old' and 'new' Wordsmith

	'OLD' WORDSMITH	**'NEW' WORDSMITH**
Highest MI	24.807 (BIODIVERSITY)	24.807 (BIODIVERSITY)
Number of collocates with MI > 3	25	751
Number of collocates with MI > 0	42	751
Number of collocates with MI = 0	744	58
Number of collocates with MI < 0	23	0
Lowest MI	-6.896 (AND)	0

Column two, 'OLD' WORDSMITH, displays the results that have already been presented in section 6.2. There are 25 collocates with an MI > 3 (listed in table G.3 on page 442), and 42 collocates with MI > 0 (listed in table G.2). Also mentioned in section G.1.3 on page 439, are the overwhelming majority of collocates – 744, with MI = 0, and the small number of 23 with MI < 0. Comparison of these results with column three, 'NEW' WORDSMITH, reveals the disparity. With the new calculation of MI, nearly all of the collocates – 751 out of 809, have now become 'significant' contextualisers of BIODIVERSITY. It was clear that these results would make my Venn diagram comparisons unusable. More worryingly, they cast doubt on the reliability of the MI calculation in Wordsmith. Consultation with Mike Scott revealed that he had, indeed, adjusted the algorithm by which Wordsmith calculated the MI value and he pointed out that there were different ways of calculating MI, which had the effect of emphasising the significance of different types of words.[3] Scott's view was that, since both the old and new algorithms were valid methods of calculating an MI, and my approach used a *comparison* of the reports for two different corpora, I was free to use either one of them, as long as I used just one. Given that the 'old' algorithm generated results that were more usable, I elected to retain this for all the MI calculations in the project.[4]

[3] This is confirmed in the previously-cited book by Michael Oakes, *Statistics for Corpus Linguistics.*
[4] This means that the results I present are not reproducible using new versions of Wordsmith. The results have been generated using the "December 2006" version, which Mike Scott makes available on his website. Mike

Having opened this section, on the reliability of my comparisons of collocate contextualisation, by pointing out some of the possible weaknesses, I shall now change tack. If I thought that the results that it produces were absurd, I would have rejected the technique. If I thought the results were inconsistent, I would also have it. But in the empirical work of acquiring an overview of the object of study, I have also acquired a certain confidence in the results. The Venn diagrams display a degree of variation which one would expect, but within a reasonable range which suggests that the displays are much more than random collections of words. My starting point, in acquiring a view of the object of study, was the list of 84 common one-word keywords, which I first presented in figure 5.3 on page 186. For ease of reference, I now repeat figure 5.3, presenting it below as figure 6.3.



ACTION	CORPORATE	HEALTH	NGOS	RESOURCE
ADDITION	COUNTRIES	HUMAN	ORGANISATIONS	RESOURCES
AREAS	DEVELOPING	IMPACT	PLANT	REVIEW
ASSESSMENT	DEVELOPMENT	IMPACTS	POLICIES	SAFETY
BENEFITS	DIOXIDE	IMPLEMENTATION	POLICY	SITES
BIODIVERSITY	EMISSIONS	INCLUDING	POTENTIAL	SOCIAL
BUSINESSES	ENERGY	INDICATORS	PROCESS	STAKEHOLDERS
CARBON	ENSURE	INDUSTRY	PRODUCTION	STANDARDS
CLIMATE	ENVIRONMENT	INFRASTRUCTURE	PRODUCTS	STRATEGY
COMMITMENTS	ENVIRONMENTAL	INTERNATIONAL	PROJECT	SUPPLIERS
COMMUNITIES	ETHICAL	INVESTMENT	PROJECTS	SUPPORT
COMMUNITY	EXAMPLE	ISSUES	RECYCLING	SUSTAINABILITY
COMPANIES	GLOBAL	KEY	REDUCE	SUSTAINABLE
COMPANY	GOVERNANCE	LANDFILL	REDUCTION	TARGETS
COMPLIANCE	GOVERNMENTS	LOCAL	RENEWABLE	TRANSPARENCY
CONSULTATION	GREENHOUSE	MINING	RENEWABLES	WASTE
CONSUMERS	HAZARDOUS	MONITORING	REPORT	

Figure 6.3: The 84 common one-word keywords in the top 200 one-word keywords of green business and the radical NGOs

In section 5.2.8 of the same chapter, I presented my conclusions regarding research question one. I rejected the claim that the language of green business made the same representations as

Scott's Web, *Versions of Wordsmith*, http://www.lexically.net/wordsmith/previous_versions.htm, (accessed 13th February 2008).

that of the radical NGOs. But I also speculated that it was within the 84 common one-word keywords that we might find evidence of a language which was, to borrow Welford's term, undergoing some form of hijack. It was on these 84 words, therefore, that I elected to wield my 'comparison-of-collocate-contextualisation' tool described in section 6.2. I did not have the time available to work through all 84 words. However, the thirty-odd Venn diagrams, which I did create, do inspire confidence that these results provide a useful *indicator,* of possible differences in usage by their discourse communities.

In figure 6.4, below, I present some miniaturised Venn diagrams of eight one-word keywords, which I subjected to this procedure. I shall use these in order to discuss the reliability of my tool as an indicator. The eight words, which, just like BIODIVERSITY in figure 6.2, are written in bold capitals in the middle of their Venn diagrams, have been selected in order to be illustrative of certain characteristics or trends which I wish to discuss, and have no significance beyond this.[5] Just as in figure 6.2, green business is always on the right, and the radical NGOs on the left. I have reduced the size of the Venn diagrams in the interests of space. While the patterns to which I wish to draw attention remain clear, the individual collocates are too small to read. For readers interested in more detail, all eight Venn diagrams are presented individually in half-page scale, in section G.2 from page 445.

Within each Venn diagram, I have endeavoured to make the cell width for the collocates the same for all three lists. This means that the sizes of the grey shaded boxes are roughly proportional to the number of collocates, and enables one to acquire a rough idea of the extent to which the keyword is contextualised, simply from the first visual impression of the diagram. The grey-shaded areas are not, however, proportional from diagram to diagram. Using a standard cell-width for all diagrams, which would have to be dimensioned according to the keyword with most collocates, would have led to those keywords with relatively few collocates having inconveniently small lists. As an example of this, the Venn diagram for IMPACTS, on the left hand side of the third row, displays the enormous number of collocates with which green business significantly contextualises the keyword. But there are so many, that they are illegible at this scale of reduction. There is no need to impose this type size on all the Venn diagrams, when the loss of consistency can be compensated for by a little common sense on the part of the viewer, and the gain is the legibility of the collocates.

[5] The size of the circle-pairs varies slightly among the eight, but this is an unfortunate and unintended consequence of the PowerPoint manipulation that was necessary in order to get them all together on a portrait-style A4 slide, and no significance should be attached to circle size.

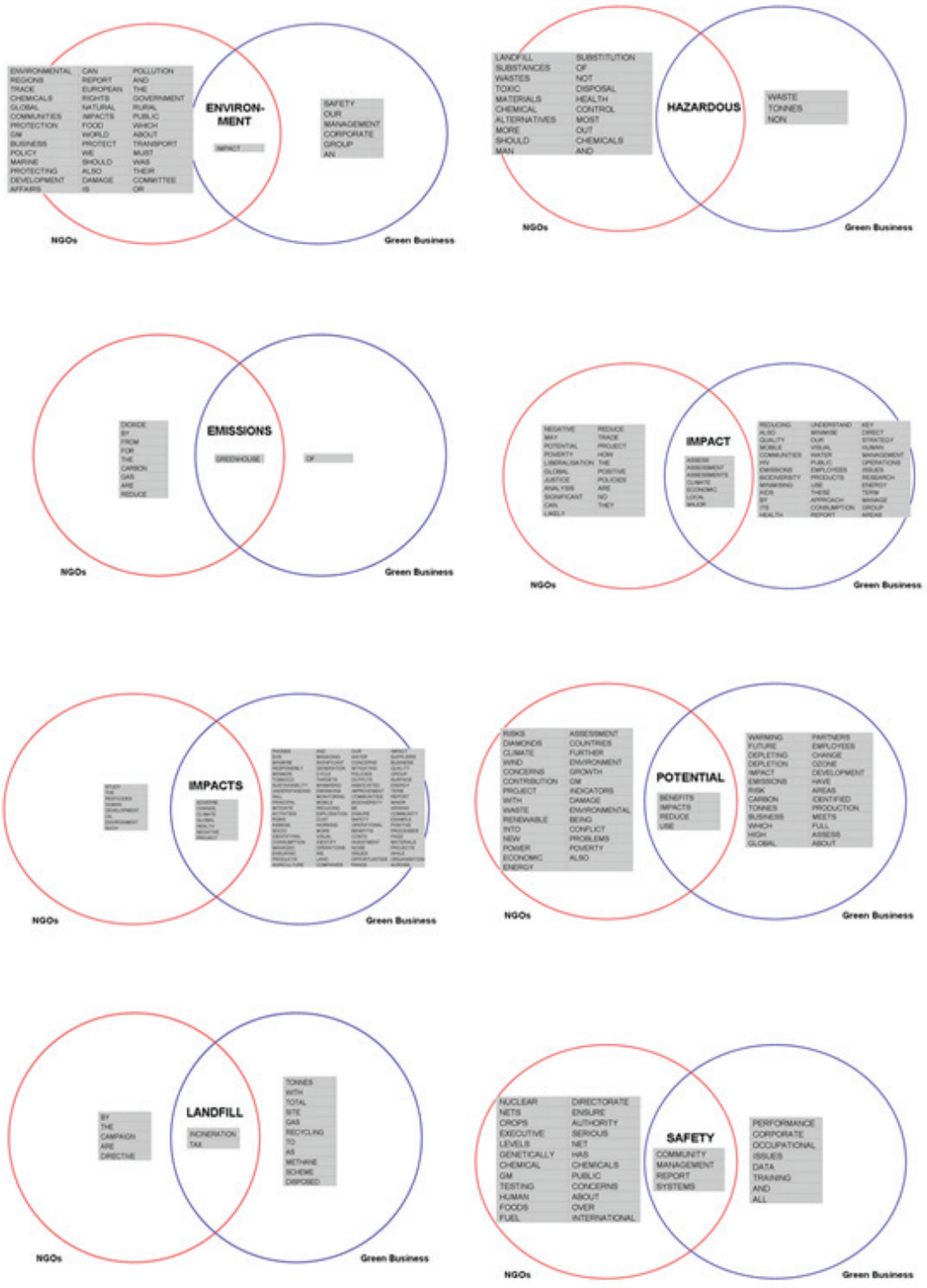


Figure 6.4: Eight Venn diagrams showing comparisons of collocate contextualisation

Within a Venn diagram, then, a relatively large shaded area is indicative of there being quite a few collocates which, from the viewpoint of the BNC, are significantly unusual contextualisers of the keyword. These eight Venn diagrams suggest that, from this BNC perspective, the radical NGOs do as much unusual contextualising of the keywords as do the

green corporations. In the top two Venn diagrams, for ENVIRONMENT and HAZARDOUS, we can see that, whereas green business's contextualisation of the keyword is not particularly unusual, the radical NGOs are using the words in quite markedly different ways to the BNC standard. The tendency is reversed in the third row, with the previously mentioned IMPACTS. Here, we have a strong indication that green business contextualises this word in ways that differ a great deal from the BNC viewpoint, while the radical NGOs' patterns of wording would appear to look fairly similar to the BNC.

I have just remarked on three keywords whose Venn diagrams are unbalanced, suggesting that there is unusual contextualisation by either one or the other discourse community. In contrast to these, we have, on the right hand side in rows two, three and four, IMPACT, POTENTIAL and SAFETY. Both sides of these Venn diagrams have substantial numbers of words, suggesting that these three words are used in special, but different, ways by the radical NGOs and green business. In another contrast to these 'heavyweights', we have, on the left hand side of rows two and four, EMISSIONS and LANDFILL. The sizes of their grey-shaded areas suggest that these two keywords are not used in particularly unusual ways by either the radical NGOs or green business. Indeed, if I were to expand the size of the Venn diagram for EMISSIONS, so that the collocates became legible, this impression would be reinforced by reading them (see figure G.3 on page 447). The significant collocates of the radical NGOs are DIOXIDE, BY, FROM, FOR, THE, CARBON, GAS, ARE and REDUCE. The single common collocate in the middle of the Venn diagram is GREENHOUSE, and the only significant collocate 'unique' to green business is OF. From the perspective of the BNC, then, we may interpret the usage of EMISSIONS to vary significantly, only in its association with the semantic field of the GREENHOUSE effect and its major cause: levels of CARBON DIOXIDE GAS. This unusual contextualisation is almost exclusively confined to the linguistic discourse of the radical NGOs, the one green business exception being GREENHOUSE. Otherwise, the BNC perspective finds nothing, which is significantly unusual, in the contextualisation of EMISSIONS.

A further observation, to which I would like to draw attention is the relatively small number of collocates which appear in the central, common area of the Venn diagrams. On the right hand side of the top row, HAZARDOUS has no common significant collocates. Even in those Venn diagrams that display a good deal of significant contextualisation, the shaded areas in the middle are relatively small, in comparison to the ones on the left and right. The impression that one gains, is of two protagonists, each for the most part going their own way

in the usage of these words. This evidence supports the point of view, which I first presented in section 2.2 on page 41, that the linguistic discourse is characterised by fragmentation, rather than a true exchange of meaning. Not only do the linguistic discourses consist of different, competing representations of reality. Even when their owners use the same linguistic sign, the evidence suggests that it is used differently and may, therefore, have different intended meanings.

I would have liked to have seen more examples, similar to EMISSIONS and LANDFILL, among the roughly 30 'keywords' on which I managed to apply the tool. I have included them among these eight in order to illustrate the appearance of less controversial linguistic signs, but they are atypical of the thirty, and I am slightly concerned that such a high proportion of the one-word 'keywords' do appear to be contextualised in such unusually significant ways. On the other hand, it may be that there is a positive correlation between (i) being a statistically significant 'keyword' in a corpus and (ii) being the object of statistically unusual contextualisation by the discourse community. Is it possible, that linguistic signs which lend themselves to different usages and, therefore, contextualisations, have a tendency to be used with greater frequency by their discourse communities? In posing this question, I am returning to a suggestion that I first made in section 4.12 on page 173, and which I summarised in section 4.12.2, whose heading, "Semantic content up – statistical 'keyness' down" describes the obverse trend. There, I compared three lists of the top ten one-, two- and three-word keywords in the corpus of green business, and made the observation that the two- and three-word keywords communicated more than the "semantically bland" one-word 'keywords'. The latter, however, had a much higher statistical keyness, which led me to postulate that there might be an *inverse* relationship between, what I dubbed the 'graspable' semantic content of units of meaning, and their statistical keyness.

The ability of the one-word 'keywords', to be combined in different multi-word units of meaning, is an important factor to bear in mind when considering the usefulness of the Venn diagrams, and it allays some of my concern over the high levels of unusual contextualisation. We need to remember that these Venn diagram views may also show us evidence of the keyword's inclusion within multi-word units of meaning, as well as the collocates that contextualise it, when it stands alone as a one-word unit of meaning. Ideally, we would like to see how *units of meaning* are unusually contextualised by their discourse communities. But, as Mike Scott is always at pains to remind us, Wordsmith doesn't do *units of meaning*; it just does character strings.

However, even though it doesn't do *units of meaning*, Wordsmith's MI calculation with reference to the BNC standard, does make some compensation for its inability to spot when the node word is actually part of a larger unit. I shall illustrate my point using the example of ENVIRONMENT. From an examination of the three-word clusters in the green business concordance report for ENVIRONMENT, one can see something that we already know – this character string plays a descriptive role in several multi-word units of meaning. It often appears in clusters functioning as a pre-modifier to some other noun. REPORT, REVIEW, AGENCY and ISSUES are typical examples of so-called "collocates of ENVIRONMENT." In fact, they are often the head noun in a single unit of meaning, in which ENVIRONMENT functions adjectivally. But when we search for these four collocates in the Venn diagram of figure 6.4 (see figure G.1 on page 446 for larger scale), we find that Wordsmith has omitted them. The reason for this is that these usages of ENVIRONMENT have also entered into the 'typical' English of the BNC. Their occurrence within the discourse of green business is not, therefore, sufficiently significant to merit inclusion in the Venn diagram. In conclusion, then, we may surmise that the Venn diagram will only display evidence of the node word's inclusion in multi-word units of meaning, in cases in which the unit of meaning is both a significant 'keyword' of the discourse community, and where the usage has not migrated into the more general English of the BNC.

To summarise this section on the reliability of the collocate contextualisation tool, there are clearly some important, unanswered questions regarding the information content of the Venn diagrams. But equally clearly, they do communicate information which appears, from the plausibility of the interpretations, to be reliable. They also have the advantage of providing a relatively efficient method, for gaining an overview *indication* of the usage of a word by a discourse community, without getting bogged down in a paralysing mass of detailed usage. I return, now, to the overall objective of chapter six, which is to seek evidence in the linguistic plane that might respond to the appropriation claim. In section 6.2, I have presented my tool for identifying possible variations in the usage of linguistic signs. Now, in section 6.3, I have discussed its reliability and concluded that it is good enough to proceed further. I have already identified the 84 common one-word keywords as candidates for closer examination, in making an empirical response to the appropriation claim. However, these words are much-too general a collection of linguistic signs to be considered as a coherent object of study. In section 6.4, therefore, I shall address the empirical challenge of deciding how to identify the language of environmentalism, which has allegedly been appropriated by

the discourse of green business. This will provide me with a coherent object of study on which I can apply my tool.

6.4 The language of environmentalism

6.4.1 A semantic field of concern

"It is increasingly clear," writes Welford, "that when we discuss environmentalism many of us are essentially speaking very different languages."[6] It was with this quotation that I opened section 2.4 on page 60, and proceeded to develop the appropriation claim. And I concluded section 2.4 with the view that the appropriation of the language of environmentalism, by green business, was only to be expected. I argued that the adoption of a vocabulary, by members of a different culture with different experiences of the world, must inevitably lead to its appropriation. My expectation, then, is that the comparisons of collocate contextualisation of the vocabulary of Welford's "environmentalism," should have plenty of large grey-shaded areas on either or both sides of the Venn diagrams. But how to select a collection of words, which we might reasonably describe as having originally been under the guardianship of the radical environmental movement, before being adopted into the language of green business?

Here, the practicalities in constructing the object of study impose a limitation on my empirical ambitions. From a historian's point of view, the testing out of Welford's claim would demand a diachronic perspective on the usage of language: what was the language of "environmentalism" twenty years ago and ten years ago, and what is it today? How has the usage of this language changed during the last twenty years? In due course, I imagine that corpus linguistics will be able to provide examples of time-dependent corpora that might make such a historical view possible. But, within the current empirical limitations of technology and my own resources, I have had to satisfy myself with three, so-called, *synchronic* corpora. Although I have seen that the dates of production of texts, in the corpora, vary by several years, one of my working assumptions is that we are looking at a snap-shot in time of language usage. I have, therefore, no empirical method of ascertaining what the language of "environmentalism" was twenty years ago or ten years ago. I can only observe that I have a large sample of the language of "environmentalism" as it exists today.

[6] Richard Welford, *Hijacking Environmentalism,* 32.

However, we do know how the environmental movement has spoken historically. We know that one rich vein in its discourse, is a message of impending crisis.[7] It may have varied in the degree of pessimism with which it has viewed the consequences in its crystal ball, but the discourse of concern has been, and continues to be, a central element in its representations. An examination of the one-word 'keywords' of the radical NGOs, reveals that this semantic field is very strongly present. In table D.2 on page 386, I presented, among other things, the top 200 one-word 'keywords' of the radical NGOs. That list contains a significant number of words within what I will call "a semantic field of concern;" all of them expressing fear or worry about the possible consequences of contamination of the biosphere. The field also includes references to specific sources of such contamination or grounds for concern. In the top 200 one-word 'keywords' of table D.2 are GM (Genetically Modified, as in *GM food*, or *GM Crops*) CHEMICALS, NUCLEAR, PESTICIDES, GENETICALLY, HERBICIDES, PESTICIDE, DIOXINS and CHEMICAL. The reason why I have not included these product-specific keywords in the semantic field, is that, whereas they are a legitimate part of the representation of the radical NGOs' concerns, we cannot expect green business to have any need to use them in their representations. Among the 25 British green businesses, for example, there are no pesticide producers or any nuclear-based generators of electricity. There is no point in trying to explore how green business uses a word, which it has no possible grounds for using. Excluding these product-specific words, the top 200 one-word 'keywords' in table D.2 include fourteen non-specific words, which express concern about the impact of contamination of the biosphere. But the top 200 statistically significant 'keywords' is a very artificial cut-off point with which to work. In order to gain a greater appreciation of this semantic field, I extended my object of study to the top 500 one-word 'keywords' of the radical NGOs. In addition to the fourteen words which I identified from the top 200 list, I found an additional twenty words expressing concern.[8] All 34 words are shown in table 6.3 below. The 34 words, presented in table 6.3, form the object of study for responding to the appropriation claim. Before I proceed to the matter of their contextualisation, however, I shall briefly explore the extent to which green business has adopted this language of environmentalism.

[7] In chapter one, section 1.3.1, I have previously made reference to Fredrik Buell's *From Apocalypse to Way of Life: Environmental Crisis in the American Century*, (London: Routledge, 2003). This provides a good overview of the development of the discourse of the ecological critique.

[8] One of the presentational challenges of corpus linguistics is to decide where to draw the 'relevant-irrelevant' dividing line for base material. At the risk of incurring a charge of pedantry, I include, in table G.5 of appendix G, the top 500 one-word 'keywords' of the radical NGOs, from which table 6.3 has been extracted.

Table 6.3: A semantic field of concern in the top 500 one-word 'keywords' of the radical NGOs

N	Key word	Keyness		N	Key word	Keyness		N	Key word	Keyness
13	IMPACTS	23 112,00		177	POTENTIAL	3 318,51		329	VULNERABLE	1 821,81
15	EMISSIONS	22 457,07		184	EFFECTS	3 122,44		342	DESTRUCTION	1 757,73
28	IMPACT	14 502,96		208	RISKS	2 879,84		345	DISASTER	1 752,09
42	POLLUTION	10 039,64		212	EXPOSURE	2 822,00		355	THREAT	1 691,35
89	ILLEGAL	5 981,55		218	RISK	2 731,55		365	DAMAGING	1 633,59
91	CONCERNS	5 966,06		234	CONTAMINATED	2 586,35		392	PROTECTED	1 550,61
93	CONTAMINATION	5 921,91		261	VIOLATIONS	2 253,76		430	POLLUTANTS	1 392,70
126	HAZARDOUS	4 552,07		270	UNSUSTAINABLE	2 182,58		440	TOXICITY	1 362,60
134	TOXIC	4 287,94		277	DAMAGE	2 135,30		446	LEAKS	1 308,06
146	PROTECT	4 075,24		282	ABUSES	2 114,00		468	UNDERMINE	1 209,57
152	PROTECTION	3 871,83		297	DISASTERS	2 043,94				
176	SAFETY	3 360,15		317	POLLUTING	1 899,80				

6.4.2 Green business's adoption of the semantic field of concern

I am told that the first stage, in an alcoholic's process of recovery, is to recognise that she *is* an alcoholic.[9] Green business may have acknowledged that its activities have a detrimental effect on the biosphere and its contents, and it may have promised to make good the damage and lead a better life. But, notwithstanding these good intentions, most of the words listed in table 6.3 present a psychological challenge for an aspiring green corporation. We should not be unduly surprised, if the empirical examination of the linguistic discourse reveals that green business shies away from much of this vocabulary. This is indeed the case, as the results shown in table 6.4, below, reveal.

Table 6.4 is divided into four major columns, with narrow grey-shaded breaks to indicate their boundaries. In the left-hand column are the 34 words from table 6.3, which comprise the radical NGOs' semantic field of concern. I have included their ranking in the top 500 and the statistical keyness which Wordsmith calculates. In the second major column, which I have called "Green Business top 500," are the eleven words which green business also uses in its top 500 keywords. By comparing the ranking ("N") and the keyness, we can learn something about the relative importance of the keyword for green business and the radical NGOs. For example, IMPACT is a word which is very key for both the radical NGOs and green business. It has a ranking of 28 in the radical NGOs' listing and 33 for green business, and the keyness values are, correspondingly, very high for both. On the other hand, POLLUTION, which is 42nd in the ranking for the radical NGOs with a keyness value of just

[9] This recognition of a new experience of self is not unlike the example I used in section 2.3.2 of chapter two. There, I described my realisation that, if everyone else lived in the way in which I live, we would need eight planet earths to support us. The first necessary, but not sufficient, stage in the process of my recovery, is for me to recognise that the way I live is environmentally irresponsible.

over 10,000, only manages a ranking of 404 among the green business keywords, and a relatively modest keyness of about 800. In contrast to IMPACT and POLLUTION, SAFETY is an example of a keyword that green business uses with more frequency than the radical NGOs – 7th in the green business ranking and only 176th for the radical NGOs.

Table 6.4: A comparison of the usage of the semantic field of concern by the radical NGOs and its adoption by green business

NGOs top 500			Green Business top 500			GB – list of 9,728 keywords			Not found
N	Key word	Keyness	N	Key word	Keyness	N	Key word	Keyness	
13	IMPACTS	23 112,00	30	IMPACTS	9 017,55				
15	EMISSIONS	22 457,07	5	EMISSIONS	27 957,12				
28	IMPACT	14 502,96	33	IMPACT	8 470,03				
42	POLLUTION	10 039,64	404	POLLUTION	801,33				
89	ILLEGAL	5 981,55							ILLEGAL
91	CONCERNS	5 966,06	218	CONCERNS	1 698,29				
93	CONTAMINATION	5 921,91				1074	CONTAMINATION	299,47	
126	HAZARDOUS	4 552,07	115	HAZARDOUS	3 130,90				
134	TOXIC	4 287,94							TOXIC
146	PROTECT	4 075,24				851	PROTECT	421,15	
152	PROTECTION	3 871,83	497	PROTECTION	590,1				
176	SAFETY	3 360,15	7	SAFETY	21 059,48				
177	POTENTIAL	3 318,51	138	POTENTIAL	2 646,17				
184	EFFECTS	3 122,44							EFFECTS
208	RISKS	2 879,84	76	RISKS	4 538,33				
212	EXPOSURE	2 822,00				704	EXPOSURE	547,61	
218	RISK	2 731,55	123	RISK	3 023,30				
234	CONTAMINATED	2 586,35				897	CONTAMINATED	394,29	
261	VIOLATIONS	2 253,76							VIOLATIONS
270	UNSUSTAINABLE	2 182,58				1942	UNSUSTAINABLE	121,69	
277	DAMAGE	2 135,30							DAMAGE
282	ABUSES	2 114,00				5066	ABUSES	20,94	
297	DISASTERS	2 043,94							DISASTERS
317	POLLUTING	1 899,80				5113	POLLUTING	20,77	
329	VULNERABLE	1 821,81							VULNERABLE
342	DESTRUCTION	1 757,73				5983	DESTRUCTION	-29,88	
345	DISASTER	1 752,09							DISASTER
355	THREAT	1 691,35							THREAT
365	DAMAGING	1 633,59							DAMAGING
392	PROTECTED	1 550,61				1145	PROTECTED	269,63	
430	POLLUTANTS	1 392,70							POLLUTANTS
440	TOXICITY	1 362,60				3201	TOXICITY	51,18	
446	LEAKS	1 308,06							LEAKS
468	UNDERMINE	1 209,57							UNDERMINE

In order to find the remaining 23 keywords in this NGO-determined semantic field of concern, I had to spread my net much wider. I ran a listing of the keywords of green business and relaxed the settings on statistical significance so as to include more keywords. This resulted in an enormous listing of 9,728 keywords, mostly positive, but also some negative.[10] Ten of the remaining 23 words were found in this listing, though DESTRUCTION is included

[10] One of the techniques I used, to achieve this, was to adjust my *p-value* setting. This was set at the very rigorous default setting of 0.000001, and was adjusted up to 0.0001. The p-value is a statistical calculation of the danger of being wrong in claiming a relationship, in this case in comparing the word's occurrence in the test (green business) corpus and its occurrence in the reference (BNC) corpus. By increasing the value from one in a million to one in ten thousand, a few more words with relatively few absolute occurrences were allowed the statistical status of being a keyword.

by Wordsmith because it is used significantly *less frequently* by green business, than is the case in the 'typical' English of the BNC. Wordsmith signals this by assigning a negative keyness coefficient. There are thirteen words in the fourth, "Not found" column. I must underline that this does not mean that the words are *never* used by green business, just that, whatever that usage is, Wordsmith does not consider it to have any statistical keyness when compared with the BNC reference.

Deciding where to set my minimum cut-off point for considering a word as adopted by green business, required that I consider, not just its keyness, but also the absolute number of its occurrences in the corpus. The rule which I applied, required the word to satisfy either one or the other of two minimum requirements, and those that qualified have been given a grey-shaded background in table 6.4. The procedures for calculating the two criteria of either (i) minimum keyness, or (ii) minimum number of absolute occurrences, are described in section G.3.1 on page 455. All of the eleven words in column two qualified on both criteria. These criteria were then applied to the words in columns three and four on the 'either-or' basis, i.e. a word could be included either by having a keyness of over 250, or an absolute number of occurrences of over 300. Five words in column three and two words in column four qualified for inclusion, making a total of eighteen out of the 34 that the radical NGOs have in their top 500 keywords. In summary, then, we may observe that roughly half of the words in the radical NGOs' semantic field of concern do not carry over to the green business semantic field. My impression of the rejects is that they tend to be the more emotive words among the 34. It would be interesting to explore whether green business augments those words of concern of which it does make key use with other keywords of concern, and if so, how they compare with those in the radical NGOs' list, which it has declined to adopt. However, available space and time dictate that I must proceed directly to examining the collocate contextualisation of those eighteen keywords of "environmentalism" which green business *has* adopted into its linguistic discourse.

6.5 Collocate contextualisation of the semantic field of concern

In this section, I present three figures, each of which consists of six Venn diagrams showing comparisons of the significant collocate contextualisation around one of the eighteen 'keywords', which I identified in the previous section. The words are presented in descending order of keyness ranking in the radical NGOs' linguistic discourse, as shown in the left hand column of table 6.4. Figure 6.5 contains the six most key 'keywords' in the radical NGOs'

ranking, figure 6.6 shows the next six and figure 6.7 the final group of six. I repeat the note of caution that I made in connection with figure 6.4; at this stage, we are just looking for corpus-level *indications* that a word is being used differently. The visual impression is sufficient for our current purposes and, to aid in the interpretation of these Venn diagrams, I have drawn up three guidelines. First, the appearance of no or very few words in a Venn diagram tells us that the language communities contextualise the word in a similar way to the BNC standard. Second, a lot of words in the middle section of a Venn diagram but little in the two outer sections, tells us that the communities contextualise the word in a similar way to each other, but differently to the BNC standard.

Figure 6.5: Comparison of collocate contextualisation in the keywords of concern - one to six

Third, a lot of words in one or two or both of the two outer sections but little in the middle, tells us that the two communities contextualise the word significantly differently from each other, and also from the BNC standard. Clearly, within this final category, a lot of words in

both of the two outer sections of the Venn diagram would suggest that the most marked difference is in contextualisation between the two communities.

In figure 6.5 above, for example, we have, on the right hand side of the top row, EMISSIONS. This is an example of the first category of word. The radical NGOs have relatively few significant collocates and green business has just two – from the standpoint of the BNC, its contextualisation by the two communities is unremarkable. As far as the second category is concerned, I am afraid that I have no examples with which to illustrate it. Five of the six Venn diagrams in figure 6.5 and all of the Venn diagrams in figures 6.6 and 6.7, fall into the category of the third guideline – they show high levels of significant contextualisation by either one or the other, or, in most cases, *both* of the language communities.

Figure 6.6: Comparison of collocate contextualisation in the keywords of concern - seven to twelve

If one imagines oneself to be a member of the radical NGO language community and well-versed in its linguistic discourse, then the contextualisation of these linguistic signs by green business is bound to strike one's ear as being strange. There are a few words: POLLUTION (fig. 6.5), HAZARDOUS and SAFETY (fig. 6.6) and CONTAMINATED and PROTECTED (fig. 6.7), whose contextualisation by green business is not so very different from the BNC. But, even in these cases, the radical NGO language user will register a difference. And for a comfortable majority of these words, the *indications* are that green business has not just adopted the linguistic sign, it may be using it in different ways.

Figure 6.7: Comparison of collocate contextualisation in the keywords of concern – thirteen to eighteen

If one is willing to accept that my eighteen words represent a language of "environmentalism," then the evidence, presented in figures 6.5, 6.6 and 6.7, lends support to

Welford's complaint that the words around this language made him uneasy. It is not difficult to understand why this linguistic behaviour by green business would, from the perspective of a radical NGO language user, be interpreted as an appropriation of the language of "environmentalism." So far, however, I have only managed to present clear evidence of differences in *contextualisation* in the linguistic plane. This provides a strong indication of differences in *usage* by the two communities, but that must be explored by a closer, interpretive examination of how the linguistic signs are used in texts. In the next section, I shall present the procedure I have developed for selecting examples of text, which are representative of the significantly different usage of a linguistic sign.

6.6 Contextualised concordancing – procedure

The Wordsmith concordancing procedure finds lines of original text which contain, at their midpoint, the node word, whose usage we are interested in examining. Its contextualised concordancing procedure, however, produces only a subset of these lines. The report is limited to those lines which, in addition to having the node word at their midpoint, also contain one or more of the specified context words, within a particular horizon of, say, +/- 5. Using this report procedure, therefore, it is possible for me to produce shorter concordance reports, whose lines are *not* representative of the overall usage(s) of the node word by, for example, green business. Rather, they are representative of those usage(s), by which green business most clearly distinguishes its own usage(s) of the node word, from the usage(s) to which the radical NGOs put the same word. With reference to figure 6.8, below, I can use the significant collocates in the outer sections of the Venn diagrams, to generate these more limited concordance reports.

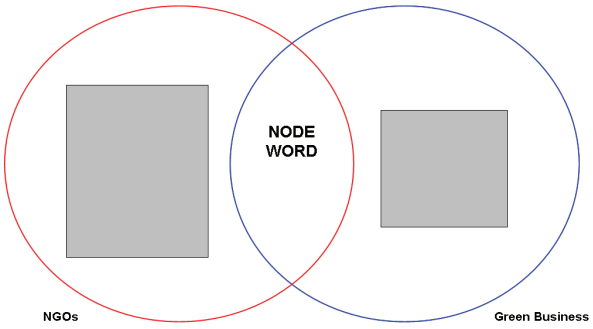


Figure 6.8: Using the 'unique' significant collocates of a word to generate a contextualised concordance report

In section H.1 on page 469, I describe, in detail, my procedure for generating these shorter contextualised concordance reports. The example I use to illustrate the procedure is for

POTENTIAL, as it is contextualised in the green business corpus. The result of the procedure is shown, in reduced scale, in figure 6.9, below. The only modification which I have made to the report is to mark POTENTIAL in bold type face, to make it easier to see.

N	Concordance
1	us identify priority areas for action, set targets for improvement and explore **potential** new business opportunities. We are tackling our impact upstream prima
2	ild-up of greenhouse gases in the atmosphere. Climate change looms large in its **potential** impact on society and as a business matter. With its interests in agri
3	minate the air we breathe. And, in recent years, we have begun to appreciate the **potential** impact on the earth's climate system of the carbon dioxide emitted to
4	ss the Group at the start of 2005. this is called the Performance, Development, **Potential** process or PDP for short. Overall our aims were to: ▪ ▪ ▪ ▪ ▪ Provi
5	ing devices to discourage landing in high-risk areas. Overhead lines have the **potential** to harm birds so we have conducted surveys to identify high-risk area
6	xample, Power Systems has developed a risk prevention process to minimise the **potential** risk of land contamination through spillage and leakage from existing
7	lated projects. This means sites can focus their resources on areas of greatest **potential** impact to environment, health and safety. Sites with the greatest pote
8	and applied more specific Ozone depleting substances (ODSs)/ ozone depletion **potential** (ODP) OZONE DEPLETION POTENTIAL FROM ANCILLARY USE OZONE DEPLETION
9	o and regulation for a minimum age is expected in 2003-04, which will restrict **potential** youth access to vending machines. Korea (packaging): "All cigarette p
10	ases are not new to the cement industry. 1.4.1.3 The equipment used to abate **potential** emissions from the bypass, gas conditioning system and electrostatic p
11	s of the trading efforts that have been initiated by us, and by others, and the **potential** which trading offers to remove the fear that the cost of dealing with
12	Carbon Management were updated in 2004 and estimated the carbon sequestration **potential** of the Group's sponsored and promoted forests at 3,816,000 metric tonn
13	its of business with strategic importance for the group that make, or have the **potential** to make, a significant contribution to BP's financial performance ▪
14	and operated by BP. We appreciate that the investments we are making have the **potential** to bring significant change to the lives of many of the people in the
15	hich fits with our core experience in other fuels. We have identified over 20 **potential** pathways by which hydrogen can be produced, using different sources
16	response, Lord Browne commissioned work on our assessment of the sensitivity of **potential** development areas at the earliest stages. He said: "We are determined
17	Safety 2.5.6 Safety Programmes We systematically assess risks to anticipate **potential** accidents, and put programmes in place to minimise them. We also learn
18	a strategy for dealing with the epidemic. Every company should understand the **potential** impact of HIV/AIDS on its operations and have taken action to minimise
19	ficant greenhouse gas emitted directly from the operations. The global warming **potential** of methane is 21 times higher than that of carbon dioxide. The total
20	brings together the knowledge and resources needed to spread the word about the **potential** economic benefits that environmentally responsible business methods ca

Figure 6.9: 20 random lines from the 882-line contextualised concordance report of the usage of POTENTIAL in the green business corpus

To summarise the procedure, Wordsmith's different functions enabled me to take the corpus-level evidence of variation in the contextualisation of a one-word 'keyword', and to generate reports that, I claim, are representative of the usage(s) by which green business and the radical NGOs most distinguish themselves from each other. From the empirical evidence that is provided by contextualisation, I can now move to the interpretative process of examining the usage of 'keywords' and their possible conceptualisation(s). Figure 6.10, below, illustrates this procedure and I will make two comments on its arrangement. First, I faced a dilemma in deciding what to place above the horizontal dotted line and what to place below. The arrangement shown here is most appropriate for the corpus-linguistic view. The mechanistic contextualisation is carried out on a whole corpus. Then, on the basis of its results, I move down into the corpus to find specific examples of usage in specific texts. But an alternative line of logic is suggested by the two-plane schematic.[11] My projected move from contextualisation to usage may not get me to the institutional/cultural plane, but it is definitely in an upward direction.[12] This was my case for inverting the schematic in figure 6.10, which, though sound, did not outweigh the narrative of my corpus-linguistic procedure.

My second comment is that I have drawn in two twenty-line reports on the right, under green business. The purpose of this is to draw attention, to the possible need to generate more

[11] By now, my two-plane schematic will be etched onto the retina of the reader's eye, and I refrain, therefore, from copying it once again.

[12] This is the move from the lexicogrammar into the discourse semantics of a particular language community which I discuss in section 3.3.10 of chapter three.

than one random concordance report. The production of two, three, or even more reports is typical of the procedure, by which corpus linguists satisfy themselves as to the representativeness of their interpretations of usage. To meet their comprehensive descriptions of the usages of a word, the repetition is as necessary as it is desirable. However, my experience has been that the interpretations of usage, in which I have been interested, have made themselves apparent, by their very striking frequency, within the first report of twenty lines. I have, on occasion, referred to a second random report, if I felt that the empirical foundation for an interpretation I wished to make was of questionable significance. But, as the next section shows, the observations about usage which I have been able to make are, generally, very clear cut.

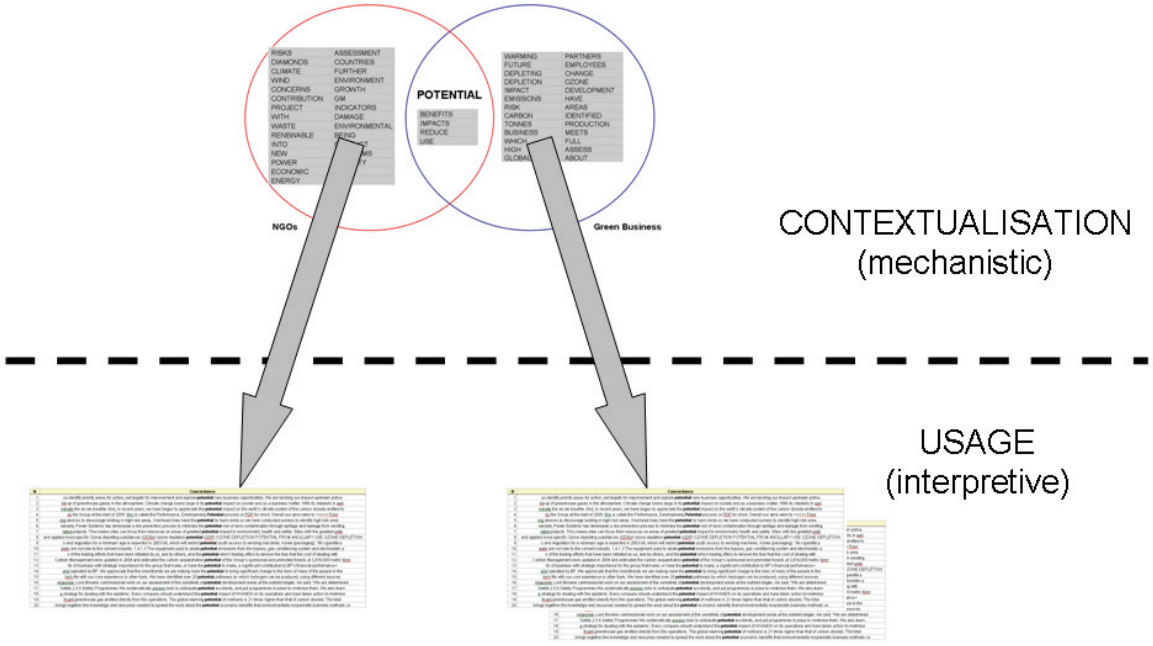


Figure 6.10: A summary of the contextualised concordancing procedure

I now return to the context of this chapter's attempt to respond to the appropriation claim. Recapitulating, I managed, with the eighteen Venn diagrams in section 6.5, to present clear evidence of differences in *contextualisation* in the linguistic plane. This is a strong indication of differences in *usage* by the two communities. I have now explained my empirical procedure for the interpretation of usage(s) of these 'keywords', by green business and the radical NGOs. Clear interpretive evidence of differences in *usage,* are what is required to provide empirical support for the appropriation claim. In section 6.7, I shall return to the eighteen 'keywords' that I have chosen as being representative of Welford's language of "environmentalism." I shall discuss the different types of communicative role they might

play, within the semantic field of concern, and use this discussion to focus my empirical efforts to interpret usage in the twenty-line concordance reports.

6.7 Interpretations of usage: the semantic field of concern

6.7.1 The object of study and the interpretive method

A twenty-line concordance report was needed for all eighteen words, in each of the two corpora. Thirty-six reports, each requiring one page in landscape format, is a lot of material. So, in the interests of space, my object of study is presented in appendix H on page 469. In section 6.7, I shall confine myself to describing my interpretive method, and then proceed to the observations which are my results. My working method has been paper-based and has involved the usage of different coloured highlighting pens and a pencil. This does not lend itself easily to transcription – the large number of annotations might well serve to confuse, rather than illuminate, the results. Therefore, in the results presented in the appendix, I have limited my annotations of the reports to those, to which I explicitly make reference in the following interpretative work.

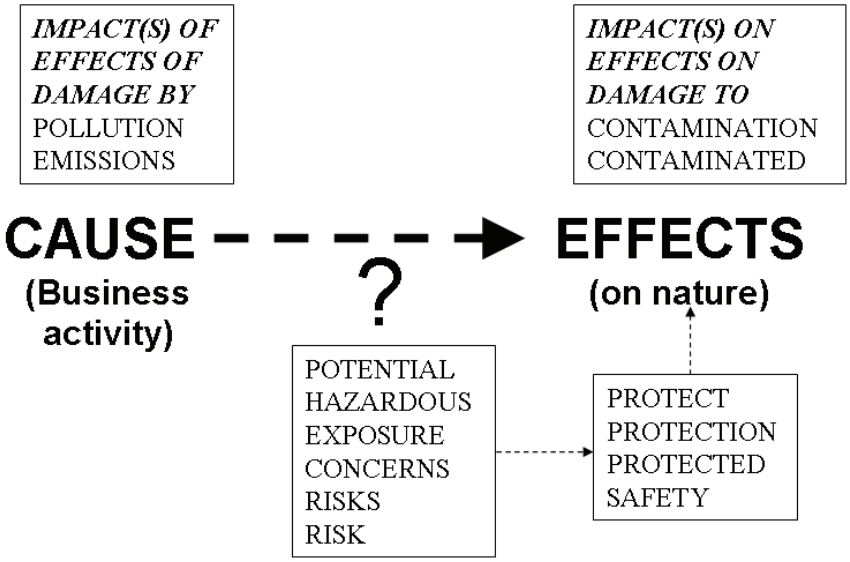


Figure 6.11: The semantic field of concern and the 'cause-effect' locus

My starting point was the 36 twenty-line concordance reports, organised into eighteen pairs. The eighteen 'keywords', in the common semantic field of concern, group themselves around a 'cause-effect' locus, as I have suggested in the schematic in figure 6.11 above.[13]

[13] I remind the reader that the radical NGOs' semantic field of concern has 34 words. Table 6.4 displays both the eighteen words which have been adopted for use by green business, and the sixteen keywords of the radical NGOs, which green business has declined to use with any statistical significance.

From their starting point, in the natural landscape, the radical NGOs represent the effects of the injuries, which the biosphere and its contents are suffering. For the NGOs, there is normally a clear audit trail, back to the cause of these detrimental effects. But I have drawn the arrow as a dotted line with a question mark underneath, in order to illustrate the 'innocent-until-proven-guilty' principle which, to the frustration of the radical NGOs, always underlies the discourse. Associated with this uncertainty and, therefore, placed under the question mark, is a third group of words, which are concerned with the subjective evaluation of the cause-effect relationship. Very closely related to this evaluation of risk is a fourth group, which concerns questions of protection and safety, for those elements of the natural world which are judged to be at risk. There is a degree of arbitrariness about this organisation.[14] But the four sub-groups provided a systematic means of working through the eighteen words.

My practice was to read through one pair of reports at a time, and gain some first impressions of the usage of the word. With the schematic of figure 6.11 in mind, typical avenues of investigation were to look for agents which/who are responsible for the causes, any evaluations of the cause-effect relationship, the recipients which/who suffer the effects, and possible knock-on consequences of these effects on the first recipient to another one.[15] With the assistance of my highlighting pens and fresh printouts of the reports, I then attempted the same, interpretive procedure on the pair of reports, and made notes of the significant differences in usage that I observed. Having completed this process for each word in a sub-group, I reviewed my summaries, to see if there were any general trends. In like manner, having completed my interpretive procedure for each of the four sub-groups, I gathered an overview interpretation of the differences in usage for the entire semantic field of concern. Although my procedure was bottom-up, what follows is a top-down interpretation of the differences in usage of the language. All my references to usages, in the sections that follow, may be found in appendix H. There, I have presented the concordance reports with my observations, in the order in which I now make reference to them. Not all of the eighteen 'keywords' are represented in appendix H on page 469. This is because the evidence of their usage did not conform to my interpretive analysis. More time and space would have enabled

[14] For example, risk is not simply an evaluation of the probability of an event. It also needs to take into account the magnitude of the adverse effect that is under consideration. The chances of a meltdown in the core of a nuclear power station are very, very small. But that doesn't mean that there is no need to make contingency plans; the severity of the consequences makes the risk a more serious proposition. So, one could argue that it also ought to be placed under EFFECTS.

[15] For example, the pollution of the air by fly ash, containing heavy metals, can then contaminate soil in the vicinity of an incinerator and enter the food chain, ultimately poisoning people.

me to explore these results. For the time being, I must simply register them as evidence of the weaknesses in my 'contextualisation-to-concordancing' procedure.

6.7.2 Green business wishes to address concerns

The CONCERNS of the radical NGOs have a wide spread. Of the twenty concordance lines in table H.1, I have marked seven with an 'X', indicating that they make explicit reference to the focus of our interest, namely human health or the natural landscape. There are three concordance lines in which the text, that is made available by the Wordsmith default setting of 160 characters, provides insufficient information for me to interpret what the focus of concern is. Some of these may also refer to health or the environment, but they would not alter the overall impression that the NGOs have concerns about proposals, new systems, human rights and many other issues, in addition to their concerns about the natural landscape. The report for green business, in table H.2, reveals that their usage of CONCERNS also covers different sorts of objects than just the natural landscape. I can find just four examples of usage, marked with an 'X', in which the specific concern relates to health or the natural environment. The thirteen lines without grey shading are those in which it is not immediately apparent, from the available text, what the specific concerns are, if any. This high number suggests that green business uses CONCERNS in a general sense, more often than the radical NGOs. But the difference between the two reports is not something of which I wish to make an issue. However, an interesting comparison with the usage that green business makes of CONCERNS is the importance it attaches to dealing seriously with them. In its concordance report, in table H.2, I have also highlighted in yellow fourteen lines in which green business represents some aspect, of a process for addressing the concerns which are in focus. It represents processes of listening to, understanding and then responding to, the concerns of different stakeholders, and also the procedures it has put in place for recording this input. It is very clear, from the analysis, that green business takes the opinions of wider society seriously. Here is a wider context for concordance line nine, which is part of a speech made by the then, BP chief executive, John Browne:

> We can't put up the barricades and try to hide from the *concerns* of society. We're part of that society not least because our staff have views and opinions of their own which inevitably reflect the wider *concerns* of society [emphasis added].[16]

[16] John Browne, *Halting climate change - taking practical steps that will make a difference,* Speech date: 07 October 1997, Venue: Greenpeace Business 2nd Annual Conference – London, http://www.bp.com/genericarticle.do?categoryId=98&contentId=2000305, (accessed 14th February 2008).

This is a good start. As we shall see in the next section, the green business semantic field also shares meanings with the radical NGOs' field on the desirability of protecting the natural landscape.

6.7.3 All agree on the need to protect the natural landscape

There is also consensus on the need to protect the natural environment. In the concordance report for the NGOs' usage of PROTECT, in table H.3, the object of the verb, in eighteen of the twenty lines, is some aspect of human health or the natural landscape. But the message is the same from the concordance report for green business, in table H.4. There, all twenty lines of PROTECT have a clear object of the process of protecting, and the object is some aspect of human health or the natural landscape. In the green business report the objects do tend to be more uniform in type. For example, seven of the objects of protection are either employees or customers of the green businesses, in three lines the object is "the environment" and other lines refer to the protection of "human life" and "rare species." By contrast, the radical NGO report refers to "the crop, the rural environment, biodiversity, farmers, children, small farmers, whales, dolphins, porpoises, sexual health, the forest, contract farmers, indigenous land" and "the North Sea and its marine life." This diversity is also a reflection of the very marked contextualisation around the node word in the Venn diagram for PROTECT, which appeared in figure 6.6, and which I now repeat in figure 6.12, below, together with the Venn diagram for PROTECTION. One could argue that green businesses don't have quite such a detailed view of the landscape, about which they are concerned, as the radical NGOs. This is a characteristic to which I shall return, in the next section.

Where we can discern a more interesting variation between the representations, is in examining what agent it is, from which these objects need protection. In the radical NGOs' concordance report, in table H.3, there are eight lines in which there is an explicit agent, highlighted in red, that is responsible for the threat to the natural environment. In several of the remaining lines it is easy to interpret the agents as being, for example, whale hunters in Antarctica, a mining corporation and over fishing in the North Sea. If we now turn our attention to the report for green business, in table H.4, there are five clear agents, also shaded in red, fewer than the radical NGOs, though not dramatically so. However, closer examination of the five lines reveals that the agents are not as real or specific, as those who appear in the radical NGOs' representations. They are "HIV, the disease, further decline, hazards" and "discrimination." This generalised representation, of the causes of effects, is also a theme to which I shall return, in section 6.7.5.

I have included the concordance reports for PROTECTION, in tables H.5 and H.6, simply to reinforce my comments about the similarity in usage between the two discourse communities. The number of lines, in which the object of protection is either people or some aspect of the natural landscape, is ten for the radical NGOs and nine for green business. As is the case with PROTECT, however, a closer examination of the objects suggests that the radical NGOs are concerned about the protection of a more varied selection of aspects in the natural landscape. Of green business's nine objects, six are described as "the environment." The radical NGOs, on the other hand, mention "this woodland, groundwater, wildlife, non-SSSI [Sites of Special Scientific Interest] designated sites, his [an account of the fate of one man], new varieties of plants, ethnic minorities" and "workers."

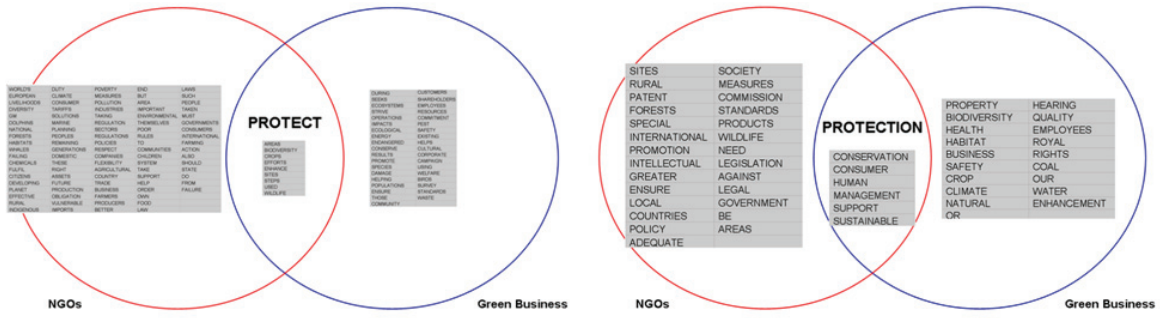


Figure 6.12: Venn diagram comparisons of the significant collocates of PROTECT and PROTECTION

I shall now take a small, methodological side-road and relate the two observations I have just made, on the differences and similarities in the *usage* of PROTECT and PROTECTION, with the two collocate contextualisation diagrams in figure 6.12, above. On the basis of my empirical procedure I argued that a large number of significant collocates in the Venn diagram was evidence of significant differences in *contextualisation,* and that this might be indicative of significant differences in *usage.* As figure 6.12 shows, both PROTECT and PROTECTION are excellent examples of significant *contextualisation*. But my observations from the concordance reports are that the two groups appear to *use* the words in the same way. It is at a more detailed level of, in this case, the recipients of the word, that the differences suggested by the Venn diagram are confirmed. This is a thread which I shall pick up later. Now I shall return to the focus on the natural landscape. There appears to be a consensus on the desirability of its protection, although I have indicated that, compared with the view from green corporate headquarters, the radical NGOs have a more detailed representation of what is in the landscape. This impression is confirmed as we compare their respective representations of the harm which is being suffered, by the natural environment.

6.7.4 A generalised view of damage

Whereas the representations of the radical NGOs include very particular references to the natural landscape, the view from green business seems much more abstract. The first pair of reports to which I shall make reference is that for DAMAGE itself. For the radical NGOs (see table H.7), nineteen of the twenty usages have a clear natural-landscape reference to the recipient which is suffering the damage, among them "DNA, the environment, livelihoods, sites of value for nature conservation, people's health, the planet" and "the community." Not surprisingly, green business uses DAMAGE with a wider spread of objects (see table H.8), including aspects of its own productive landscape: "Thunder Horse Platform in Gulf, power lines" and "property." There are also abstract usages of DAMAGE, such as to "reputation," which occurs three times. More interestingly, of the twelve lines in which the object of DAMAGE is an aspect of the natural landscape, only two, marked with an 'X', refer to specific incidents in which damage was caused. The other ten usages are representations of corporate objectives such as "Our strategy is to minimise damage to biodiversity" (line five), or a discussion of general issues such as "Sulphur dioxide is a major constituent of 'acid rain', associated with damage to the environment" (line fourteen).

The divergence between the radical NGOs' and green business's view of the landscape becomes even more pronounced, when the usages of CONTAMINATION and CONTAMINATED are examined. In the radical NGO report, in table H.9, seventeen of the twenty lines include the object of the contamination, and in almost all cases it is very specific. Examples of the objects include "chicken feed, United States food, dog food, local soil, allotment in Walkergate 3B, her blood, honey" and "non-GM rape." In the green business report (see table H.10) on the other hand, only thirteen of the examples have objects that might be considered to be a part of the natural landscape. In the thirteen lines there are only three terms that are actually used: "groundwater, land" and "(surface) water," and in all but two of the cases, marked with an 'X', the usage is part of a description of a corporate procedure, a corporate objective or a possible event which has not happened. In only two of twenty lines of usage, does green business represent the specific contamination of a specific element of the natural landscape. A comparison of the report pairing for CONTAMINATED tells the same story. In the radical NGOs' report, in table H.11, all twenty lines include the object of contamination and the view is often very specific: "30 percent of our food, sago palm, crops, fly ash, our adult volunteers, the pheasant, worker, Batchelors Beanfeast, the Lorentz National Park" and "soya and maize gluten." In the green business report (see table

H.12), there are fifteen objects which are contaminated, of which fourteen are the very general term "land" and one is "areas." In only one of these fifteen lines of usage, marked with an 'X', can I see a clear reference to a specific piece of landscape: "restoration of 600 acres of sacrificial and dedicated land," which comes from Anglian Water Group's *Sustainable Development Report 2002.* Otherwise, "contaminated land" is part of the representation of a procedure, regulation or corporate objective.

The usage of EFFECTS also confirms the radical NGOs' eye for detail as opposed to green business's generalised view of the natural landscape and its procedures for taking care of nature. In the concordance report for the radical NGOs, in table H.13, fourteen of nineteen lines include a clear representation of the recipient of the effects in question, and many of them are very specific. Examples from the report include "vulnerable groups, particularly babies and the elderly, molluscs, birds, 4-9% of patients exposed" and "the health of sensitive consumers." In the green business report, in table H.14, eleven of nineteen lines include the representation of the recipient of the effects. Only three of the usages employ the very vague catch-all term "environment," and there appears to be a marginally sharper focus to the green business lens when one reads of "fish populations and the aquatic environment, the regions and communities in which they operate" and "local communities." But, with the possible exceptions of lines fourteen and fifteen, closer inspection reveals that the other nine lines are generalised discussions, by the corporation, of scenarios that might occur, or accounts of what used to happen (but doesn't now), or a corporate procedure that has been established for making sure that this sort of thing won't happen in the future.

The usage of IMPACT, either as verb or noun, occurs in a mix of processes. These stretch from the more physical, undesired processes affecting the natural landscape, with which we are primarily concerned, to managed processes which have the objective of achieving some desirable end. A typical example of this usage is in line three of the radical NGOs' report for IMPACT (see table H.15), in which the text is concerned with the "design and impact of development projects and programmes." My observation applies equally to the two players – just ten of the radical NGOs' usages have a reasonably clear recipient in the natural landscape, and eleven among the twenty lines in the green business report in table H.16. But among this somewhat smaller proportion, my 'detailed – generalised' observation applies once again. Among the radical NGOs' recipients of some impact, we find "the lives of the poor, 26 HIPC [Heavily Indebted Poor Countries], human rights, they" and "the ground" used here in the sense of getting hold of the facts of what is happening *on the ground*. Of the

eleven green business recipients of some impact, eight use the very general term "environment" and another two are the fairly general terms "wildlife and habitats" and "socio-economic." There is just one representation, where a corporation refers to a specific occurrence of its "impact – in our own plantations" (line nineteen). However, a close examination reveals that the corporation is concerned with issues in which it can have "the most impact," that is, it is reviewing how the corporation can have a *positive* impact on the environment around it.

The 'keyword' IMPACTS lends itself to an even greater variety of usage than IMPACT. It is able to take, as a pre-modifier noun, either the cause of the impacts, or the recipient which will suffer or perhaps benefit from the impacts. For example, the term *climate change impacts* refers to some unknown consequences that are being caused *by* climate change, whereas the term *environmental impacts* refers to the consequences *on* the environment of some unspecified agent. The syntactic flexibility of IMPACTS is reflected in its usage. In the concordance report for the radical NGOs, in table H.17, the recipients of impacts are few, and they are generalised. I can find only seven lines where there is a clear recipient and in four of these the radical NGOs use the bland formulation of either "social" or "environmental" IMPACTS. The green business report (see table H.18) on the other hand, has fourteen lines in which there is a recipient. Confirming the green business tendency to generalise, however, all fourteen recipients are either "environmental, social, health, economic" or "biodiversity."

To summarise my interpretation thus far, the evidence, in the linguistic plane, points to a green business discourse community which *does* look outwards, beyond the perimeter fence of its own operations. In common with the radical NGOs, it *is* concerned about the condition of the natural landscape 'out there', and it agrees with the NGOs that its protection *is* important. Unfortunately, however, the view from corporate headquarters, of the natural landscape and how it is suffering, is very hazy. What green business sees beyond its perimeter fence is damage to "the environment," "society and communities," "land, air and water," and "habitats, species and eco-systems." In the next section, we will also see that green business's view of exactly what is causing the damage, is also shrouded in uncertainty.

6.7.5 The uncertainty of green business over causes

In appendix H, I have now repeated the pair of concordance reports for DAMAGE (see tables H.19 and H.20) to which I referred earlier. But I have annotated them further, by highlighting, in red, those agents I can find, which are responsible for the damage to the natural landscape.

The report for the radical NGOs, in table H.19, shows that they have a very clear view of what is causing the damage. There are fourteen lines which contain an agent within the limited space of the concordance line.[17] The agents of damage are stated explicitly: "GM crops, export subsidies, weapons, agriculture and development, [people] leaving the land, Shell, SAPREF [Shell and BP South African Petroleum Refineries]" and "current EPA [Economic Partnership Agreement] negotiations." In the green business report (see table H.20) we find that in only six, of the twelve lines in which there is a reference to damage to the natural landscape, is there also an agent which is responsible for causing the damage. In all of these concordance lines the representation is one of a generalised risk of damage to the natural landscape, or a historical account of damage having been done previously. In no concordance line is there a specific reference to damage done now.

I have also repeated the report pair for EFFECTS (see tables H.21 and H.22) and annotated them with red highlighting for the agents of effects. Here, the first impression is that green business sees as much as the NGOs – it mentions thirteen agents compared with the radical NGOs' eleven. But, again, a closer examination disappoints; seemingly all of the representations of the green corporations are either generalised scenarios, models of what could happen (but hasn't), historical reviews of the bad old days, or procedures which have been implemented for preventing the negative effects from ever happening. There is just one usage, in line fourteen, which might possibly be a representation of a specific occurrence: "In addition, low level effects on aquatic organisms have been observed for specific APIs [Active Pharmaceutical Ingredients] such as synthe [*sic*]." Using the Wordsmith audit trail, it is a straightforward procedure to return to the source, for more of the text – an informative document produced by GlaxoSmithKline. But it deals with the *general* issue of pharmaceuticals in the environment. The concordance line comes from the document's opening paragraph:

> When pharmaceuticals are administered to patients, some of the active pharmaceutical ingredient (API) may not be completely metabolised (biochemically altered and inactivated). […] Recently, as a result of advances in analytical techniques, extremely low concentrations of pharmaceuticals are being measured in wastewater, surface water (rivers and streams) and drinking water. *In addition, low level effects on aquatic organisms have been observed for specific APIs such as synthetic hormones* [emphasis added].[18]

[17] Pure curiosity prompted me to trace back to the original text from concordance line one, in order to find the cause of "DNA damage." It turned out to be a group of chemicals known as Alkyl Phenols which are described in exhaustive detail in a GreenPeace report that I have referenced below table H.19.
[18] GlaxoSmithKline, *Pharmaceuticals in the Environment*, http://www.gsk.com/responsibility/cr_issues/ehs_mf_i_pharma_environment.htm,(accessed 14th February 2008).

The contrast between these corporate generalisations and the radical NGOs' focus on the details of the cultural causes is, again, striking. Among their eleven agents of EFFECTS in table H.21, the radical NGOs are on the trail of "polluting chemicals, pesticides, the proposed wind farm, the Chernobyl accident, 'xenobiotic' compounds" and "brominated flame retardants."[19]

The concordance report pair for IMPACT does not give any clear picture of the usage of this keyword, possibly because of its ability to function as both verb and noun, and also because of the spread of usage to which I have referred earlier. However, I have repeated the report pair for IMPACTS (see tables H.23 and H.24), and annotated them with the agents of negative impacts, highlighted in red. The difference in the number of identified agents is not so great; sixteen for the radical NGOs and thirteen for the green corporations. But the 'detail – generalised' comparison applies here as well. "Climate change" does appear in six of the sixteen usages by the radical NGOs, but in the other ten lines we find different, specific agents including "multi-national corporations such as Shell, nuclear exemption from the CCL, this controversial 6-lane road bridge, food shortages" and "the Bank's projects." Contrast this list with the agents in the green corporations' representations: "social performance, our manufacturing operations, our operations, Severn Trent group's most significant environmental impacts, our true impacts" and "its global operations."

The linguistic sign IMPACTS, used as a noun, lends itself very well to generalisations. In several concordance lines, in table H.24, a green corporation represents both cause and effect with this one word. For example, concordance line seventeen comes from Anglo American's 2002 sustainability report for their mining operations at Namakwa Sands.[20] On page 24 of the report, we can read the following:

> The Minerals Act (No.50 of 1991) requires an approved environmental management program (EMPR) report before mining operations may proceed, regular reviews and if

[19] A xenobiotic is a chemical which is found in an organism but which is not normally produced or expected to be present in it. Brominated flame retardants are produced synthetically in 70 variants with very varying chemical properties. They are applied to prevent electronics, clothes and furniture from burning. However, some brominated flame-retardants are considered Persistent Organic Pollutants. They are known to accumulate in the body and their consequences are not well-known.

[20] Namakwa Sands is the name that Anglo American gives to its base metals mining business that operates along the West Coast of South Africa, north of Cape Town. From their website, we can read that "Namakwa Sands undertakes the mining of heavy mineral sands and their subsequent processing, concentrating and smelting. It operates three different sites and comprises three separate facilities. These are the mining and preliminary concentration plant at Brand-se-Baai, a minerals separation plant in Koekenaap for the recovery of ilmenite, zircon and rutile, and a smelter near Saldanha Bay for the smelting of ilmenite in the production of titania slag and pig iron." Anglo American, Base Metals geographic locations, http://www.angloamerican.co.uk/ourbusiness/thebusinesses/base/geographiclocations/, (accessed 14th February 2008).

> required amendments to the EMPR. Chapter 6 of the EMPR and the environmental management program (EMP) defines the Company's environmental *management objectives and commitments in managing identified environmental impacts* [emphasis added].[21]

The specific *causes* of damage, to the sand dunes which make up the natural landscape around Anglo American's three sites, are not referenced by their individual names. Instead, they are grouped together as "environmental impacts," a term which can also be used to refer to the *consequences* of Anglo American's activities. The only clue to the fact that Anglo American is referring to its own internal *causes* of environmental disruption, is its commitment to *managing* them. But the ambiguity of this text might easily lead an unsuspecting reader into thinking that Anglo American was now able to *manage* the natural landscape and any damage caused to it, just as well as it manages the Namakwa Sands operation.

This textual confusion reflects Bill McKibben's claim, to which I referred in section 2.5.1 on page 64, that the "logic of our present thinking leads inexorably in the direction of the managed world."[22] The productive landscape of Namakwa Sands is a manifestation of Anglo American's business models. It came into existence through the senior management's confidence in the soundness of the business case, and all the activity that is now carried out daily at Namakwa Sands, is directed by Anglo American's systems and procedures. At the corporate head office, in Carlton Terrace, London, the physical reality of the primary concentrator plant at Brand-se-Baai, and the four million tonnes of sand which it processes annually, are experienced through a corporate lens which represents everything in words and numbers. These representations are compared with other representations; the previous year's 'words and numbers' and the budgeted 'words and numbers'. Discrepancies between 'actual' and 'planned' are highlighted, and their consequences reviewed. The causes of these effects are explained and analysed in detail, and procedures instigated for rectifying the problems. In this way, head office is able to manage its productive landscapes, so that they achieve their business objectives. But I have not downloaded, into my corpus, Anglo American's reports for managing its *productive* landscape. What we are examining are the London head office's procedures for managing its relationships with the *natural* landscape, which exists around the corporation's *productive* landscapes. And, just like the productive landscapes, corporate headquarters needs models which it can manipulate. These models are under construction and,

[21] Anglo American, *Namakwa Footprint 2002*, http://www.angloamerican.co.uk/static/uploads/Namakwa%20Sands%202002.pdf, (accessed 14th February 2008).
[22] Bill McKibben, *The End of Nature*, 172.

just like the models of the corporation's productive landscapes, they will always be in a state of adjustment. However, to judge by what we have seen of green business's representations thus far, the current Anglo American model is likely to be a poor representation of the real thing: an approximately 150-kilometre coastal strip, which extends down the west coast of South Africa from the mining area at Brand-se-Baai to the smelter at Saldanha Bay. Notwithstanding the quality of its representation, it is through the comparison of reported 'results' with the numbers in the model, that the natural landscape is managed, a process which is examined in the next section.

6.7.6 Managing risk and safety – the process is our guarantee

With reference to the 'cause – effects' arrow in figure 6.11, which I repeat below as figure 6.13, I have, thus far, focused my attention on each end separately. In section 6.7.4, I focused on the 'effects end' of the schematic – the natural landscape and the damage which it is experiencing. Then, in section 6.7.5, I addressed the 'causes end', looking for representations of the sources of contamination of the natural landscape. Whereas the radical NGOs make very detailed cause-effect representations, the green corporations' models of interaction between (i) their productive landscapes *inside* the perimeter fence and (ii) the natural landscapes *outside*, remain very primitive indeed.

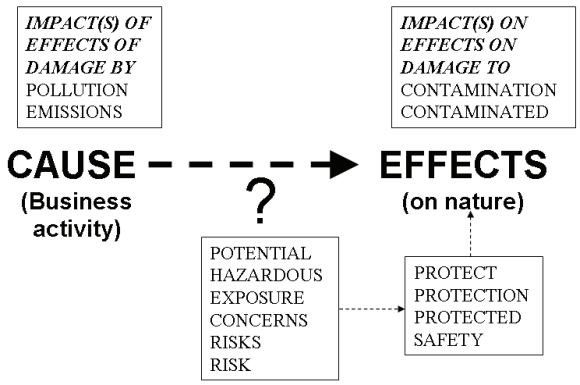


Figure 6.13: The semantic field of concern and the 'cause-effect' locus

The evidence, on which I am basing my observations, is the textual representation of these models that the green corporations themselves see fit to publish on their websites. Clearly, much of this textual representation will be the sort of corporate-level view from such places as Carlton Terrace – the language of chief executives is bound to be generalised and abstract. It is possible, therefore, that the models with which the green corporations work in their internal operations, are more sophisticated and detailed, than the picture which I gain

from the websites. If so, then this is unfortunate. The chief executive's commitment to a "sustainable future" recognises the 'cause – effect' relationship in the abstract.[23] But it is the recognition of the existence of the myriad 'cause-effect' relationships, in which the Saldanha Bay smelter takes part that is the vital next step, in the green corporations' transition to their goal of a "sustainable future." In this section, I want to explore how green business represents these relationships, by examining its usage of the three 'keywords' RISK, RISKS and SAFETY.

A comparison between the radical NGOs and green business of their twenty concordance lines for RISK reveals some, by now expected observations (see tables H.25 and H.26). First, the radical NGOs have nineteen out of nineteen effects, highlighted in grey shading, and they are detailed: "irreversible genetic pollution of the environment, feather pecking, cancer, testicular and breast cancer, the lives of 1500 local fishermen" and "rising flood risk." By contrast, the green business effects are few – six of eighteen, and they are general: "environmental risk, health risk, contaminated land" and "a migration of talent." Second, in nineteen of nineteen lines the radical NGOs identify a clear agent, highlighted with red shading, which is the source of the risk. Examples include "such chemicals, radon, farm-scale trials, this kind of pollution" and "the transfer of GM genes." The green business concordance lines are almost without agents. In the twenty lines, all I could find were (i) some guidelines for operation which identify "substances introduced for use" (line eight), (ii) "smoking" (line ten), and (iii) "without adequate funding" (line 13).

Compared with the radical NGOs, green business is very vague on the specific causes and effects of the relationships. But it turns the tables on them when it comes to the process of *managing* the relationship. The agent is mostly unclear, the consequences are similarly uncertain, and the connection between them is, as yet, unproven. But the linguistic discourse of green business makes representations to the reader, of a comprehensive corporate apparatus for ensuring that, whatever the risk may turn out to be, it is under control. In its report for RISK, in table H.26, seventeen of eighteen concordance lines include some representation of green business's semantic field of management (highlighted with yellow shading), which I identified in chapter five. The examples include "assessments and audits, analysis, review, identification and control, assessing risk and designing controls, Maintain the … Risk Matrix

[23] Typical of such statements is the chief executive's introduction to the Anglo American *Report to Society 2004*. At the end of his introduction, at the bottom of page three, Tony Trahar describes the report as "a reflection of a dynamic Group, which has firmly committed to being part of a *sustainable future*" [emphasis added]. Anglo American, *Creating Enduring Value: Report to Society 2004*, http://www.angloamerican.co.uk/static/uploads/RTS%202004.pdf, (accessed 14th February 2008).

and conduct further survey work" and "minimise the risk." As important as the representational content, the tone of the sentences in which they appear is always positive. In the concordance lines for the radical NGOs, in table H.25, there are just nine of a possible nineteen references to some attempt at managing the risk. Moreover, the reduction of risk at which the NGOs aim will, in two cases, be achieved by "tighter controls" (line one) or "refusing loans" (line sixteen), i.e. by taking specific action to *remove* the source of the risk. I include the two reports for RISK in figure 6.14 below, because the difference in usage that the colours illustrate, is so striking. The full size originals can be read in tables H.25 and H.26.

N	Concordance	
1	the need for tighter controls of such chemicals to ensure that we minimise our risk of exposure. However, the statistical analysis does identify the following	
2	5 times greater than for non-smokers. "Radon poses an easily reducible health risk to populations all over the world, but has not up to now received widespread	
3	ed rape crops alone next spring in the name of science. These farm-scale trials risk irreversible genetic pollution of the environment and the contamination of	
4	erroneous assumption that pro-poor development automatically reduces disaster risk, so the development community already owns the problem. Competition • Tea	
5	ry, all companies except British Energy are ranked with respect to their carbon risk profile and performance. Rankings were based on: ??CO2 emissions per unit	NC
6	birds in relatively small groups – never more than 200 – this helps reduce the risk of feather pecking. "And if we do see feather peaking we'll hang up some ca	
7	tner. By coming together they have combined their expertise and mitigated the risk of being over exposed. Figure 4: ACF Partnership/Structure SEnU NRU ACU*	
8	ost and least stable atmospheric conditions is:- The number of individuals at risk of exposure relates to the distance from the incidence and population densi	
9	ryngeal or lung cancer was found, nor was there evidence of increasing cancer risk with closer proximity to the incinerators. More recently, Elliott et al.13	
10	up most of these pollution episodes - disguising the health threat to those at risk from this kind of pollution. It is only when levels get really bad, as they	
11	at risk? The health of up to one in five people in the UK is particularly at risk from air pollution. These include young children, pregnant women, the elde	
12	associated with emissions to expensive option overall (Table 14). air and the risk of damage to human health", omitting water and amenity impacts "because of	
13	ries, and is incre a s i n g . Men born with this defect are also at a higher risk for testicular and bre a s t cancer (Paulozzi, 1999). • Testicular cancer	
14	llow leachate to threaten groundwater and surface water; where gas may pose a risk to nearby buildings; where habitats may be destroyed; or where pests and t	
15	ntracts which make it difficult to increase their recycling rates, they run the risk of not meeting their statutory recycling targets. This could occur them a p	
16	that they have refused loans or used their financial influence to minimise the risk of serious environmental, social or ethical impacts from a potential or exi	
17	e value of IFI finance is much greater, as their involvement reduces political risk and encourages the flow of further private finance. In spite of overwhelm	
18	vironment and put the livelihoods of 1500 local fishermen and their families at risk. (Sawit Watch email posting 26/Jan/2000) The human cost The impact of	Poll'
19	s not 'what comes out at the other end' but what goes on inside the gut. So the risk of a health problem arising from the transfer of GM genes, such as antibiot	
20	ter efficiency targets and be designed to avoid or cope with the rising flood risk from climate change. Further reading www.environmentagency. gov.uk/ sav	

N	Concordance	
1	cupiers, Land Securities continues to be heavily engaged in the conducting of risk assessments and audits across our investment and development portfolios as	
2	be involved in customer business to receive induction training. Staff in high-risk areas receive additional training, as well as annual reminders, to help th	
3	05/06. For example, at operating company level, we will use the results of this risk analysis to identify higher risk suppliers with which to conduct a more det	
4	tone of our risk management approach has been the update of the environmental risk review conducted by consultants, SustainAbility. This document helps to s	
5	xample thousands of our employees cannot start work without first conducting a risk assessment of the work area and receiving a safety document. Our safe syst	
6	s to protect the health and safety of our employees in a number of areas that risk assessment had identified as key. The progress made is reflected in our i	
7	risis management and business continuity. Increased management involvement in risk identification and control will be a key theme in 2004. • Scottish Courag	
8	dous substances introduced for use should be those that represent the lowest risk possible. MATERIALS CONTINUED Performance Indicator 2001 Performance (glo	
9	g and Supply have launched several tools to provide assistance with assessing risk and designing controls. These tools include guidelines, technical informat	
10	mers who want to continue smoking while also potentially reducing their health risk. There was no evidence that PREPs were more appealing to consumers wanting	
11	advisers who carry out independent checks on our management of environmental risk and our corporate governance of environmental issues. We have also estab	
12	for pursuing natural attenuation UK Division Maintain the Contaminated Land Risk Matrix and conduct further survey work at a minimum of two higher risk sit	
13	blic support the necessary funding for scientific research will be limited. The risk that without adequate funding there will be a migration of talent to places	
14	t for removal to the top of the footings there is less safety and environmental risk. The fishing obstruction remains, but that is the same for both the option	
15	as sector and other business unit risk management and compliance boards. The Risk Oversight and Compliance Council and boards assist in the identification a	NC
16	oduct if there is insufficient data or if we consider the risk to be high. Our risk assessments take into account both the inherent properties of chemicals (ha	
17	ypt – developed an innovative road safety campaign, with two aims: minimise the risk that IGH companies experience RTAs and reduce the number of RTAs in the Idk	
18	ncrease plant recoveries by approximately 3%. Ferrous Metals An environmental risk was identified at the phenol dam at the Highveld Steelworks in 1998. Both	
19	all high risk grid and primary transformer substation sites identified in our risk assessment. Chart 9.1 shows the oil loss figure from underground cables w	
20	g Environmental Performance 2000" study, managed by the Safety & Environmental Risk Management Rating Agency (SERM). Each company taking part was provided wit	NC

Figure 6.14: Comparison of concordance reports for RISK between the radical NGOs (top) and green business (bottom). Red highlights the agents responsible for the risk and yellow the management of the risk.

In appendix H, I have presented a similar analysis of the two reports for RISKS (see tables H.27 and H.28) and the observations are broadly similar. Green business makes a representation of managing the risks in seventeen of twenty concordance lines. The three exceptions include two references to the risks that customers run (i) when they choose to smoke cigarettes and (ii) if they buy counterfeit products, while the third exception discusses the risks of road accidents in an Egyptian subsidiary. Clearly, there are good reasons why the green corporations cannot manage the risks in these three cases. The radical NGOs have ten out of eighteen references to the management of risks, but the need to remove or restrict the source of the risks is even clearer than it was in the report for RISK. Phrases which I have highlighted in the yellow that indicates 'managing the risks', include "protection against

hazards, requiring substitution of, take precautions in order to minimise, protect farmers and consumers" and "further restrictions." Whereas the green business approach to risks is to manage them, the NGO approach to dealing with risks is to go to the source of the threat and then either eliminate them, emasculate them or provide protection from them.

The green business desire to focus attention on the space between 'cause' and 'effect' receives its clearest manifestation, in the usage it makes of the linguistic sign SAFETY (see tables H.29 and H.30). With its positive connotations and no semantic requirement to refer to either cause or effect, SAFETY is, for green business, an ideal term for usage within the semantic field of concern. I take the liberty, once again, of including below in figure 6.15, the concordance report for green business's usage of SAFETY. The yellow shading indicates the representations of the semantic field of management.

N	Concordance	
1	global policies on Accident Investigation and on the Management of Health and Safety Risks of Radio Frequency Fields for employees and the general public. In	
2	industry agreements. Unilever's worldwide standards of occupational health and safety are applied to our 62,000 employees and seasonal workers. The standards	
3	Shell companies have been committed to continuous improvement in their health, safety and environmental (HSE) performance for many years, and have policies, pr	
4	s. Biffa operational managers attend specialist in-house courses, hold regular safety meetings with workers and are issued with performance criteria against	
5	owed by those in the North West. We started off by carrying out a 'Health and Safety Climate Survey' to assess attitudes and provide us with a benchmark agai	
6	for the health and safety culture we wish to create and maintain. Health and safety management within S&N is built on a set of Group Standards which detail a	
7	nce. We place considerable emphasis on employee involvement in the health and safety decision-making process, as this is the best way of ensuring that system	
8	ty Standards that set out what we expect to achieve in each area of health and safety. These standards are used to provide regular assurance to the Board, th	
9	e Audit Committee so that they can review measures of environment, health and safety performance and track our progress toward meeting EHS targets. They als	
10	curately assess the safety and effectiveness of new medicines and monitor their safety after approval. Safety and efficacy information is provided to doctors th	
11	e issues * Workplace issues o Employee consultation o Employee health and safety o Equality and diversity o Rewarding employees o Training and devel	NC
12	s been working with environmental management systems since 1997 and health and safety systems since 2001. Its distribution division achieved certification to	
13	North Slope and in Anchorage. These team discussions focus on how to heighten safety awareness and improve performance to prevent such tragic incidents in t	
14	ur industry and society because of the potentially serious impacts on health, safety and the environment. Oil released into the environment can contaminate	
15	." he explains. "And BP is very keen to promote issues like the environment and safety, so this is great way to combine the two." The information on this page	
16	s to the local contractor including purpose built training centre. Health and Safety Performance Improvement Karachaganak, Kazakhstan – Industry top quartile	
17	ough selection, retention, education, training and awareness in all aspects of safety, health and the environment. 3. Risk assessment: Identify, assess and pr	
18	e foundations for greater discipline in the way that we go about achieving our safety, health, environment and community goals, setting a framework for conti	
19	and training courses, the use of computer touch screens for access to critical safety and health information and enhanced risk management practices at the emp	
20	gement support for safety programmes ▪ structured training regimes ▪ regular safety audits ▪ screening and training of contractors ▪ clearly understood sa	

Figure 6.15: Concordance report for SAFETY in the green business corpus

Only three of the nineteen lines have an agent which is the source of a threat to safety, and the third one includes the phrase "can contaminate" (line fourteen), indicating that green business tends to understand threats as a theoretical eventuality. The yellow shading highlights the text which represents some process of managing which will secure even greater safety. The equivalent report for the radical NGOs (see table H.29), reveals the characteristics which we would expect: many more representations of the sources of the threat to safety, and an approach which is precautionary and sceptical to being able to manage the risk.

6.7.7 Summary - the green business response to the semantic field of concern

My observations of the concordance reports that I have presented in section 6.7, provide evidence that green business uses the words in the semantic field of concern, in very different ways to the radical NGOs. The differences are so striking and suggestive of such different

conceptualisations, that it makes more sense to describe some of them as *linguistic signs* with the semantic flexibility which that term conveys, rather than the traditional *words* or *keywords*, with their suggestion of an associated meaning. Green business has adopted many of the linguistic signs that the radical NGOs have used in their semantic field of concern. But they have put these linguistic signs to use in innovative ways such that, in sum, the green business conceptualisation of the 'cause-effect' locus is very different from that of the radical NGOs. Whereas their usage suggests that the latter conceptualise the natural landscape as 'fleshy' and 'fibrous' and see that it is suffering, green business's usage suggests that it conceptualises the natural landscape in the abstract. Whereas the evidence suggests that the radical NGOs conceptualise cause-effect relationships as direct and the agents of damage as obvious, the usage points to a green business which is, again, poor on details and more comfortable with abstractions. But paradoxically, given all the uncertainty about cause and effects, the evidence of usage in the linguistic plane suggests that green business conceptualises the relationships as being under careful management.

That these conceptualisations should be so different does not surprise me unduly. After all, I am now making my projections into the cultural plane, and here, a profound ideological opposition between eco-radicalism and liberal-productivism, was one of the starting points. What I find more disturbing, as a student of language, is the huge semantic 'flexibility' of these linguistic signs.

6.8 Summary – the appropriation claim

The procedure I have developed provides a technique for identifying text that is representative of what makes one language community's usage of the language distinctive from another's. In section 6.4, I proposed and presented the radical NGOs' semantic field of concern, and a method for selecting which of the linguistic signs are also used by green business. In section 6.5, I presented a methodology for visualising the mechanical contextualisation of a linguistic sign. Then, in section 6.6, I showed how it is possible to take the output from the mechanistic contextualisation to generate representative samples of text for interpretive analysis. The interpretations in section 6.7 provide an encouraging confirmation that the procedure appears to deliver useful results.

Having now compared the different ways in which the radical NGOs and green business use the same linguistic signs, it is not difficult to have some sympathy with Welford's usage of the term *hijack,* to describe a process for which I preferred to use the label

appropriation. Green business is unquestionably using some of the same linguistic signs as the radical NGOs. But it is putting them to use in ways which are very different from the usages that the NGOs make of them. If we concede to Welford and the radical NGOs their claim to have been first out with the semantic field of concern and we also allow them the luxury of assuming that they have copyright on *the* meaning (!) of each of these linguistic signs, then the accusation of a hijack makes perfect sense. If we deny them ownership rights on meaning, but allow them to retain their 'first out' claim, then we they may justifiably use my term of *appropriation*.

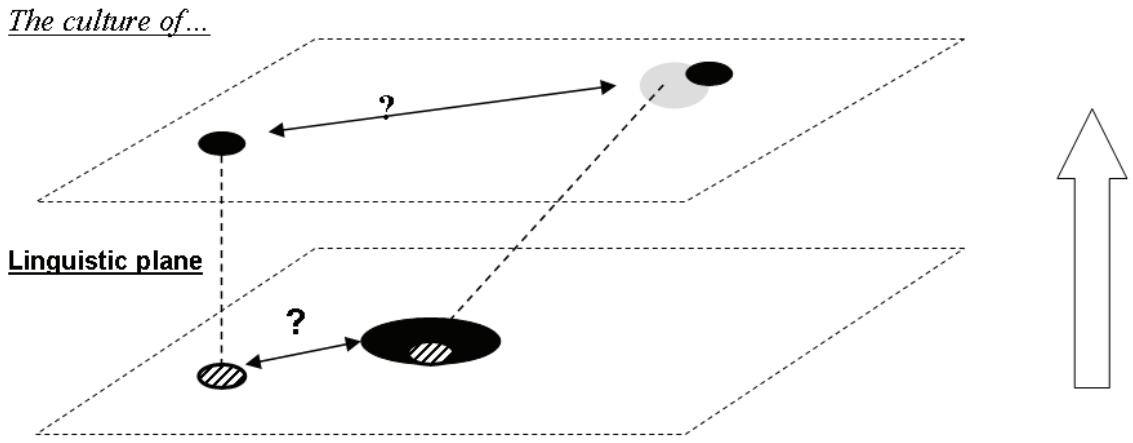


Figure 6.16: Is there appropriation of language in the linguistic plane and what effects might it have on the cultural plane?

The empirical evidence of chapter six supports the appropriation claim. However, an additional challenge which I posed to the evidence of usage in the linguistic plane was to identify recurrent patterns of usage which I might be able to project onto the cultural plane. This is indicated by the large vertical arrow pointing upwards on the right hand side of figure 6.16, above. Do the results from section 6.7 shed any light on the light grey spot, which marks the cultural position of green business? Here, I give myself permission to make my 'language – meaning' jump from the linguistic plane to the institutional/cultural plane. Without the benefit of evidence from 'non-green' business, the evidence from the linguistic plane suggests that there is probably *some* movement. First, green business recognises that there is a natural landscape, beyond the perimeter fence which marks the boundary of its own productive landscape. Second, it is concerned about the health of that natural landscape and it recognises, at an abstract level, that its own operations have some detrimental impact on that health. However, its process of understanding the complex relationships, between its productive landscape and the natural landscape, are very much in their infancy. And its approach to

understanding is dominated by the managerial techniques, which it has used with such success on its own productive landscape. My representation of the grey spot of green business culture as merely a modest development on the black spot of liberal-productivist 'non-green' business culture, is a fair illustration of progress. In the next chapter, we will see how green business has made its first steps towards the management of nature.

7 The incorporation claim – response

7.1 Introduction

In section 2.5 on page 64, I presented an argument, advanced by both Bill McKibben and Richard Welford, which I have called *the incorporation claim*. There I discussed, first in the cultural plane and second in the institutional plane, mankind's conceptualisation of its relationship with the natural world. I began, by advancing the interpretation that green business 'culture' selects which knowledge of the natural landscape it wishes to acquire. Then I endorsed the Welford/McKibben claim that this selective knowledge, of the natural landscape, is incorporated within the corporations' knowledge of their own productive landscapes. I concluded the section with figure 2.19 on page 84, repeated as figure 7.1 below.

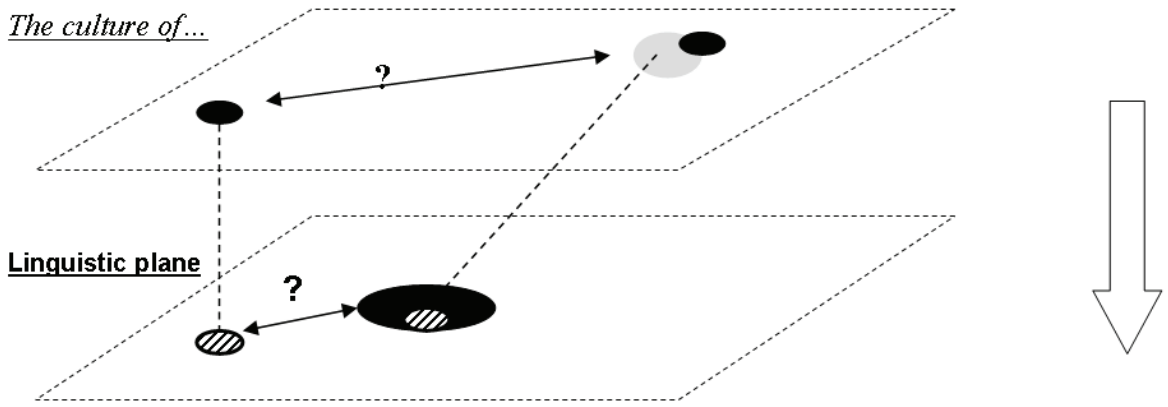


Figure 7.1: Is there any evidence in the linguistic plane to support the claim that nature is being incorporated within culturally-defined processes?

With the illustrative help of a few corporate case studies, I discussed the grey shaded spot in figure 7.1, which represents the 'culture' of green business. These were selected from among the hundreds of web-based examples, with which green business represents the manifestation of its new culture in the world 'out there'. Although one might argue that the use of case studies *is* an empirical approach, the weakness is that it is open to accusations of partiality in the selection process. I picked out, after all, selected examples, which illustrated the interpretive claim I had already made. With the assistance of the more macro-oriented and quantitative techniques, which corpus-based empirical analysis in the linguistic plane offers, it might be possible to test the validity of the incorporation claim in another way. In my concluding comments on figure 2.19 on page 84, I posed two specific research questions, to which I would like the linguistic analysis to make some response. First, what knowledge of the natural landscape is being selected by green business for inclusion? Second, how is that

knowledge incorporated, linguistically, within the traditional language of business? These are the two questions to which I now attempt to make a response, based on the evidence found in the linguistic plane. Chapter seven is, therefore, organised accordingly. In section 7.2, I present the empirical evidence from the linguistic plane, showing what language of the natural landscape is to be found in the discourse of the two protagonists. The empirical results of 7.2 lead me to make a further interpretive move on the incorporation claim, which I have called "Bridging the gap" and placed in section 7.3. In sections 7.4 and 7.5, I return to the empirical evidence of the linguistic plane, in an attempt to make a response to research question two. Finally, in section 7.6 I make a short interpretive summary of how the evidence, from the linguistic plane, has contributed to an understanding of the cultural/institutional plane.

7.2 The empirical response to research question one

7.2.1 Introduction

In my discussion of the institutional plane, I posed the first research question in terms of *knowledge* of the natural landscape. In making the move down to the linguistic plane, I change my terminology to the *words* of the natural landscape. In doing so, I recognise that there is a considerable difference between these two entities. However, I will defend the move, on the grounds that the *words* of the natural landscape are the place to begin the process, of trying to ascertain what sort of knowledge, of the natural landscape, green business is representing in its discourse. As I explained in chapter three, the key words of green business are 'key' relative to a benchmark known as the British National Corpus. The linguistic discourse of green business is being compared against the linguistic discourse, of a collection of texts which aims to be representative of general British English. So the key words, in the linguistic discourse of green business, are those words which it uses unusually often, when compared with general British English. The presence of a semantic field of the natural landscape, in the linguistic discourse of green business, will be evidence that green business writes about the natural landscape more than is the case, in the general British English benchmark which the BNC provides. In order to provide another point of comparison, I shall also conduct a parallel review of the linguistic discourse of the radical NGOs, and compare the results with those from green business.

Drawing the lexical boundaries around my semantic field of the natural landscape, presents the same sort of selection dilemmas that I have already described in chapter five. There, in section 5.2.3 on page 188, I conceded that the ambiguity and indeterminate nature,

of words, meant that the process of selection could never claim to be more than an interpretive process. However, I have further argued that a generous interpretation, which is then followed up with closer analysis, offers the best chance of identifying more of the linguistic signs which play a role in the semantic field under consideration. I have also followed this strategy, in selecting the words in the semantic field of the natural landscape, occasionally running a randomly-selected concordance report on an ambiguous word, to see if there was a predominant usage either within the semantic field or outside.[1] I provide a more detailed discussion of the selection and rejection dilemmas in section I.1 from page 505.

7.2.2 The one-word keywords of the natural landscape

The identification process was first carried out on the top 200 one-word 'keywords' of green business and the radical NGOs. These were the two lists which I presented, in chapter four, as being large enough objects of study from which to work. The number of positive selections, which I was able to make from the top 200 list of green business, was, however, very small. I decided, therefore, to cast my net further down the keyword listings, in the hope of finding more examples of the semantic field of the natural landscape. The results, which I present in tables I.1 and I.2 on pages 511 and 514, are, therefore, based on the top 500 one-word 'keywords' for both green business and the radical NGOs. For the two-word and three-word keywords, I worked with the object of study that I established in chapter four: the top 100 two-word keywords and the top 50 three-word keywords. In the interests of space, all of these results are presented in tables I.3 to I.6 on pages 518 to 523, from which I extract samples in order to illustrate my observations and interpretations.

The evidence, from a comparison of these keyword lists, presents a strong contrast and is very much in line with comments I made in sections 6.7.3 on page 245 and 6.7.4 on page 247. There, I observed that green business's view of the landscape seemed to be generalised and abstract. In section 6.7.4, for example, I compared the green business and radical NGOs view of damage to the natural landscape, by examining concordance lines of linguistic signs such as CONTAMINATED, EFFECTS and IMPACT. In my concluding remarks to section

[1] An example of this is the linguistic sign PLANT, which is 166th in the list of green business's one-word 'keywords' and 156th in the radical NGOs' list. Of the 20 random concordances in the green business report, only two lines used the organic sense of PLANT, whereas seventeen lines used the industrial meaning of PLANT and one used it as a verb in a metaphorical sense. In the NGOs' report, three of the twenty random selections were organic PLANT. Two usages were as a verb, in which the object being planted was an idea rather than a flower or a seed (lines 2 and 17), and the remaining fifteen usages were industrial PLANT. On the strength of these results, therefore, I decided to exclude PLANT from my semantic field of the natural landscape. On the other hand, PLANTS, which is 450th in the NGO keyword list, has a usage that is generally in a 'fibrous' sense. It has, therefore, been included in the radical NGOs' semantic field of the natural landscape.

6.7.4, I observed that the pattern of usage was broadly the same in all cases; the radical NGOs tended to have very specific 'fleshy' or 'fibrous' recipients, of the injury or damage that was being represented. In contrast to these recipients, what green business saw beyond the perimeter fence of its productive landscape, was much more abstract; damage to *the environment*, *society and communities*, and *land air and water*.

The process of reviewing these keyword lists, in the search for a semantic field of 'the natural', reinforced this impression of abstraction so much, I made an interpretive move in dividing the field into two types of natural landscape. I have elected to shade those words which have a 'fleshy' or 'fibrous' reference, in a bright shade of green. I have also included within this category, references to the inorganic aspects of the natural landscape, such as AIR, WATER, LAND and, possibly, other terms used to refer to them. They are neither 'fleshy' nor 'fibrous,' but are nonetheless 'real' aspects of the natural landscape. In contrast to this vocabulary, there is another group of words which do not refer to the natural landscape *per se*. Rather, borrowing Searle's notion, they are *socially-constructed* representations of the natural landscape. These words have been shaded with a pale green background. I provide a more detailed discussion of the selection and rejection process in section I.1 from page 505, and the complete lists are available in sections I.2, I.3 and I.4. But in figure 7.2 below, I present a comparison based on the top 200 one-word 'keywords', which illustrates the difference between the two corpora quite clearly.

The reduction in the tables, which I have made in order to obtain the side-by-side comparison, makes the individual words almost illegible. But the visual effect, of bright green on the left of figure 7.2, and pale green on the right, is quite clear. To the right of the thick, black, vertical line, are the top 200 one-word 'keywords' of green business. A single, empty, horizontal line divides the top 100 (above) from keywords 101 to 200 (below), and each group of 100 words is divided into four columns of 25, so that the ranking runs from top to bottom and from left to right in the top 100 before it is repeated for keywords 101 to 200. There are two observations which I wish to make about, the representation of the natural landscape in the linguistic discourse of green business. First, the area of green shading, as a proportion of the overall area, is small. It fills exactly fifteen of the 200 cells which are available, corresponding to 7.5% of the total. Considering that this table is based on a corpus of texts, which were selected because they represented 'business in the biosphere', 7.5% is disappointing. Second, of these fifteen words, every single one has been assigned to the semantic field of the socially-constructed natural landscape and, therefore, given a pale green

shading. They are all used as labels for the way in which mankind conceptualises some thing, or some systematic relationship, in the natural landscape.

1	COUNTRIES	26	RIGHTS	51	CHANGE	76	GATS
2	GM	27	FOOD	52	EXPORT	77	ORGANIC
3	ENVIRONMENTAL	28	IMPACT	53	LANDFILL	78	MEASURES
4	CLIMATE	29	REPORT	54	ECONOMIC	79	CORPORATE
5	WASTE	30	RECYCLING	55	TRANSPORT	80	ISSUES
6	GLOBAL	31	DEBT	56	INVESTMENT	81	LEVELS
7	TRADE	32	GOVERNMENTS	57	COMMUNITY	82	TARGETS
8	DEVELOPMENT	33	WORLD	58	NUCLEAR	83	AGRICULTURAL
9	INTERNATIONAL	34	CARBON	59	GOVERNMENT'S	84	WORLD'S
10	GOVERNMENT	35	INDUSTRY	60	AGRICULTURE	85	TRANSPARENCY
11	ENVIRONMENT	36	NGOS	61	REDUCTION	86	ORGANISATIONS
12	SUSTAINABLE	37	PIPELINE	62	INDIGENOUS	87	REGULATION
13	IMPACTS	38	POLICY	63	POOR	88	WILDLIFE
14	COMPANIES	39	MINING	64	RESOURCES	89	ILLEGAL
15	EMISSIONS	40	HUMAN	65	EXAMPLE	90	BRIEFING
16	DEVELOPING	41	FUEL	66	FORESTS	91	CONCERNS
17	LOCAL	42	POLLUTION	67	CAMPAIGNER	92	ENSURE
18	EARTH	43	SECTOR	68	SUBSIDIES	93	CONTAMINATION
19	CROPS	44	RENEWABLE	69	INCINERATION	94	FARMING
20	ENERGY	45	FOREST	70	PRODUCTS	95	FORESTRY
21	POVERTY	46	PROJECT	71	AID	96	LEAST
22	COMMUNITIES	47	LIBERALISATION	72	POLICIES	97	PESTICIDES
23	BANK	48	HEALTH	73	PROJECTS	98	BIODIVERSITY
24	FARMERS	49	LOGGING	74	SUSTAINABILITY	99	INDICATORS
25	CHEMICALS	50	PUBLIC	75	PRODUCTION	100	GLOBALISATION
101	INCINERATOR	126	HAZARDOUS	151	NATIONAL	176	SAFETY
102	CONSULTATION	127	EARTH'S	152	PROTECTION	177	POTENTIAL
103	LIVELIHOODS	128	STANDARDS	153	REVIEW	178	ADDITION
104	CORPORATIONS	129	ACTION	154	CAMPAIGN	179	SOCIAL
105	LAND	130	COSTS	155	PEOPLE	180	PESTICIDE
106	STRATEGY	131	SUPERMARKETS	156	PLANT	181	AFFECTED
107	REDUCE	132	GROWTH	157	PEOPLES	182	BUSINESSES
108	AREAS	133	COMMISSION	158	SECTORS	183	PLANNING
109	AGENCY	134	TOXIC	159	RESOURCE	184	EFFECTS
110	GOVERNANCE	135	GREENHOUSE	160	PROCESS	185	PIPELINES
111	POOREST	136	CAPACITY	161	CURRENTLY	186	ETHICAL
112	BENEFITS	137	PAPER	162	COMPANY	187	EXPORTS
113	NGO	138	ASSESSMENT	163	PARTICIPATION	188	INCREASE
114	FUELS	139	MARKETS	164	HERBICIDE	189	COMMITMENTS
115	PROTOCOL	140	DIOXIDE	165	COMPOSTING	190	AGENDA
116	SUPPORT	141	CONSUMERS	166	ECONOMY	191	COUNTRY
117	BANK'S	142	ACCESS	167	NATIONS	192	PULP
118	NEGOTIATIONS	143	AGREEMENTS	168	COMPLIANCE	193	PRODUCERS
119	STAKEHOLDERS	144	INFRASTRUCTURE	169	KEY	194	OFFSHORE
120	INCINERATORS	145	FUND	170	RURAL	195	EXTRACTIVE
121	GENETICALLY	146	PROTECT	171	MONITORING	196	SCALE
122	FOSSIL	147	INCLUDING	172	REGIONAL	197	IMPLEMENTATION
123	CROP	148	RENEWABLES	173	CURRENT	198	DIOXINS
124	WARMING	149	SITES	174	FUNDING	199	SUPPLIERS
125	FINANCIAL	150	PLANTATIONS	175	IMPORTS	200	CHEMICAL

1	ENVIRONMENTAL	26	TARGETS	51	COMPLIANCE	76	RISKS
2	BUSINESS	27	COMMUNITY	52	CARBON	77	INDICATORS
3	ENERGY	28	SITES	53	PROJECT	78	INDUSTRY
4	SUSTAINABLE	29	COMMUNITIES	54	CLIMATE	79	CONTRACTORS
5	EMISSIONS	30	IMPACTS	55	EFFICIENCY	80	HIV
6	EMPLOYEES	31	RESPONSIBILITY	56	ENSURE	81	CONSUMPTION
7	SAFETY	32	PRODUCTS	57	SOCIAL	82	CONSUMERS
8	MANAGEMENT	33	IMPACT	58	GREENHOUSE	83	INITIATIVE
9	WASTE	34	EHS	59	PROGRESS	84	ASSURANCE
10	PERFORMANCE	35	PRINCIPLES	60	DATA	85	ENGAGEMENT
11	ENVIRONMENT	36	BUSINESSES	61	INITIATIVES	86	MINE
12	BIODIVERSITY	37	CSR	62	REDUCE	87	STRATEGY
13	COMPANIES	38	RECYCLING	63	DEVELOPING	88	STEWARDSHIP
14	DEVELOPMENT	39	COMPANY	64	RENEWABLE	89	REDUCTION
15	GLOBAL	40	SUPPLIERS	65	LANDFILL	90	COUNTRIES
16	REPORT	41	PROGRAMMES	66	MINING	91	GOVERNMENTS
17	STAKEHOLDERS	42	CUSTOMERS	67	TOTAL	92	INVESTMENT
18	GROUP	43	PROGRAMME	68	REVIEW	93	CONSERVATION
19	CORPORATE	44	PROJECTS	69	DIALOGUE	94	INTERNATIONAL
20	OPERATIONS	45	KEY	70	GOVERNANCE	95	IMPROVEMENT
21	HEALTH	46	STAKEHOLDER	71	PARTNERSHIP	96	SUPPLY
22	REPORTING	47	EMPLOYEE	72	TARGET	97	RECYCLED
23	SUSTAINABILITY	48	SITE	73	DEVELOP	98	NGOS
24	ISSUES	49	ACTIVITIES	74	COMMITMENT	99	SYSTEMS
25	STANDARDS	50	LOCAL	75	IMPROVE	100	GENERATION
101	OPERATING	126	NOX	151	INCIDENTS	176	WORKING
102	SOCIALREPORT	127	OPERATIONAL	152	REGULATORY	177	ASSESSMENT
103	PROCESS	128	AIDS	153	DEVELOPED	178	AUDITS
104	CHALLENGES	129	INFORMATION	154	CONDUCT	179	ACCORDANCE
105	AREAS	130	MINIMISE	155	IMPLEMENTATION	180	TRANSPARENCY
106	INCLUDING	131	MANAGING	156	PRODUCT	181	IMPROVING
107	OPPORTUNITIES	132	SIGNIFICANT	157	CONTRIBUTE	182	BENEFITS
108	SUPPORT	133	PARTNERS	158	POLICIES	183	CONSULTATION
109	OCCUPATIONAL	134	PACKAGING	159	IMPLEMENT	184	FRAMEWORK
110	OPERATE	135	EXPLORATION	160	HYDROGEN	185	FEEDBACK
111	GUIDELINES	136	AUDIT	161	POLICY	186	METHANE
112	RENEWABLES	137	WORKPLACE	162	TRAINING	187	ANNUAL
113	QUALITY	138	POTENTIAL	163	VERIFICATION	188	COMMITMENTS
114	DIOXIDE	139	APPROACH	164	HABITAT	189	CR
115	HAZARDOUS	140	CONTINUE	165	PROVIDE	190	CONTRIBUTION
116	PROCESSES	141	EXAMPLE	166	PLANT	191	SERVICES
117	CERTIFICATION	142	ETHICAL	167	INFRASTRUCTURE	192	HABITATS
118	AWARENESS	143	REDUCING	168	MOBILE	193	ACHIEVE
119	RESOURCES	144	MONITORING	169	IMPROVEMENTS	194	EXECUTIVE
120	HSE	145	SOLAR	170	PRACTICES	195	MATERIALS
121	DIVERSITY	146	PARTNERSHIPS	171	ONGOING	196	RESOURCE
122	ADDITION	147	EXTERNAL	172	ACTION	197	AIM
123	RISK	148	PRODUCTION	173	OBJECTIVES	198	SMOKING
124	WASTEWATER	149	ORGANISATIONS	174	MARKETING	199	PROMOTE
125	RESPONSIBLE	150	FOCUS	175	COMMITTED	200	HUMAN

Figure 7.2: A visual comparison of the semantic field of the natural landscape in the top 200 one-word 'keywords' of the radical NGOs and green business

To the left of the thick, black, vertical line, are the top 200 'keywords' of the radical NGOs, arranged in the same way as those for green business. I have shaded in a total of 27 of the 200 cells, which is a little under double the fifteen words that I identified in the keywords of the corporations. These 27 are divided between fourteen keywords, which belong to the semantic field of the 'fleshy' and 'fibrous' natural landscape (in bright green), and thirteen belonging to the socially-constructed natural landscape (light green). If we extrapolate the impression gained from figure 7.2, which is based on the top 200 keywords, we may advance the tentative hypothesis that, whereas the linguistic discourse of the radical NGOs appears to contain some references to the 'fleshy' and 'fibrous' natural landscape, the linguistic discourse of green business would appear to be devoid of such references. If the validity of this claim should be supported by further empirical evidence, and it becomes clear that green business does not actually include references to the natural landscape, which are similar to the

radical NGOs, in its linguistic discourse, then the McKibben/Welford claim of the incorporation of the discourse of nature will need to be re-examined. Such an empirical finding might suggest that they have two quite different representations of the natural landscape.

From this first impression, then, I now present the overall results for the top 500 one-word 'keywords' of green business, which I have taken from table I.1 on page 511. My tentative hypothesis, that green business makes *no* references to the 'fleshy' and 'fibrous' natural landscape, is not supported by the evidence from studying more of the keywords of its linguistic discourse. In figure 7.3 below, I present a view of the top 500 keywords which shows that, although there are not *many*, there are *some* references, to the 'fleshy' and 'fibrous' natural landscape, in its linguistic discourse.

ENVIRONMENTAL	COMPLIANCE	OPERATING	INCIDENTS
BUSINESS	CARBON	SOCIALREPORT	REGULATORY
ENERGY	PROJECT	PROCESS	DEVELOPED
SUSTAINABLE	CLIMATE	CHALLENGES	CONDUCT
EMISSIONS	EFFICIENCY	AREAS	IMPLEMENTATION
EMPLOYEES	ENSURE	INCLUDING	PRODUCT
SAFETY	SOCIAL	OPPORTUNITIES	CONTRIBUTE
MANAGEMENT	GREENHOUSE	SUPPORT	POLICIES
WASTE	PROGRESS	OCCUPATIONAL	IMPLEMENT
PERFORMANCE	DATA	OPERATE	HYDROGEN
ENVIRONMENT	INITIATIVES	GUIDELINES	POLICY
BIODIVERSITY	REDUCE	RENEWABLES	TRAINING
COMPANIES	DEVELOPING	QUALITY	VERIFICATION
DEVELOPMENT	RENEWABLE	DIOXIDE	HABITAT
GLOBAL	LANDFILL	HAZARDOUS	PROVIDE
REPORT	MINING	PROCESSES	PLANT
STAKEHOLDERS	TOTAL	CERTIFICATION	INFRASTRUCTURE
GROUP	REVIEW	AWARENESS	MOBILE
CORPORATE	DIALOGUE	RESOURCES	IMPROVEMENTS
OPERATIONS	GOVERNANCE	HSE	PRACTICES
HEALTH	PARTNERSHIP	DIVERSITY	ONGOING
REPORTING	TARGET	ADDITION	ACTION
SUSTAINABILITY	DEVELOP	RISK	OBJECTIVES
ISSUES	COMMITMENT	WASTEWATER	MARKETING
STANDARDS	IMPROVE	RESPONSIBLE	COMMITTED
TARGETS	RISKS	NOX	WORKING
COMMUNITY	INDICATORS	OPERATIONAL	ASSESSMENT
SITES	INDUSTRY	AIDS	AUDITS
COMMUNITIES	CONTRACTORS	INFORMATION	ACCORDANCE
IMPACTS	HIV	MINIMISE	TRANSPARENCY
RESPONSIBILITY	CONSUMPTION	MANAGING	IMPROVING
PRODUCTS	CONSUMERS	SIGNIFICANT	BENEFITS
IMPACT	INITIATIVE	PARTNERS	CONSULTATION
EHS	ASSURANCE	PACKAGING	FRAMEWORK
PRINCIPLES	ENGAGEMENT	EXPLORATION	FEEDBACK
BUSINESSES	MINE	AUDIT	METHANE
CSR	STRATEGY	WORKPLACE	ANNUAL
RECYCLING	STEWARDSHIP	POTENTIAL	COMMITMENTS
COMPANY	REDUCTION	APPROACH	CR
SUPPLIERS	COUNTRIES	CONTINUE	CONTRIBUTION
PROGRAMMES	GOVERNMENTS	EXAMPLE	SERVICES
CUSTOMERS	INVESTMENT	ETHICAL	HABITATS
PROGRAMME	CONSERVATION	REDUCING	ACHIEVE
PROJECTS	INTERNATIONAL	MONITORING	EXECUTIVE
KEY	IMPROVEMENT	SOLAR	MATERIALS
STAKEHOLDER	SUPPLY	PARTNERSHIPS	RESOURCE
EMPLOYEE	RECYCLED	EXTERNAL	AIM
SITE	NGOS	PRODUCTION	SMOKING
ACTIVITIES	SYSTEMS	ORGANISATIONS	PROMOTE
LOCAL	GENERATION	FOCUS	HUMAN

DELIVER	DISPOSAL	BENCHMARKING	INDICATOR
EMISSION	PROVIDING	ACCESS	FOCUSED
BELIEVE	BASELINE	FATALITIES	GROUP'S
WORLD'S	LEADERSHIP	PROCUREMENT	APPROXIMATELY
ECONOMIC	MANAGERS	OVERALL	CONDUCTED
MANAGE	ACHIEVED	CORE	ASSESS
PROCEDURES	STATIONS	WASTES	VEHICLES
SULPHUR	IDENTIFY	COMPANY'S	TRADING
SOLUTIONS	EMS	INCLUDES	CURRENTLY
RIGHTS	ENVIRONMENTALLY	SPILLS	DISCHARGES
REFINERY	IMPLEMENTED	SOURCES	KILN
INCLUDE	WILDLIFE	INCREASE	STRATEGIC
INTERNAL	DIESEL	SEEK	DISTRIBUTION
REVIEWED	PHONES	ACHIEVING	CONTRIBUTIONS
MANUFACTURING	MEDICINES	TERM	ACTIONS
CUSTOMER	INNOVATIVE	LAND	CONSISTENT
YEAR	ACCIDENTS	REUSE	CONTINUOUS
CONCERNS	ENGAGE	CONSUMER	EFFICIENT
FOSSIL	CHEMICALS	PIPELINE	VERIFIED
MARKETS	WINDFARM	EFFORTS	CEO
TECHNOLOGIES	MEET	PART	MINERALS
FUTURE	SLUDGE	INTEGRITY	LEAKAGE
METALS	RESPONSIBLY	SUPPLIER	ASH
BRANDS	WORKFORCE	PRACTICE	JOINT
FOUNDATION	TREATMENT	FACILITIES	CHAIN
WORLDWIDE	INTEGRATED	UNDERTAKEN	SKILLS
PLANS	SEWAGE	SURVEY	DISPOSED
ENCOURAGE	FORUM	CONTRIBUTING	MEASURES
ORGANISATION	EMPOWERMENT	DECOMMISSIONING	ILLICIT
CERTIFIED	HELPING	ECO	SMOKERS
TECHNOLOGY	ENHANCE	RELATED	REPORTABLE
GENERATED	REGULATORS	PROVIDES	RECYCLE
APPROPRIATE	RESPONSIBILITIES	RELEVANT	EXPECTATIONS
NATURAL	ADDRESS	INJURIES	STRIVE
NGO	RETAIL	STAFF	MALARIA
ENSURING	HEALTHCARE	ADDRESSING	CREEK
REQUIREMENTS	WORK	PORTFOLIO	EMPLOYMENT
WORLD	POWER	MINIMISING	OBJECTIVE
ASSESSMENTS	AWARDS	FLARING	REPORTED
DONATIONS	GLOBALISATION	VALUES	POSITIVE
PREVENTION	COMMERCIAL	TRUST	UNDERSTANDING
CHALLENGE	CLEANER	SOCIETY	OXIDES
GLOBALLY	LEVELS	INVESTING	REHABILITATION
IMPROVED	RECOGNISE	MINIMISATION	INNOVATION
ETHICS	IMPLEMENTING	CHANGE	COMPLY
EFFLUENT	EXCELLENCE	MANAGED	MONITOR
TRANSPORT	RESEARCH	EFFECTIVE	CONSTRUCTION
HYDRO	SUPPORTING	NEEDS	HELP
PLAN	BASED	ACTIVELY	PARTICULATE
GASES	DELIVERING	SHAREHOLDERS	ENGAGING

SUPPORTS	VOLUNTEERING
HANDSETS	BUILD
TESTING	OZONE
POLLUTION	COMPETITIVE
REDUCTIONS	EXISTING
REDUCED	BENCHMARK
IDENTIFIED	TAILINGS
SPECIES	INDIGENOUS
MAJOR	GROWTH
CODE	MINES
CLEAN	CONTRACTOR
HSSE	SOX
VOLUNTARY	ROLE
SCENARIOS	MAINTAIN
LOCATIONS	BRAND
COMPLETED	GENERATING
SECTOR	ESTABLISH
STANDARD	NEW
CONJUNCTION	REVIEWS
AIMS	EQUIVALENT
DEPLETING	VENTURE
SANDS	PRIORITY
OPERATES	DONATED
AUDITING	NETWORK
GUIDANCE	ENVIRONNEMENT
CHARITABLE	GROWING
UNDERAGE	CYCLE
INVESTMENTS	WIND
REFINERIES	SUPPLIES
CAPACITY	FORESTRY
COD	RELATIONSHIPS
LEVEL	PROTOCOL
FUND	LIQUEFIED
BIOMASS	BRIBERY
VENTURES	SCOPE
REMEDIATION	FURTHER
REGULATIONS	TOOL
COLLIERY	DEMONSTRATE
PROMOTING	CREATE
LAUNCHED	PROACTIVE
MARKETPLACE	EXTRACTIVE
EQUIPMENT	HYDROCARBON
USAGE	SUPPORTED
INVOLVEMENT	CANS
LARGEST	SCHEME
VALUE	SENIOR
COMBUSTION	PROTECTION
INDEPENDENT	REUSED
SURVEYS	RESPECT
SHAREHOLDER	WETLANDS

Figure 7.3: The top 500 keywords of green business illustrating the distribution of the semantic fields of the socially constructed natural landscape and the 'fleshy' and 'fibrous' natural landscape

In figure 7.3, I have arranged the keywords in ten columns of 50, so that the first column, on the left hand side, runs down from one to 50, and then column two is from 51 to 100 etc. Again, the reduction is too great for the words to be read easily, but the important point is to see the pattern which is created; the light green shading of the socially-constructed natural landscape predominates on the left, among the highly prioritised 'keywords', whereas the few

examples of bright green shading of the 'fleshy' and 'fibrous' landscape, tend to be on the right, among the less highly prioritised keywords.

It is important to interpret these statistical findings with caution. The characteristic of abstractness, which the words in the semantic field of the socially-constructed natural landscape tend to have, makes them suitable for use in generalised descriptions. The 'fleshy' and 'fibrous' keywords, on the other hand, tend to have a very particular reference in the natural landscape, so they do not lend themselves to such frequent use. We cannot draw the conclusion that, simply because these words tend to have a lower statistical frequency of usage, they must be of 'less importance' to the decision makers of green business.

I move, now, to an overall comparison between these top 500 one-word 'keywords' of green business, and those of the radical NGOs. As far as the semantic field of the 'fleshy' and 'fibrous' natural landscape is concerned, green business does include *some* references in its linguistic discourse, though they tend not to have a particularly high statistical keyness.[2] We have already seen, in figure 7.2, that the radical NGOs have references to this natural landscape high up in their ranking of keywords. A review of their keywords from 201st down to 500th position, which is available in table I.2 on page 514, confirms that the bright green shading of this landscape continues to appear regularly, in the linguistic discourse of the radical NGOs, as one proceeds down the ranking. The overall comparison between the two discourses is shown below in figure 7.4.

The Venn diagram illustrates the radical NGOs' greater usage of references to the 'fleshy' and 'fibrous' natural landscape. On the left of the diagram, we can 'read' a semantic field which contains references to an agricultural landscape, populated by the poor and concerned with the cultivation of the soil. There is also evidence of a natural landscape of forests and also one reference to whales! In the central section, there are only four common 'keywords'. This short list also reveals the perennial challenge of empirical work, in which interpretive decisions must always be made; these particular six words of the 'fleshy' and 'fibrous' are more in a grey area between this landscape and the socially-constructed one. INDIGENOUS is an adjective, rather than a noun and cannot, therefore, refer independently to anything 'fleshy' or 'fibrous'. However, its inclusion has been justified on the grounds that the head noun, which it most often describes, is definitely part of the natural landscape.[3]

[2] Below the top 500 keywords, I am, unfortunately, unable to say anything, because I have not had time to prepare the empirical evidence.
[3] In appendix I, section I.1, I describe the work by which I also decided that two other adjectives: HUMAN and NATURAL, ought to be placed in the semantic field of the *socially-constructed* natural landscape.

SPECIES and WILDLIFE have a generic meaning and, as such, they are social constructions. But the entities to which they refer are all part of the 'fibrous' or 'fleshy' natural landscape, hence their inclusion here.

Figure 7.4: A Venn diagram of the distribution of the semantic field of the 'fleshy' and 'fibrous' natural landscape in the top 500 one-word 'keywords'

The evidence, from the concordance reports of both green business and the radical NGOs, is that LAND is most often used to refer to particular locations in the natural landscape, normally as the object of some cultural activity. This does not disqualify it from inclusion in the semantic field of the 'fleshy' and 'fibrous', so I have included it here. On the right hand side of figure 7.4, there is just one keyword which is 'unique' to the linguistic discourse of green business. WETLANDS occurs in the context of specific conservation or rehabilitation projects, in the texts of several of the green corporations. It normally refers to an area of the natural landscape which is adjacent to one of their productive landscapes

Figure 7.4 shows that the overall pattern of usage, of this 'fleshy' and 'fibrous' semantic field, is one of imbalance. The weighting is heavily on the side of the radical NGOs, and there are relatively few keywords in common. If we now turn our attention to the semantic field of the socially-constructed natural landscape, the visual impression, provided by figure 7.5 below, is significantly different in two respects. First, the top 500 'keywords' in the linguistic discourse of the two protagonists, contain an approximate balance for this semantic field – nineteen words in the discourse of the radical NGOs and seventeen for green

business. Second, there is a great deal of overlap in the words that are used to refer to this semantic field – fifteen of the words are placed in the central shared section and, compared with previous Venn diagrams, I have had to 'push' the two circles towards each other, in order to create enough room to place the list of these common words. The similarity, in the words which make up this semantic field, is even closer than the visual impression created by figure 7.5. Note that HABITAT, one of the two 'unique' words of green business, has its plural relation: HABITATS in the central section of the diagram, so the radical NGOs also use this keyword. Similarly, the green business prefix: ECO cannot be so very different, in its function of describing some other noun, from the radical NGOs' ECOLOGICAL.

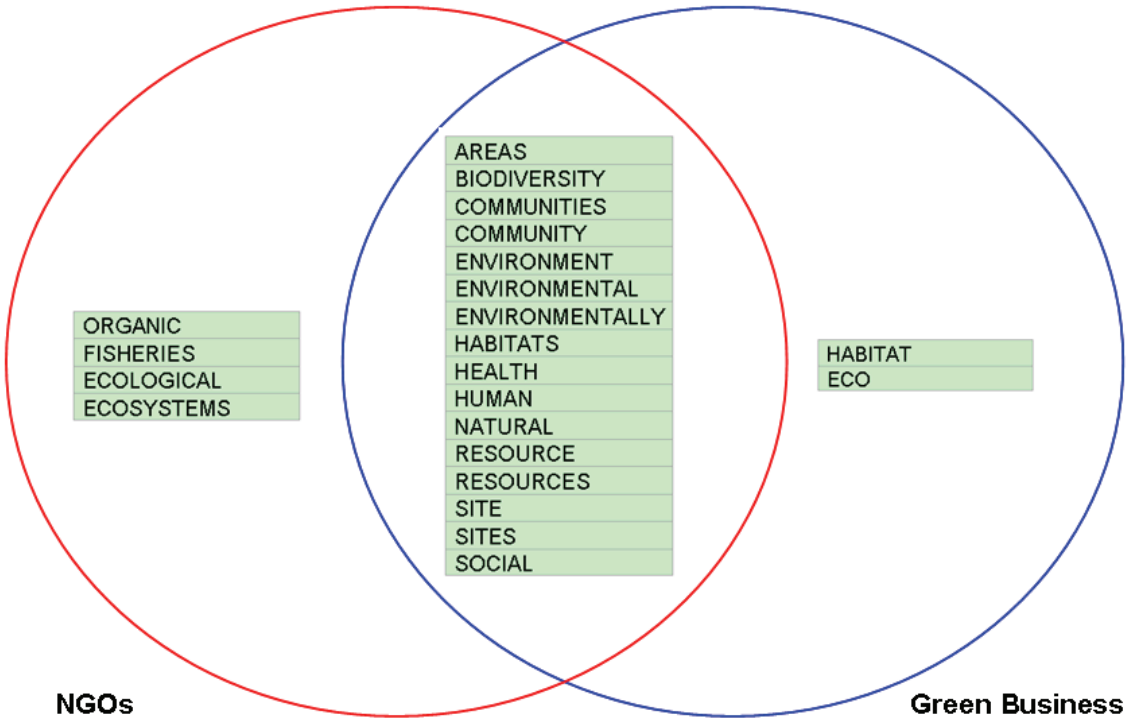


Figure 7.5: A Venn diagram of the distribution of the semantic field of the socially-constructed natural landscape in the top 500 one-word 'keywords'

It is an interesting feature of the linguistic discourses that this semantic field appears, on the basis of the one-word 'keywords', to have such a similar collection of constituent words. However, as I have previously argued in chapter five, single words are certainly not the only bearers of meaning. It is, therefore, important to examine the two-word and three-word keyword lists, to see if they reveal the existence of other aspects of the semantic field, which have not been referred to by the one-word 'keywords'. The full discussion and the relevant lists are contained in sections I.3 and I.4 on pages 517 and 521, while, below, I present a brief summary.

7.2.3 The two-word and three-word keywords of the natural landscape

In my review of the top 100 two-word and top 50 three-word keywords, I have applied the same bright green and pale green shading as I have used for the one-word keywords, and looked for units of meaning which referred to, either the 'fleshy' and 'fibrous' or the socially-constructed, natural landscape. My findings are that no new aspects of these semantic fields are revealed, in either the two-word or three-word keyword lists. Although there is nothing new to be said about the two-word keywords of green business, there are two new entrants to the radical NGOs' list, which do not appear in their one-word list of 'keywords' and are worthy of mention. However, they are closely related, semantically, to one-word 'keywords', so their appearance does not suggest that there is a new, undiscovered subfield of the natural landscape. CHILD appears in the keyword CHILD LABOUR in 69th place, but this is part of the radical NGOs' representation of the condition of the poor, which has already been represented by words such as INDIGENOUS, POOR, LIVELIHOODS, PEOPLES and WOMEN'S in the one-word list. Similarly, MAIZE makes its first appearance in 36th place in the keyword GM MAIZE. But this is, clearly, part of the discussion of genetic modification of crops, which has been identified in the one-word list, with words such as CROPS, FOOD, ORGANIC, CROP and RAPE.

In section 4.12.3 on page 177, I made some observations regarding the divergence in the linguistic discourse. There, I observed how the proportion of common keywords between the two discourses declined, as the number of constituent words in the unit of meaning increased, from one to two, then from two to three. I speculated that this divergence of the discourses was a reflection of the greater nuance of meaning, which the multi-word units bear. With regard *just* to the semantic field of the natural landscape, the evidence, contained in sections I.3 and I.4 on pages 517 and 521, does not support my generalisation. I have not identified any new subfields of the natural landscape, emerging among the two-word or three-word keywords. They are semantically consistent with the references made by the one-word keywords.

7.2.4 The empirical response to research question one - summary

In this section, I shall recapitulate the progress I have made, in responding to research question one of the incorporation claim. First, I return to the research question as it was posed in section 2.5.7 on page 84, and then repeated at the beginning of this chapter. Figure 7.6 below, is a copy of figure 7.1. My interpretive discussion, in section 2.5, took place within the

confines of the grey shaded 'outgrowth' in the upper plane, which is intended to suggest possible developments of meaning in the 'culture' of green business. The first research question asked what knowledge of the natural landscape is being selected, by green business, for inclusion in its discourses of meaning.

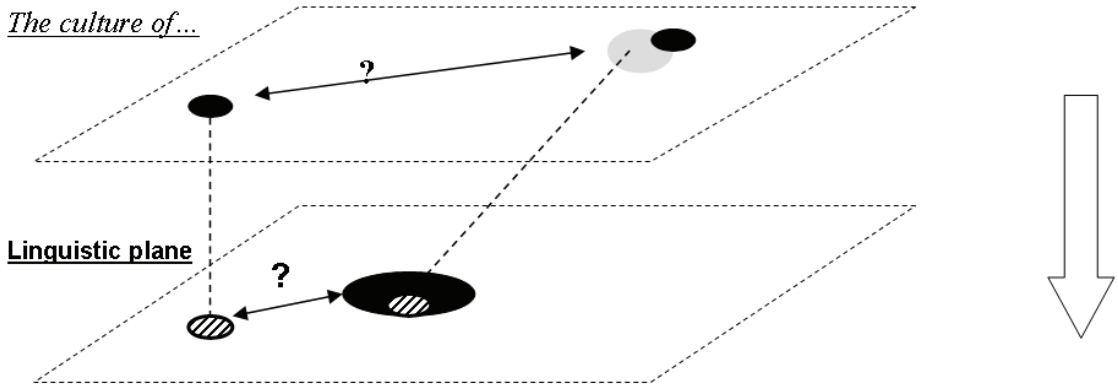


Figure 7.6: Is there any evidence in the linguistic plane to support the claim that nature is being incorporated within culturally-defined processes?

In making an empirical response to this theoretical question, I must be very careful to respect the divide, on which I have insisted, between the two planes. My evidence is *linguistic* and I will not make any categorical claims as to the *meanings* intended by green corporations. I can, however, show the patterns of linguistic contextualisation, and, relying on the theoretical argument that *meaning* may be equated with *usage*, I can suggest that these patterns of usage, of words, are indicative of the way in which their users conceptualise the meaning of the words.

Making the assumption that knowledge about some thing would be represented using the vocabulary of that same thing, my first empirical response, in the linguistic plane, has been to search for a language of the natural landscape in the discourses of the radical NGOs and green business. With reference to figure 7.6 above, I have tried to compare the two small discs with a diagonal line-patterning, in the lower plane, to see how closely they compare. Figure 7.4, repeated below as figure 7.7, shows that, in marked contrast to the radical NGOs, the linguistic discourse of green business contains very little language that makes a representation, of what I have dubbed the 'fleshy' and 'fibrous' natural landscape.[4] An important implication of this evidence is that, without a common vocabulary, the prospects

[4] In section 7.4, I shall make a more detailed examination of this vocabulary using concordance reports, in order to be able to respond to research question two. But a moment's reflection is enough to confirm that this finding is what we ought to expect. Green corporations have no wish to produce texts of nature writing with detailed accounts of flora and fauna.

for establishing a discourse of *meaning,* between green business and the radical NGOs, on the subject of the 'fleshy' and 'fibrous' natural landscape, are nil.

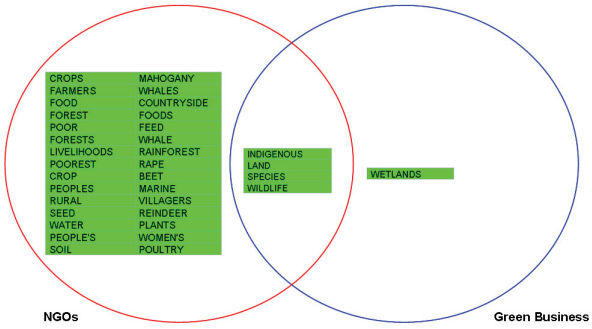


Figure 7.7: Miniaturised copy of figure 7.4 showing the distribution of the semantic field of the 'fleshy' and 'fibrous' natural landscape in the top 500 one-word 'keywords'

If we now relate the findings I present in figure 7.7, to the linguistic plane in figure 7.6, the evidence suggests, first, that green business has definitely *not* adopted the language of the 'fleshy' and 'fibrous' natural landscape. The two small circles with diagonal line-patterning are certainly not comprised of this vocabulary. The second conclusion to be drawn from these results, assuming that I am permitted to make my 'language – knowledge' jump up to the cultural plane, is that green business appears to have acquired very little knowledge of the natural landscape indeed.

However, the interpretive move I made, in section 7.2.2, and the consequent evidence which I presented in figure 7.5, repeated below as figure 7.8, is more encouraging.

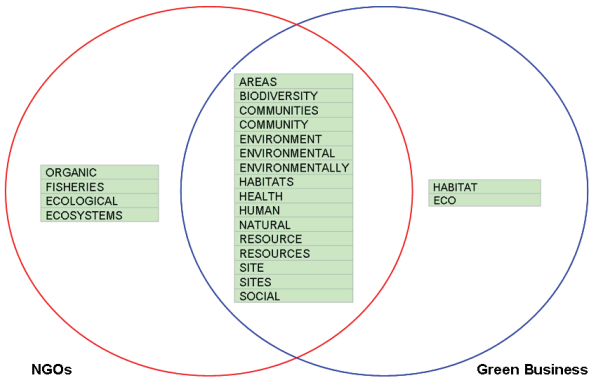


Figure 7.8: A Venn diagram of the distribution of the semantic field of the socially-constructed natural landscape in the top 500 one-word 'keywords'

The language of the environment which green business *is* adopting, or may well have a hand in creating, is a vocabulary of a socially-constructed natural landscape. The linguistic evidence shows that, in addition to its adoption by green business, this is a vocabulary of

which the radical NGOs also make use. In this common vocabulary, therefore, lies the possibility of establishing a discourse of shared meanings. But although a vocabulary of common linguistic signs is a pre-requisite, to the creation of a discourse of meaning, it is not sufficient. I have already demonstrated, in chapter six, that the semantic field of concern has not just been adopted by green business, it has been appropriated; the use to which the signs are put, in the two linguistic discourses, shows marked differences in contextualisation. Clearly, the same phenomenon could be present in the semantic field of the socially-constructed natural landscape. With reference to the linguistic plane of figure 7.6, the central section of the Venn diagram, in figure 7.8, corresponds to the two small discs with a diagonal line-patterning. The large black disc, which surrounds the green business usage of this vocabulary, represents the business-oriented contextualisation, about which Welford complained. Staying with the two-plane schematic of figure 7.6, and again employing my 'language – knowledge' assumption to jump to the cultural plane, I can now make a more substantial response to research question one. The linguistic evidence suggests that green business is not acquiring knowledge of the 'fleshy' and 'fibrous' natural landscape to any significant degree. Rather, it is acquiring (or creating?) knowledge of a *socially-constructed* natural landscape.

In sections 7.4 and in 7.5, I shall present further evidence from the linguistic plane, which attempts to respond to research question two. However, before I return to its empirical evidence, I shall, in section 7.3, develop my interpretive argument. I shall argue that, from the perspective of green business, it makes good sense to acquire this particular form of knowledge, as a means to build a bridge between its own productive landscapes and those 'fleshy' and 'fibrous' landscapes which, physically, surround them, but which, conceptually, are virtually non-existent.

7.3 Bridging the gap

7.3.1 Socially-constructed productive landscapes

One impression, gained from the previous section's review of the keywords, is that the radical NGOs maintain a focus of representation, within their linguistic discourse, on the 'fleshy' and 'fibrous' natural landscape. It is, after all, their *raison d'être* and the intended beneficiary of their efforts. Green business, however, has made only very modest progress towards incorporating the semantic field of this verisimilar landscape, into its linguistic discourse. There is no likelihood of establishing a productive, communicative discourse, when the two

protagonists cannot meet each other in a common vocabulary. However, the evidence suggests that they might be able to establish a productive discourse in the semantic field of a *socially-constructed* natural landscape. The linguistic evidence suggests that here is a type of knowledge of the natural landscape, which both green business and the radical NGOs may be incorporating into their institutional cultures.

But I now wish to make a further interpretive response, which, although it doesn't respond directly to research question one, does shed further light on the development of this new discourse. In section I.4 on page 521, I have described the emergence of a new semantic field among the top 50 three-word keywords, primarily of green business, but also, to a more limited extent, in the linguistic discourse of the radical NGOs. I have dubbed this semantic field *the socially-constructed agents of damage*, shaded its keywords in pink, and present its emergence, among the top 50 three-word keywords of green business, in figure 7.9 below.

1	HEALTH AND SAFETY	26	EMISSIONS TO AIR
2	ENVIRONMENTAL AND SOCIAL	27	GLOBAL WARMING POTENTIAL
3	CORPORATE SOCIAL RESPONSIBILITY	28	DOW JONES SUSTAINABILITY
4	GREENHOUSE GAS EMISSIONS	29	INJURY AND ILLNESS
5	CORPORATE RESPONSIBILITY REPORT	30	ENVIRONMENTAL SUSTAINABILITY REPORT
6	OIL AND GAS	31	ENVIRONMENTAL REPORT APPENDICES
7	ENVIRONMENTAL MANAGEMENT SYSTEMS	32	HABITAT ACTION PLAN
8	LOST TIME INJURY	33	LOCAL AIR QUALITY
9	BIODIVERSITY ACTION PLAN	34	CODE OF CONDUCT
10	ENVIRONMENTAL MANAGEMENT SYSTEM	35	EMISSIONS PER GWH
11	NON HAZARDOUS WASTE	36	BLACK ECONOMIC EMPOWERMENT
12	EXPLORATION AND PRODUCTION	37	INTERNATIONAL MARKETING STANDARDS
13	GLOBAL REPORTING INITIATIVE	38	CLIMATE CHANGE LEVY
14	GROUP OF COMPANIES	39	LAWS AND REGULATIONS
15	LOST TIME INJURIES	40	GOOD CORPORATE CONDUCT
16	EMPLOYEES AND CONTRACTORS	41	LIQUEFIED NATURAL GAS
17	ENVIRONMENTAL PERFORMANCE REPORT	42	ACROSS THE BUSINESS
18	KEY PERFORMANCE INDICATORS	43	CONTRACTORS AND SUPPLIERS
19	COUNCIL FOR SUSTAINABLE	44	EMISSIONS TRADING SCHEME
20	HEALTH AND ENVIRONMENT	45	OBJECTIVES AND TARGETS
21	INJURY FREQUENCY RATE	46	FIRED POWER STATIONS
22	CARBON DIOXIDE EMISSIONS	47	DISCHARGES TO WATER
23	CODE OF BUSINESS	48	LAND AND BIODIVERSITY
24	NON GOVERNMENTAL ORGANISATIONS	49	LONDON BENCHMARKING GROUP
25	BIODIVERSITY ACTION PLANS	50	ALL GROUP COMPANIES

Figure 7.9: The semantic field of *the socially-constructed agents of damage* in the top 50 three-word keywords of green business

These units of meaning, shaded in pink, refer to abstract conceptualisations of a very few, of the thousands, of different ways, in which the productive landscapes of green business, out in the 'real' world, damage natural landscapes, also, out in the 'real' world. Despite the abstractions, I wish to emphasise the close ties between the idea of a socially-constructed landscape and the real thing. There is nothing abstract, about falling from an

unsecured gantry and breaking one's leg – ask the worker involved. But, in the linguistic discourse of green business, the worker's broken leg has become "a lost time injury" (8th in the ranking of figure 7.9). There is nothing abstract, about the sulphur dioxide coming from the coal-fired power station – ask the asthmatic child, who lives on the housing estate downwind of the smoke stack. But, in the linguistic discourse of green business, the sulphur dioxide has become "emissions to air" and "emissions per GWH" (26th and 35th in figure 7.9). There is nothing abstract, about the traces of cyanide waste leaching into a river from the tailings of a gold mine – ask the people who use the water for drinking. But, in the linguistic discourse of green business, the cyanide has become "discharges to water" (47th in figure 7.9).

I do not mean to imply that the emergence of these terms is, necessarily, evidence of some rhetorical ploy, by the executives of green corporations, to obscure the 'real world' causes and the 'real world' consequences, for which their corporations are responsible. In saying this, I realise that I open myself to the charge of being either naive or, perhaps worse, an apologist for business. Clearly, the public relations people, who formulate the linguistic discourse of green business, will be more comfortable with using "emissions to water" instead of "cyanide poisoning." I am bound to concede that there is a rhetorical advantage for green business, in using this sort of language. But there is also a very practical reason, which explains the emergence of these two socially-constructed landscapes. In contrast to the language of the 'fleshy' and 'fibrous' natural landscape, a representation which aims at verisimilitude, these two semantic fields provide green business with a symbolic language designed for *managing*. I shall try to illustrate what I mean with an example.

Paul Skinner, speaking as a human being, can express his sense of moral concern for the 'fleshy' and 'fibrous' natural landscape, which lives and breathes around the various productive landscapes that Rio Tinto controls. Similarly, in his capacity as a human being, he can affirm his own sense of moral responsibility, for righting whatever wrongs Rio Tinto's productive landscapes inflict. But Paul Skinner, functioning in his role as Chairman of Rio Tinto, cannot remove the poisons in the tailings from its gold mines, any more than he can cure the liver damage, of the people who live in the vicinity of these productive landscapes. He does not *manage*, in any hands-on, manipulative sense of the word, either the 'concrete' and 'steel' productive landscapes of Rio Tinto, or the 'fleshy' and 'fibrous' natural landscapes around them.

In section 6.7.5 on page 249, I used the example of Anglo American's management of its Namakwa Sands operation in South Africa. I argued that the process of managing, from

corporate headquarters in Carlton House Terrace, London, is actually a process of manipulating a symbolic language, which models Anglo American's 'concrete' and 'steel' productive landscape on the coastal strip north of Cape Town. On the other side of Pall Mall from Carlton House Terrace, is St. James Square. There at number six, in the corporate headquarters of Rio Tinto, Paul Skinner and his senior executives manage *their* 'concrete' and 'steel' productive landscapes, through the manipulation of socially-constructed models, similar to the ones that Anglo American has developed. These models are subject to a continuous process of development by Rio Tinto's economists and financial analysts. They carefully hone the models' accuracy, in order to provide St. James Square with an ever more sophisticated representation of its business environment, and to make the corporation's 'concrete' and 'steel' landscapes more responsive to its business objectives. And these models really do work! Through their manipulation, the Rio Tinto productive landscapes really do respond to corporate objectives, dictated from St. James Square. The relative profitability of mines can be compared with each other, so that management knows which to close in a downturn. The forecasts of market demand are, similarly, linked up to the mines' forecasts of supply, so that necessary shutdowns for maintenance can be scheduled optimally. The productive landscapes' interactions, with other elements in the supply chain, are modelled and managed precisely. Paul Skinner may only be able to *express his concern* for the 'fleshy' and 'fibrous' natural landscape. But the practical response that he and his fellow executives can make, in their efforts to address these 'real' world problems, is to develop similar, socially-constructed models in pink and pale green. If models can be made, which are as accurate and as finely-tuned as the ones they already have for managing their productive landscapes, then they ought to be able to manage the 'fleshy' and 'fibrous' natural landscape, with as much success as, say, their Rössing uranium mine in Namibia.[5]

Rather than simulating the interaction of the productive landscape with market demand, the new green business models will simulate their impacts on the natural landscape. They will be constructed using both the pale green and the pink building blocks, some of which I have been able to present, in figures 7.8 and 7.9. These cause-effect relationships will

[5] Rössing, a large open pit uranium mine, is situated in Namibia, south-western Africa and started operations in 1976. It is located close to the town of Arandis, 65 kilometres inland from the coastal town of Swakopmund in the Namib Desert in the Erongo Region in Namibia. Walvis Bay, Namibia's only deepwater harbour, lies 40 kilometres south of Swakopmund. Rössing's product is uranium oxide (U_3O_8) and its customers are the nuclear power utilities in Central Europe, North America and South-east Asia where the uranium oxide is used in the generation of electricity. Rössing is one of the largest open pit uranium mines in the world, with solid reserves which will continue to serve the world nuclear energy industry. The mine currently produces about 7.55 per cent of the world's uranium. Rio Tinto, *Uranium,* http://www.riotinto.com/whatweproduce/452_uranium.asp, (accessed 21st February 2008).

provide the mechanisms, by which the non-human corporation is able to 'experience' the natural landscape, and the impacts of its productive landscapes upon it. In figure 7.10 below, which is copied from figure 2.15 on page 72, I have juxtaposed my eco-radical vision, on the left, with liberal-productivist experience, on the right. In the eco-radical vision, the productive landscapes are placed *within* the 'fleshy' and 'fibrous' natural landscape, so that all the consequences for the biosphere's plants and animals, which are caused by the productive landscape's inputs and outputs, are known. In the liberal productivist experience, on the other hand, the natural landscape is, with the exception of a few items, invisible. The only way it exists, for this productive landscape, is either as material inputs which must be paid for, or as a waste sink, for which there is also a charge. Only when a cost is incurred, does the natural landscape merit a mention as an item in the liberal-productivist profit and loss account.

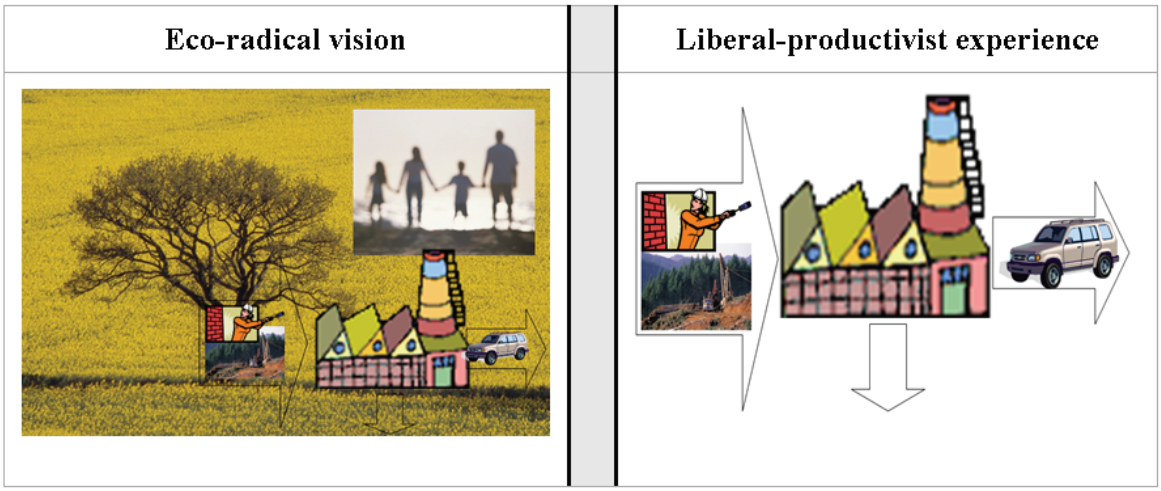


Figure 7.10: The eco-radical vision for reality and the liberal-productivist experience of reality

In section 2.5.3 on page 68, I commented on the enormous gulf between the vision on the left, and the experience on the right, and the challenge that green business faced, therefore, in attempting to make progress towards the vision. Now, I can advance my view on how green business has begun the process, of attempting to bridge the gap.

7.3.2 Bridging the gap with a socially-constructed landscape

In figure 7.11 below, I have juxtaposed green business's pale green words of the socially-constructed natural landscape, alongside the pink-shaded three-word keywords that represent the socially-constructed agents of damage. These few signs are my linguistic evidence of a new landscape under development. Despite the modesty of my evidence, however, this landscaping project is a huge cooperative effort, involving hundreds of thousands of highly-trained people. On the left of figure 7.11 are the natural scientists, whose role is to measure

and map the complexities of the 'fleshy' and 'fibrous' natural landscape, in order that it is possible to describe it in quantitative ways. On the right of figure 7.11 are the engineers, natural scientists and social scientists, who study the ways in which productive landscapes cause damage, and the forces which drive their construction and operation. And in addition, there are the green corporations who are pioneers in the acquisition of this knowledge. They are adopting (and appropriating?) the linguistic signs that are employed, in order to make use of the knowledge. As I have already implied, in the background of this new socially-constructed landscape lie two separate 'real' landscapes. On the left is the 'fleshy' and 'fibrous' natural landscape and on the right is the productive landscape. In reality, of course, the productive landscapes are absolutely *in* the natural landscape, and their interactions are very real. But the linguistic representation, from St. James Square, Carlton House Terrace, or any other centre of corporate power that you might care to mention, is of separation.

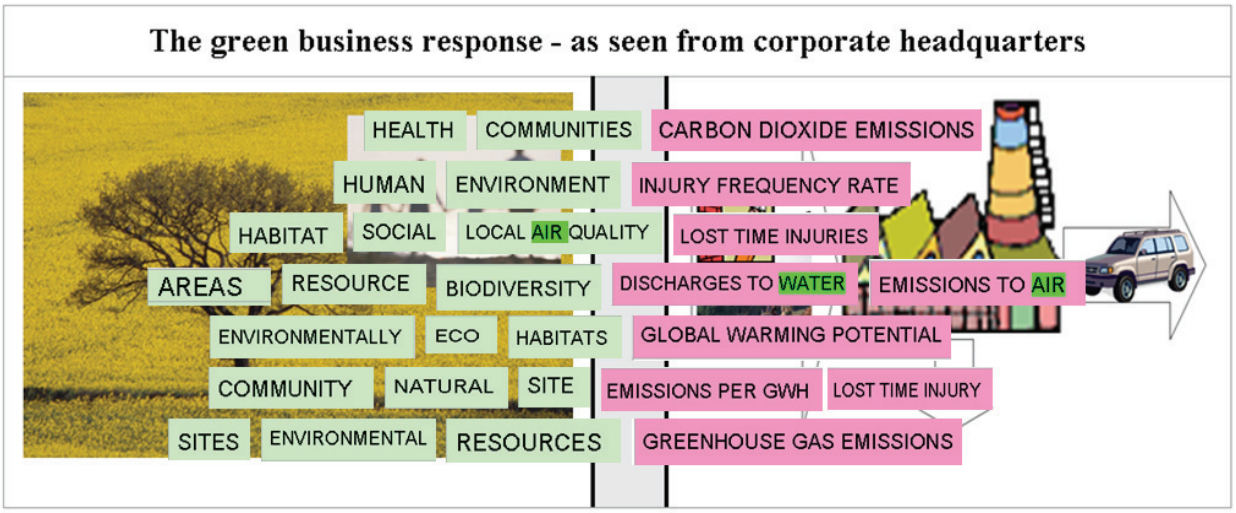


Figure 7.11: The response of green business to the eco-radical vision

From the point of view of green business, the great virtue of the pink- and green-shaded language is that it lends itself to the process of *management*. Thanks to the natural scientists and the engineers, the material conditions of the natural and productive landscapes are represented in a symbolic language, which can be recorded in a standardised form and then moved through time and space. At head office the symbols are understood. They are compared with last year's symbols and the budgeted symbols for this period, and they are fed into the corporate models of the landscapes. Decisions are then taken, to influence the operation of the productive landscape, which will, in turn, have a beneficial effect on the *operation* of the natural landscape. These forecast improvements in the *operation* of the natural landscape will either be confirmed or refuted, when the figures for the next quarter's

operating report arrive at corporate headquarters. The vocabulary of this socially-constructed natural landscape ought, therefore, to display linguistic evidence of being subject to the management processes upon which I have just speculated, and the evidence for this is presented in section 7.5. First, however, I examine the modest amount of language of the 'fleshy' and 'fibrous' natural landscape in the linguistic discourse of green business. My purpose is to provide the first part of my empirical response to research question two; how is the knowledge of a 'fleshy' and 'fibrous' natural landscape incorporated, within the traditional discourse of business?

7.4 The empirical response to research question two – concern for the 'fleshy' and 'fibrous' natural landscape?

7.4.1 Introduction

We have already seen, in chapter six, that the radical NGOs make frequent representations of concern for the natural. There are plenty of references to the 'fleshy' and 'fibrous' particulars of the natural landscape, and concrete representations of the agents which are responsible for its injuries or threats to its well-being.

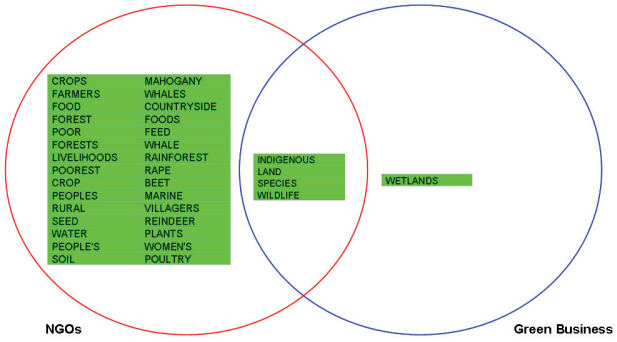


Figure 7.12: Miniaturised copy of figure 7.4 showing the distribution of the semantic field of the 'fleshy' and 'fibrous' natural landscape in the top 500 one-word 'keywords'

The greater challenge, however, will be to find similar expressions of concern from green business. First, as figure 7.4 illustrated (repeated above in miniature as figure 7.12), the linguistic discourse of green business includes very few representations of the 'fleshy' and 'fibrous' natural landscape. Second, as I have suggested in the previous section, we need to make a distinction between the green corporations, and the human beings who work for them. Paul Skinner, the human being, may *care* about the well-being of the natural landscape, but Rio Tinto, the corporation of which he is chairman of the board of directors, cannot *care* about it, unless we are all willing to enter into the charade of assigning Rio Tinto such a

human characteristic as compassion. How, then, does green business incorporate the language of the 'fleshy' and 'fibrous' landscape, within its linguistic discourse? Can I discern patterns in the contextualisation of language, which I might interpret as knowledge and thereby use as a response to research question two?

The evidence from the linguistic plane, which I shall present in this section, suggests that 'caring and concerned' rhetorical gambits are eschewed by the PR officers of the green corporations. Attempts to represent business in 'touchy-feely' language can be easily spotted. They would be instantly seized upon and derided, by radical NGOs and critical discourse analysts. This is not to say that green business discourse *never* represents the corporation, in a terminology that provides connotations of humanity. For example, the texts of some corporations represent the corporation as a collection of people. Shell has a tendency to do this and it is not unique. In its unedited 'keywords' list, the pronoun WE appears in 6th place (see table J.1 on page 525). By comparison, in the same list for Veolia Water UK, WE is ranked in 203rd position (see table J.2 on page 525). Neither does it mean that green business discourse *never* represents the corporation, as caring about the 'fleshy' and 'fibrous' natural landscape – if someone puts me on the spot and asks whether or not I love my wife and children, there is really only one permitted answer. In summary, then, the green corporation has to perform a fine balancing act, and it will be damned, whichever side of the line it should fall. On the one side, it needs to give sufficient expression of care and concern to avoid accusations of being heartless, from a predominantly sceptical audience. But it knows that the same audience is on the look out, for any exaggerated representations of a caring and compassionate corporation, and will ridicule it with the accusation that "talk is cheap," if it can find such rhetorical over-egging of the pudding.

In section J.2 from page 526, I present the empirical evidence on which I shall be basing this interpretive discussion. First, I present some concordance reports from the linguistic discourse of green business, which are based on variants of CARE and CONCERN. In the generation of these reports, I have sought to find the statements, by green business, that it cares and, by studying the recipients of this caring, what it is that green business cares for or about. Then I present another seven concordance reports, each of twenty lines. They are all randomised extracts of their respective 'complete reports', based on the entire linguistic discourse of green business. Five of the reports are based on the words that appear within the circle of "Green Business" in figure 7.12 above. The reports for LAND, WETLANDS, SPECIES and WILDLIFE are generated from the single word. INDIGENOUS, however, is an

adjective. I have, therefore, examined the two-word clusters of its concordance report, looking for the appearance of INDIGENOUS with a noun of the 'fleshy' and 'fibrous' natural landscape to its right. I have then run concordance reports on these two-word units of meaning, merged the files, and extracted one twenty-line random report. I have also taken the liberty of including two other adjectives: HUMAN and NATURAL, even though I assigned them to the socially-constructed natural landscape in the previous section. Their overall usage is heavily in this latter semantic field, the most common references being to HUMAN RIGHTS and to NATURAL GAS and NATURAL RESOURCES. However, both words combine, in a small minority of usages, with nouns representing the 'fleshy' and 'fibrous' natural landscape. In order to cast my net wider, in the search for green business concern for this landscape, I have included these two words, applying the same selection and extraction procedure as I have just described for INDIGENOUS. The procedure is described in more detail in section J.2 on page 526, and the order of their presentation follows their chronological treatment in the rest of section 7.4.

7.4.2 Caring and concerned corporations?

The evidence, from the linguistic plane, is that green business is wary of expressing too much corporate *caring about* the natural world. The concordance report on CARE* ABOUT (see table J.3), shows that, in the entire linguistic discourse of green business, there are only seven instances, in which a corporation describes itself as caring about some aspect of the natural landscape. The tendency is also for the recipient of CARE, to be an abstract representation. The most 'fleshy' recipient of the green corporations 'caring about' is *employees*, which appears twice. Otherwise, they become more abstract with examples such as *human rights* (two lines) and *rural communities* (one line). In contrast to CARE ABOUT, the prepositional verb CARE FOR requires a more 'fleshy' recipient of the caring process (see table J.4). This is a logical consequence of their respective usages. The object of CARE FOR has to be something that needs care, and the process of caring *for* something, is an activity rather than the attitude of mind, implied by caring *about* something. If the green corporations wish to avoid the 'talk is cheap' accusation, then representations of caring *for* are more important than those of simply caring *about*. This is reflected in the finding that there are more occurrences of CARE FOR in the linguistic discourse of green business; 89, compared with 23. In the twenty-line random report, in table J.4, nine of the lines contain a representation of disadvantaged people being cared for, not by a corporation but, almost always, by a home, hospital or hospice, which is supported financially by the corporation. The logic of this

argument speaks for itself. The linguistic evidence suggests that the green corporations prefer to demonstrate care *for* the natural landscape, through representations of practical measures they take to address problems. Further, it is the human elements of the natural landscape, predominantly employees and their families, who receive the lion's share of representations in green business texts.

The conclusions drawn from the concordance reports on CARE are underpinned by the findings I present, in appendix J, for concordance reports on CONCERN (see tables J.5 and J.6 on pages 532 and 534). Both the sequences CONCERN ABOUT and CONCERN FOR represent attitudes of mind, and, from the point of view of green business representations, have two shortcomings. First, there is the incongruity of assigning the human attribute of a feeling of anxiety, to the non-human green corporation. Second, there is the danger of incurring the 'talk is cheap' accusation, to which I referred in the previous paragraph. In fact, the great majority of usages of CONCERN, in the linguistic discourse of green business, are representations of *other* people's concerns. The green corporations recognise that others are concerned, and they take these concerns seriously. As evidence that they do take them seriously, they make representations of the different ways in which they provide CARE FOR elements of the natural landscape. It is in the identification of the recipients of this care, that their linguistic discourse represents the 'fleshy' and 'fibrous' landscape most closely.

The empirical evidence of this section has borne out my reasoning that it does not make rational sense, to represent a green corporation as caring about, say, a Caledonian pine tree or being concerned about, for example, an Amazonian frog. It only makes sense for a green corporation to support the work of an orphanage, in caring for street children in Johannesburg. It is only in the representation of business-supported action in the 'fleshy' and 'fibrous' natural landscape, that such vocabulary is employed by the green corporations. But, as I discussed in section 2.5.3 on page 68, usage of the natural landscape is an inescapable consequence of our existence, recognised by bio-regionalists, liberal-productivists and green corporations alike. Perhaps evidence of the green corporations' representations of their care for the natural landscape can be found in the way in which they use that landscape? I shall now examine the way in which the very limited vocabulary of the natural landscape is used, in the linguistic discourse of green business.

7.4.3 A 'fleshy' and 'fibrous' natural landscape as an object of careful usage?

In this section, I review the vocabulary of the 'fleshy' and 'fibrous' natural landscape, with the objective of identifying patterns in the way the green corporations represent their relationship with it. In my presentation of figure 7.4 in section 7.2.2, I conceded that I had elected to cast my net wide, in order to find the modest number of entries on the green business side of the Venn diagram. An important first question for the empirical evidence, therefore, is to ask just how 'fleshy' and 'fibrous' the references are. For example, is SPECIES used to refer to the very 'fibrous' Caledonian pines, in the western highlands of Scotland, or to the very 'fleshy' Amazonian frog, or is it mostly used to refer to the promotion of species diversity? My line of argument, at the close of the previous section, suggested that rather than searching for green business assurances of their care and concern, I ought, instead, to examine the ways in which green business represented its *usage* of the natural landscape.

As a first example of the green corporations' representations of the natural landscape, I have reviewed the concordance report for NATURAL WORLD and NATURAL ENVIRONMENT (see section J.2.5 and table J.7). Although these terms do make a representation of the 'fleshy' and 'fibrous' natural landscape, their usage is, overwhelmingly, for purposes of representing a general natural landscape, rather than any specific place or quality. The evidence I present shows that, when green corporations represent the natural landscape in such general terms, they often include its instrumental subordination to (their) productive landscapes, whether as resource input or toxic sink, and the dilemma of how to manage this trade-off. In the very few examples, in which some specific part of the natural landscape is represented, however, the particular green corporation's activities to enhance the landscape are always altruistic. This suggested trend is confirmed in the usage of WETLANDS (see section J.2.6 and table J.8). Although wetlands have an important role within the natural landscape, they have no instrumental value as a resource input to the productive landscape. This does not mean, of course, that they are free of interference by man; 'unproductive' marsh has been drained and converted into agricultural land, for centuries. However, in the linguistic discourse of the green corporations, WETLANDS, whether used generically or as part of the representation of some specific location within the natural landscape, is contextualised within a process of careful, respectful management, which recognises its intrinsic value.

This finding ought not to surprise us. The landscape is contextualised differently by different cultural communities. If I had been studying the linguistic discourse of a group of seventeenth century farmers in the Cambridgeshire fens, I would probably have found an instrumental contextualisation in their usage of WETLANDS, rather than the intrinsic treatment it receives, in the texts of green business. If green business's linguistic discourse also included words such as COUNTRYSIDE and SCENERY, we might also expect to find wholly intrinsic contextualisations by the corporations, perhaps expressing an aesthetic appreciation. However, LAND, in the linguistic discourse of green business as, no doubt, in other linguistic discourses, displays evidence of differences in its contextualisation. Land is important, both as a source of mineral inputs and a toxic sink for the green corporations, and this fact is evident in some of the usages to which LAND is put in their linguistic discourse (see section J.2.7 and table J.9). Just as for WETLANDS, there are generic representations of LAND and there are geographically-specific usages. But what is most interesting, is that, whereas the usage of LAND for generic purposes also makes representations of the *instrumental* treatment of LAND, the specific usages all represent an *intrinsic* attitude towards LAND on the part of the green corporation and, often, a process of enhancement.

My empirical examination now moves from the *land*scape, to studying the patterns of usage of two nouns which represent elements in the landscape: *species* and *wildlife*. The usage of SPECIES by green business, spans the gamut of attitudes towards the natural landscape (see section J.2.8 and table J.10). There are two examples of certain species of fish which are considered, like the examples of land, as inputs to a productive landscape. But there is a contrast to the usages of LAND, which were all generic representations. Apart from these two instrumental representations, the clear majority of usages contextualise SPECIES intrinsically and, in many cases, the green corporations are active agents in a process of enhancing their conditions. The same applies to the usage of WILDLIFE (see section J.2.9 and table J.11). Here, the clear majority, of the contextualised usages of WILDLIFE, place it within specific projects and plans in which the green corporations are engaged, which have the objective of enhancing the 'fleshy' and 'fibrous' natural landscape. The semantic representation itself is often of a socially-constructed natural landscape, e.g. "Drayton continued plans to incorporate **wildlife** corridors as a key component of final rehabilitation by sowing 10 hectares with native tree seed" (line 18). This activity is, clearly, anchored in a very specific geographic location of the natural landscape, but note how the "10 hectares of native tree seed" are also represented as being a "wildlife corridor." This is an illustration of

the point I made in section 7.3.2; green business is able to manifest very great changes in landscapes, traditional productive ones but also, more recently, natural ones, through the manipulation of a socially-constructed language.

The final two words, which I have included for examination, are INDIGENOUS and HUMAN. I have, however, limited the reports to their usage in specific two-word noun phrases, in which they describe a head noun which has some reference to the 'fleshy' and 'fibrous' natural landscape. (For more description see sections J.2.10 and J.2.11). With these two terms, the green business semantic field of the 'fleshy' and 'fibrous' landscape ascends, once again, into the abstract atmosphere of a predominantly generic usage. Again, however, there is a pattern in the usage; where it makes a generic representation of the natural landscape, the contextualisation is mixed between the problems of possible impacts caused by the productive landscape, but also the improving role that green corporations can play in the natural landscape. However, in the minority of usages in which the representation descends into some specific place in the natural landscape, there is rarely evidence of damage caused by the green corporation. Instead the representation is one of the corporation working to enhance the natural landscape.

7.4.4 Green business and the 'fleshy' and 'fibrous' natural landscape - summary

The empirical findings, from a study of the linguistic discourse of green business, do not support my speculation that I would be able to find a context of care and concern, around green business's vocabulary of the 'fleshy' and 'fibrous' natural landscape. However, the reason for this is that my object of study cannot provide evidence that is relevant to the theoretical claim. The greater part of the textual material, in the green business corpus, consists of representations made by corporations, and not by human beings speaking as human beings. A small volume of the material consists of speeches made by senior executives but, even in this linguistic discourse, the individual concerned is speaking as a representative of her corporation. The overwhelming majority of the texts, in my object of study, are representations of the *corporations*' attitudes to, and relationships with, the world around them. In summary, then, the linguistic discourse of green business reveals the following contextualisations of the semantic field of the natural landscape. First, a green business tends to avoid overt statements that it cares about the natural landscape. Second, it prefers to demonstrate its care, through the representation of its own efforts, or the efforts of an agent which it sponsors, to enhance or heal the natural landscape. And it is in these representations,

of improvements to the natural landscape, that the linguistic discourse of green business is at its most 'fleshy' and 'fibrous'.

The final point I wish to make, is that the linguistic evidence suggests that I ought to make room for another semantic field. Green business works with a semantic field of the 'fleshy' and 'fibrous' natural landscape, when it wishes to make representations of its acts of improvement. In this style of discourse, typically packaged as a case study, the 'story' is anchored in the details of space and time. But green business also operates with a semantic field of the *generic* natural landscape. When it wishes to make representations of the burden which is imposed on the natural landscape, by the productive landscapes of mankind, it goes generic. This is its response to the discourse of the radical NGOs; it recognises their concerns and provides assurances that they are understood and, at least partially, accepted as legitimate. Having made these assurances using a language of the *generic* natural landscape, the green corporations make representations of two broad categories of response that are possible. The first one consists of making enhancements to the 'fleshy' and 'fibrous' natural landscape, while the second involves the reduction of burdens, which the natural landscape is obliged to carry by the corporations' productive landscapes. In the first type, the corporation lowers its gaze from a generic natural landscape, and focuses on the details of geographic space, as I have just described. These processes of enhancement demonstrate the level of corporate commitment. In the second type, the corporation also lowers its gaze from a generic natural landscape in order to focus on details. This time, the focus is on the socially-constructed productive landscape and the socially-constructed natural landscapes around them. These, too, will demonstrate their level of commitment, by showing that the corporations can *manage* their way to a sustainable natural landscape. Around this vocabulary, it ought to be possible to identify the semantic field of *management,* and I shall present the empirical results for this semantic field in the next section.

7.5 The empirical response to research question two - managing the socially-constructed natural landscape

7.5.1 Introduction

The naming of features of the natural landscape, in ways which reflect their degree of usefulness or interest to mankind, is not a new phenomenon. One of the older examples of this practice: *resource(s),* occurs in my semantic field and appears in the Venn diagram of figure 7.8, repeated below as figure 7.13. The history books contain plenty of accounts of merchant adventurers from Europe, plundering continents in the hunt for gold, and the problem is just

as current today. The aborigine tribes of Western Australia consider their natural landscape as a home, a hunting ground and a place of worship. I, on the other hand, am pleased that the bauxite deposits which their landscape contains are labelled as *resources,* because they are the raw material for my car's aluminium body shell. Liberal-productivism places the label *resource* on something that it has found in the natural landscape and thereby changes its status.

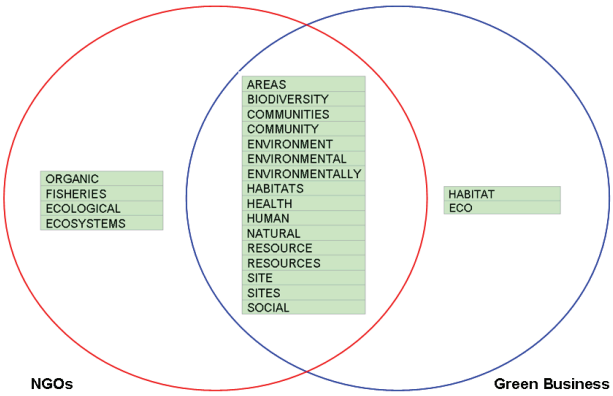


Figure 7.13: A Venn diagram of the distribution of the semantic field of the socially-constructed natural landscape in the top 500 one-word 'keywords'

But a language of the socially-constructed natural landscape is not necessarily the preserve of the green corporations. Taking another example from the semantic field shown in figure 7.13, the label *site* can be placed on an area of land, in order to change its social status. At the urging of the environmentalists and natural scientists, a parcel of land is designated as a *Site* of Special Scientific Interest (SSSI), and its protection from the excavators is assured. Similarly, business interests can see to it that another area of the natural landscape is designated as a Hazardous Waste *Site*, and thereby treat it as a sink for unwanted by-products from their productive landscapes.

One of the advantages of a Venn diagram is that it illustrates the distribution of the semantic field. As I pointed out in section 7.2.2, in my first presentation of this semantic field of the socially-constructed natural landscape, there is a much greater proportion of shared keywords than I have been used to finding with other semantic fields. This high proportion of common linguistic signs can be interpreted positively – an indication that they might be used to construct a *shared* discourse of meaning, as I suggested in my summary of the empirical response to research question one, in section 7.2.4. However, in the light of the empirical experience of chapter six, and my *site* example in the previous paragraph, an alternative interpretation exists; the linguistic signs, in this semantic field, might be the subject of

profound contextual differences. Following the empirical methodology I used in chapter six, the mechanistic contextualisation patterns might lead me to concordance reports, showing that the usages of a word, in the two corpora, are very different. I have argued that these words form part of a symbolic language by which the natural landscape is managed. If this is correct, then their political significance is considerable. On this reading, therefore, we ought to expect that their usage will reflect the political conflicts between liberal-productivism and the discourse of the radical environment.[6]

I can only speculate on how the radical NGOs may contextualise the semantic field of the socially-constructed landscape, by suggesting three plausible and non-exclusive alternatives. First, although it may not be 'fleshy' and 'fibrous', the socially-constructed natural landscape does suffer the impacts of productive landscapes. So we might expect to see evidence of the semantic field of concern, in its contextualisation. Second, concerns about, say, biodiversity may be illustrated by reference to the details of crops, farmland and wildlife. So we may see the contextual evidence of the semantic field of its 'fleshy' and 'fibrous' sister. Third, the radical NGOs may also make use of the semantic field of management, in order to present the degree of damage to the natural landscape, in a language which is understood by government and green business, if not the general public.

As for green business, it is my contention that the contextualisation of the words of the socially-constructed natural landscape ought to display a strong presence of the semantic field of management. In the following empirical work, I shall make use of the semantic field of management which I presented in section 5.2.5 on page 191. In figure 5.6 of that section, I used a flow-chart schematic in order to describe the process of management, and I repeat this now, in reduced scale, in figure 7.14 below. The corporations need to be able to monitor their own effects on the natural landscape. They also need to formulate the standards of operation to which they should aspire, if they are to take their responsibilities seriously. Finally, they

[6] *Biodiversity* itself is not quantifiable, but measures of biodiversity are made using *biodiversity indicators*. One of the radical NGOs: the Royal Society for the Protection of Birds has been very successful, in persuading both the UK government and the EU, that bird populations are an extremely accurate way of measuring biodiversity levels. Clearly, there is considerable political advantage, for the RSPB, of getting birds so centrally placed in the discourse around biodiversity in the UK and EU. The following is a short extract from a paper presented at an international conference by two of their researchers: "Indicators are being identified by the EU to measure progress, including towards the biodiversity target. Through a joint BirdLife International and European Bird Census Council (EBCC) initiative: "Birds as biodiversity for sustainability: a pan-European strategy", we have presented three biodiversity indicators." Royal Society for the Protection of Birds, *Measuring Real Progress: Headline Indicators for a Sustainable World,* http://www.rspb.org.uk/Images/Download%20-Global%20Indicators%20-%20paper%20for%20Malta%20_final%20draft_tcm9-133052.pdf, (accessed 22nd February 2008).

need to set themselves objectives, make plans, implement the plans, and then report back, on the progress that is being made towards the objectives and the, hopefully, reduced impacts on the natural landscape.

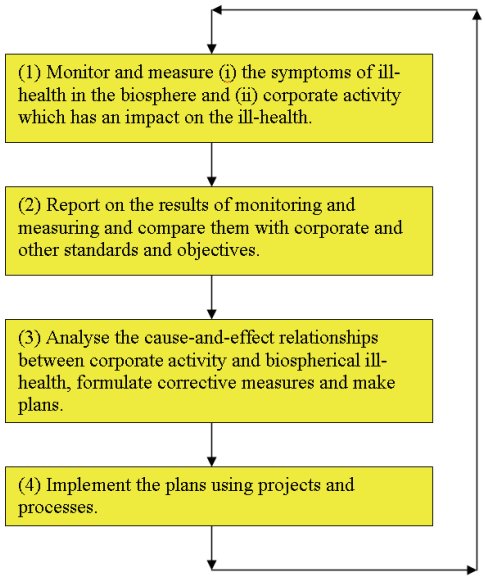


Figure 7.14: 'Management' - the business process by which green business works to make its operations greener

In my Venn diagram presentation of the distribution of this semantic field (see figure 5.7 on page 193), I background shaded the keywords with yellow. It is a colour which is said to have some affinity with the brain's cognitive processes and the process of management is very rational. In the interests of space, I will repeat the Venn diagram from figure 5.7 in a reduced scale as figure 7.15 below. But I will summarise my description of the semantic field, as it is manifested in the linguistic discourse of green business and the radical NGOs.

Figure 7.15: The distribution of keywords in the semantic field of management

The first impression one gains, from figure 7.15, is the enormous number of keywords in the linguistic discourse of green business. Including the seven common two- and three-word keywords, this semantic field accounts for 43% (=64/150) of the top 150 green business

two- and three-word keywords. A few of them refer to standards and objectives that have their origin in agencies external to the green businesses. But the vast majority of the keywords refer to the internal business processes by which the corporation manages itself, with the objective of improving its operating efficiency. The list of keywords used by the radical NGOs is much shorter, and there are two strands of this semantic field which are evident. First, there is evidence of an appeal to government and international agencies, to find ways of controlling the activity of international business, as well as a moral appeal to the concept of environmental justice. The need for corporate control is also revealed by terms such as *accountability* and *compliance*. Second, the radical NGOs focus more on the damaging effects on the natural landscape, i.e. whereas the green corporations represent their actions in all the four boxes, the radical NGOs dwell more in the first box in the flow chart.

In the next section, I shall present a few examples of the contextualisation of one-word 'keywords', which belong to the semantic field of the socially-constructed landscape. In section 6.5 on page 235, I showed that this mechanistic, corpus-level approach provided a useful indication of the extent of variation in usage of a word. However, the patterning, that it is capable of revealing, is limited by the distinction between meaning and linguistic sign that I have referred to, in connection with Wordsmith's search process. The empirical procedure would produce more accurate results, if Wordsmith was capable of identifying both single- and multi-word *units of meaning,* which belong to the semantic field of the socially-constructed natural landscape. In that case, it would be possible to see how language communities contextualised these units of meaning. But Wordsmith can only register signs on the electronic page, with the result that words are registered as being collocates of a node when, in the reality of their usage, they are really part of a multi-word unit of meaning which incorporates the node. This problem might be solved by attempting to identify the units of meaning manually, as I have done with the two- and three-word keywords. However, here the empirical procedure is frustrated by an error in the Wordsmith procedure; it will generate a concordance report, based on a multi-word unit of meaning which I have selected, and it will then produce the analysis of all the contextualising collocates. But when asked to rank these collocates, by calculating their MI with reference to the BNC, Wordsmith calculates an MI of zero for all of them. I must, therefore, limit this contextualisation procedure to the analysis of single words, accepting the empirical problems of so doing, and recognise that the procedure, although promising, remains a fairly crude yardstick, compared to the concordance-report approach which I summarise in section 7.5.3.

7.5.2 Contextualisation evidence in the linguistic plane

The procedure I have used, for generating the contextualisation reports, is the same as the one I used in chapter six (see sections 6.2.3 on page 221 and 6.3 on page 223). However, instead of the overlapping Venn diagrams that I used in the previous chapter, I have chosen, this time, to illustrate the results using something I call a *target diagram*. My reason for doing this lies in the empirical challenge which is set by the incorporation claim. The appropriation claim of chapter six required that I made comparisons, between the contextualisation patterns in the radical NGO corpus and those in the green business corpus. But the incorporation claim is best tested by examining how the semantic field of the socially-constructed natural landscape is contextualised by just one language community – green business. In both my Venn diagram procedure and this target diagram procedure, the selection requires that a collocate has a specific mutual information index (MI) of at least 3.0. However, once a word qualifies because it has an MI $\geq$ 3.0, the Venn diagram presentation gives no indication of its MI value and hence its importance, relative to the other qualifying collocates, in contextualising the node word. The advantage of my target diagram is that it enables me to illustrate the ranking of the contextualising collocates around a particular keyword. The closer the collocate is to the centre of the target, the higher is its MI and the greater the significance of its contextualisation role on the node word.

A single target diagram, for green business, will show the statistically significant unusual contextualisation of a node word, relative to the general English benchmark which is provided by the BNC. Greater empirical credibility would be provided, by a comparison with the same diagram for the contextualisation of the same word in the corpus of the radical NGOs. This is particularly important with respect to my testing out of Stubbs' methodological challenge. I have provided these comparisons in section K.3 from page 560, along with my interpretation of the results, and discussion of these diagrams' ability to show us useful patterns. In the interests of space, however, I have taken just the comparison for BIODIVERSITY into this section, while the remaining node words which I have selected for illustration, just have the target diagram for the green business corpus.

In figure 7.16 below, I now present the two target diagrams, which illustrate the significant unusual contextualisation of the linguistic sign BIODIVERSITY, in the corpora of the radical NGOs and green business. Visual comparisons are, perhaps, easiest when they are side by side, as I have presented them in appendix K. But in order to make the scale large enough to read easily within the confines of a portrait-style layout, I present them one above

the other. My comments are a summary of the findings and conclusions, which I make in section K.3 from page 560, and this comparison, based on the example of BIODIVERSITY, is illustrative of these general tendencies.

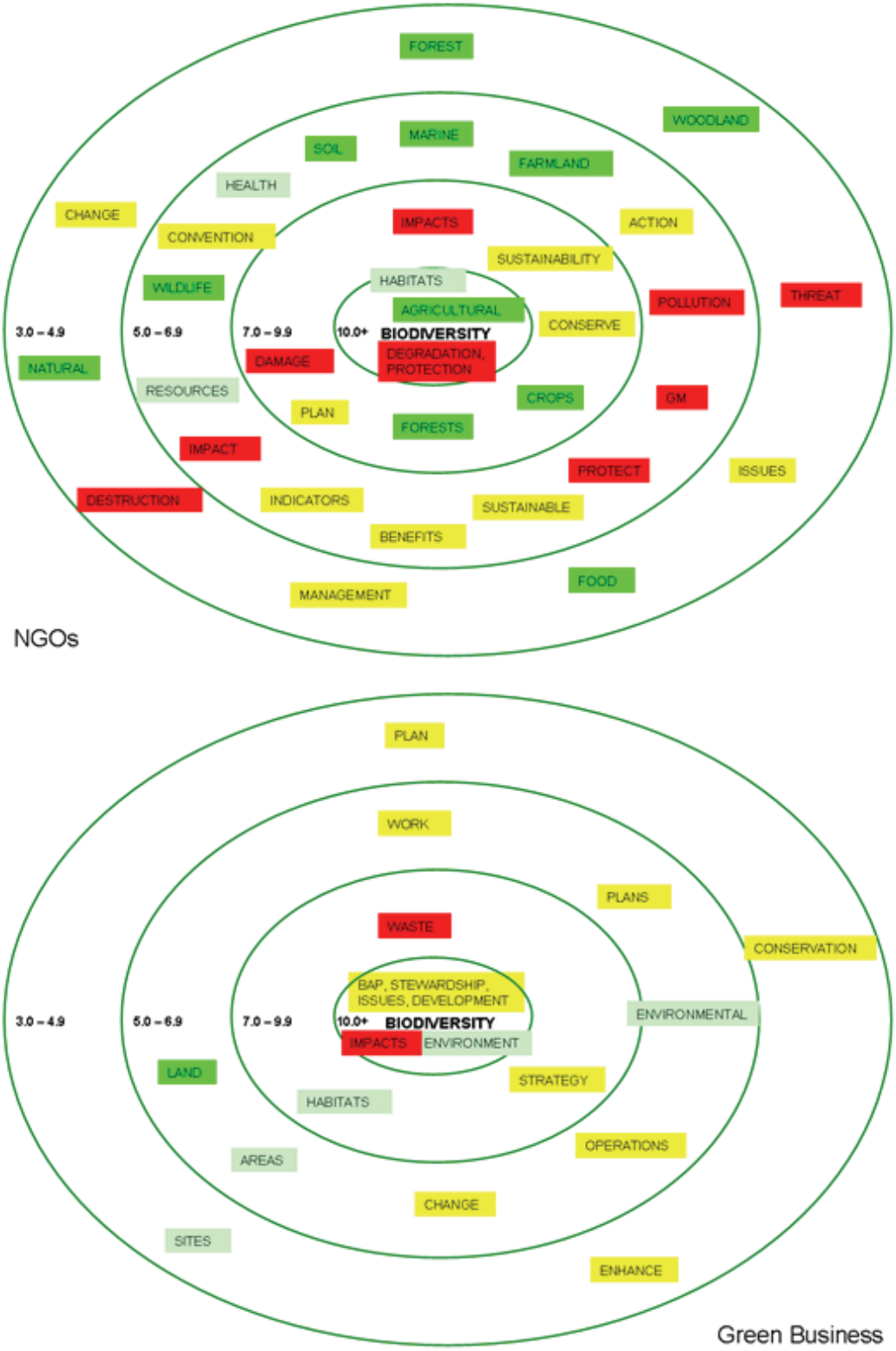


Figure 7.16: A comparison of the significant contextualisation of BIODIVERSITY in the linguistic discourse of the radical NGOs and that of green business

I have three general observations to make. First, the corpus of the radical NGOs tends to generate a larger number of significant collocates of the node word, than does the corpus for green business. The conclusion which I draw, from this finding, is that the NGOs make the most radical representations of the socially-constructed natural landscape, as seen from the perspective of the BNC benchmark. Second, with the exception of the pair for HEALTH, there is considerable divergence in the collocates that appear in the diagrams for each word. This means that the contextualisation of the node word by the protagonists, is unusual, both compared with the BNC standard and compared with each other. In the case of HEALTH, the green business listing has a total of fifteen collocates, of which eight are 'unique' and seven – almost half, shared with the listing for the radical NGOs. The list for the radical NGOs has a total of 32 collocates, of which 25 are 'unique'. In the example of BIODIVERSITY, in figure 7.15 above, the green business target diagram has a total of 21 collocates, of which sixteen are 'unique'. The five collocates which are shared with the diagram for the radical NGOs are ISSUES, IMPACTS, HABITATS, CHANGE and PLAN. The target diagram for the radical NGOs has a total of 35 collocates, of which 30 are 'unique'. In the other three examples I have selected for inclusion, the proportion of shared words never exceeds one third of the complete list and, sometimes, is as low as one tenth. This finding supports the view that the words, in the semantic field of the socially-constructed natural landscape, are just as prey to the contextualisation of their user communities, as the semantic field of concern which I examined in chapter six. The prospects for building a discourse of *shared* meanings, based on this *shared* vocabulary, do not look promising.

My third observation is that the previous section's speculation, concerning the likely contextualisation of this semantic field by the two protagonists, is supported by the evidence from BIODIVERSITY. The radical NGOs' contextualisation is more colourful than that of green business. The strong primary colours of red, representing the semantic field of concern, and green, representing the 'fleshy' and 'fibrous' natural landscape, stand out very clearly. They communicate a radical NGO representation of BIODIVERSITY, which makes reference to the detail of the natural landscape, as well as the damage which it is suffering. The juxtaposition draws attention to the paucity of such representation, in the target diagram for green business. Note, too, that the only two red-shaded words, in the target diagram for green business, are the bland WASTE and IMPACTS. The radical NGOs' target diagram, in contrast, contains DEGRADATION and PROTECTION in the bull's eye, and other words such as DAMAGE, POLLUTION, THREAT and DESTRUCTION. In the green business

diagram the leading colour, among the collocates of BIODIVERSITY, is the yellow that represents the semantic field of management. In the bull's eye I have given four of the six words a yellow shading, and the first of these is BAP, an acronym for Biodiversity Action Plan – the most significant collocate of BIODIVERSITY contextualises it in an action plan.

The comments I have made with the example of BIODIVERSITY are, generally, supported by the other four words which I present. I provide the paired target diagram comparison in sections K.3.1 to K.3.5 on pages 560 to 564. Here, I include just the diagrams for the contextualisation in the linguistic discourse of green business. They are presented in figures 7.17 to 7.20 below. The general impression which is conveyed, by my five examples, supports the hypothesis. It is the yellow-shaded semantic field of management that forms the predominant framework, within which the five node words, all belonging to the socially-constructed natural landscape, are contextualised, in the linguistic discourse of green business. With respect to research question two, and making my 'language-knowledge' jump from the linguistic plane to the cultural plane, the socially-constructed knowledge of the natural landscape, which green business is acquiring, is being contextualised within the business processes, with which green business has already achieved so much success in the management of its own productive landscapes.

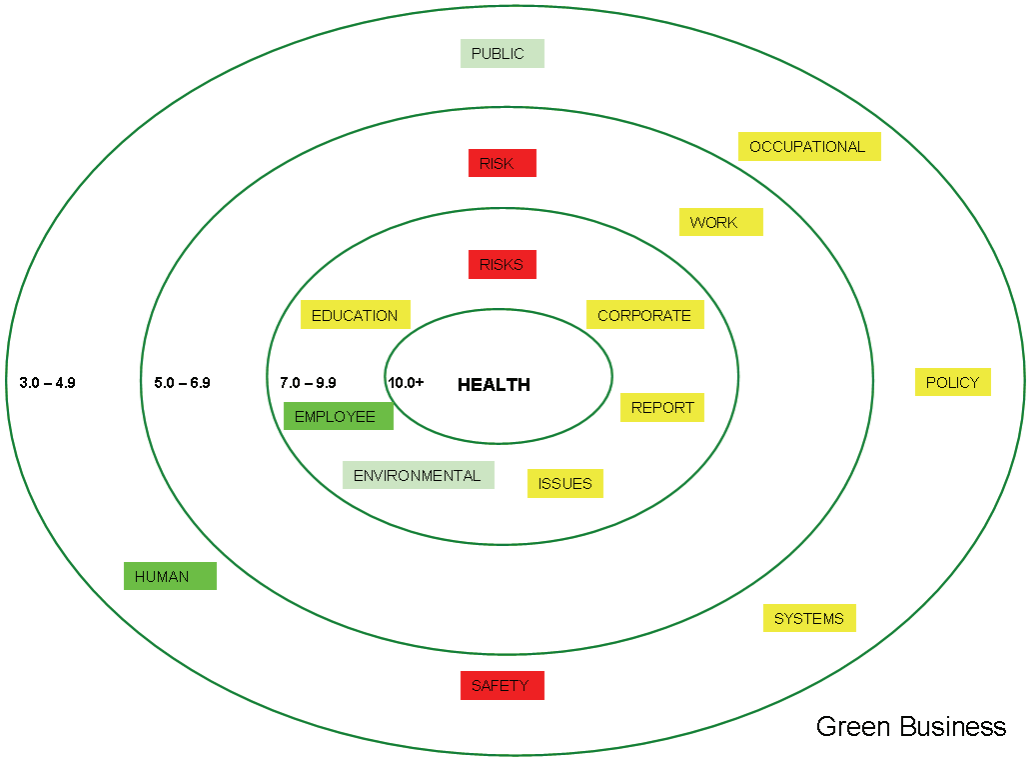


Figure 7.17: The significant contextualisation of HEALTH in the linguistic discourse of green business

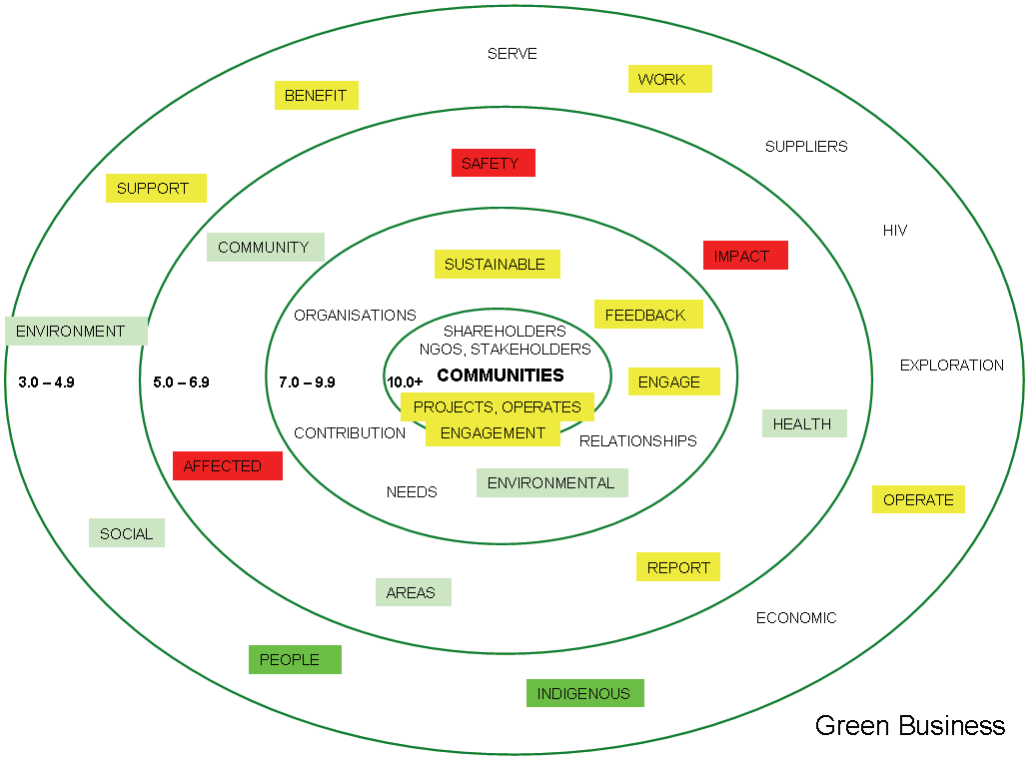


Figure 7.18: The significant contextualisation of COMMUNITIES in the linguistic discourse of green business

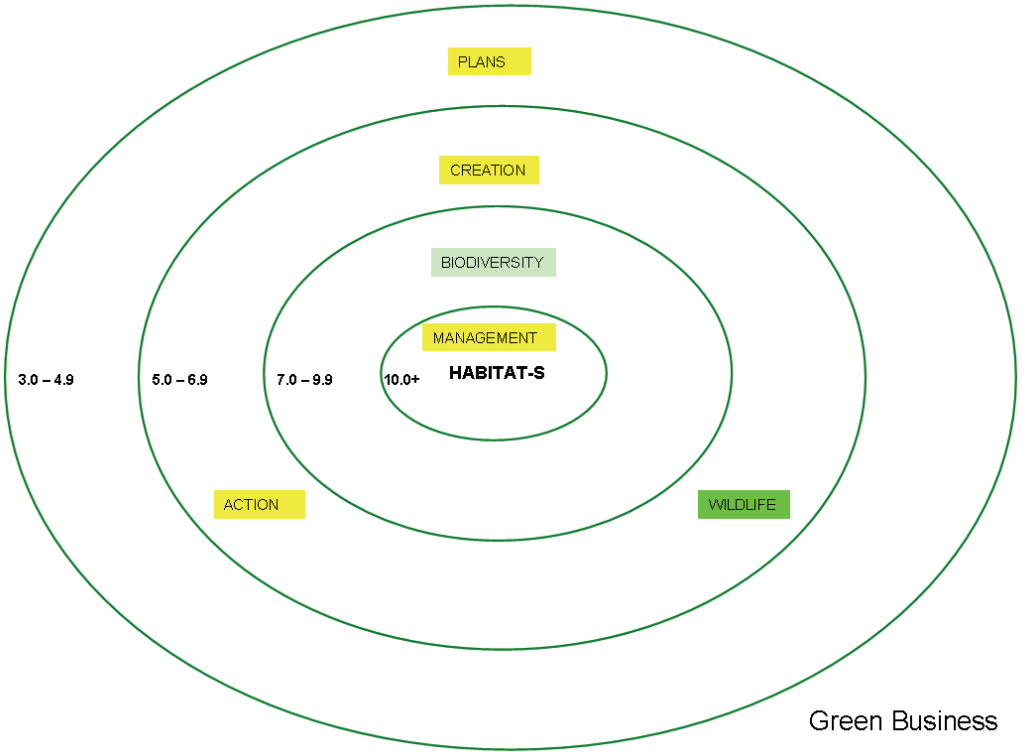


Figure 7.19: The significant contextualisation of HABITAT-S in the linguistic discourse of green business

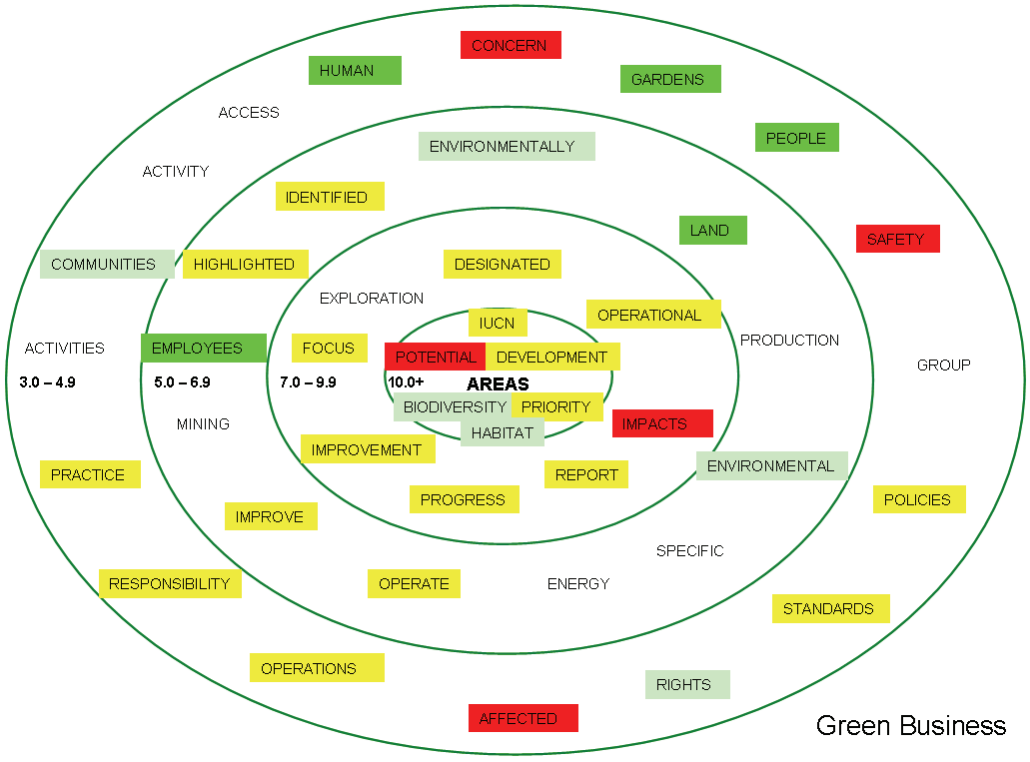


Figure 7.20: The significant contextualisation of AREAS in the linguistic discourse of green business

Having made this jump, from empirical evidence in the linguistic plane to cultural interpretation, I feel obliged to emphasise the point I have made, in greater detail, in the appendix: *I am not entirely convinced by what I have done*. To be more specific, I do not think that I have developed this contextualisation procedure to a sufficient level of accuracy, to be able to make useful and trustworthy illustrations in all cases. These five examples are the best ones, I am able to present, from a pool of about twelve reports which I have prepared. The indeterminacy which exists between linguistic signs, with which Wordsmith works, and meaning, in which we are primarily interested, leads to disturbances in the contextual patterning, which are, at present, so great that the overall corpus-level picture is obscured from view. Rather than being a representative sample, of the analysis of the whole object of study, these five examples should be considered as case studies, which I have selected in order to illustrate my argument.

In the next section, I shall take advantage of some of these corpus-level, mechanistic findings, as a basis for the concordance reports whose analysis will reveal the usage, to which some of these words are put by green business.

7.5.3 Interpretations of usage based on concordance reports

In section L.1 on page 567, I describe the procedure which I have used, in order to generate the contextualised concordance reports for the semantic field of the socially-constructed natural landscape. Rather than running a concordance report for all the occurrences of a particular linguistic sign, I have tried to isolate and, thereby, accentuate the statistically most striking pattern of usage by green business. In chapter six and appendix H, I presented pairs of contextualised concordance reports for particular linguistic signs. These were generated from the two corpora of green business and the radical NGOs, and the empirical objective was to examine possible differences in the usage of the same linguistic sign by the two language communities. For the generation of concordance reports in chapter six, I used the 'unique' collocates of the sign to limit the concordance report, as illustrated on the left of figure 7.21 below. This procedure has the effect of accentuating the differences between the two.

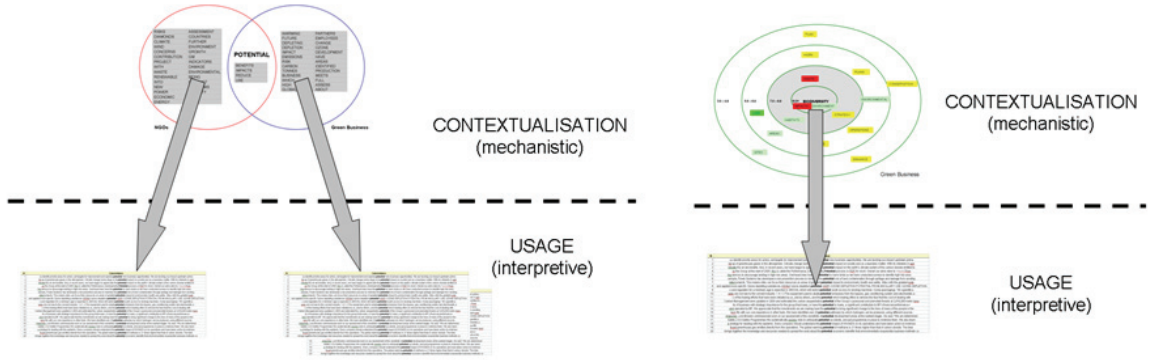


Figure 7.21: Illustration of the procedures used to generate contextualised concordance reports – chapter six on the left and chapter seven on the right

However, in this chapter I examine the linguistic evidence of just one language community: green business. In order, therefore, to accentuate its patterns of usage, I elected to limit the concordance reports, by only using the statistically most significant collocates of the linguistic signs, as illustrated on the right of figure 7.21. The procedure I used, was to take the edited list of collocates for each linguistic sign and reject all the collocates, which had an MI value below 7.0. The reason why I chose MI ≥ 7.0, as the criterion for selection of the contextual collocates, was that, from a review of all the eighteen linguistic signs under examination, this figure was a good trade-off. On the one hand, I needed to find a cut-off point which was low enough to ensure that as many of the linguistic signs as possible could be included in this contextualising procedure, i.e. they had at least one collocate with an MI ≥ 7.0. On the other hand, I wanted to keep the number of contextualising collocates, around a

linguistic sign, down to a reasonably small number, so that the concordance reports were limited by the statistically most significant collocates. The higher the MI value I used, the more the procedure would attempt to emulate the experience of Welford as he registered, from his own reading experiences of green business discourse, that there was something unusual about the way in which the corporations contextualised, what he referred to as, *the language of the environment*. The object of study was the eighteen 'keywords', which I have proposed, as belonging to the semantic field of the socially-constructed natural landscape, in the linguistic discourse of green business. This is shown below in the shaded circle in figure 7.22. With the selection criterion of MI ≥ 7.0 there were two linguistic signs which had no collocates: SITE and HABITAT. These were omitted, therefore, and the procedure was carried out on the remaining sixteen words.

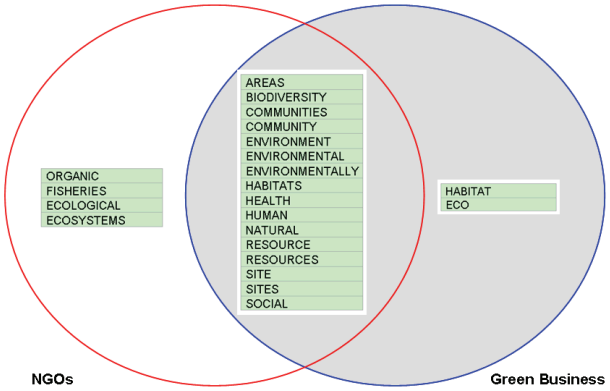


Figure 7.22: A Venn diagram of the distribution of the semantic field of the socially-constructed natural landscape in the top 500 one-word 'keywords' with the semantic field of green business in focus

The lists of contextualising collocates are all presented in table L.1 on page 569, and are followed by sixteen twenty-line concordance reports (see tables L.2 to L.17), one for each of the sixteen qualifying linguistic signs, out of the eighteen shown in figure 7.22 above. The order of presentation of the concordance reports is, however, rearranged to suit my interpretive logic. I have organised them into five smaller groups, and I present a summary version of my comments here. Before doing so, I will remind the reader that my observations, about the usage of these linguistic signs, do not describe some 'average' of all the occurrences in the linguistic discourse of green business. As I have tried to emphasise, I am examining a subset of the most striking usages of the words, as viewed from the perspective of the BNC.

In my first subgroup, consisting of ENVIRONMENT, ENVIRONMENTAL and SOCIAL, the evidence suggests that these signs are not really used to make any reference, to

a socially-constructed natural landscape. Rather than describing the natural landscape in more abstract ways, the evidence shows that their usage has been turned around, so that they are applied to describing the management processes that green business has implemented, in order to be green. Neither in the second subgroup, of ENVIRONMENTALLY and ECO-EFFICIENCY, is there any reference to the socially-constructed natural landscape. In the distinctive linguistic discourse of green business, these two linguistic signs are used to describe one of the corporations' intended objectives for their productive landscapes, namely *environmentally-responsible* operations, which can be achieved through the processes of *eco-efficiency*.

The third subgroup consists of RESOURCE, RESOURCES and NATURAL (GAS). The usage of these 'keywords' exemplifies the classic business approach to the natural landscape. In this view, the natural landscape is valued as a provider of raw material inputs for business's productive landscapes. Added to this, is the enlightened green business strategy of resource conservation – making sure that Mother Nature's gifts are managed carefully. In the concordance reports for these three words (see tables L.7, L.8 and L.9), there is the first strong evidence of the semantic field of management.

In the fourth subgroup I present, in tables L.10 to L.13, concordance reports for HEALTH, COMMUNITY, COMMUNITIES and HUMAN RIGHTS. With the exception of the last report, the evidence shows that, within the linguistic discourse of green business, their usage is most often within the contextual framework of the corporate management process. The pattern is most easily seen, by simply running one's eye over whole reports and gaining an impression of the extent of the yellow shading, around the light green shaded node word. The four words are presented in declining order of their manageability (!). Within the linguistic discourse of green business, HEALTH (see table L.10) is most manageable, with eleven out of thirteen examples. COMMUNITY follows and then COMMUNITIES, both with relatively high proportions of manageable usages. The report for HUMAN RIGHTS (see table L.13) comes last, and its evidence suggests that the green corporations have made only very modest progress, towards incorporating it within their management processes.

In the final section, for the fifth subgroup, which I have called *Managing the natural landscape*, I present the four concordance reports for SITES, AREAS, BIODIVERSITY and HABITATS. With these four 'keywords', the green business focus shifts from the human to the non-human elements, of the natural landscape. In the previous subgroup's reports for COMMUNITY and COMMUNITIES, the green business representations reflect a perception

of activity or passivity, in the people with whom they establish relationships. In this subgroup, however, the elements of the natural landscape are passive with respect to green business initiatives. This makes them more uniformly amenable to incorporation, within green business management processes, and this is reflected in the pattern of usage. In table L.14, the first of these reports, on the 'keyword' SITES, provides an illuminating side-by-side comparison of green business reporting systems, which are capable of managing first, the corporations' productive landscapes and, second, the natural landscapes in which they have taken an interest. The next report (see table L.15), presents the usage of AREAS and here we see the same management processes, contextualising those AREAS which refer to the 'fleshy' and 'fibrous' natural landscape. HABITATS and BIODIVERSITY repeat the pattern of management. In figure 7.23 below, I have copied the twenty-line concordance report for HABITATS (see table L.16). There, it is presented in full-page landscape style and the text can be read, to confirm the usage of each occurrence of HABITATS. Here, the purpose of my including the report is to convey, through its yellow shading, the pervasiveness of green business's semantic field of management, around the light green shading of HABITATS. All of these four reports reinforce the evidence from the linguistic plane that, in its representations at least, green business manages the socially-constructed natural landscape.

N	Concordance
1	ss raising, action plan monitoring and audit. Brown Hare The brown hare is found throughout Britain. It is mainly nocturnal and is generally found in open grassland habitats with nearby woodland and hedgerows which provide resting places or "forms" during the day. The hare's diet consists mainly of herbs and grasses in summer and
2	Spotted Flycatcher Muscicapa striata Action Plan 1. Introduction 1.1 The spotted flycatcher is a summer migrant to the UK. The species prefers habitats of open woodland, hedgerows with mature trees, parkland and large gardens. The species feeds almost entirely on insects. 1.2 The spotted flycatcher generally a
3	icroscopic plants and animals to larger species such as common frogs and dragonflies. In addition, standing open water habitats are commonly fringed by important wetland habitats such as marshy and swamp, which are covered in a separate swamp and marsh Habitat Action Plan. This broad standing open water Habitat Action Plan has been pr
4	nhance selected scrub habitats and create new scrub areas in appropriate locations with low current nature conservation particularly where these border existing woodland habitats. WT ? ? ? ? ? 4.2 Action Potential Partners Year Meets Objective No. 2003 2004 2005 2006 2007 2013 5.2.4 Develop generic management prescri
5	Swamp And Marsh Habitat Action Plan 1. Habitat Description 1.1 The term 'swamp and marsh' covers a range of wetland habitats where water is at or near the ground surface for most of the year. Swamp and marsh vegetation tends to be associated with ponds, floodplains and lakesides. 1.2
6	ion plan is reviewed and updated. WT ? ? 4.3 5.4 Awareness 5.4.1 Produce an internal communication so that best practice for the conservation of improved grassland habitats can be used by staff where they occur on site. WT ? ? ? 4.4 5.4.2 Make areas of improved grassland available for recreation and amenity where this does not
7	ecological survey programme. WT ? ? ? 4.1 5.1.2 Develop an information management system which records and manages improved grassland data alongside other priority habitats. WT ? 4.1 5.1.3 Implement data management system, recording improved grassland data & keep up-to-date as appropriate. WT ? ? ? ? ? 4.1 5.1.4 Research
8	animals and provides corridors allowing dispersal and movement between other habitats. Such habitats are becoming increasingly valuable for wildlife, as other grassland habitats are lost. 2.2 Current threats to the improved grassland habitat include: ▪ Recreational pressure. ▪ Adding nutrients through leaving grass cuttings 'in-s
9	on the broadleaved woodland habitat action plan. LA, WT ? ? ? ? ? ? 4.4 5.4.3 Encourage appropriate public access for study and enjoyment of broadleaf woodland habitats. WT ? ? ? ? 4.4 5.4.4 Publish results of broadleaved woodland habitat action plan. - ? ? ? ? ? ? 4.4 6. Partners EN – English Nature LA –
10	cological survey process. WT ? ? ? 4.1 5.1.2 Develop an information management system, which records and manages broadleaved woodland data alongside other priority habitats. WT ? 4.1 5.1.3 Implement data management system, recording broadleaved woodland data & keep up-to-date as appropriate. WT ? ? ? ? ? 4.1 5.1.4 Suppor
11	Partners Year Meets Objective No. 2003 2004 2005 2006 2007 2013 5.1 Data Collection & Information Management 5.1.1 Determine the extent of broadleaved woodland habitats on all Biffa landholdings through the ecological survey process. WT ? ? ? 4.1 5.1.2 Develop an information management system, which records and manages bro
12	ollection Site Management Monitoring Biodiversity Noxious Invasive Pest & Management & Audit Awareness Weeds Species Species SPECIES & HABITAT ACTION PLANS SPECIES HABITATS Skylark Woodland Nature Conservation Amenity Linnet Broadleaf Woodland Lowland Meadows Improved Grassland Brown Hare Scrub Swamp & Marsh Built Up Areas & G
13	contribution Montgomeryshire Lake Vyrnwy – 3 year population monitoring project undertaken with recommendations for future management of the moorland & woodland edge habitats Peak National Park UDV – UK's first major re-introduction project launched in October 2003 Black Poplar LBAP Target STW action STW contribution Derbyshire
14	ientific Interest (SSSIs) in our region. A number of these have been identified as being of European importance, and under EC Directives on the conservation of natural habitats, flora & fauna, and birds, are nominated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Special Areas of Conservation are strictl
15	ent Plans; and ▪ Implementation/asset management of the Management Plans. Generation supports the employment of two rangers to help protect and enhance the wildlife habitats at our Musselburgh and Valleyfield ash lagoons. These rangers actively manage the reserves and help the public to enjoy the facilities provided. A valuable bi
16	tegy is to minimise damage to biodiversity when we develop new projects or as part of our maintenance operations and to positively enhance our landholding for species, habitats and heritage through measures such as our Rural Care Programme. ScottishPower aims to set a good example to other energy users by actively seeking to minimise
17	graze on Bridger Coal Company's successful reclamation site, also located in Wyoming. PacifiCorp regards mining activities as an opportunity proactively to enhance habitats. Taking part in biodiversity Our Environment Policy states that "…we will strive to continue to be regarded as a good and trusted neighbour…". We engage ou
18	tishPower Environmental Performance Report 2003/04 Performance Review Our strategy for the management of biodiversity issues is to minimise impact, positively enhance habitats, ensure that planned restoration enhances habitat and species where environmental impact is unavoidable and contribute to biodiversity processes such as Local
19	into sites in ten countries started the BirdLife International/Rio Tinto partnership. The organisations share the aim of enhancing the conservation of birds and their habitats as a means of contributing to sustainable development. The fourth annual Rio Tinto mine site birdwatching events organised by BirdLife and Rio Tinto during 200
20	y five of the world's people rely on plants for primary health care, and plants help regulate our climate and bind our soils. They provide food, fibres, timber, fuel and habitats for the wildlife, birds and insects that keep our fragile ecosystem in balance. Our Investing in Nature programme, through Botanic Gardens Conservation Internat

Figure 7.23: Twenty random lines extracted from the contextualised concordance report for HABITATS in the linguistic discourse of green business

7.6 Summary – the incorporation claim

Figure 7.24 below, is a copy of figure 7.1 with which I opened this chapter. My empirical objective has been to examine the linguistic plane, for evidence that might either substantiate or reject the argument, advanced by both Richard Welford and Bill McKibben, which I have called *the incorporation claim*. In my reformulation of the claim, into a format to which I might be able to respond empirically, I arrived at two specific research questions. First, what knowledge of the natural landscape is being selected by green business for inclusion? Second, how is that knowledge incorporated, linguistically, within the traditional language of business?

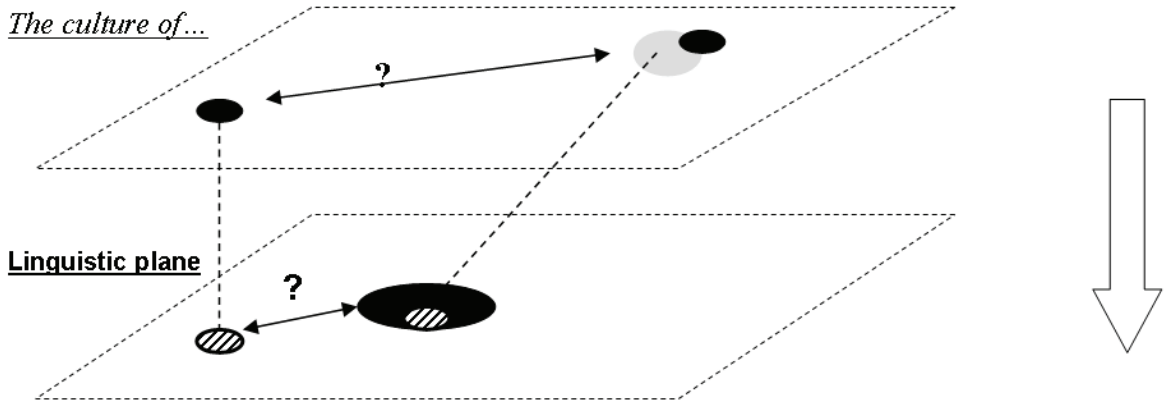


Figure 7.24: Is there any evidence in the linguistic plane to support the claim that nature is being incorporated within culturally-defined processes?

I have demonstrated that, in marked contrast to the radical NGOs, the linguistic discourse of green business contains very little language that makes a representation of, what I have dubbed, the 'fleshy' and 'fibrous' natural landscape. An important implication of this evidence is that without a common vocabulary, the prospects are nil, for establishing a discourse of *meaning* between green business and the radical NGOs, on the subject of the 'fleshy' and 'fibrous' natural landscape. However, the language of the environment which green business *is* adopting, or may well have a hand in creating, is a vocabulary of a socially-constructed natural landscape. The linguistic evidence shows that, in addition to its adoption by green business, this is a vocabulary of which the radical NGOs also make use. With reference to the linguistic plane of figure 7.24 above, a clear majority of the group of linguistic signs of this semantic field, corresponds to the two small spots with a diagonal line-patterning. Staying with the two-plane schematic of figure 7.24, and employing my 'language – knowledge' assumption to jump to the cultural plane, I can now make a more substantial response to research question one. The linguistic evidence suggests that green business is not

acquiring knowledge of the 'fleshy' and 'fibrous' natural landscape to any significant degree. Rather, it is acquiring (or creating?) knowledge of a *socially-constructed* natural landscape. In addition, it is also creating knowledge of the relationships which exist, between its own productive landscapes and this socially-constructed natural landscape. I have illustrated this previously in figure 7.11, which I now repeat below as figure 7.25.

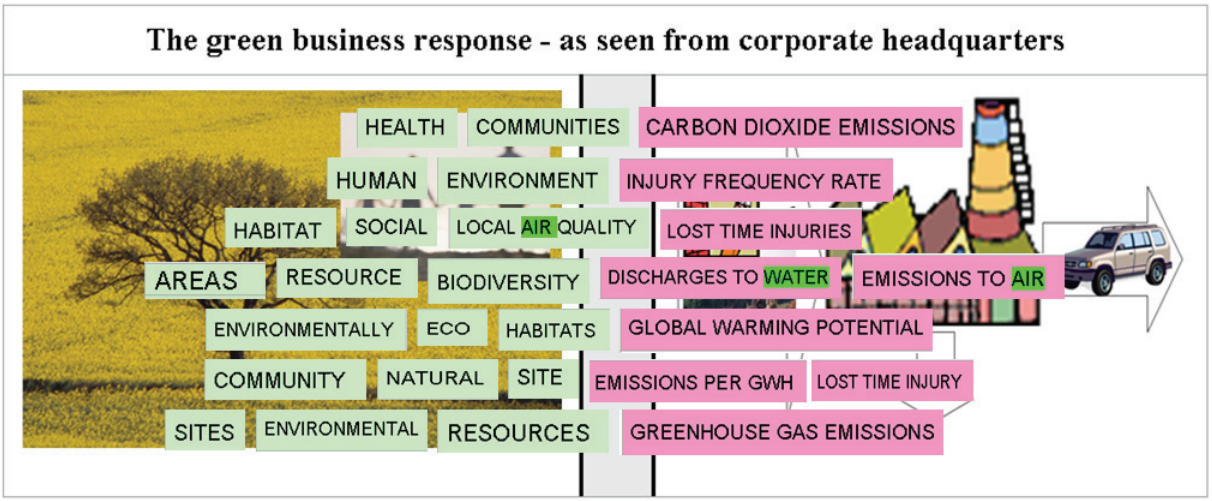


Figure 7.25: The semantic field of the socially-constructed natural landscape and the socially-constructed agents of damage

The great virtue of this language, for green business, is that it provides corporate headquarters with the means to construct models and, through the manipulation of these models, to construct a bridge between the two landscapes across which it can *manage*. On the one side, it can *measure* the emission levels of its own productive landscapes, and relate these to its already existing business models. On the other side, it can *measure* the impacts of these emissions on the natural landscape, by representing it in a socially-constructed language which models the 'fleshy' and 'fibrous' reality. Through the accumulation of this knowledge, it becomes possible to *manage* nature by *managing* the productive landscapes.

This brings me to the second research question: how is this knowledge incorporated, linguistically, within the traditional language of business? In the context of figure 7.24 above, this question is asking for some characterisation of the large black disc in the lower plane. And the empirical response, which I provide to this question, is that the semantic field of the socially-constructed natural landscape is contextualised within a semantic field of management. Making my 'language – knowledge' assumption to jump to the cultural plane, I will now advance the interpretation that the response of green business, to the ecological critique, is to take on the burden for managing nature, as it continues with the operation of its

productive landscapes. The language of the radical environment has not, as Welford claimed, been hijacked; rather, it is under new management. The sign, in the window of green corporate headquarters, reads *Managing nature – business as usual*.

8 Summary and concluding remarks

8.1 Introduction

I have three tasks to accomplish in this short, final chapter. First, in section 8.2 I shall briefly gather together the findings of the project.[1] Then, in section 8.3, I shall discuss the shortcomings of my methods and the time-imposed limitations on my results. In doing so, I will also make a brief evaluation of my contribution and set up an agenda for further research. Finally, in section 8.4, I shall conclude the thesis with a personal reflection on this work.

8.2 Summary of the project's findings

8.2.1 The hijack hypothesis explained

I concluded chapter one with a rejection of the hijack hypothesis and, as part of my explanation, presented figure 1.15 on page 34, which I repeat below as figure 8.1. In the diagram, I suggested that Welford had constructed the culture of green business as a kind of 'mirage' of the linguistic plane and, as a consequence, placed it mid-way between eco-radicalism and liberal-productivism, even though he argued forcefully that the 'culture' of green business, what he called *eco-modernism*, was really just a minor improvement on liberal-productivism.

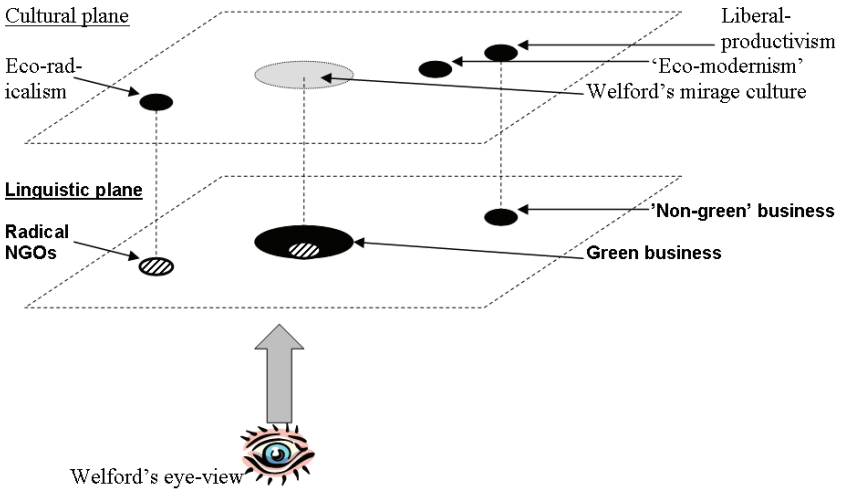


Figure 8.1: Welford's 'mirage' of green business culture in the cultural plane

In chapter one, I suggested that the source of the confusion lay in his conflating the linguistic plane and the cultural plane. Now, exploring the consequences of my validation of the appropriation claim, I can be more precise. The corpus linguistic evidence of the lower

[1] For readers interested in more detailed summaries, I refer to the closing sections of chapters five, six and seven.

plane reveals that the conventions of usage – *the discourse semantics,* to use the systemic functional grammarian's terminology, of the two language communities, vary considerably in some specific areas of environmental vocabulary. The differences in these conventions of usage mean that we can more accurately conceive of the discourse semantics as a lens, lying over the linguistic signs that the language communities use.[2] Reflecting the fact that each community has its own conventions of usage, each discourse semantics lens refracts meaning in different directions. The problem, for the typical reader of linguistic signs, is that she has just one 'discourse semantics lens' with which to interpret meaning.[3] If I now adjust figure 8.1, we can see that the problem with Welford's interpretation is not so much the position of his eye-view, as the fact that, not having access to the discourse semantics of the corporations, he applies his own lens to the linguistic signs of green business. Whereas his own lens constructs meanings in vertical lines from the linguistic discourse, the green business lens refracts meaning towards the position of liberal-productivism, as I have illustrated in figure 8.2, below.

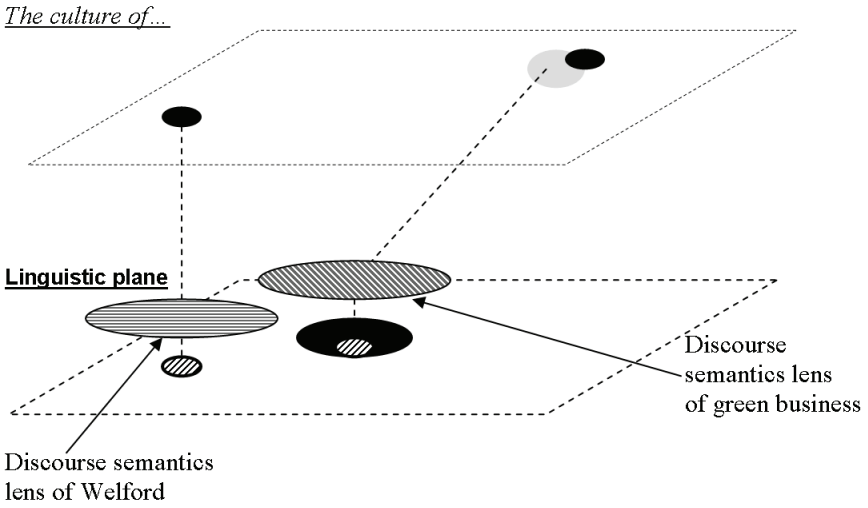


Figure 8.2: The effect of the different 'discourse semantics lenses'

In order to understand the linguistic discourse of green business, *as green business intends it to be understood*, one needs to apply the same conventions of usage to the linguistic signs as green business does. If these British green corporations had written their linguistic discourse in a foreign language, we would immediately have called in the help of a translator

[2] My metaphor of different lenses to denote different discourse semantic conventions of language usage, when I have already made considerable use of the lens metaphor to suggest different experiences of reality, is not accidental. However, I will not attempt any closer parallels in this thesis.
[3] Some culture studies readers may be familiar with the term *ethno-semantics*, which explores the different ways in which different ethnic groups conceptualise terms. This is a direct parallel with the linguists' notion of discourse semantics.

to help us understand their meanings. But, because they write in English, we assume that we can 'translate' what they have written without assistance. Through the development of my empirical response to the appropriation claim, I have demonstrated that corpus linguistics can reveal the differences in the discourse semantics. In this way, we are better able to make a sympathetic interpretation of the linguistic discourse of the players.

8.2.2 Control of the linguistic discourse

One interpretive response I made to the hijack hypothesis was to suggest that green business discourse might be more persuasive than that of the radical NGOs in regard to one of its most important target audiences – the British state. This would imply that the latter's linguistic discourse looks more similar to the corporations' representations of experience than that of the radical NGOs. I attempted my corpus linguistic response to this hypothesis in chapter five, introducing the third corpus – that of the British government, into the linguistic plane, as shown in figures 5.1 on page 183 and 5.19 on page 213, repeated below as figure 8.3.

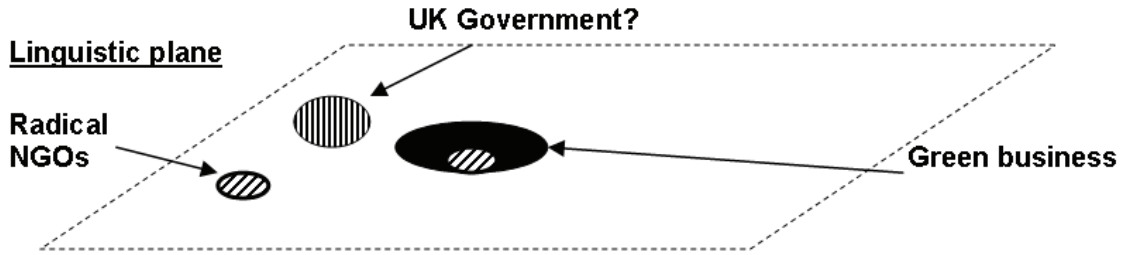


Figure 8.3: Comparison within the linguistic plane

I conducted a comparison of the three corpora using one-word, two-word and three-word keywords and my technique of semantic fields of coherence. The evidence, from the two-word and three-word keywords, gave no support to the hypothesis that the government's representations looked more like those of green business than those of the radical NGOs. Rather, it presented a fragmented view of the linguistic plane, in which different players compete by projecting their own representations of experience. The relatively modest overlap between the corpora, which was suggested by the two- and three-word analysis, was in contrast to the much greater proportion of shared one-word 'keywords'. This finding, suggesting that the players were using a large number of the same one-word 'keywords' in order to construct different representations, gave further support for the appropriation claim, which I investigated in chapter six.

8.2.3 The appropriation claim

As I shall demonstrate in section 8.2.6, Welford was already on the trail of the appropriation claim, when he made his hijack accusation in 1997. From a linguist's point of view, appropriation is a more precise metaphor for understanding what has happened. The hijack hypothesis assumes, wrongly, that linguistic signs only have one meaning and that the original users of the vocabulary have copyright on that meaning. The metaphor of appropriation, on the other hand, creates space for different usages and, therefore, different meanings of the linguistic signs as, for example, when a new discourse community adopts them into its representations of experience. In chapter six, I identified the one-word 'keywords' that are common to the radical NGOs and green business within the semantic field of concern. Applying my two-stage methodology, first of comparative collocate contextualisation, and second of contextualised concordancing, to the eighteen common one-word 'keywords' of this semantic field, I showed that there are considerable and systematic differences in their usage. On the strength of my analysis of these eighteen 'keywords', green business is both adopting the vocabulary of the radical environment and putting it to use in new ways. Welford's 'hijack' is better understood as an appropriation, but his instinct about the tendency to take words out of their original contexts and thereby alter their meanings was right.

8.2.4 The incorporation claim

Welford also argued for his hijack hypothesis in other ways, one of which I interpreted as the incorporation claim, in section 2.5.6 on page 79. According to this hypothesis, green business 'culture' selects the knowledge of the natural landscape which it wishes to acquire and, to use Welford's terminology, "embeds" it within its existing knowledge of its own systems.[4] Here, I think, is the most important contribution I can make. Corpus linguistics has enabled me to respond affirmatively to this claim by showing how green business incorporates lingustic signs of nature. First, I have demonstrated that the green corporations' favoured vocabulary is of a *socially-constructed* natural landscape that serves as a rather poor representation of the real natural landscape. In contrast, the radical NGOs' semantic field of the *fleshy and fibrous* is a more faithful attempt to represent the natural landscape. However, I have shown that the vocabulary of the socially-constructed natural landscape is also present in the discourse of the radical NGOs, and suggested that it is in this common linguistic ground that a fruitful discourse of meaning might be cultivated by the two protagonists.

[4] The "eco-modernist approach sees the future as being a product of what is here and now. Environmentalism, it asserts, must therefore be embedded in what is here and now." Richard Welford, *Hijacking Environmentalism*, 32.

Further, I have argued that the great merit of this language of the socially-constructed natural landscape is that it can be measured and, therefore, that it lends itself to a process of management, as I illustrated in figure 7.25 on page 302, repeated below as figure 8.4. The measurability of the natural landscape enables green corporate headquarters to construct a model of it, just like the models of its productive landscapes, with which it operates so successfully. Linguistically, the representations of the agents of damage undergo the same process of conversion to a socially-constructed form. For example, a fleshy and fibrous *broken leg*, sustained by a worker falling from an unsecured gantry, is represented as a socially-constructed *lost time injury*. Because the pink language and the pale green language are both measurable, they provide a means of linking the two landscapes and, in this way, the green corporation constructs models of the relationships which enable it to manage nature, while it continues to run its business as usual.

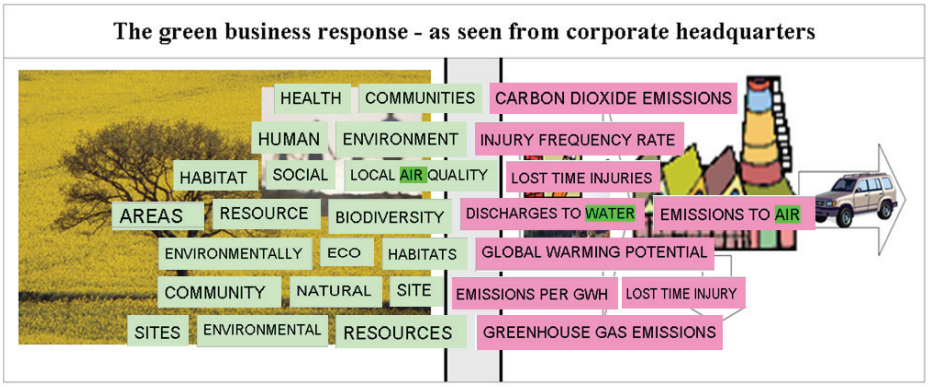


Figure 8.4: The development of the language for the management of nature

8.2.5 The methodological challenge

The results from my work on the appropriation claim have also provided a response to the methodological challenge, which I based on an argument advanced by Michael Stubbs as quoted in section 1.1.2 on page 2. He suggested that the members of a discourse community would tend to use the lexicogrammar of language "in regular ways, in large numbers of texts" and that such "discourse patterns tell us which meanings are repeatedly expressed in a discourse community."[5] In my analyses of the eighteen common one-word 'keywords' of the semantic field of concern, I found that such systematic differences in the usage of the lexicogrammar do exist. Interpreting Stubbs' "patterns" in a literal sense, I developed my Venn diagrams of comparative collocate contextualisation and, as a second stage, the contextualised concordance reports, with their frame-semantics style of highlighting. With

[5] Michael Stubbs, *Text and Corpus Analysis*, 158.

both of these, I have been able to show how two different discourse communities use their lexicogrammar in systematically different ways, as the example of RISK, presented below in figure 8.5, shows. The red shading highlights what agent the text producer thinks is causing the RISK. The grey shading highlights what the text producer considers to be the consequences of that RISK materialising. Finally, the yellow shading highlights the possible ways of managing the RISK, in order to reduce the likelihood of it happening or the consequences should it do so.[6]

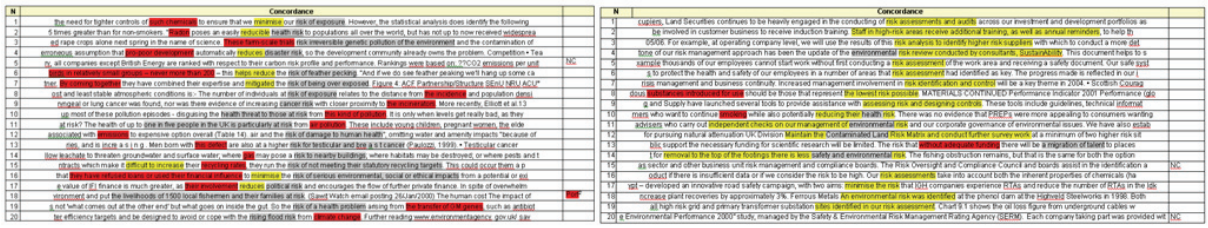


Figure 8.5: The usage of RISK – radical NGOs on the left and green business on the right

8.2.6 Welford vindicated

Richard Welford would not insist on the inclusion of this section, but I wish to state my debt, explicitly, to a researcher whose work I have cannibalized mercilessly through 300 pages. I have already alluded to this debt in sections 8.2.3 and 8.2.4. In my opening paragraph of section 2.4 on page 60, in which I introduce the appropriation claim, I make use of Welford's statement that "when we discuss environmentalism many of us are essentially speaking very different languages."[7] The source of interpretive inspiration for appropriation is obvious. As I have already written in section 8.2.4, in the development of the incorporation claim, I have leaned on Welford's (and McKibben's) idea of nature being embedded within cultural processes. Finally, I mention another observation, advanced by Welford, to which I have not had cause to refer. Here, he argues that corporate environmental techniques are based on a managerial ideology which

> is rooted in a reductionist and positivist way of interpreting the world stressing certainty, quantification and technological development. Inherent in this worldview is a rationality that prefers quantitative arguments, scientific facts and alternatives which can be ranked in a priority order.[8]

The relevance of this quote, in connection with my observations about the measurability of the socially-constructed language, will also be apparent.

[6] The full size versions can be found in tables H.25 and H.26 of appendix H.
[7] Richard Welford, *Hijacking Environmentalism*, 32.
[8] Ibid., 41.

8.3 Criticism and further research

8.3.1 Introduction

As the committee members are sharpening their knives in preparation for the criticism of the thesis, I now launch my pre-emptive strike. There is much that can be criticised. Some of the assumptions which I have been obliged to make, in order to make an empirically messy world conform to my theoretical model, have been rather dubious. My imposition, at times, of a cultural and linguistic homogeneity on the flux of organisations, their representatives and the representations of their activities, is not beyond critique. The same applies to my insistence that everyone was describing the same reality of 'business in the biosphere'. The gap between corpus linguistics and culture studies has also left me feeling that I had bitten off more than I could chew, on more than one occasion. But if it didn't try to do new things, it wouldn't be research, so I shall get straight on with describing what I would have done (i) if I had known *then*, what I know *now* and (ii) if there had been a limitless amount of time available in which to do the work.

8.3.2 The linguistic aspects of the project

There are several exercises which I would have liked to carry out on the corpora. First, I would make a better job of identifying linguistic discourse which represented the same reality. My interpretive move with semantic fields of coherence revealed the wide disparity in representations within the three corpora. Assuming that a single semantic field of coherence – *climate change* would be the obvious candidate – generated corpora that were large enough for analysis, it would be interesting to explore the differences in wording and usage when the external reality being represented was so much more similar than what I had. Second, from a linguistic point of view, my mixing of different genres such as press releases, speeches, news articles and analytical reports into one big corpus 'pot', was problematic.[9] Both of these variables could have had an impact on the accuracy of the comparative collocate contextualisation procedure, and ought to have been explored.

I could have gone further with testing research question two in the linguistic plane. In responding to this question (see section 5.3 on page 199), I was looking for evidence that the UK government was, in some way, influenced by green business. My response was that there was no evidence, based on semantic fields of coherence, to sustain the claim. But I did not conduct any analysis along the lines of the appropriation claim, to explore whether the British

[9] As I discussed in section 4.6 of chapter four, my file naming convention provided the capability to do some testing with different genre, but time was not on my side.

government's usage of language looked similar to green business. I could, for example, have conducted a three-way test on the semantic field of concern and looked at how the UK government used the one-word 'keywords' that both green business and the radical NGOs use. Using Wordsmith, there is no reason why I could not have conducted a three-way comparative collocate contextualisation exercise, and then followed up on these with three twenty-line contextualised concordance reports. Similarly, it would have been interesting to investigate the British government's representation of the natural landscape and, following my technique with the incorporation claim, look for patterns in its usage of these linguistic signs. Is, for example, the British government's representation of the natural landscape also surrounded by a semantic field of management? And what of the radical NGOs' usage of the one-word 'keywords' within the semantic field of the socially-constructed landscape? It would be ironic, indeed, to discover that this, too, was surrounded by the semantic field of management. Welford's hijack hypothesis generated plenty of research questions, and time constraints have prevented me from completing all of the empirical responses that are possible.

Given more time, I would also have immersed myself in frame semantics theory and used that to develop analytic techniques which were more than my own invention. My introduction of semantic fields of coherence was a necessary interpretive move, and it produced useful results. But it would have benefited both from a stronger theoretical foundation and also some statistical supporting evidence, which is, at the present time, not provided by Wordsmith.[10] Finally, I would have liked to be able to conduct contextualisation work within Wordsmith, using two-word and three-word units of meaning as my nodes. In this way, I could have looked at comparative collocate contextualisations of terms such as *sustainable development* and *climate change,* and used the Venn diagrams to generate contextualised concordance reports. Although this is, in principle, possible with the current versions of Wordsmith, there was an error in the release of the software with which I worked, and considerations of time prevented me from pursuing this line of investigation.

On a more positive note, I am confident that I have managed to make a contribution in pushing corpus linguistics towards culture studies. I have designed and constructed two corpora which were intended to contain the textual representations of two distinct cultural groupings. I have developed techniques for examining variation in the usage of linguistic

[10] This latter requirement is not beyond the bounds of possibility for Wordsmith, and I know that Mike Scott has been mulling over possible techniques for some time.

signs and, employing these techniques, I have been able to demonstrate systematic differences in the discourse patterns of the two cultural communities. I believe that this thesis would make a useful reference point for anyone attempting similar work and wishing to anticipate and address the difficulties I have faced.

8.3.3 The culture studies aspects of the project

In demonstrating how the process of appropriation and incorporation make possible the diffusion of linguistic signs and cultural meanings between communities, I have reinterpreted existing linguistic and cultural hypotheses. But given more time, I would have liked to deepen my empirical demonstration of the development of the language through which green business will manage nature for us. A more comprehensive and detailed demonstration of the vocabulary of this socially-constructed language, and of how the terms are used in the corporate management of nature, is where I would invest further research time. As I have already observed in connection with the linguistic aspects of the project, there remains a wealth of empirical material in my objects of study, which I would like to explore.

For example, among the three-word units of meaning, which I categorised in the semantic field of the socially-constructed agents of damage and presented in figure 8.4, is EMISSIONS PER GWH. This is a measure of the amount of pollution which is generated for each unit of electricity that is produced. It provides a means for someone to judge where the acceptable threshold level should be set, in the trade off between the productive landscape's generation of energy, and the natural landscape's ability to absorb the damage caused by the emissions. Using Wordsmith's concordance report for PER in the green business corpus as the focus of analysis, it is a simple matter to search for three-word clusters with PER in the middle slot. A few of the examples that Wordsmith reveals are PARTS PER MILLION, EMISSIONS PER TONNE, INJURIES PER 200, DISEASE PER 10 and CASES PER 100. Given time, it would be very interesting to explore how green business makes use of these terms in constructing its models of the relation between its productive landscapes and the natural landscape.

And it would be very interesting to explore the extent to which the radical NGOs, and the British government, for that matter, are also participating in this linguistic merger of the landscapes. Is this 'nature-management' project confined to green business, or is it a more widespread discourse? Most people, to whom I explain the project's findings, are appalled by the prospect of nature being managed. They want me to tell them that I have managed to expose green corporate double dealing, and that, when *sustainable development* is properly

'imposed' on the activities of green business, we will be able to continue our lives, undisturbed by the unpleasant thought that nature is under new management. My contribution will be to make a sober presentation of the linguistic evidence that demonstrates how we are destined to manage nature. I hope that this will help to puncture the balloon of over-inflated expectations about what green business can or ought to do. With the prospect before me of the corporate management of nature – an inevitable consequence of my 'delegating', onto green business, the task of organising the smooth and painless transition (!) to a sustainable society, I may recognise, reluctantly, that the responsibility cannot be ducked. It comes with the power.

8.4 My responsibility

> The men of old […] first set up good government in their own states; wanting good government in their own states, they first established order in their own families; wanting order in the home, they first disciplined themselves.[11]

And I do have enormous power. As I extend my arm to take a bar of Dove soap from the shelf of my local supermarket outside Oslo, I set in train an enormous network of interrelated processes extending across the landscapes of the earth. Every time I reach out and take something, I cause new logistical chains to be activated, involving thousands of different agents and thousands of different landscapes. It is not the green corporations which are powerful, it is me. They are my creation and they do my bidding in every corner of the earth, as I reach out to take things from the shelf.

Power brings responsibility. But I have to take *some* things. I cannot exempt myself from living in the natural landscape and I cannot, therefore, exempt myself from using some of the resources of that landscape.[12] My dilemma is not 'to take or not to take', but rather, *how much* to take. On my poorer days, I find that I want to reach out my arm and take more, and the act of taking gives me a fleeting sense of self esteem. But on my better days I can reach out, not in order to take, but to give. On my good days I can reach out to give of myself to the natural landscape, of which I am a part, as much as it is a part of me.

But as long as I continue having more bad days than good days, I must accept the responsibility, along with the rest of the human race, for the management of nature. As long as we choose to live beyond the limits of the natural landscape's carrying capacity, we will

[11] Confucius, *The Great Digest & Unwobbling Pivot*, Translated by Ezra Pound, (London: Peter Owen, 1952), 29-31.
[12] Wendell Berry, *Another Turn of the Crank*, 72. The original text is "We cannot exempt ourselves from living in this world, [and] we cannot exempt ourselves from using the world."

continue to create disturbances and imbalances in the landscape which we will be obliged to try to 'correct'. We will lurch from problem to problem, doing the best we can, to understand what is happening to the natural landscape, then to mitigate, with our technologies, the worst of the consequences.

As I write, the latest disturbance has been brought to our attention by scientists at the Norwegian Institute for Air Research. Somewhat confusingly, given the name of their institute, they have discovered high levels of sucralose in samples of sea *water* taken from selected sites around the Norwegian coast.[13] Sucralose, which is also known in the EU as E955, is 600 times sweeter than natural sugar, and twice as sweet as saccharin. It was discovered in 1976 by scientists from Tate & Lyle, working with researchers from King's College, London, and it now has a 62% share of the artificial sweetener market in the USA.[14] In addition to being extremely sweet, sucralose has the quality that human bodies are not able to absorb much of it through the wall of the stomach and intestines. Most of it, therefore, is excreted. But Norwegian sewage treatment plants also struggle to absorb sucralose, with the result that most of it ends up in the sea, where it takes a very long time to break down. Environmental scientists in Sweden report similar findings, and have begun a study of fish and shellfish in affected waters, to find out how their metabolisms are affected by sucralose.[15] After struggling to deal with the excessive saltiness of our rivers and coastal waters, caused by the nitrates in agricultural run-off, we may now have to manage a marine environment that is getting too sweet. We are a very clever species.

[13] Norsk Institutt for luftforskning, *Sukralose blir spredt i miljøet*, http://www.nilu.no/index.cfm?ac=news&text_id=28513&folder_id=4316&view=text&lan_id=1, (accessed 20th February 2008).
[14] Wikipedia, *Sucralose*, http://en.wikipedia.org/wiki/Sucralose, (accessed 20th February 2008).
[15] Swedish Environmental Research Institute, *Measurements of Sucralose in the Swedish Screening Program 2007*, http://www.ivl.se/rapporter/pdf/B1769.pdf, (accessed 20th February 2008).

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Appendices - cross-referenced table of contents

In order to assist with the cross-referencing between the main chapters of the thesis and the many appendices in which I provide supporting material, this extra 'table of contents' shows to which section of the main thesis each of the appendices applies. In some cases, the contents of a single appendix support more than one section of the main thesis (see, for example appendix C below). In such cases, I have signalled this by listing the individual section numbers and headings of the appendix.

Main thesis chapter			
	Section number	**Section heading**	**Appendix and/or section heading**
4 – Designing, building and preparing the corpora for discourse comparison			
	4.3	Design of the three test corpora	A - Design of the three test corpora and rejected websites
	4.6	Building the corpora	B - Building the three test corpora and the BNC
	4.8	Generating and editing the one-word keyword lists of the three test corpora	C- Generating wordlists and keyword lists and editing the keyword lists C.1 The minimum number of occurrences in the wordlist C.2 Editing the corpus-based keyword lists
	4.9	Comparing the edited one-word keyword lists	C.3 Making a numerical comparison of the keyword listings of the three corpora
	4.12	Discussion of the one-, two- and three-word keyword lists	D – The object of study in the linguistic plane

5 – Discourse comparisons in the linguistic plane			
	5.2	Response to research question one	E – Linguistic plane – research question one
	5.3	Response to research question two	F – Linguistic plane – research question two
6 – The appropriation claim			
	6.2	Collocate contextualisation	G – The appropriation claim – contextualisation G.1 Collocate contextualisation
	6.3	The reliability of the collocate contextualisation tool	G.2 Comparative collocate contextualisation - examples
	6.4	The language of environmentalism	G.3 A semantic field of concern
	6.5	Collocate contextualisation of the semantic field of concern	G.4 Comparative collocate contextualisation – the semantic field of concern
	6.6	Contextualised concordancing - procedure	H – The appropriation claim – concordancing H.1 Producing contextualised concordance reports
	6.7	Interpretations of usage: the semantic field of concern	H.2 Concordance reports on the semantic field of concern

7 – The incorporation claim			
	7.2	The empirical response to research question one	I – The incorporation claim – the semantic field of the natural landscape
	7.4	The empirical response to research question two – concern for the 'fleshy' and 'fibrous' natural landscape?	J – The incorporation claim – concern for the natural landscape
	7.5	The empirical response to research question two – managing the socially-constructed natural landscape	
		7.5.2 Contextualisation evidence in the linguistic plane	K – The incorporation claim – contextualisation of the socially-constructed natural landscape
		7.5.3 Interpretations of usage based on concordance reports	L – The incorporation claim – contextualised concordance reports of the socially-constructed natural landscape

Appendix A – Design of the three test corpora and rejected websites

This appendix provides supporting material for section 4.3 of chapter four. It is divided into three main sections, one for each of the three test corpora. In each section I provide a discussion of the detailed design and selection challenges which I had to face, in constructing the corpus. Each section also contains a table with an overview of some of the websites which I investigated as possible candidates for inclusion in the corpus, but which were rejected. The column heading *Reasons for rejection* provides an insight into some of the empirical difficulties that I had to deal with during the construction phase, and would make useful reading for anyone thinking of attempting a similar project.

A.1 Design of the green business corpus and rejected websites

A.1.1 Introduction

In this first of the three test corpora the objective was to select material containing the representations of British green businesses, which fall within the common discourse boundary as defined in section 4.2.4 on page 145:

> Accounts of the damaging consequences of either business activity or the ruling economic framework on the condition of the biosphere or the economic and social conditions of people, and of (a) the activity that green business is taking/not taking, or (b) ought to be taking/not taking, or (c) the necessary changes to the economic framework, in order to reduce the damaging effects of business activities or the economic framework and improve the condition of the biosphere or people.

The design challenges were almost exclusively concerned with deciding which organisations, and therefore websites, qualified for inclusion within the category of British green business. Once the websites had been identified, the downloading process was relatively straightforward. All of the corporations organise their green discourse in a very structured manner, dividing it from the more business- and investment-oriented material that is aimed at visitors with a commercial interest. The following points, which I now present, are concerned with deciding which organisations, operating in the UK, should be considered to be British green businesses.

A.1.2 Defining a green business

The green businesses which comprise the corpora were selected on the basis of their membership in one or more of the following three categories:

1. Membership of the World Business Council for Sustainable Development (WBCSD). This organisation "is a coalition of 175 international companies united by a shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress."[1] The website makes it clear that membership of the World Business Council for Sustainable Development is by invitation only. Note that, according to the website, companies "pledge their support" – which may be interpreted as a solid corporate commitment to sustainable development.[2] Note, however, that they are asked to "publicly report on their environmental performance" and further that they are asked to aspire to (!) "widen their reporting to cover all three pillars of sustainable development."[3] This means that although the corporation is required to make a commitment to sustainable development, the reporting on its progress towards sustainable operation is voluntary and may, therefore, not be found on its website. In fact, all of the eleven corporations that are included do publish some information on their progress towards sustainable operation. The quantity varies substantially.
2. Membership of the BCSD-UK.[4] The WBCSD has also established national organisations, of which the UK organisation (the BCSD-UK) is one example. Nowhere in its website does the BCSD-UK state that member companies must make a commitment to the goal of sustainable development. In an exchange of emails with the deputy chief executive, he confirmed that the BCSD-UK supported the "broad objectives" of the WBCSD, i.e. sustainable development, and that the individuals who were actively involved in the work of the BCSD-UK are "champions of sustainable development within their organisations." On this basis it was decided that there were grounds for including such companies.
3. Signatories to the UN Global Compact.[5] The compact does not require member corporations to make an explicit commitment to sustainable development. However, the scope of its three environmental principles is so comprehensive as to make this

[1] The World Business Council for Sustainable Development, *Dedicated to Making a Difference,* http://www.wbcsd.ch/templates/TemplateWBCSD5/layout.asp?MenuID=1, (accessed 5th February 2008).
[2] The World Business Council for Sustainable Development, *About the WBCSD – Membership and Governance, http://www.wbcsd.ch/templates/TemplateWBCSD4/layout.asp?type=p&MenuId=MzM5&doOpen=1&ClickMenu=LeftMenu,* (accessed 5th February 2008).
[3] Ibid.
[4] Business Council for Sustainable Development – United Kingdom (BCSD-UK), *Welcome*, http://www.bcsd-uk.co.uk/, (accessed 5th February 2008).
[5] United Nations Procurement Division, *About Us*, http://www.un.org/Depts/ptd/about.htm, (accessed 5th February 2008).

"requirement" rather superfluous. Several of the UK members of the WBCSD have also signed up to the UN Global Compact. However, there are three UK-headquartered signatory corporations which are not members of the WBCSD, and these were included.

I decided that a business, that sells its greening services to other businesses, should not be considered to be a green business. There are several consultancy firms that provide services in the area of environmental management, and therefore have a lot of material about the greening of business. But there is a distinction to be made between (i) the linguistic discourse of business describing its own greening and (ii) the linguistic discourse of third parties describing the greening of business. For that reason such websites and discourse were excluded.

A.1.3 Defining a British business

On the website of the World Business council for Sustainable Development, the member corporations are listed by country. Shell is listed as being a Dutch company, although its history and activities have always been Anglo-Dutch. The same applies for Unilever, which *is* listed as being British. Considering the history of Shell and the scope of its operations in the UK, there are good reasons to justify its inclusion under *British* green business. I decided that unless the website under review was clearly managed, either by an organisation with a British or Anglo-international orientation, it should not be included. Coors, for example, is a brand of beer that is widely marketed and distributed in the UK, and the UK subsidiary has enrolled in the BCSD-UK. But the website link goes straight to the US parent, in Colorado, and the company was therefore not included. It is mentioned in table A.1, later in this section.

A.1.4 Defining a business

Two members which I found on the list of the BCSD-UK are not businesses. North Lincolnshire Council is a local authority and the earning of profits is not part of its memorandum of association. Sustainability West Midlands is a non-profit organisation, operating for the improvement of the environment in the region. These two organisations were excluded from the corpus.

A.1.5 Discussion of other organisations' websites which were considered and rejected

In this section, I provide some brief descriptions of other websites which I investigated, but which were rejected for various reasons. It is not intended to be exhaustive but is provided in order to illustrate the selection/rejection criteria.

1. The National Industrial Symbiosis Programme (NISP) "is an innovative business opportunity programme that delivers bottom line benefits for our members whilst generating positive outcomes for the environment and society."[6] The goal is to make better use of resources through inter-company recycling. The benefit is reduced usage of resources and less waste burden on the environment, but there is no requirement to commit to sustainable development.
2. The International Chamber of Commerce's website contains a lot of links.[7] I have followed up some of these below.
3. Business Action for Energy is organised by the WBCSD and the ICC.[8] It is a laudable initiative but there is no membership commitment to sustainable development.
4. Business Action for Water is organised by the WBCSD and the ICC.[9] It is a laudable initiative but there is no membership commitment to sustainable development.
5. The Dow Jones Sustainability Indexes (DJSI) represent, in the opinion of the Dow Jones' analysts, the leading "sustainability corporations" in every single sector into which Dow Jones divides business corporations.[10] There are 73 UK companies on the list I downloaded – eight of the eleven WBCSD members are included on this list. Deloitte and ERM are not included, but may still be partnerships in which case they are not investment candidates. E-ON UK, the former electric power utility Powergen, is the one corporation that I would have expected to see. Several of the BCSD-UK members are also on the DJSI, but that still leaves maybe 60 new companies that have been given a "leading sustainability corporations in their sector" label by Dow Jones.

[6] National Industrial Symbiosis Programme, *About NISP*, http://www.nisp.org.uk/about_us.aspx, (accessed 5th February 2008).
[7] International Chamber of Commerce, *Sustainability*, http://www.iccwbo.org/policy/environment/id16966/index.html, (accessed 5th February 2008).
[8] Business Action for Energy, *Home*, http://www.iccwbo.org/bae/id10992/index.html, (accessed 5th February 2008).
[9] "Set up in December 2004 by the International Chamber of Commerce (ICC) and the World Business Council for Sustainable Development (WBCSD), Business Action for Water (BAW) is an ad-hoc, temporary business initiative bringing together a comprehensive network of businesses, large and small, drawn from many sectors and regions around the world." WBCSD, *Business Action for Water,* *http://www.wbcsd.org/templates/TemplateWBCSD4/layout.asp?type=p&MenuId=ODYz&doOpen=1&ClickMenu=LeftMenu,* (accessed 5th February 2008).
[10] Dow Jones Sustainability Indexes, *Overview*, http://www.sustainability-indexes.com/07_htmle/indexes/overview.html, (accessed 5th February 2008).

A review of the criteria document shows that all of these 60 companies must be producing impressive reports about their social and environmental performance. This is a sign of the extent to which green issues have shouldered their way into the discourse of business. From my reading of the criteria, which focus on tangible measures such as the existence of an audit process, or the publication of a report etc, I cannot see that the corporations on the list have made a commitment to their own sustainable operation, in order to qualify. As in the case with the three Global Compact signatories, each of which is on the DJSI, this 'public commitment' requirement is, arguably, an irrelevant criterion, whose only purpose is to give me an excuse to exclude a great many perfectly eligible green corporations. If there had been resources available to evaluate all of these 60 corporations, then they would have been the first candidates for inclusion.

Table A.1 below, provides examples of organisations and websites that I rejected during the design and construction phase.

Table A.1: Examples of some organisations which were rejected from the British green business corpus

Name of Organisation (Activity)	**Website address**	**Description of content and reason for rejection**
Conoco Phillips (Energy)	http://www.conocophillips.co.uk	This is the UK website of a US parent company. It has a very limited section called "Community" and within this a subsection on "Health safety and environment." But this link goes to the US website for the CEO's "signed statement."
Coors (Process)	http://www.coors.com/	There does not appear to be any UK website for this US company.
Eversheds (Legal consultancy)	http://www.eversheds.com/	No obvious section on own greening. It sells legal advice on environment.
Inchferry Consulting (Environment consultancy)	http://www.inchferry.co.uk/	It sells environmental advice.
Lafarge	http://www.lafarge.com/	There does not appear to be any UK website

(Aggregates)		for this French company.
North Lincolnshire Council (Local gov)	http://www.northlincs.gov.uk/	Not a business.
Pegasus International (Finance)	http://www.pegasus-international.co.uk/	No obvious section on greening available.
Scott Wilson (Environment consultancy)	http://www.scottwilson.com/	It sells environmental advice.
Sustainability West Midlands (Not-for-profit organisation)	http://www.sustainabilitywestmidlands.org.uk	Not a business.
UPM Kymenne (Process)	http://w3.upm-kymmene.com/	This has a Finnish parent with no UK website.
William Tracey (Waste management)	http://www.wmtracey.co.uk/	No material available.
WSP Group (Environment consultancy)	http://www.wspgroup.com/	It sells environmental advice.

A.2 Design of the radical NGOs' corpus and rejected websites

A.2.1 Introduction

In practice, the development of a list of candidate websites for the radical NGO corpus was a long, painstaking process of trial and error. I started from the handful of radical NGO websites that I had identified in my PhD project application to the faculty. The list of possible candidates for inclusion was extended by copying the website addresses in their "links" sections. These candidate sites were then followed up, one at a time and, after review, either placed in the radical NGO list or moved to a rejects list. As the criteria for acceptance and rejection became clearer and more refined, the procedure became simpler and faster.

However, even though the design phase extended over many days of intensive work, and the 'final' list of radical NGO candidates numbered over 40 at the point when corpus construction began, the downloading process itself also generated new candidates.

In contrast to the relatively simple selection of material for the green business corpus, the radical NGO corpus posed the additional challenge of reviewing whether or not particular campaigning issues should be included. This problem of representativeness versus comparability has already been dealt with in section 4.2.2 on page 143. In this section, therefore, there is first a discussion of the criteria used to determine whether or not a campaigning organisation was eligible for inclusion as a British NGO. Then there is a treatment of the difficult borderline campaign issues, to illustrate the practical problems associated with external definitions of discourse. The lists of borderline and rejected cases is intended to augment the examples that have already been provided, in the general design section in section 4.2 on page 143.

A.2.2 Rejection criteria for radical NGOs

1. An NGO for business. The site was an organisation providing resources for business. This could not be described as *radical*.
2. A US site. There are a lot of very comprehensive radical websites in the USA. I have rejected these on the grounds that they concern themselves with US companies and US issues and are not, therefore, taking part in the UK debate.
3. International sites (= non-UK and non-US). These have been rejected on similar grounds to the US sites. An exception to this rule is a site called "Down to Earth," which is run from the UK and concerns itself with the struggle by indigenous peoples in Indonesia against, among others, Rio Tinto's mining operations.[11]
4. A government agency. Any site that might conceivably be funded by government has been rejected. A lot of university sites were rejected on this criterion.
5. A super-government agency. NGOs connected with the UN fall into this category. Again, they do not represent a *radical* discourse.
6. One-man-crusade websites. An example of this is Jim Dyer who leads his own campaign against Shell's "radioactive crimes."[12] I decided to insist that a website had to be the voice of an organisation, on the grounds that this gave me a reasonable

[11] Down to Earth, *International Campaign for Ecological Justice in Indonesia*, http://dte.gn.apc.org/, (accessed 5th February 2008).
[12] Shell's Nuclear Crimes, *Home*, http://www.nuclearcrimes.com/index.htm, (accessed 5th February 2008).

guarantee of quality. The linguistic discourse, which an organisation submits to the public arena, has been prepared as the opinion of a group of rational individuals, who have a right to be taken seriously by the rest of the world.

7. Websites without owners. One website I placed on the rejected NGOs list did not appear to have any information about who owns it, perhaps because of the libellous nature of the material it contains.[13] I decided to limit the websites to those which are owned by a clear organisation that stands up for what it says.
8. Electronic libraries and newspapers. The website of the Business and Human Rights Resource Centre, for example, has its human rights files on individual companies.[14] However, on close examination it turns out that they are providing a library service and that all the entries for say, Anglo American, are from other websites. There is a lot of material from online newspaper articles. There is material from investment and trade magazines, and there is also material from some human rights agencies. The Ethical Consumer Information Systems (ECIS) "Corporate Critic" website works very much like the Business and Human Rights Resource Centre.[15] I had to subscribe for one day in order to access the database, but the results of the search on Anglo-American revealed that they merely referred to other sources. For this reason I excluded the website.
9. Unobtainable websites. Between the time when I conducted the design process and the subsequent period when I downloaded material, the website to attac UK disappeared from Internet.[16] The links from the international website to the UK branch also failed to make a connection, so this site, whose library section contained material on trade, globalisation and the role of multinationals, excluded itself.

A.2.3 Discussion of borderline topics for the discourse

1. Animals. Text dealing with the difficulties experienced by animals is categorised in different linguistic discourses.

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[13] Unknown website publisher, *Corporate Criminals*, http://www.neravt.com/left/corpcrime/corpcrime.html, (accessed 5th February 2008).
[14] Business and Human Rights Resource Centre*, Home*, http://www.business-humanrights.org/Home, (accessed 5th February 2008).
[15] Ethical Consumer, *Corporate Critic Online Ethical Research Database*, http://www.ethicalconsumer.org/research/ecis.htm, (accessed 5th February 2008).
[16] attac UK, *Welcome to attac.org.uk*, http://www.ndparking.com/serve.php?lid=508592&dn=attac.org.uk, (accessed 5th February 2008).

- There is material describing the suffering of animals at the hands of modern or medical science. It can be argued that the treatment of animals in testing laboratories probably owes much to the anthropocentric and instrumental view of the natural world that also justifies damage to the biosphere. I looked, in such discourse, for representations that the suffering is the direct result of business activity or economic growth. They were very rare so such text has not been included.
- Animal suffering at the hands of industrial food production, however, is included. In this sort of discourse it is the business-style or factory-farming approach to food production which is the direct cause of the suffering of animals. The material has, therefore, been included.
- Animal suffering as a direct result of business activity. An example of this is a Friends of the Earth report about the threat to orang-utans posed by deforestation for palm oil plantations.[17] In this report, an explicit connection is made between business, in this case Unilever and others, and the fate of the animals, so the material is included. The World Wildlife Fund has other case-study examples of animals whose habitat is under threat from business activity. There is another boundary that I draw here, however, between the orang-utans and the polar bears. The orang-utans' forests are being cleared and burned by 'business people' so they got their story included. But texts about the polar bears, whose habitat is under threat from the impersonal climatic changes that are caused, most probably, by economic activity, did not qualify for inclusion.

2. Nuclear energy. At the time of reviewing its site, GreenPeace had an anti US Star Wars campaign which was connected to its concern about the threat from nuclear materials. It did not argue that there was a significant business interest which was the primary driver of the Star Wars project, and it was therefore not included.[18] Besides this, however, several NGO sites argue against nuclear energy as part of their wider discourse about climate change and energy use. In this context, nuclear energy is often rejected as a possible solution to the energy problem, and therefore such material is included.

[17] Friends of the Earth, *The Oil for Ape Scandal – How palm oil is threatening orang-utan survival*, http://www.foe.co.uk/resource/reports/oil_for_ape_summary.pdf, (accessed 5th February 2008).
[18] As of February 2008 this is no longer a current campaign. A search on the website at http://www.greenpeace.org.uk/, turns up just secondary references to it in, for example, a history of GreenPeace UK.

3. Forestry. None of the green corporations included on my list, is primarily a processor of forestry products. For this reason, I have avoided NGO material that deals directly with the reputedly unsustainable activities of logging companies, often named. But I have included material in which forests are destroyed in order to make way for palm oil plantations – an important raw material for Unilever, and where biodiversity and the conditions of indigenous peoples are threatened.
4. Genetics. This discourse is a part of the wider discourse of science and technology which, at least for greens, spans the range from enthusiastic development of, say, alternative means of generating energy, to open hostility to, say, genetically-modified organisms. With the exception of GlaxoSmithKline, none of the other green businesses is involved in work in genetic modification. I elected, therefore, not to include radical NGO discourse on the general issue of genetics. However, Unilever has no firm stance on the use of genetically-modified food substances, whereas, from the radical NGO point of view, it is clear that the issue of GM food is a prime example of the "damaging activity of business on the biosphere," and that it needs to be outlawed. This persuaded me to include this material in the discourse.
5. Pesticides and toxic chemicals. Some of the radical NGO websites regard the use of pesticides in the production processes of business, as being driven by short-term financial considerations. As such, this is a legitimate part of the discourse – the damaging consequences of the economic system on the biosphere. It is akin to the suffering of animals in factory farming. But there are other NGOs, of which PAN-UK is the best example, which do not make an explicit link in their discourse between business and the biosphere.[19] It is also the case that none of the green businesses are producers of pesticides and that only Unilever, through its purchase of foods, is part of the supply chain between producer and human health. Shell Chemicals produces petrochemical "building blocks," some of which are harmful to human health and it is safe to assume that all of the industrial members of the green corporations, will be significant users of toxic chemicals. The result of this is that I included campaigns against chemicals (toxics) where the radical NGO represented business in an active, damaging role. But, as far as was practical, I excluded campaign material against pesticides which are a consequence of a more diffuse modern way of living.

[19] Pesticide Action Network – *UK, About PAN UK*, http://www.pan-uk.org/About/index.htm, (accessed 5th February 2008).

6. HIV/AIDS. Several of the green businesses, primarily those with significant operations in Africa, identify HIV/AIDS as an important aspect of their greening responsibilities and this discourse was included as representing action being taken to improve the conditions of people. The radical NGO websites that work on, amongst other problems, HIV/AIDS, do not regard business as being responsible for these very damaging consequences, so their discourse was not included.
7. Development Aid. Many critics claim that the guidelines placed on the usage of development aid from, say, the G8 countries, actually worsen the conditions of the biosphere in the developing countries and its reorganisation is, therefore, necessary for the future benefit of the biosphere. This is a legitimate argument and closely parallels the criticism of the World Bank and the IMF. This discourse has been included under the category of "the necessary changes to the economic framework for business operation." But when the criticism of development aid was simply that there was not enough of it, or that it led to corruption in recipient countries, I did not include it.

A.2.4 Examples of rejected topics for the discourse

1. How to live green. I have already made references to the radical, ecological organisations who advocate major changes in the way we live. There are also radical NGOs advocating "ten simple ways" to live more sustainably. They were also excluded from the radical NGOs' linguistic discourse as I defined it.
2. How to buy green. The main Ethical Consumer website has a lot of advice about what to buy, but it does not fall within the boundaries of the discourse, so I did not include it.[20] The single document that I did include is a short report under their "Corporate Watch" section – the only one of about twenty company reports that relates to one of the UK green businesses – Deloitte.
3. The GreenPeace science section is another good example of the critique that science is employed by business to support its own growth objectives. But there is no clearly visible hand of business in a damaged biosphere, so it could not be considered to be part of the *business-in-the-biosphere* discourse.
4. Discourse in which business is accused of influencing the political system in order to reap gains from activities that are damaging to the biosphere. For example, the GreenPeace "Stop the War in Iraq" campaign maintained that the US went to war

[20] Ethical Consumer, *Corporate Critic Online Ethical Research Database*, http://www.ethicalconsumer.org/research/ecis.htm, (accessed 5th February 2008).

partly to secure access to Iraq's oil.[21] In this case, the political system is reputedly being influenced by business to take action that is to the detriment of the biosphere (the people of Iraq).

5. Economics & democracy. This is a discourse which argues that new, more devolved forms of political organisation will be necessary, to construct an economics that is more sustainable. Its emphasis is more on the interplay between economic organisation and political organisation than on economic organisation and business organisation. For this reason it was not included.
6. Politics, science and law. This discourse is too far removed from the "necessary changes to the economic framework" to be included.
7. Ethnic discrimination. This is a discourse on how efforts made by people in positions of power to "protect" the wider biosphere can be ethnically discriminatory. Murray Bookchin would be a good example of a sociologist concerned by the latent fascism of ecology.[22]
8. Refugees. The term "environmental refugee" has been coined to describe people(s) who are forced to leave their traditional landscapes because environmental changes have made it impossible for them to continue to live in the way they have. Some of the Inuit peoples, south Pacific islanders, and sub-Saharan Africans are examples of environmental refugees. I elected, however, to treat this case in the same way as the polar bears. The immediate cause of their problems is environmental, even though the environmental problems are probably caused by man.
9. Corporate accountability, transparency and governance. There is a discourse which argues that changes in the legal framework within which corporations operate are necessary. This discourse lies very close to "changes to the ruling economic framework," but I elected to exclude it on the grounds that it is more of a political or legal discourse than economic.

In table A.2 below, I have provided a summary of some of the radical NGO websites which I visited, reviewed and rejected.

[21] GreenPeace, *THE TIGER IN THE TANKS - ExxonMobil, oil dependency and war in Iraq*, http://www.greenpeace.org.uk/files/pdfs/migrated/MultimediaFiles/Live/FullReport/5543.pdf, (accessed 5th February 2008).
[22] Murray Bookchin, *The Ecology of Freedom*, (Palo Alto: Cheshire Books, 1984).

Table A.2: Examples of some organisations which were rejected from the radical NGO corpus

Name of Organisation	Website address	Description of content and reason for rejection
Animal Liberation Front Supporters Group	http://www.alfsg.org.uk/who_alf.html	I cannot find any discourse that describes animal exploitation or suffering together with industrial/business activity. This was the requirement I stipulated for the discourse to be included.
Animal Rights Magazine	http://www.arcnews.co.uk/	This describes itself as the UK's premier animal rights magazine. The three campaigns it runs are on hunting, zoos & circuses and vivisection – no explicit link made to business or economic activity.
attac UK	http://attac.org.uk/attac/html/index.vm	The library section contains material on trade, globalisation and the role of multinationals, but the web address failed to respond in the August to October time period.
British Wind Energy Association	http://www.britishwindenergy.co.uk/	An NGO for business.
British Trust for Conservation Volunteers	http://www.btcv.org/	Altruistic people fixing their local environment.
British Union for the Abolition of Vivisection	http://www.buav.org/	The website describes itself as "the world's leading anti-vivisection campaigning organisation. As the name suggests, this website campaigns against vivisection. Clearly many of the experiments on animals are being carried out at the behest of business, but there is no direct link in their discourse between business activity and animal suffering.
Business & Human Rights Res. Centre	http://www.business-humanrights.org/Home	This has its human rights files on individual companies, but on close examination I have now discovered that they are providing a library service and that all the entries for say, Anglo American, are from other websites. There is a lot of material from online newspaper articles. There is material from investment and trade magazines, and there is also material from some HR agencies. Human

		Rights Watch is the biggest contributor, but I have elected not to include this website because it is predominantly US (though it does have a UK office).
Centre for Air Transport and the Environment	http://www.cate.mmu.ac.uk/	Manchester University unit.
Centre for Alternative Technology	http://www.cat.org.uk/index.tmpl?refer=index&init=1	Practical advice on living sustainably.
Close Covance Campaign	http://www.covancecampaign.com/	This is a website aimed at the closure of a laboratory outside Harrogate where animals are used for testing. It focuses exclusively on vivisection and there is no direct link between business and the animal suffering.
Conservation Foundation	http://www.conservationfoundation.co.uk/	Conservation in the UK – no discourse about business
Cumbrians Opposed to Sellafield	http://www.corecumbria.co.uk/	Single issue NGO and no nuclear topic in the green corporations.
Earth First Britain	http://www.earthfirst.org.uk/	This is a disparate grouping of activists. The material on the website describes their defence of the biosphere against those who would damage it, but there is no explicit link made between business and the biosphere, so I have not included it.
Energy Saving Trust	http://www.est.org.uk/	Practical advice on saving energy – no discourse on negative effects of business or economic growth.
Essential Action	http://www.essentialaction.org/	This site is in the US, so although it has an article on Shell I have not included it.
Ethical Consumer Information service – Corporate Critic	http://www.corporatecritic.org/	The Ethical Consumer Information Systems (ECIS) "Corporate Critic" website works very much like the Business and Human Rights Resource Centre (see above). I have had to subscribe for one day in order to access the database, but the results of the search on Anglo-American reveal that they merely refer to other sources. For this reason I am excluding the website.

Ethical Corporation	http://www.ethicalcorp.com/	This is a website that functions as an electronic newspaper. Unlike the two "libraries" mentioned above, this website does have its own articles. But the articles are written by journalists who are interested in reporting news rather than representatives of NGOs that have a particular ideology. I have included in this folder some examples of the articles which I believe should not be included.
Ethical Investment Research Service	http://www.eiris.org/index.htm	Sells its services on research into ethical behaviour.
Flora and Fauna International	http://www.fauna-flora.org/	Worldwide conservation activities – no discourse on causes of depletion.
HelpAge International	http://www.helpage.org/	Taking care of the elderly – worldwide focus.
International Rivers Network	http://www.irn.org/index.html	US site with global focus – nothing on the UK.
National Society for Clean Air	http://www.nsca.org.uk/pages/index.cfm	This NGO says that it "brings together organisations and individuals across the private, public and voluntary sectors to promote a balanced approach to understanding and solving environmental problems." This is hardly a radical NGO, so I have not included its discourse.
Neravt	http://www.neravt.com/left/corpcrime/corpcrime.html	This is a US website in Vermont (vt) which offers help to other organisations in setting up their websites. It contains material on some of the 25 green corporations, but who the owners of the website and the documents which it contains are is not clear, and for this reason I have not included it in the discourse.
Operation Noah	http://www.christian-ecology.org.uk/noah/	This is an umbrella organisation for church-based NGOs and its focus is on tackling climate change through changing the way churches and congregations live.
Pesticide Action Network,	http://www.pan-uk.org/	This website campaigns for better control of pesticides, but does not seem to place the responsibility for the problem directly on

PAN-UK		business
Powerwatch	http://www.powerwatch.org.uk/	The dangers associated with magnetic fields around electrical circuits.
Residua	http://www.residua.com/	This is a company.
SPEAK – the voice for the animals	http://speakcampaigns.org.uk/	This website, "the voice for the animals," campaigns against an animal-testing laboratory being built by Oxford University. There is no direct link made between business and the biosphere so the material is not included.
Stamp out Poverty	http://www.tobintax.org.uk/?lid=9806	This is a website which lobbies for the introduction of a small tax (stamp duty) on the trading of currency and the channelling of this money to International development. In this way they argue that those who benefit from globalisation of markets will be able to give a small fraction of their income to those who will never see any benefit from globalisation. This discourse is clearly looking to improve the conditions of people, but the imposition of a new tax on the existing economic system does not, in my interpretation, amount to "a change to the economic framework." I have not, therefore, included it.
Stop Huntingdon Animal Cruelty	http://www.shac.net/	A UK-based website against an animal-testing laboratory called Huntingdon Life Sciences. There is no explicit link made between the activities of business and damage to the animals.
Surfers Against Sewage	http://www.sas.org.uk/index.asp	This is a significant campaigning website for better water quality and waste management practices. But the cause of the damage to the biosphere can best be described as the 'throwaway' style in which we live now. There is no explicit criticism either of business or of the economic system. For this reason I have not included it.
SUSTAIN	http://www.sustainweb.org/index.asp	Better food and agriculture – very practice oriented and no discourse on business or economic growth.
Sustrans	http://www.sustrans.org.	The name of this organisation stands for Sustainable Transport. It "works on practical

	uk/	projects to encourage people to walk, cycle and use public transport." So the discourse belongs in the "how to live green."
The Environment Council	http://www.the-environment-council.org.uk/templates/mn_hometemplate.asp?id=h	Although it is described as independent it gets some of its funding from corporations. There is some material here on waste management, but I am going to ignore it.
The Intermediate Technology Development Group	http://www.itdg.org/?id=home	This organisation, founded by EF Schumacher, works in the area of discourse that I have designated as "How to live green" though its area of application is primarily the developing world rather than the developed.
The Wildlife Trusts	http://www.wildlifetrusts.org/index.php?section=home	This claims to be the UK's largest wildlife conservation organisation. It has a lot of material on aspects of the biosphere in the UK, and concern to preserve them. But I don't find evidence of business activity.
The Women's Institute	http://www.womens-institute.org.uk/index.shtml	The Women's Institute has several campaigns which would seem to be relevant to the discourse, but the concerns they express do not make any explicit links between either business and business growth or the current economic framework. They have therefore been excluded.
Tidy Britain	http://www.tidybritain.org.uk/	Couldn't access website
Traidcraft	http://www.traidcraft.co.uk/	Traidcraft is the UK's leading organisation dedicated to fighting poverty through trade. As such, its discourse comes under the category of "how to live green."
Transparency International	http://www.transparency.org/activities/activities.html	Reporting standards to fight corruption.
TreeAid	http://www.treeaid.org.uk/	Africa tree-planting project
Uncaged Campaigns	http://www.uncaged.co.uk/	This is a campaigning site from the UK which focuses on vivisection and has selected Proctor & Gamble's testing for particular attention. Here we have a direct link being made between one particular business: P&G, and harm to animals. But they do not argue

		that P&G are doing this for the traditional business reasons of profit. The anti-vivisection argument is grounded in the immorality of the actions. This has been a tricky one to deal with, but I have not included it.
WaterAid	http://www.wateraid.org.uk/	3rd world water project – no discourse about business.
Worldwatch Institute	http://www.worldwatch.org/	Really a US site with global focus – nothing on the UK.
World Conservation Union	http://www.iucn.org/	An NGO for governments.

A.3 Design of the UK government corpus and rejected websites

A.3.1 Introduction

The process of designing the government discourse followed a very similar pattern to that used for the radical NGOs, but, thanks to the more centralised nature of government, it was more quickly accomplished. The PhD application's pilot project provided the initial website starting points, and in a matter of a few days a design list of 34 sites had been drawn up, through the pursuit of the most promising links provided in the government websites. However, in common with the experience of constructing the radical NGO corpus, the more detailed examination, demanded by the downloading process, generated questions that led to adjustments being made in the corpus. A very clear lesson, which I learned from the process, is that it is not wise to spend too much time at the drawing-board stage, but better to plunge into the construction and let that experience force the design questions along the way.

Government departments were naturally automatic candidates for inclusion. But there were many other bodies that required examination, in order to decide whether or not they should be considered to be part of government. One category was agencies of the government with a role in policy formulation on the greening of industry. The Sustainable Development Commission, for example, has a remit to "put sustainable development at the heart of government policy."[23] Its representation of the greening of industry and its opinions on what

[23] Sustainable Development Commission, *About Us*, http://www.sd-commission.org.uk/pages/aboutus.html, (accessed 5th February 2008).

ought to be happening are, therefore, important input to the government's policy-making process. A second group is agencies which have a role in presenting the government with a representation of the condition of the biosphere and its contents. Here, the apparently independent expert committees were included. Clearly, it is a vitally important aspect of the government's job to gather the best possible understanding of problems, in the process of identifying solutions and policy objectives for achieving those solutions. Several government-sponsored committees, therefore, are also included in the list of websites.

A.3.2 Discussion of the selection criteria for topics

The following criteria were used to select government discourse:

1. The government's representation of the damaging consequences of business activity or the ruling economic framework for the condition of the biosphere or the economic and social conditions of people.
2. Government policy which seeks changes to the framework for business operation, in order to reduce the damaging effects of business or economic activities and improve the condition of the biosphere or the economic and social conditions of people.
3. The government's representation of the greening of business. If there is any material where the government specifically presents its own understanding of the greening of industry process, then this is a clear candidate for inclusion.
4. Government policy on the greening of industry. Whereas (1) above is the government's perception of what is happening, this is government's opinion of what ought to be happening.
5. Speeches made by key spokesmen of the government which may be said to reflect government policy.
6. Legislation, directives and taxation schemes on the greening of business. From a political-science point of view, one would have to say that the legislation is the proof of whether or not an agent has been successful in winning government over to a particular opinion. On these grounds, one should include legislation from Parliament on the greening of industry. The counter argument that I could make, from a linguistic point of view, is that the legislation is not the same as policy. It is a realisation of policy, providing rules and guidelines for the exercise of control over experience. I planned to include this discourse with the intention that I might be able to treat the distinction as an aspect of the genre analysis. However, for reasons that are explained

in section (28) of table B.5 in appendix B, it turned out that there was actually very little legislation indeed that could be downloaded into the corpus.

7. Some of the sites, which belong to agencies that are responsible for administering law, quite naturally include a representation of the policies which were the foundation for the laws which they are now responsible for implementing. This is legitimate government linguistic discourse and it was included. However, the representation of its own activity in implementing law is not, in my judgement, relevant discourse to judge the extent to which either green-business discourse or radical NGO discourse is reflected by the government. I therefore rejected such material.

In table A.3 below, I have provided a summary of some of the UK government websites which I visited, reviewed and rejected.

Table A.3: Examples of some websites which were rejected from the UK government corpus

Name of Organisation	Website address	Description of content and/or reason for rejection
DEFRA - Farming	http://www.defra.gov.uk/farm/farmindx.htm	This material is focused just on farming and doesn't deal with 'business.'
DEFRA - Fisheries	http://www.defra.gov.uk/fish/fishindx.htm	There is nothing specifically about the effect of business on fishing stocks or the oceans.
DEFRA – Food and Drink	http://www.defra.gov.uk/foodrin/fdindx.htm	Focuses on standards for food.
DEFRA – Plants and Seeds	http://www.defra.gov.uk/planth/phindx.htm	This is concerned about maintaining the quality of commercially-produced seeds and plants.
DEFRA – Rural Affairs	http://www.defra.gov.uk/rural/default.htm	There is a lot of material here on rural affairs, but I don't see anything on the threat to the countryside posed by business activity.
DEFRA - Science	http://www.defra.gov.uk/science/default.htm	This section is concerned to stress how science will help DEFRA to better understand the environment.
Inland Revenue and DEFRA – Enhanced Capital Allowances	http://www.eca.gov.uk/	This is a scheme – an implementation – of government policy to try to encourage green initiatives through favourable taxation schemes.

Programme		
Health and Safety Executive	http://www.hse.gov.uk/index.htm	I cannot find any material that could be classed as framing policy on business and the environment.
The Office of Water Services	http://www.ofwat.gov.uk/	This is a government regulator but, in contrast to the Environment Agency, this regulator seems to be focused purely on managing the regulation of the water companies' service commitments.
The Cabinet Office	http://www.cabinetoffice.gov.uk/	The Cabinet Office has the task of coordinating the work of the different departments and this website has nothing special about environment and business.
Cleaner, Safer, Greener	http://www.cleanersafergreener.gov.uk/flash/index.html	This is a government initiative which is a joint venture by many of the different departments. The aim is to make people's local environments better. But it's very much "how to" and no policy that I could find. Evidence of how the government views health.
Environmental Industries Sector Unit	http://www.eisu.org.uk/eisu/index.html	This is a DTI unit responsible for promoting UK Environmental Business abroad.
DTI - Environment Unit	http://www.dti.gov.uk/sectors_environment.html	This unit is responsible for promoting the industry sector in the UK.
The Office of the Deputy Prime Minister	http://www.odpm.gov.uk/	This site has a section on "Sustainable Communities," but there is nothing specific on the greening (or not) of business.
HM Revenue and Customs – Climate Change Levy	http://www.hmrc.gov.uk/	This is a good example of the implementation of government policy rather than the policy itself.
Business Link	http://www.businesslink.gov.uk/	This DTI site provides practical help to businesses.
Government News Network	http://www.gnn.gov.uk/search/default.asp	This site provides access to news and press releases from all areas of government. But my impression is that there is nothing of a policy nature that occurs here.

UK Climate Impacts Programme		This website presents information on how climate change is affecting and will affect the UK, and offers advice to business on how to plan for it.
DEFRA – Advisory Committee on Business and the Environment		This committee seems to act as a forum for exchange of views between DEFRA and the business community.
UKBAP - The UK Biodiversity Action Plan		This site is all about implementing the plan.

Appendix B – Building the three test corpora and the BNC

This appendix provides supporting material for section 4.6 of chapter four. I present three tables containing the websites addresses of the organisations which I included in the three test corpora. In downloading material from the green business websites, all the text which they organised within their 'business and society' or 'corporate social responsibility' sections qualified for inclusion. If there are no notes from the downloading, then it means that I copied all of the material in that section. In selecting which material to download from the radical NGO and UK government websites, I had, on occasion, to take the empirical decision that certain sections would not qualify for inclusion. In such instances I have made a note in the relevant section of the table. These comments provide an insight into some of the empirical difficulties that I had to deal with during the construction phase and would make useful reading for anyone thinking of attempting a similar project.

B.1 Green business websites

Table B.1: The names of the organisations and their websites which were accessed in the building of the green business corpus

Tag Nr.	**Name of Organisation – Website** **Notes from downloading**
(01)	Anglian Water (AWG) – http://www.awg.com/, (accessed 6th February 2008). "Sustainability"
(02)	Anglo American – http://www.angloamerican.co.uk/, (accessed 6th February 2008).
(03)	Arup – http://www.arup.com/, (accessed 6th February 2008). "Corporate Responsibility"
(04)	BBC – http://www.bbc.co.uk/, (accessed 6th February 2008). "About the BBC / Plans, policies and reports"
(05)	BG Group – http://www.bg-group.com/, (accessed 6th February 2008).
(06)	BP – http://www.bp.com/, (accessed 6th February 2008).
(07)	British American Tobacco – http://www.bat.com/, (accessed 6th February 2008). "Corporate Social Responsibility"
(08)	British Industrial Plastics – http://www.bip.co.uk/, (accessed 6th February 2008). "About us / Environment"

(09)	Castle Cement – http://www.castlecement.co.uk/, (accessed 6th February 2008). UK subsidiary of Heidelberg group (German). "What's your interest? / Cement and the environment"
(10)	Corus – http://www.corusgroup.com/en/, (accessed 6th February 2008). Anglo-Dutch company. "Responsibility"
(11)	Deloitte Touche – http://www.deloitte.com/, (accessed 6th February 2008). United Kingdom / About us / Corporate Social Responsibility
(12)	ERM Group – http://www.erm.com/, (accessed 6th February 2008). This claims to be the world's largest pure-environmental consultancy company. There is a very small section on its own greening.
(13)	E-ON UK – http://www.eon-uk.com/, (accessed 6th February 2008). "Corporate Responsibility"
(14)	GlaxoSmith-Kline – http://www.gsk.com/index.htm, (accessed 6th February 2008). Anglo-US company. "Corporate Responsibility"
(15)	HSBC holdings plc – http://www.hsbc.com/, (accessed 6th February 2008). "About Us / Corporate Social Responsibility"
(16)	Land securities – http://www.landsecurities.co.uk/, (accessed 6th February 2008). "Our company / Corporate Responsibility"
(17)	Rio Tinto – http://www.riotinto.co.uk/, (accessed 6th February 2008 – this website address has now changed to http://www.riotinto.com/).
(18)	rth group – http://www.rthgroup.co.uk/, (accessed 6th February 2008). "Sustainability"
(19)	ScottishPower – http://www.scottishpower.com/, (accessed 6th February 2008). "About Us / Values & Environment"
(20)	Scottish and Newcastle – http://www.scottish-newcastle.com/, (accessed 6th February 2008). "Responsibility"
(21)	Severn Trent – http://www.severn-trent.com/, http://www.stwater.co.uk/ (Severn-Trent Water), http://www.biffa.co.uk/ (Biffa Waste Management), (all three websites accessed 6th February 2008).
(22)	Shell – http://www.shell.com/, (accessed 6th February 2008).
(23)	Unilever – http://www.unilever.com/, (accessed 6th February 2008).

(24)	Veolia Water – http://www.veoliawater.co.uk/, (accessed 6th February 2008). "Corporate Responsibility"
(25)	Vodafone – http://www.vodafone.com/, (accessed 6th February 2008).

Table B.2: The size of the different corporations' text contributions in the green business corpus

Tag Nr.	Name of Organisation	Number of files in the folder	Wordsmith count of number of words	Percentage contribution to the total corpus
01	Anglian Water (AWG)	8	44,436	1%
02	Anglo American	71	357,285	**11%**
03	Arup	1	563	<1%
04	BBC	1	21,240	<1%
05	BG Group	66	93,540	3%
06	BP	195	463,438	**14%**
07	British American Tobacco	44	338,669	**10%**
08	British Industrial Plastics	4	678	<1%
09	Castle Cement	14	28,799	<1%
10	Corus	59	55,961	2%
11	Deloitte Touche	12	4,851	<1%
12	ERM Group	5	1,452	<1%
13	E-ON UK	145	105,125	3%
14	GlaxoSmith-Kline	106	204,472	6%
15	HSBC holdings plc	54	43,390	1%
16	Land securities	19	34,053	1%
17	Rio Tinto	52	131,083	4%
18	rth group	0	0	<1%

19	ScottishPower	80	296,453	**9%**
20	Scottish and Newcastle	45	95,479	3%
21	Severn Trent	85	222,829	6%
22	Shell	339	399,823	**12%**
23	Unilever	120	217,947	6%
24	Veolia Water	40	49,831	1%
25	Vodafone	90	118,257	3%
	Total size of corpus	**1,655**[1]	**3,329,654**	**100%**

B.2 Radical NGO websites

Table B.3: The names of the organisations, their websites which were accessed in the building of the radical NGOs corpus, and specific comments concerning the downloading from each website

Tag nr.	**Name of Organisation – Website address** **Notes from downloading**
(01)	ActionAid International – http://www.actionaid.org/, (accessed 6th February 2008). Mostly direct action to alleviate poverty, but there is some material on the economics of poverty.
(02)	Airportwatch – http://www.airportwatch.org.uk/index.php, (accessed 6th February 2008). This site falls into the category of campaigning against the damaging consequences of business activity in the general sense. It's very much a borderline case – difficult to make a distinction between the cause of the problem being untrammelled economic growth or simply a consequence of the modern way of life… Luckily however the site is clearly under construction and has almost no discourse at all!
(03)	Amnesty International – http://www.amnesty.org/, (accessed 6th February 2008). There is a section of this website called "Economic globalisation and human rights" which is included.
(04)	Animal Aid UK – http://www.animalaid.org.uk/, (accessed 6th February 2008). General animal rights website, but the section on factory farming has been

[1] There are 16 Adobe .pdf files whose contents were locked so the text could not be extracted. The 16 comprised 1 from HSBC, 1 from Scottish & Newcastle, 3 from Scottish Power, and 11 from Rio Tinto. Of the four companies, I would say that only in Rio Tinto's case did the .locked pdf documents make up a significant section of their discourse.

	downloaded. I have taken the section on the "exploitation" of animals in the cause of research. Is this part of the discourse as defined? I have been thinking of animals in much the same way as the natural environment – suffering indirectly from the effects of industrial activity i.e. as an *externality*, to use the jargon of business economics. But in the context in which AnimalAid is concerned, the animals are being used as a consumable resource in the "industrial" process. I use the term "industrial" advisedly because much of the research is in the cause of medical science, which is hardly the same thing as business. In the light of this reflection, I think that factory farming is a more suitable candidate for inclusion as it forms a part of the business of food production.
(05)	Baku – Ceyhan Campaign – http://www.bakuceyhan.org.uk/, (accessed 6th February 2008). From the website: "the **Baku Ceyhan Campaign** is working to raise public awareness of the social problems, human rights abuses and environmental damage that is being caused by the Baku-Tbilisi-Ceyhan oil pipeline." This is a project which has been led by BP – a second good reason to include it.
(06)	Bretton Woods Project – http://www.brettonwoodsproject.org/index.shtml, (accessed 6th February 2008). This is a joint project set up by UK NGOs and it is critical to the World Bank and the IMF. Some of its material falls into the category of economic growth damaging to the environment or necessary changes. Some documents on the site are the minutes of internal meetings but I don't think of these as part of the public discourse so I have not included them.
(07)	CAFOD – http://www.cafod.org.uk/, (accessed 6th February 2008). Fighting poverty in the developing world. Campaigns on globalisation, trade, debt and child labour.
(08)	Campaign to Protect Rural England – http://www.cpre.org.uk/index.htm, (accessed 6th February 2008). Several sections on the negative impact of industrial/economic activity on the countryside. Planning and development, transport, energy resources.
(09)	Chemical Reaction – http://www.chemicalreaction.org/, (accessed 6th February 2008). This website campaigns for action on the registration, evaluation and authorisation of chemicals which are one of the hazardous bi-products of business activity.
(10)	Christian Aid – http://www.christianaid.org.uk/index.htm, (accessed 6th February 2008). Three important campaigns that they are running: Trade justice, Debt and Fair trade. They also have some reports on environment.
(11)	Corporate Responsibility Coalition – http://www.corporateresponsibility.org/ A campaign from 100 NGOs. It doesn't believe that a voluntary approach to corporate

	responsibility has been successful.
(12)	Corporate Watch – http://www.corporatewatch.org.uk/, (accessed 6th February 2008). Research and publishing on the social and environmental impact of large corporations
(13)	Down to Earth – http://dte.gn.apc.org/, (accessed 6th February 2008). UK-based website fighting for indigenous peoples in Indonesia against Rio Tinto.
(14)	Environmental Investigation Agency – http://www.eia-international.org/index_shocked.shtml, (accessed 6th February 2008). UK/US organisation – they have run a few scientifically-documented campaigns on the poisoning of the global environment.
(15)	Ethical Consumer – http://www.ethicalconsumer.org/, (accessed 6th February 2008). This website has a lot of good advice on what to buy in order to be an ethical consumer, but this falls outside the discourse boundary. It also has a magazine called Corporate Watch and here there is a single article on the big five accountancy firms, of which Deloitte is one.
(16)	Friends of the Earth UK – http://www.foe.co.uk/, (accessed 6th February 2008). An enormous amount of material on the damage done to the biosphere both by business and by the economic system. The Corporates and Campaigns sections are particularly relevant. I've done climate and global trade and I've now downloaded the material, mostly press releases, from their enormous Real Food campaign. It deals with three main issues: (1) the power of supermarkets, increasingly, the power of Tesco, (2) pesticides and (3) GM food. I have excluded material on pesticides based on the titles of the press release so one or two pesticide press releases may have crept in because I didn't spot what they were about from the title. I have chosen to interpret the attack on supermarkets as being a criticism of the negative effects of the economic system on our biosphere and therefore qualified for inclusion. N.B. Press releases at FoE are often double archived. An example of this is a PR entitled "Growth in flights will wreck climate change targets." It is archived in two campaigns (i) Transport and (ii) Climate Change.
(17)	Global Witness – http://www.globalwitness.org/, (accessed 6th February 2008). Human rights abuses in countries where natural resources are mined. Of their three campaigns: diamonds, oil and forests, I have downloaded text from diamonds because Anglo-American owns 45% of De Beers, and from oil because of Shell and BP. Under their Diamond Campaign they have a section called Press articles, which have been collected from other sources: BBC, Times etc. They have not been included. They also set up links to other websites or include material copied from other websites such as UN resolutions on Angola – again, they have not been included. Neither have I included their single-country reports, on the grounds that they are not specific enough in their criticism of business in the biosphere.

(18)	GreenPeace UK – http://www.greenpeace.org.uk/, (accessed 6th February 2008). Another enormous site for material on the damage done by business to the biosphere. Most of their campaigns fall within the discourse boundary. Their science section is another good example of the critique that science is employed by business to support its own growth objectives. But I don't consider this to be part of my "Business sin the biosphere" discourse.
(19)	McSpotlight – http://www.mcspotlight.org/, (accessed 6th February 2008). This website has developed from the original lawsuit filed by McDonalds and this material is not included. But it also has material on individual companies and a few of the articles refer to one of the 25 green corporations.
(20)	Medact – http://www.medact.org/index.php, (accessed 6th February 2008). Medact is a UK-based charity taking action on key global health issues. It has a limited amount of its own material on the WTO and climate change. I have not included its references to other (US and Canadian) websites.
(21)	Mines and Communities – http://www.minesandcommunities.org/index.htm, (accessed 6th February 2008). This website focuses attention on mineral resources corporations. There is material on several of the 25 green businesses: Anglo-American, BP, De Beers, Rio Tinto and Shell. This has material organised by business. This is another website where one has to be careful to see if the material originates from the website or comes from somewhere else. There is, for example, a series of articles under the heading "London Calling," which are from a website called Nostromo Research. The Mines and Communities website won't take responsibility for them and I haven't included them. Under Rio Tinto, there are a lot of articles lifted from newspapers that are local to the scene of the mining activity and I have tried to avoid copying them. But it's not always obvious at first glance – certainly not from the title on which one clicks – that this is the case. Sometimes it seems as if it is their material.
(22)	New Economics Foundation – http://www.neweconomics.org/gen/, (accessed 6th February 2008). This website focuses on the necessary additions to the economic yardstick of *progress* in order to direct business and other activity to a better future. Much of its discourse falls into the category of the necessary changes to the economic framework and has therefore been included. Not all of their publications are free and I can't start buying the ones that they charge for.
(23)	Oxfam – http://www.oxfam.org/eng/, http://www.maketradefair.com, (both website addresses accessed 6th February 2008). Oxfam are running a campaign which is on a separate website. It is called "Make Trade Fair" and this has been included.
(24)	People and Planet – http://www.peopleandplanet.org/, (accessed 6th February 2008).

	People & Planet is the largest student network in Britain campaigning to alleviate world poverty, defend human rights and protect the environment. It has two campaigns on climate change and trade justice.
(25)	Save the Children UK – http://www.savethechildren.org.uk/, (accessed 6th February 2008). This website campaigns for children in the developing world. There are sections on child poverty and economics and trade and debt. These have been included.
(26)	Tearfund – http://www.tearfund.org/, (accessed 6th February 2008). A Christian NGO based mainly in the UK and Ireland tackling the underlying causes of poverty. It has several campaigns which are relevant to the discourse: climate change, trade and debt.
(27)	The Corner House – http://www.thecornerhouse.org.uk/, (accessed 6th February 2008). This is an NGO producing in-depth material on a wide range of issues, a few of which have been included in the discourse. Its list of subjects contains some good examples of fields of discourse that fall just outside what I have defined as my "business-in-the-biosphere" discourse: *Included* Agriculture & GM Climate Trade *Not included* Dams – same problem as pesticides Development Aid – not "B-in-B" Economics & Development – not in B-in-B Ethnic discrimination – not in B-in-B Forestry – nothing on palm oil Gender – not in B-in-B Genetics – not in B-in-B Health – not in B-in-B Nuclear – not in B-in-B "Overpopulation" - not in B-in-B Politics, science and law - not in B-in-B Refugees - not in B-in-B
(28)	The National Trust – http://www.nationaltrust.org.uk/main/, (accessed 6th February 2008). This site has a small amount of text on the damaging effects of economic growth. It has a lot to say about how it is planning to cope with, for example, climate change and its own greening process, but this falls outside the discourse boundary.
(29)	The Royal Society for the Prevention of Cruelty to Animals – http://www.rspca.org.uk/, (accessed 6th February 2008). This is a very large organisation, but only a small amount of its discourse is relevant – animals suffering at the hands of industrialised farming. They have two campaigns, one on chicken production and the other on battery hens.
(30)	The Royal Society for the Protection of Birds – http://www.rspb.org.uk/, (accessed 6th

	February 2008). The RSPB has a substantial "Policy" section on its website in which it takes up issues that impact on its own particular part of the biosphere – birds.
(31)	The Soil Association – http://www.soilassociation.org/web/sa/saweb.nsf/home/index.html, (accessed 6th February 2008). This website's linguistic discourse argues that the industrialisation of food cultivation and rearing is a threat to the biosphere. It has four key issues that I have downloaded: Animal welfare in farming, antibiotic usage in farming, genetic engineering and pesticide usage. Unfortunately, many of their in-depth documents are only available for a charge and are therefore not included.
(32)	The Trade Justice Movement – http://www.tjm.org.uk/, (accessed 6th February 2008). This is a small primarily campaigning website set up by several of the bigger NGOs, so although it is relevant, there is not very much material on the website.
(33)	The Woodland Trust – http://www.woodland-trust.org.uk/index.htm, (accessed 6th February 2008). This website is concerned about the damaging effects of economic growth on woodland. There are two sections on transport and climate change.
(34)	War on Want – http://www.waronwant.org/, (accessed 6th February 2008). From its homepage, it describes its mission as: War on Want fights poverty in developing countries in partnership and solidarity with people affected by globalisation. We campaign for workers' rights and against the root causes of global poverty, inequality and injustice. There are three relevant campaigns here: Trade justice, Privatisation and poverty, Corporations and conflict.
(35)	Waste Watch – http://www.wastewatch.org.uk/, (accessed 6th February 2008). This website has a small policy section on some of the waste problems caused by business or economic growth. This text has been included.
(36)	World Development Movement – http://www.wdm.org.uk/index.htm, (accessed 6th February 2008). This website has a campaign running on the unfairness of trade and one on debt. Both of these have been included.
(37)	World Wildlife Foundation UK – http://www.wwf.org.uk/core/index.asp, (accessed 6th February 2008). For the most part, this organisation operates within the non-human biosphere, but some activities bring it into criticism of the activity of business and/or economic growth. Two campaigns have been included in the corpus: climate change and chemicals and health.

Table B.4: The size of the different organisations' text contributions in the radical NGOs corpus

Tag Nr.	Name of Organisation	Number of files in the folder	Wordsmith count of number of words	Percentage contribution to the total corpus
(01)	ActionAid International	20	19,916	<1%
(02)	Airportwatch	2	618	<1%
(03)	Amnesty International	69	278,624	2%
(04)	Animal Aid UK	43	41,633	<1%
(05)	Baku – Ceyhan Campaign	57	193,120	1%
(06)	Bretton Woods Project	297	328,144	2%
(07)	CAFOD	79	401,816	3%
(08)	Campaign to Protect Rural England	328	154,143	1%
(09)	Chemical Reaction	25	23,597	<1%
(10)	Christian Aid	91	845,190	**7%**
(11)	Corporate Responsibility Coalition	14	60,837	<1%
(12)	Corporate Watch	24	209,531	2%
(13)	Down to Earth	80	596,355	**5%**
(14)	Environmental Investigation Agency	34	54,906	<1%
(15)	Ethical Consumer	1	1,837	<1%
(16)	Friends of the Earth UK	3,078	2,752,943	**24%**
(17)	Global Witness	108	395,534	3%
(18)	GreenPeace UK	1,005	1,644,560	**14%**
(19)	McSpotlight	5	2,197	<1%
(20)	Medact	4	13,775	<1%

(21)	Mines and Communities	153	237,407	2%
(22)	New Economics Foundation	241	1,618,349	**14%**
(23)	Oxfam	122	273,223	2%
(24)	People and Planet	17	20,525	<1%
(25)	Save the Children UK	37	111,109	<1%
(26)	Tearfund	26	92,872	<1%
(27)	The Corner House	20	248,493	2%
(28)	The National Trust	7	6,469	<1%
(29)	The Royal Society for the Prevention of Cruelty to Animals	5	1,442	<1%
(30)	The Royal Society for the Protection of Birds	100	235,123	2%
(31)	The Soil Association	92	188,780	1%
(32)	The Trade Justice Movement	7	16,055	<1%
(33)	The Woodland Trust	28	39,798	<1%
(34)	War on Want	42	95,402	<1%
(35)	Waste Watch	28	81,462	<1%
(36)	World Development Movement	18	33,270	<1%
(37)	World Wildlife Foundation UK	30	250,155	2%
	Total size of corpus	**6,337**[2]	**11,569,210**	**100%**

[2] There were 5 Adobe .pdf files, whose contents were locked so the text could not be extracted - 2 for the RSPCA and 3 for Oxfam. The contribution to Oxfam was not significant compared with its overall discourse size. The RSPCA's contribution was extremely small so the absence of the three reports can be considered as very significant for their discourse, but insignificant for the total.

B.3 UK government websites

Table B.5: The names of the organisations, their websites which were accessed in the building of the UK government corpus and any comments on the downloading process from each website

Tag nr.	Name of Organisation – Website address Notes from downloading
(01)	Advisory Committee on Releases to the Environment (ACRE) – http://www.defra.gov.uk/environment/acre/index.htm, (accessed 6th February 2008). This committee's function is to give statutory advice on the risks to human health and the environment, from the release and marketing of genetically modified organisms (GMOs).
(02)	Advisory Committee on Consumer Products and the Environment (ACCPE) – http://www.defra.gov.uk/environment/consumerprod/accpe/index.htm, (accessed 6th February 2008). This committee provides policies for reducing the environmental impact of products and services. This is mostly documentation on ways in which consumer products can be produced in a more biosphere-friendly way. This is what business ought to be doing.
(03)	DEFRA – Animal Health and Welfare – http://www.defra.gov.uk/animalh/animindx.htm, (accessed 6th February 2008). In keeping with the NGO downloading policy, I have avoided animal testing material and limited the discourse to the welfare of animals either within modern farming or under pressure from economic activity. This is represented in two sections of this part of the DEFRA website: *Animal Welfare Strategy* and *Animal Welfare*. There is an enormous amount of material on a series of specific health issues in farm animals: BSE, Foot & Mouth, Scrapie, but I have considered these to be simply health issues associated with farm animals without any reference to any 'business' activity.
(04)	DEFRA – Environmental Protection – http://www.defra.gov.uk/environment/index.htm, (accessed 6th February 2008). There is a vast amount of material which I conceive of as the government's representation of reality. It is too comprehensive to include, and it doesn't include any reference to business either. I have therefore had to rely on the summaries that are included as the background on which strategy and policy documents are based.
(05)	DEFRA - Farming – http://www.defra.gov.uk/farm/farmindx.htm, (accessed 6th February 2008). There are sections on sustainable farming strategy and also on farming and the environment, so here we have the government's views on the industrialisation of farming and how this affects the biosphere.
(06)	DEFRA – Fisheries – http://www.defra.gov.uk/fish/fishindx.htm, (accessed 6th February 2008).

	Under sea fisheries there is a statement of needs in which the government lays out its policies for sustainable fishing. This is relevant material. This site has been brought into the discourse as a response to the radical NGO discourse on the seas, such as GreenPeace's "Save our Oceans" campaign. For this reason I have limited the downloading to a few policy documents.
(07)	DEFRA – Food and Drink – http://www.defra.gov.uk/foodrin/fdindx.htm, (accessed 6th February 2008). This section focuses on standards for food. It has a Food Industry Sustainability Strategy which is relevant for how business ought to be acting to protect the biosphere, and this has been included. I have included this website largely in response to the radical NGO discourse of food being under threat, but also because we have Unilever in the green business discourse. I have, therefore, limited the sections I have downloaded from to Organic Food Production and the Food Industry Sustainability Strategy.
(08)	DEFRA – Rural Affairs – http://www.defra.gov.uk/rural/default.htm, (accessed 6th February 2008). There is a lot of material here on rural affairs, but there does not appear to be a link made to the threat to the countryside posed by business activity. There is one section on environmental stewardship, which deals with the greening of industrialised farming. This has been included.
(09)	DEFRA – Sustainable Development – http://www.defra.gov.uk/environment/sustainable/index.htm, (accessed 6th February 2008). The main website for sustainable development is at http://www.sustainable-development.gov.uk/ (see below), but this site contains a small amount of strategy material. This site contains almost no information of its own. With the exception of one document on social enterprises, which I have downloaded, the documents it refers to all belong to other sites. Otherwise there are lots of links to other sites.
(10)	DEFRA - Wildlife and Countryside – http://www.defra.gov.uk/wildlife-countryside/index.htm, (accessed 6th February 2008). This section is concerned with preservation of the biosphere against the damage of economic progress. The most significant part of this section is the material on biodiversity which I have downloaded.
(11)	Department for Transport – http://www.dft.gov.uk/, (accessed 6th February 2008). This department works mainly on policy implementation, but there are three sections which deal with the Business in the biosphere discourse: (i) Aviation – environmental issues, (ii) Roads and vehicles – roads policies and (iii) Shipping and ports – environment, liability and compensation. It is important to remember the discourse boundary. This site has a lot of material on how we can live greener, for example, by taking the bus, but this lies outside.

(12)	Department of Health – http://www.dh.gov.uk/Home/fs/en, (accessed 6th February 2008). This website has an advanced search engine for finding material concerned with the effects of pollution on the human element of the biosphere. I used the search facility in the library of the department to try to obtain relevant documents. Here are the search strings that I used: Environment + Health, Pollution, Industry, Emissions, Climate change, Chemicals, Toxic waste and Incineration.
(13)	DTI – Energy – http://www.dti.gov.uk/energy/, (accessed 6th February 2008). This section deals with energy and a carbon-free future. The material comes under the category of a representation of what business ought to be doing in order to improve the condition of the biosphere. The material I have downloaded is the government's assessment of how energy impacts on the biosphere and on people.
(14)	DTI – Europe and World Trade – http://www.dti.gov.uk/ewt/, (accessed 6th February 2008). There is a section on government policy with respect to trade with the developing world. I have downloaded material from the "Trade & development" section as well as some speeches and statements on the same subject.
(15)	DTI – Oil and Gas – http://www.og.dti.gov.uk/, (accessed 6th February 2008). I have downloaded material from the section called "Environment." Note that there is a section here, as in many of the websites I have visited, on legislation. As with the others, I have ignored this material and will download legislation from (28) The Office of Public Sector Information.
(16)	DTI – Renewable Energy – http://www.dti.gov.uk/renewables/, (accessed 6th February 2008). I conceive of this site as being in the discourse category of "the activity that business ought to be taking." I have copied material from "Renewables explained" and "Policy." The "Planning" section is all about procedures to follow when doing things, but not what business "ought to be doing." Under "Publications" this part of the DTI has a very large number of documents, all describing cases of renewable energy projects. This is linguistic discourse which represents individual examples of what business is doing, but the intention of the case is to point out what other businesses could be doing. Here the government represents itself as very much an offensive agent, acting as a promoter of greening.
(17)	DTI - Responsibility – http://www.societyandbusiness.gov.uk/, (this website could not be accessed on 6th February 2008). This site describes itself as "the Government's website on CSR. We have an ambitious vision for UK businesses to consider the economic, social and environmental impacts of their activities, wherever they operate in the world." This website may therefore be considered as a central source of government discourse on what action business "ought to be taking."
(18)	DTI – Sustainable Development – http://www.dti.gov.uk/sustainability/, (accessed 6th

	February 2008). On this website it says that the "DTI works with others to encourage innovative, enterprising and internationally competitive business solutions to environmental problems and the wider challenges of sustainable development." I have downloaded material under "Sustainable Development," "Business Opportunities" and "Environmental Protection."
(19)	DTI - The Office of Science and Technology – http://www.ost.gov.uk/index_v4.htm, (this website could not be accessed 6th February 2008). This office reports into the DTI and has overall responsibility for strengthening science and technology in the UK. It has a section on policy and within this there is material on climate change and GM Food.
(20)	Food Standards Agency – http://www.food.gov.uk/, (accessed 6th February 2008). This is a government department established to promote the quality of food in Britain. It contains some material that the NGOs have been concerned about – GMOs and toxic substances in food. This has been included.
(21)	Government Sustainable Development Unit – http://www.sustainable-development.gov.uk/, (accessed 6th February 2008). This is a site for implementation, which we are not interested in, but also for reporting on progress, which we are interested in. It also publishes the UK Sustainable Development strategy. Material aimed at helping or encouraging the public to live a more sustainable life is not included and neither are the reports which chart progress on making the operation of government more sustainable.
(22)	HM Treasury – Green Technology Challenge – http://www.hm-treasury.gov.uk/Consultations_and_Legislation/consult_greentech/consult_greentech_index.cfm, (accessed 6th February 2008). There is just a single consultation paper proposing ways of getting business to be greener. I could have simply included this under the next website address.
(23)	HM Treasury – The Environment – http://www.hm-treasury.gov.uk/topics/environment/topics_environment_index.cfm, (accessed 6th February 2008). There are two important sections under the "Tax, Work & Welfare" policy area. "Tax & Environment" and "Work & Welfare" contain useful material on ways of moving towards a more sustainable future using economic instruments. There is a newsroom section with speeches and statements by key treasury figures, but unfortunately this has no keyword search facility which would enable me to draw out the material with an environmental emphasis, so I have had to ignore them.
(24)	Number 10 Site – http://www.number-10.gov.uk/output/page1.asp, (accessed 6th February 2008). I have downloaded 23 speeches or statements or press articles by Tony Blair which have the environment (or social issues) as their theme.

(25)	Sustainable Development Commission – http://www.sd-commission.org.uk/, (accessed 6th February 2008). The website says that "The Sustainable Development Commission is the Government's independent advisory body on sustainable development." This has a lot of policy advice to the government in the area of business and the environment. The case studies that are available on the website provide examples of what we ought to be doing, but there are approximately 100 of these and only 7 can be generously classified as being business cases. This illustrates, once again, the wider focus that the government must have on the greening process. I have not downloaded material which one can describe as "resources" – these are tools to help in the process, but not representations of what business ought to be doing. The SDC has also become a "critical friend" of government, so its discourse can also include critical representations of government (in)activity – this material has not been included. Under the resources section there is some relevant material, but it has almost all been downloaded under the "Business" section.
(26)	The Environment Agency – http://www.environment-agency.gov.uk/?lang=_e, (accessed 6th February 2008). This is a government regulator, but it has a lot to say about policy. "We are the leading public body for protecting and improving the environment in England and Wales. It's our job to make sure that air, land and water are looked after by everyone in today's society, so that tomorrow's generations inherit a cleaner, healthier world." There is a lot of material on environmental policy and also one section on business and industry. There is an excellent "Policy" section with position statements on a range of environmental issues. NB. (i) The "Our Views" section merely takes the reader to the same position statements by a different route. (ii) A downloading facility, that at the time of working (16th -17th November, 2005) doesn't work, has been very disappointing. Its failure has meant that this site has not been given the attention, within the overall government corpus, that it deserves.
(27)	The G8 Summit 2005 – http://www.g8.gov.uk/, (accessed 6th February 2008). This site summarises the UK's presidency of the G8 in 2005 and the two major issues that Blair wants to address: Climate Change and Africa – both relevant for CSR.
(28)	The Office of Public Sector Information – http://www.opsi.gov.uk/, (accessed 6th February 2008). This site provides all of the acts of Parliament since 1988 and has a search motor as well. It is very well organised and its purpose is to make the final output of government – legislation, available to the public. Legislation is (probably?) a genre in its own right and very different from the other types of discourse that have been included in the other two corpora. For this reason it is not very comparable, though clearly in terms of assessing the hijack hypothesis government legislation represents the acid test for success in taking control of the discourse. Rather than select Acts of Parliament therefore, I decided to select the Explanatory Notes that accompany them. Here is the description of their role which I have taken from the website: Explanatory Notes to Acts of the UK Parliament

	With effect from the first Public General Act of 1999, all new Public Acts which result from Bills introduced into either House of Parliament by a Government Minister (with the exception of Appropriation, Consolidated Fund, Finance and Consolidation Acts), are to be accompanied by Explanatory Notes. The text of the Explanatory Notes will be produced by the Government Department responsible for the subject matter of the Act. The purpose of these Explanatory Notes is to make the Act of Parliament accessible to readers who are not legally qualified and who have no specialized knowledge of the matters dealt with. They are intended to allow the reader to grasp what the Act sets out to achieve and place its effect in context. This seems to me to be a very sensible compromise. We get English which from a genre point of view is more closely aligned with the English in the rest of the corpora, and at the same time the content includes the government's intentions in introducing the legislation. However, there are very few single Acts of Parliament that relate to the discourse of the biosphere and its contents – I have downloaded just 12 items in the years 1999 – 2005.
(29)	The Royal Commission on Environmental Pollution – http://www.rcep.org.uk/index.htm, (this website could not be accessed 6th February 2008). The commission's role is to advise government on matters, both national and international, concerning the pollution of the environment. The commission has been in operation since its first report in 1972. Since then it has produced reports on pollution issues, on which it considers it important to focus. The 21st report, which was published in 1998, was the first one to be made available electronically, so I started there. However, this particular report was only available as an image in Adobe, and I had to proceed to the 22nd report. This one and subsequent reports have all been downloaded.

Table B.6: The size of the different governments departments' text contributions in the UK government corpus

Tag Nr.	Name of Organisation	Number of files in the folder	Wordsmith count of number of words	Percentage contribution to the total corpus
(01)	ACRE	98	464,797	**7%**
(02)	ACCPE	24	302,213	4%
(03)	DEFRA – Animal Health and Welfare	65	432,527	**6%**
(04)	DEFRA – Env. Protection	76	1,401,031	**20%**
(05)	DEFRA – Farming	5	76,087	1%

(06)	DEFRA – Fisheries	8	44,915	<1%
(07)	DEFRA – Food and Dink	6	103,948	1%
(08)	DEFRA – Rural Affairs	4	93,024	1%
(09)	DEFRA – Sust. Dev.	2	8,679	<1%
(10)	DEFRA – Wildlife and Countryside	22	159,416	2%
(11)	Department for Transport	9	51,492	<1%
(12)	Department of Health	18	375,504	5%
(13)	DTI – Energy	22	185,749	3%
(14)	DTI – Eur. & World Trade	18	35,235	<1%
(15)	DTI – Oil and Gas	9	5,264	<1%
(16)	DTI – Renewable Energy	113	905,844	13%
(17)	DTI – Responsibility	57	197,702	3%
(18)	DTI – Sust. Dev.	35	145,729	2%
(19)	DTI – Off. Of Sci. & Tech.	6	205,989	3%
(20)	Food Standards Agency	16	11,763	<1%
(21)	Govt. Sust. Dev. Unit	86	373,453	5%
(22)	HM Treasury – Green Technology Challenge	1	3,608	<1%
(23)	HM Treasury – The Environment	27	302,831	4%
(24)	Number 10 Site	23	55,911	<1%
(25)	Sustainable Development Commission	46	300,160	4%
(26)	The Environment	64	60,679	<1%

	Agency			
(27)	The G8 Summit 2005	14	33,059	<1%
(28)	The Office of Public Sector Information	12	191,474	3%
(29)	The Royal Commission on Environmental Pollution	7	574,257	**8%**
	Total size of corpus	**893**	**7,102,340**	**100%**

B.4 The BNC control corpus

Table B.7 below, presents an overview of all the BNC-based text material, broken down into its nine domains. Under the processing of each of the domain folders by Wordsmith, the programme registered an error in writing the wordlist for the world affairs domain: *wridom5*. Closer examination revealed that, for reasons unknown, Wordsmith had only registered the contributions of the first 370 of wridom5's 484 text files. Several attempts were made to resolve this problem, including the removal of the file at which Wordsmith had stopped, then the next one in the list, and also by downloading and unzipping the entire folder again. None of the attempts was successful. The Wordsmith listing of the filenames proved to be inconsistent with the listing within the BNC. In consequence, the 'missing' 114 files in wridom5 could not be identified, without a large effort of manual comparison of the two folders of 484 and 370 files. Further, I discovered that the incomplete wordlist, which Wordsmith had constructed from wridom5, could not be merged successfully with the other wordlists, in order to create the overall BNC control wordlist. This was clear from a comparison between manually adding the statistics from the nine individual wordlists, and comparing them with the single wordlist which purported to be a merger of the nine. Given the uncertainty connected with the usage of a wordlist based on wridom5, I decided to exclude it from the BNC control. Although this exclusion was unfortunate, it did not seem to favour or discriminate any of the players, and the total volume of text was still much larger than any of the other three corpora.

Table B.7: The BNC control corpus

Name of folder	BNC Domain title	Number of files in folder	Wordsmith count of number of words
wridom1	Imaginative	477	17,390,675
wridom2	Natural sciences	146	3,896,157
wridom3	Applied science	370	7,354,249
wridom4	Social science	529	14,329,925
wridom5	World affairs	/	/
wridom6	Commerce	295	7,481,935
wridom7	Arts	261	6,797,260
wridom8	Belief and thought	146	3,093,073
wridom9	Leisure	438	12,616,101
Totals		**3,032**	**72,959,375**

Appendix C – Generating wordlists and keyword lists and editing the keyword lists

The material in this section supports sections 4.8 and 4.9 of chapter four. In section 4.8, I provide an overview of the procedure, by which I took the three complete raw text corpora and generated the reports, which would provide me with a basis for comparing them with each other. Here, in sections C.1 and C.2, I describe these procedures in greater detail. In section 4.9, I discuss different numeric comparisons of the three corpora, which were made possible by a procedure that I describe here, in section C.3.

C.1 The minimum number of occurrences in the wordlist

My intention was to be able to generate first, wordlists and then keyword lists, for comparison of the top 500 keywords in each test corpus. As I pointed out in section 4.8, by raising the setting for the minimum number of occurrences, one can avoid word lists with an extremely long 'tail' of words. But the danger, of raising the setting too high, is that it affects the keyword listing, which is not desirable. In order to test out where this trade-off was, I carried out some simple testing using the British Petroleum (BP) corpus. My objective was to see at what level of minimum hits the ranking of keywords began to be affected. The different organisations have widely differing corpus sizes. Whereas the BP corpus consisted of 460,000 words, the Hong Kong and Shanghai Banking Corporation (HSBC) corpus had just 43,000 words. Clearly, a word can be statistically key for HSBC, with far fewer absolute occurrences than is the case in the BP corpus. It seemed appropriate, therefore, to set a lower limit which was not the same absolute number for every organisation, but instead based on a very small percentage of the total number of words in that organisation's corpus. I started by setting a lower limit of absolute occurrences at one ten thousandth of the total number of words in the corpus, and comparing the resulting keyword listing with the listing produced from a word list which had a lower limit of just one word i.e. unrestricted.

On the left hand side of table C.1 below, is the keyword listing for BP based on the unrestricted word list, i.e. with no minimum number of occurrences stipulated for the compilation of the wordlist. On the right hand side, is the keyword list for BP based on a much more restricted word list, in which I stipulated that the minimum number of hits should be 46 (corresponding to one ten thousandth of the BP corpus of just over 460,000 words). The second word list, from which this keyword list was generated, contained only 1,261 words. As can be seen from the start of the two keyword lists in the table below, the rows are identical. The reduction in the number of words in the wordlist had no effect on the keyword

rankings. This is because the absolute number of hits of the keywords is in the thousands at the start, and then the hundreds a bit further down, still well above the lower limit of 46.

Table C.1: Comparison of top fifteen keywords listings with different minimum allowable absolute number of occurrences

KEYWORD LIST BASED ON UNRESTRICTED WORD LIST				KEYWORD LIST BASED ON 1/10,000 LOWER LIMIT		
	KEYWORD	**HITS**			**KEYWORD**	**HITS**
1	BP	3732		1	BP	3732
2	OUR	4886		2	OUR	4886
3	WE	6371		3	WE	6371
4	EMISSIONS	1203		4	EMISSIONS	1203
5	#	15729		5	#	15729
6	ENERGY	1444		6	ENERGY	1444
7	ENVIRONMENTAL	1170		7	ENVIRONMENTAL	1170
8	GAS	1096		8	GAS	1096
9	BUSINESS	1754		9	BUSINESS	1754
10	OIL	1065		10	OIL	1065
11	AMOCO	424		11	AMOCO	424
12	GLOBAL	733		12	GLOBAL	733
13	FUELS	511		13	FUELS	511
14	SUSTAINABILITY	419		14	SUSTAINABILITY	419
15	WE'RE	280		15	WE'RE	280

It is only when a word can get into the keyword rankings with fewer hits than the 46 cut-off that changes occur. For this BP corpus, the first occurrence is at keyword number 189 in the unlimited corpus, as shown in table C.2 below. Here the word OPENTALK, with only 44 hits in the corpus, nonetheless gets into the keyword rankings. This is perhaps not surprising. The reference is the British National Corpus (BNC) and this, hopefully, represents typical British English. The invented word *opentalk*, is very key for BP with only 44 absolute occurrences, because it is probably almost non-existent in the BNC. A bit lower down there is WE'LL and AUTOGAS, both, again, ruled out of the right hand keyword list, because they have fewer hits in the corpus than 46 and therefore don't appear in that wordlist.

Table C.2: Comparison of keyword listings with different minimum allowable absolute number of occurrences

186	BROWNE	91		186	BROWNE	91
187	ACCORDANCE	58		187	ACCORDANCE	58
188	HYDROCARBON	69		188	HYDROCARBON	69
189	**OPENTALK**	**44**		189	PARTNERS	173
190	PARTNERS	173		190	LUBRICANTS	58
191	LUBRICANTS	58		191	RELATIONSHIPS	215
192	**WE'LL**	**44**		192	WORKFORCE	114
193	**AUTOGAS**	**43**		193	LARGEST	194
194	RELATIONSHIPS	215		194	RENEWABLES	54

195	WORKFORCE	114		195	LEADERS	163
196	LARGEST	194		196	POLICY	368

Given my previously mentioned objective to be able to compare the top 500 keywords of each corpus, this test revealed that the one-ten-thousandth rule of thumb was still too high a lower limit to set, because it introduced distortions to the keyword list at just inside the top 200 point. The results tables in appendix B, which list the absolute word counts in each organisation's corpus, show that a great many of these sub-corpora are only several tens of thousands of words large. Since the results from the BP exercise revealed that one would have to set a lower limit that was well under one ten thousandth of the size of the sub-corpus, it became clear that the absolute level of three hits was, after all, the best setting to use. I therefore took the decision that I could set the minimum level at three occurrences. This would filter out the obscure proper nouns, but I would still feel absolutely sure that I would not be compromising the reports in the keyword listings.

C.2 Editing the corpus-based keyword lists

In order to make a comparison between the three corpora useful, it was necessary to edit each of the three 'raw' keyword lists, removing all the words that appeared to be unique to the organisation concerned. Wordsmith, through its "Stoplist" function, provides a way of editing lists, but as its procedure is rather involved and not as automated as the Keyword routine, I have included below a description of the procedure that I followed:

1. I started by copying the three keyword lists for the whole corpora into a new folder "(05) Testing for consistency across the three corpora"

    - "01 – Green business the whole corpus"
    - "11 – NGOs the whole corpus"
    - "21 – Government the whole corpus"

2. I then saved each one in an Excel format and gave them the numbers 02, 12 and 22.

3. Using Excel, I then extracted the top 650 keyword entries from each file and pasted them into a Notepad document. I called the result:

    - "03 – Green Business top 650 keywords unedited"
    - "13 – NGOs top 650 keywords unedited"
    - "23 – Government top 650 words unedited"

4. Within Notepad, I then resaved each of the three files with slightly modified names and then went through each of them in turn, stripping out all the content words so that only the function words and the proper nouns remained. In this way I obtained, in each

stoplist, a written record of what I had selected out of each keyword list. I could have done this manually in Wordsmith, by simply zapping out lines in the keyword lists, but I would not have had the written record. These three files were my stoplists for the three corpora:

- "04 – Green Business stoplist for corpus keywords"
- "14 – NGOs stoplist for corpus keywords"
- "24 – Government stoplist for corpus keywords"

The three stoplists each contained over 100 different words. In order to provide some idea of what these words were, I have categorised them and provided a few examples from each group in table C.3 below.

Table C.3: Categories of words and some examples that were edited out of the keyword listings

Category of words	Examples of words placed in the stoplists
Function words	WE'LL, THAT,…
Oddities	#, N, O, T, …
Internet and communications terminology	COM, HTTP, ORG, INTERNET, WWW, WEB, EMAIL, TEL, FAX, FREEPHONE, DOWNLOAD, URL, …
Terms referring to the internal organisation of reports	PAGE, APPENDIX, PDF, ANNEX, SUMMARY, SECTION, APPENDICES,…
Names and acronyms of companies and organisations	AWG, UNILEVER, GREENPEACE, ISO, WBCSD, UN, AEA, WTO, PLC, …
Geographic proper nouns	AFRICA, US, DOHA, ASIA, …
Unrecognisable acronyms	ACCP, VED, WEEE, NDA, TCDD, ACRE, …
Units of measurement and quantities	TONNES, GWH, MILLION, LITRES, HECTARES, …
Product terms[1]	GAS, PLATINUM, DIAMONDS, COTTON, SUGAR,…

[1] This category does not include products which are explicit environmental threats, e.g. CARBON DIOXIDE, NOX, PLUTONIUM were retained in the lists of keywords.

5. Because I found from the green business corpus that its stoplist contained 157 words, rather than the 100 – 150 words that I had anticipated, I then set up the three keyword lists in a folder with just the top 700 keywords. The folder is called "Top 700 keyword lists and matching." For each corpus there is (i) the unedited top-700 keyword listing and then (ii) the result of the "match-and-mark" operation on the listing. By saving this listing, it is possible to see all the 700, but with the keywords that were selected for deletion marked on the left hand side of their respective rows. I then changed the setting in Wordsmith to the "match-and-delete" option, and created a new file with the 500+ edited keywords. These three edited keyword lists were saved in the folder "(03) Top 500+ edited keyword lists."

6. It was a simple procedure to open the 500+ edited keywords lists, delete the appropriate number of rows below 100, 200, 300, 400 and 500, and re-save the resulting lists in the five folders:

    - 05 Top 100 keyword lists
    - 06 Top 200 keyword lists
    - 07 Top 300 keyword lists
    - 08 Top 400 keyword lists
    - 09 Top 500 keyword lists

In each of the five folders, then, I had three edited keyword lists, which were ready for comparison. My procedure for the numerical comparison is described in section C.3.

C.3 Making a numerical comparison of the keyword listings of the three corpora

In this section, I describe the procedure I used in order to make a numerical comparison of the top 'X' keywords in the three corpora. The results from this procedure provided me with an overview, of the extent of consistency and variation, between the keyword listings, and they are presented and discussed in section 4.9 on page 165. In carrying out the procedure, I started with the folder containing the top 100 keywords, so the text refers to these three lists. But the procedure was identical for each of the five folders containing the top 100, 200, 300, 400 and 500 edited keywords.

1. I took all the keywords from each of the three files and made a stoplist of them. First, I had to resave the Wordsmith keyword listing as an Excel file, so that I could then extract the column of words, without carrying over the ranking number, from 1 to 100, of each word. Then, I copied the words over into a notepad file and saved these with the following names:

- (05) Government top 100 edited keywords.txt
- (05) Green Business top 100 edited keywords.txt
- (05) NGOs top 100 edited keywords.txt

2. Using these three stoplists, one at a time, I ran the Wordsmith "matchlist" function against the original keyword list, with the setting that deleted those words that *did* match. In this way, I was able to remove from the keyword list all of the words that lay in the areas of intersection in the Venn diagram. The resulting files were called:

    - (05.1) Government unique keywords in top 100 edited keywords
    - (05.1) Green Business unique keywords in top 100 edited keywords
    - (05.1) NGOs unique keywords in top 100 edited keywords

    The three lists of keywords, one from each of the three corpora, were then extracted into an Excel spreadsheet "(05.1) Uniques comparison for top 100 edited keywords."

3. Returning to the original top 100 keyword lists, I ran the "matchlist" function against the stoplist for a second corpus, but, this time, I used the setting that deleted all the words that *did not* match. I then took the resulting keyword list, and matched it against the stoplist for the third corpus, but this time deleting all the words that *did* match. In this way, I generated three listings of the words that lay in the three areas of overlap between the circles in the Venn diagram, but not in the central, 'three-way' section. The three new keyword lists were called:

    - (05.2) Just Government and Green Business KWs in top 100 edited keywords
    - (05.2) Just Government and NGOs KWs in top 100 edited keywords
    - (05.2) Just Green Business and NGOs KWs in top 100 edited keywords

4. Finally, I took the keyword listing for the words that were common between the UK government and green business, and ran the "matchlist" function against the complete radical NGO stoplist, this time rejecting all the words that *did not* match. In this way, I identified the words that were common to all three of the corpora, and which sit in the central 'three-way' section of the Venn diagram. The name of this file was

    - (05.3) All three corpora common keywords in top 100 edited keywords.

5. I then extracted these four lists of words, 'all three' plus the three 'common to just two' lists, into an Excel spreadsheet "(05.3) Commonality comparison for the top 100 edited keywords."

As I noted earlier, this process was carried out in exactly the same way for the top 100, 200, 300, 400 and 500 edited keywords. The numerical results from this process are presented and discussed in section 4.9 on page 165.

Appendix D – The object of study in the linguistic plane

The contents of the three tables in this appendix represent the final result of the procedures that I summarise in chapter four, and which have been described in detail in appendices A, B and C. The overall objective of the procedures described in chapter four, was to design, build and prepare the corpora for linguistic discourse comparison. The material in tables D.1, D.2 and D.3 are, therefore, the object of study which I used in chapter five, in order to make my observations about the linguistic discourse of the three players. In the interests of consistency in the layout of the three tables, I start the first table at the top of the next page.

D.1 The green business corpus

Table D.1: Top 100 two-word, top 50 three-word and top 200 one-word keywords of green business

Green Business Corpus Keywords						
Top 100 two-word and top 50 three-word keywords				The top 200 one-word keywords		
N	Key word	Keyness		N	Key word	Keyness
1	SUSTAINABLE DEVELOPMENT	18 026,69		1	ENVIRONMENTAL	50 282,01
2	HEALTH AND SAFETY	9 373,65		2	BUSINESS	33 236,84
3	CLIMATE CHANGE	8 229,32		3	ENERGY	32 561,70
4	ENVIRONMENTAL PERFORMANCE	7 138,26		4	SUSTAINABLE	28 694,50
5	CORPORATE RESPONSIBILITY	7 077,07		5	EMISSIONS	27 957,12
6	ENVIRONMENTAL MANAGEMENT	6 598,33		6	EMPLOYEES	21 345,17
7	BUSINESS PRINCIPLES	6 256,01		7	SAFETY	21 059,48
8	GREENHOUSE GAS	5 405,60		8	MANAGEMENT	20 525,46
9	ENERGY EFFICIENCY	5 316,06		9	WASTE	19 852,47
10	SOCIAL RESPONSIBILITY	5 283,72		10	PERFORMANCE	19 044,42
11	GROUP COMPANIES	4 885,16		11	ENVIRONMENT	17 173,10
12	HIV AIDS	4 822,87		12	BIODIVERSITY	17 137,79
13	CORPORATE SOCIAL	4 781,19		13	COMPANIES	16 551,74
14	ENVIRONMENTAL AND SOCIAL	4 558,15		14	DEVELOPMENT	15 605,07
15	BEST PRACTICE	4 237,95		15	GLOBAL	15 575,64
16	MANAGEMENT SYSTEMS	4 156,79		16	REPORT	15 331,68
17	CORPORATE SOCIAL RESPONSIBILITY	4 134,68		17	STAKEHOLDERS	15 162,41
18	NATURAL GAS	4 090,75		18	GROUP	14 986,09
19	RESPONSIBILITY REPORT	3 804,73		19	CORPORATE	14 716,54
20	HUMAN RIGHTS	3 798,92		20	OPERATIONS	14 448,74
21	GAS EMISSIONS	3 790,03		21	HEALTH	13 751,37
22	LOST TIME	3 717,76		22	REPORTING	13 069,74
23	GREENHOUSE GAS EMISSIONS	3 656,53		23	SUSTAINABILITY	11 646,63
24	HEALTH SAFETY	3 602,94		24	ISSUES	10 978,40
25	SUPPLY CHAIN	3 565,15		25	STANDARDS	10 128,28
26	OCCUPATIONAL HEALTH	3 544,70		26	TARGETS	10 075,44
27	ACTION PLAN	3 372,68		27	COMMUNITY	9 925,45
28	LOCAL COMMUNITIES	3 369,57		28	SITES	9 548,84
29	OPERATING COMPANIES	3 330,54		29	COMMUNITIES	9 501,74
30	ENERGY USE	3 311,87		30	IMPACTS	9 017,55
31	ENVIRONMENT REPORT	3 300,86		31	RESPONSIBILITY	8 828,17
32	RENEWABLE ENERGY	3 200,78		32	PRODUCTS	8 813,02
33	WASTE MANAGEMENT	3 146,86		33	IMPACT	8 470,03
34	ENVIRONMENTAL IMPACT	2 920,35		34	EHS	8 007,45
35	CORPORATE RESPONSIBILITY REPORT	2 868,68		35	PRINCIPLES	7 922,59
36	HAZARDOUS WASTE	2 861,06		36	BUSINESSES	7 875,82
37	MANAGEMENT SYSTEM	2 836,67		37	CSR	7 417,44
38	CARBON DIOXIDE	2 690,04		38	RECYCLING	7 332,57
39	OIL AND GAS	2 677,82		39	COMPANY	7 321,69
40	LONG TERM	2 583,91		40	SUPPLIERS	7 309,96
41	AIR QUALITY	2 555,89		41	PROGRAMMES	7 091,00
42	ENVIRONMENT HEALTH	2 383,83		42	CUSTOMERS	7 007,55
43	ENVIRONMENTAL IMPACTS	2 363,36		43	PROGRAMME	6 947,81

44	SAFETY HEALTH	2 359,78	44	PROJECTS	6 921,33
45	PERFORMANCE INDICATORS	2 348,71	45	KEY	6 442,79
46	POWER SYSTEMS	2 321,94	46	STAKEHOLDER	6 207,92
47	ACTION PLANS	2 311,95	47	EMPLOYEE	6 194,56
48	BIODIVERSITY ACTION	2 303,02	48	SITE	6 027,80
49	ENERGY CONSUMPTION	2 262,98	49	ACTIVITIES	5 993,25
50	SAFETY PERFORMANCE	2 259,41	50	LOCAL	5 886,06
51	SOCIAL INVESTMENT	2 185,82	51	COMPLIANCE	5 884,15
52	SOCIAL REPORT	2 161,60	52	CARBON	5 834,32
53	WATER USE	2 103,67	53	PROJECT	5 774,57
54	CHILD LABOUR	2 034,97	54	CLIMATE	5 733,39
55	COMMUNITY INVESTMENT	1 905,71	55	EFFICIENCY	5 721,28
56	SOCIAL PERFORMANCE	1 853,10	56	ENSURE	5 701,25
57	EMISSIONS TRADING	1 811,43	57	SOCIAL	5 677,13
58	FOSSIL FUELS	1 793,53	58	GREENHOUSE	5 660,76
59	ENVIRONMENTAL MANAGEMENT SYSTEMS	1 791,23	59	PROGRESS	5 656,52
60	WATER CONSUMPTION	1 754,01	60	DATA	5 634,09
61	SOCIAL REPORTING	1 750,83	61	INITIATIVES	5 598,01
62	TOBACCO PRODUCTS	1 746,60	62	REDUCE	5 575,30
63	GROUP WIDE	1 745,91	63	DEVELOPING	5 530,02
64	TIME INJURY	1 723,89	64	RENEWABLE	5 518,71
65	LOST TIME INJURY	1 717,16	65	LANDFILL	5 369,11
66	GREENHOUSE GASES	1 661,31	66	MINING	5 333,79
67	CONTINUOUS IMPROVEMENT	1 649,12	67	TOTAL	5 244,80
68	NON HAZARDOUS	1 616,15	68	REVIEW	4 963,41
69	KEY PERFORMANCE	1 595,94	69	DIALOGUE	4 960,39
70	GLOBAL COMPACT	1 562,27	70	GOVERNANCE	4 922,60
71	CORPORATE GOVERNANCE	1 552,71	71	PARTNERSHIP	4 876,39
72	ENVIRONMENTAL REPORT	1 546,18	72	TARGET	4 766,63
73	SUSTAINABILITY REPORTING	1 535,34	73	DEVELOP	4 679,82
74	BIODIVERSITY ACTION PLAN	1 501,67	74	COMMITMENT	4 640,82
75	BUSINESS CONDUCT	1 501,67	75	IMPROVE	4 548,01
76	SAFETY MANAGEMENT	1 499,39	76	RISKS	4 538,33
77	ENVIRONMENTAL MANAGEMENT SYSTEM	1 488,20	77	INDICATORS	4 390,23
78	CASE STUDY	1 484,96	78	INDUSTRY	4 267,26
79	RISK MANAGEMENT	1 467,95	79	CONTRACTORS	4 178,85
80	STAKEHOLDER ENGAGEMENT	1 461,26	80	HIV	4 166,67
81	RISK ASSESSMENT	1 450,10	81	CONSUMPTION	4 043,48
82	LOCAL COMMUNITY	1 432,82	82	CONSUMERS	4 013,84
83	SOCIALLY RESPONSIBLE	1 419,01	83	INITIATIVE	3 925,06
84	SOCIAL IMPACT	1 412,61	84	ASSURANCE	3 912,03
85	ENERGY SUPPLIED	1 393,92	85	ENGAGEMENT	3 864,52
86	DEVELOPING WORLD	1 392,84	86	MINE	3 850,07
87	NON HAZARDOUS WASTE	1 387,19	87	STRATEGY	3 826,80
88	WATER QUALITY	1 380,25	88	STEWARDSHIP	3 807,61
89	ENVIRONMENTAL SUSTAINABILITY	1 373,72	89	REDUCTION	3 760,83
90	BUSINESS UNITS	1 370,56	90	COUNTRIES	3 759,83
91	PRODUCT STEWARDSHIP	1 360,25	91	GOVERNMENTS	3 757,59
92	SUSTAINABILITY REPORT	1 352,39	92	INVESTMENT	3 634,64
93	WASTE WATER	1 307,57	93	CONSERVATION	3 623,03
94	EXPLORATION AND PRODUCTION	1 304,40	94	INTERNATIONAL	3 607,63
95	INJURY FREQUENCY	1 279,45	95	IMPROVEMENT	3 599,34
96	PERFORMANCE DATA	1 277,35	96	SUPPLY	3 588,04
97	GLOBAL REPORTING	1 265,98	97	RECYCLED	3 573,74

98	BUSINESS PARTNERS	1 243,93		98	NGOS	3 530,33
99	DEVELOPING COUNTRIES	1 239,74		99	SYSTEMS	3 517,88
100	FREQUENCY RATE	1 239,04		100	GENERATION	3 509,34
101	ANNUAL REPORT	1 237,47		101	OPERATING	3 503,62
102	WASTE SERVICES	1 232,31		102	SOCIALREPORT	3 499,60
103	ILLICIT TRADE	1 214,01		103	PROCESS	3 428,43
104	GRI INDICATORS	1 212,11		104	CHALLENGES	3 419,98
105	TIME INJURIES	1 198,64		105	AREAS	3 394,85
106	GREEN ENERGY	1 191,90		106	INCLUDING	3 282,14
107	REPORTING INITIATIVE	1 191,90		107	OPPORTUNITIES	3 275,61
108	JOINT VENTURE	1 189,46		108	SUPPORT	3 274,68
109	POWER STATIONS	1 185,62		109	OCCUPATIONAL	3 213,96
110	GLOBAL REPORTING INITIATIVE	1 185,17		110	OPERATE	3 212,00
111	GROUP OF COMPANIES	1 178,20		111	GUIDELINES	3 152,92
112	LOST TIME INJURIES	1 171,70		112	RENEWABLES	3 141,55
113	ECONOMIC ENVIRONMENTAL	1 156,21		113	QUALITY	3 137,38
114	EMPLOYEES AND CONTRACTORS	1 151,50		114	DIOXIDE	3 136,51
115	TREATMENT WORKS	1 145,25		115	HAZARDOUS	3 130,90
116	HIGH STANDARDS	1 136,94		116	PROCESSES	3 125,35
117	ENVIRONMENTAL PERFORMANCE REPORT	1 124,56		117	CERTIFICATION	3 108,49
118	KEY PERFORMANCE INDICATORS	1 077,43		118	AWARENESS	3 090,11
119	COUNCIL FOR SUSTAINABLE	989,89		119	RESOURCES	3 086,66
120	HEALTH AND ENVIRONMENT	964,87		120	HSE	3 084,09
121	INJURY FREQUENCY RATE	848,47		121	DIVERSITY	3 082,52
122	CARBON DIOXIDE EMISSIONS	831,09		122	ADDITION	3 073,90
123	CODE OF BUSINESS	806,72		123	RISK	3 023,30
124	NON GOVERNMENTAL ORGANISATIONS	789,82		124	WASTEWATER	2 969,54
125	BIODIVERSITY ACTION PLANS	781,13		125	RESPONSIBLE	2 950,02
126	EMISSIONS TO AIR	740,73		126	NOX	2 949,96
127	GLOBAL WARMING POTENTIAL	740,73		127	OPERATIONAL	2 948,02
128	DOW JONES SUSTAINABILITY	734		128	AIDS	2 942,14
129	INJURY AND ILLNESS	686,66		129	INFORMATION	2 802,71
130	ENVIRONMENTAL SUSTAINABILITY REPORT	680,12		130	MINIMISE	2 772,09
131	ENVIRONMENTAL REPORT APPENDICES	673,39		131	MANAGING	2 758,64
132	HABITAT ACTION PLAN	673,39		132	SIGNIFICANT	2 751,23
133	LOCAL AIR QUALITY	666,66		133	PARTNERS	2 734,27
134	CODE OF CONDUCT	654,86		134	PACKAGING	2 709,18
135	EMISSIONS PER GWH	653,19		135	EXPLORATION	2 697,82
136	BLACK ECONOMIC EMPOWERMENT	646,45		136	AUDIT	2 659,16
137	INTERNATIONAL MARKETING STANDARDS	646,45		137	WORKPLACE	2 649,76
138	CLIMATE CHANGE LEVY	612,78		138	POTENTIAL	2 646,17
139	LAWS AND REGULATIONS	570,56		139	APPROACH	2 617,93
140	GOOD CORPORATE CONDUCT	545,45		140	CONTINUE	2 614,84
141	LIQUEFIED NATURAL GAS	537,29		141	EXAMPLE	2 600,16
142	ACROSS THE BUSINESS	518,51		142	ETHICAL	2 591,83
143	CONTRACTORS AND SUPPLIERS	518,51		143	REDUCING	2 589,12
144	EMISSIONS TRADING SCHEME	518,51		144	MONITORING	2 588,97
145	OBJECTIVES AND TARGETS	516,78		145	SOLAR	2 583,53
146	FIRED POWER STATIONS	512,49		146	PARTNERSHIPS	2 578,50
147	DISCHARGES TO WATER	498,31		147	EXTERNAL	2 562,43
148	LAND AND BIODIVERSITY	498,31		148	PRODUCTION	2 549,35
149	LONDON BENCHMARKING GROUP	484,84		149	ORGANISATIONS	2 535,40
150	ALL GROUP COMPANIES	478,11		150	FOCUS	2 530,77
				151	INCIDENTS	2 530,70

				152	REGULATORY	2 492,98
				153	DEVELOPED	2 492,18
				154	CONDUCT	2 478,22
				155	IMPLEMENTATION	2 476,42
				156	PRODUCT	2 475,34
				157	CONTRIBUTE	2 470,17
				158	POLICIES	2 467,27
				159	IMPLEMENT	2 459,62
				160	HYDROGEN	2 458,57
				161	POLICY	2 435,02
				162	TRAINING	2 394,87
				163	VERIFICATION	2 386,81
				164	HABITAT	2 374,58
				165	PROVIDE	2 349,99
				166	PLANT	2 340,19
				167	INFRASTRUCTURE	2 284,32
				168	MOBILE	2 283,92
				169	IMPROVEMENTS	2 265,05
				170	PRACTICES	2 258,56
				171	ONGOING	2 256,45
				172	ACTION	2 254,83
				173	OBJECTIVES	2 232,13
				174	MARKETING	2 221,37
				175	COMMITTED	2 218,03
				176	WORKING	2 211,37
				177	ASSESSMENT	2 210,71
				178	AUDITS	2 209,81
				179	ACCORDANCE	2 185,21
				180	TRANSPARENCY	2 166,50
				181	IMPROVING	2 152,95
				182	BENEFITS	2 148,37
				183	CONSULTATION	2 147,46
				184	FRAMEWORK	2 138,63
				185	FEEDBACK	2 123,33
				186	METHANE	2 088,66
				187	ANNUAL	2 076,24
				188	COMMITMENTS	2 066,50
				189	CR	2 052,03
				190	CONTRIBUTION	2 029,77
				191	SERVICES	2 007,91
				192	HABITATS	1 999,95
				193	ACHIEVE	1 994,36
				194	EXECUTIVE	1 968,05
				195	MATERIALS	1 962,84
				196	RESOURCE	1 962,79
				197	AIM	1 961,40
				198	SMOKING	1 925,91
				199	PROMOTE	1 922,23
				200	HUMAN	1 899,24

D.2 The radical NGOs corpus

Table D.2: Top 100 two-word, top 50 three-word and top 200 one-word keywords of the radical NGOs

The radical NGOs Corpus Keywords						
Top 100 two-word and top 50 three-word keywords				The top 200 one-word keywords		
N	**Key word**	**Keyness**		**N**	**Key word**	**Keyness**
1	CLIMATE CHANGE	35 309,87		1	COUNTRIES	52 324,16
2	DEVELOPING COUNTRIES	21 397,82		2	GM	47 416,43
3	HUMAN RIGHTS	13 467,14		3	ENVIRONMENTAL	43 033,27
4	GM CROPS	12 436,42		4	CLIMATE	38 081,11
5	CIVIL SOCIETY	7 921,76		5	WASTE	32 377,04
6	GLOBAL WARMING	4 967,95		6	GLOBAL	31 051,83
7	DEBT RELIEF	4 763,73		7	TRADE	27 796,00
8	INDIGENOUS PEOPLES	4 680,33		8	DEVELOPMENT	27 328,30
9	FOOD SECURITY	4 580,64		9	INTERNATIONAL	24 657,52
10	LOCAL COMMUNITIES	4 313,22		10	GOVERNMENT	24 336,51
11	LOCAL PEOPLE	4 313,15		11	ENVIRONMENT	23 714,98
12	GENETICALLY MODIFIED	4 296,51		12	SUSTAINABLE	23 457,88
13	CARBON DIOXIDE	4 226,59		13	IMPACTS	23 112,00
14	GM FOOD	4 105,57		14	COMPANIES	22 534,08
15	HUMAN HEALTH	4 006,12		15	EMISSIONS	22 457,07
16	GREENHOUSE GAS	3 963,74		16	DEVELOPING	20 773,28
17	KYOTO PROTOCOL	3 809,47		17	LOCAL	20 759,66
18	NATURAL RESOURCES	3 782,90		18	EARTH	20 634,78
19	DEVELOPED COUNTRIES	3 670,18		19	CROPS	20 218,93
20	IMPACT ASSESSMENT	3 641,74		20	ENERGY	20 130,74
21	INNER CITY	3 456,15		21	POVERTY	18 373,23
22	GM FREE	3 371,95		22	COMMUNITIES	18 344,02
23	FOSSIL FUELS	3 303,58		23	BANK	17 346,65
24	ENVIRONMENTAL AND SOCIAL	3 271,70		24	FARMERS	17 094,32
25	GAS EMISSIONS	3 214,06		25	CHEMICALS	16 435,44
26	ILLEGAL LOGGING	3 189,49		26	RIGHTS	15 194,16
27	DEVELOPING COUNTRY	3 175,80		27	FOOD	15 064,80
28	ENVIRONMENTAL IMPACTS	3 128,42		28	IMPACT	14 502,96
29	FOSSIL FUEL	3 128,21		29	REPORT	14 180,37
30	ENVIRONMENTAL IMPACT	3 029,21		30	RECYCLING	14 161,44
31	MARKET ACCESS	2 816,88		31	DEBT	13 732,08
32	BRIEFING PAPER	2 640,49		32	GOVERNMENTS	13 652,14
33	ENERGY EFFICIENCY	2 621,31		33	WORLD	12 899,03
34	INTERNATIONAL DEVELOPMENT	2 574,08		34	CARBON	12 342,78
35	HUMAN DEVELOPMENT	2 562,42		35	INDUSTRY	12 022,32
36	KIMBERLEY PROCESS	2 514,59		36	NGOS	11 489,02
37	GM MAIZE	2 479,24		37	PIPELINE	11 304,49
38	INTELLECTUAL PROPERTY	2 460,17		38	POLICY	11 213,59
39	DEBT CANCELLATION	2 457,14		39	MINING	10 800,44
40	LONG TERM	2 407,66		40	HUMAN	10 701,54
41	LOCAL ECONOMY	2 390,20		41	FUEL	10 596,91
42	FARM SCALE	2 364,33		42	POLLUTION	10 039,64
43	CONFLICT DIAMONDS	2 275,95		43	SECTOR	10 006,10

44	INTERNATIONAL TRADE	2 253,93		44	RENEWABLE	9 951,00
45	HIV AIDS	2 111,28		45	FOREST	9 935,15
46	GM FOODS	2 085,91		46	PROJECT	9 903,65
47	LEAST DEVELOPED	2 084,84		47	LIBERALISATION	9 879,10
48	CREDIT UNIONS	2 044,38		48	HEALTH	9 774,92
49	EXPORT SUBSIDIES	2 039,10		49	LOGGING	9 741,09
50	EXTRACTIVE INDUSTRIES	2 010,79		50	PUBLIC	9 625,44
51	DEVELOPMENT GOALS	1 947,48		51	CHANGE	9 441,42
52	INDUSTRIALISED COUNTRIES	1 939,16		52	EXPORT	9 335,05
53	GLOBAL CLIMATE	1 929,27		53	LANDFILL	9 292,48
54	GREENHOUSE GASES	1 905,09		54	ECONOMIC	9 285,29
55	AROUND THE WORLD	1 857,45		55	TRANSPORT	9 147,59
56	MUNICIPAL WASTE	1 823,42		56	INVESTMENT	9 080,86
57	HAZARDOUS CHEMICALS	1 805,92		57	COMMUNITY	8 930,47
58	FLAME RETARDANTS	1 776,56		58	NUCLEAR	8 860,54
59	GLOBAL ECONOMY	1 764,24		59	GOVERNMENT'S	8 626,35
60	COMMUNITY DEVELOPMENT	1 748,25		60	AGRICULTURE	8 454,26
61	CARBON DIOXIDE EMISSIONS	1 743,37		61	REDUCTION	8 402,39
62	MILLENNIUM DEVELOPMENT	1 727,95		62	INDIGENOUS	8 395,95
63	DIAMOND INDUSTRY	1 723,53		63	POOR	8 222,69
64	HEALTH IMPACTS	1 723,53		64	RESOURCES	8 150,15
65	AGREEMENT ON AGRICULTURE	1 714,69		65	EXAMPLE	8 005,04
66	DIOXIDE EMISSIONS	1 712,06		66	FORESTS	7 996,78
67	GM CONTAMINATION	1 674,92		67	CAMPAIGNER	7 838,18
68	BRITISH ENERGY	1 666,36		68	SUBSIDIES	7 764,13
69	LOCAL AUTHORITIES	1 656,71		69	INCINERATION	7 754,50
70	FOREST SCHOOL	1 648,40		70	PRODUCTS	7 443,84
71	DEVELOPING WORLD	1 644,97		71	AID	7 403,97
72	HIPC INITIATIVE	1 608,63		72	POLICIES	7 160,07
73	CHILD LABOUR	1 602,04		73	PROJECTS	7 067,89
74	FREE TRADE	1 548,94		74	SUSTAINABILITY	6 843,88
75	FOREST MANAGEMENT	1 544,56		75	PRODUCTION	6 724,35
76	CORPORATE SOCIAL	1 542,34		76	GATS	6 664,43
77	ENVIRONMENTAL PROTECTION	1 527,61		77	ORGANIC	6 628,98
78	GENETICALLY ENGINEERED	1 523,08		78	MEASURES	6 458,90
79	HOUSEHOLD WASTE	1 503,10		79	CORPORATE	6 442,74
80	CARBON EMISSIONS	1 499,29		80	ISSUES	6 426,67
81	EXPORT CREDIT	1 499,06		81	LEVELS	6 425,38
82	CAPACITY BUILDING	1 498,14		82	TARGETS	6 415,74
83	CORPORATE RESPONSIBILITY	1 487,78		83	AGRICULTURAL	6 364,67
84	COMMUNITY BASED	1 479,38		84	WORLD'S	6 343,96
85	ANIMAL FEED	1 469,38		85	TRANSPARENCY	6 269,56
86	ENVIRONMENTAL DAMAGE	1 466,63		86	ORGANISATIONS	6 168,55
87	FINANCIAL INSTITUTIONS	1 451,69		87	REGULATION	6 069,64
88	LANDFILL TAX	1 445,11		88	WILDLIFE	6 029,69
89	EMISSIONS TRADING	1 440,69		89	ILLEGAL	5 981,55
90	BROMINATED FLAME	1 436,27		90	BRIEFING	5 967,67
91	ACTION PLAN	1 430,93		91	CONCERNS	5 966,06
92	GM CROP	1 418,59		92	ENSURE	5 950,27
93	CORPORATE ACCOUNTABILITY	1 414,18		93	CONTAMINATION	5 921,91
94	ENVIRONMENTAL JUSTICE	1 405,34		94	FARMING	5 917,07
95	CIVIL SOCIETY GROUPS	1 396,50		95	FORESTRY	5 766,76
96	INTERNATIONAL FINANCIAL	1 392,69		96	LEAST	5 587,71
97	AIR POLLUTION	1 389,77		97	PESTICIDES	5 578,85

98	CIVIL SOCIETY ORGANISATIONS	1 378,82		98	BIODIVERSITY	5 558,39
99	ANCIENT FORESTS	1 344,12		99	INDICATORS	5 527,31
100	EARTH SUMMIT	1 328,17		100	GLOBALISATION	5 433,06
101	LANDFILL SITES	1 320,26		101	INCINERATOR	5 431,40
102	GENETIC ENGINEERING	1 316,60		102	CONSULTATION	5 371,11
103	AFFECTED COMMUNITIES	1 312,53		103	LIVELIHOODS	5 286,98
104	INTERNATIONAL COMMUNITY	1 303,43		104	CORPORATIONS	5 255,29
105	HEALTH EFFECTS	1 302,87		105	LAND	5 251,05
106	CORPORATE SOCIAL RESPONSIBILITY	1 290,02		106	STRATEGY	5 134,14
107	DEVELOPMENT REPORT	1 274,49		107	REDUCE	5 109,56
108	DEPARTMENT FOR INTERNATIONAL	1 246,24		108	AREAS	5 106,59
109	BROMINATED FLAME RETARDANTS	1 228,56		109	AGENCY	5 089,28
110	ENVIRONMENTAL IMPACT ASSESSMENT	1 195,57		110	GOVERNANCE	4 964,24
111	CAPITAL ACCOUNT LIBERALISATION	1 140,18		111	POOREST	4 854,49
112	CONTRACTION AND CONVERGENCE	989,92		112	BENEFITS	4 836,67
113	DANGEROUS CLIMATE CHANGE	919,21		113	NGO	4 820,52
114	BRETTON WOODS PROJECT	875,02		114	FUELS	4 820,09
115	EXTRACTIVE INDUSTRIES REVIEW	808,73		115	PROTOCOL	4 809,52
116	COMMUNITY BASED ORGANISATIONS	738,02		116	SUPPORT	4 809,20
117	ACTION ON CLIMATE	733,6		117	BANK'S	4 779,37
118	DEVELOPING COUNTRY GOVERNMENTS	724,76		118	NEGOTIATIONS	4 753,05
119	EU MEMBER STATES	715,92		119	STAKEHOLDERS	4 704,17
120	EXTENT OF COMPLIANCE	662,89		120	INCINERATORS	4 687,81
121	EXPORT CREDIT AGENCIES	659,08		121	GENETICALLY	4 640,06
122	COMMUNITY DEVELOPMENT FINANCE	645,22		122	FOSSIL	4 624,92
123	EMISSIONS TRADING SCHEME	636,38		123	CROP	4 609,04
124	CODE OF CONDUCT	633,86		124	WARMING	4 570,22
125	EXTREME WEATHER EVENTS	627,54		125	FINANCIAL	4 563,81
126	CLIMATE CHANGE LEVY	605,44		126	HAZARDOUS	4 552,07
127	EFFECTS OF CLIMATE	604,42		127	EARTH'S	4 502,62
128	COMMUNITY DEVELOPMENT CREDIT	592,18		128	STANDARDS	4 494,71
129	AGREEMENT ON TRADE	566,37		129	ACTION	4 477,23
130	ENVIRONMENT AND HUMAN	565,67		130	COSTS	4 417,95
131	COMMISSION ON ENVIRONMENTAL	558,96		131	SUPERMARKETS	4 395,59
132	ETHICAL TRADING INITIATIVE	556,83		132	GROWTH	4 368,65
133	ENVIRONMENTAL AND HUMAN	539,15		133	COMMISSION	4 292,66
134	ENERGY WHITE PAPER	525,89		134	TOXIC	4 287,94
135	CLONE TOWN BRITAIN	517,06		135	GREENHOUSE	4 280,07
136	CONVENTION ON CLIMATE	515,09		136	CAPACITY	4 259,75
137	CODE OF PRACTICE	511,42		137	PAPER	4 259,59
138	AMOUNT OF WASTE	503,53		138	ASSESSMENT	4 258,94
139	EMISSIONS OF CARBON	495,36		139	MARKETS	4 224,86
140	COMBAT CLIMATE CHANGE	494,96		140	DIOXIDE	4 218,33
141	EVALUATION OF COMPLIANCE	494,96		141	CONSUMERS	4 193,46
142	DEVELOPMENT AND POVERTY	490,54		142	ACCESS	4 167,14
143	DEVELOPMENT CREDIT UNIONS	490,54		143	AGREEMENTS	4 114,34
144	ENVIRONMENTAL CAMPAIGN GROUP	490,54		144	INFRASTRUCTURE	4 079,87
145	ENVIRONMENTAL JUSTICE IMPACT	450,77		145	FUND	4 079,31
146	ENVIRONMENT AND DEVELOPMENT	450,11		146	PROTECT	4 075,24
147	ENVIRONMENTAL AND HEALTH	446,6		147	INCLUDING	4 071,06
148	EMISSIONS OF GREENHOUSE	431,87		148	RENEWABLES	4 067,22
149	CLIMATE CHANGE PROGRAMME	428,67		149	SITES	4 017,94
150	CONTROL ARMS CAMPAIGN	428,67		150	PLANTATIONS	3 998,99
				151	NATIONAL	3 917,50

				152	PROTECTION	3 871,83
				153	REVIEW	3 863,10
				154	CAMPAIGN	3 862,61
				155	PEOPLE	3 852,22
				156	PLANT	3 794,92
				157	PEOPLES	3 785,52
				158	SECTORS	3 776,90
				159	RESOURCE	3 740,82
				160	PROCESS	3 727,04
				161	CURRENTLY	3 717,75
				162	COMPANY	3 640,21
				163	PARTICIPATION	3 574,62
				164	HERBICIDE	3 561,28
				165	COMPOSTING	3 558,09
				166	ECONOMY	3 552,74
				167	NATIONS	3 521,91
				168	COMPLIANCE	3 497,38
				169	KEY	3 475,70
				170	RURAL	3 473,83
				171	MONITORING	3 439,34
				172	REGIONAL	3 402,82
				173	CURRENT	3 390,95
				174	FUNDING	3 382,99
				175	IMPORTS	3 371,14
				176	SAFETY	3 360,15
				177	POTENTIAL	3 318,51
				178	ADDITION	3 315,90
				179	SOCIAL	3 298,62
				180	PESTICIDE	3 291,30
				181	AFFECTED	3 285,50
				182	BUSINESSES	3 208,29
				183	PLANNING	3 146,36
				184	EFFECTS	3 122,44
				185	PIPELINES	3 120,70
				186	ETHICAL	3 117,43
				187	EXPORTS	3 116,59
				188	INCREASE	3 077,20
				189	COMMITMENTS	3 076,36
				190	AGENDA	3 058,70
				191	COUNTRY	3 057,23
				192	PULP	3 021,45
				193	PRODUCERS	2 996,48
				194	OFFSHORE	2 993,26
				195	EXTRACTIVE	2 977,77
				196	SCALE	2 974,77
				197	IMPLEMENTATION	2 963,93
				198	DIOXINS	2 955,15
				199	SUPPLIERS	2 947,49
				200	CHEMICAL	2 944,38

D.3 The UK government corpus

Table D.3: The top 100 two-word, top 50 three-word and top 200 one-word keywords of the UK government

The UK Government Corpus Keywords					
Top 100 two-word and top 50 three-word keywords			The top 200 one-word keywords		
N	**Key word**	**Keyness**	**N**	**Key word**	**Keyness**
1	CLIMATE CHANGE	22 657,28	1	EMISSIONS	52 664,39
2	AIR QUALITY	11 310,75	2	ENERGY	52 067,91
3	ENERGY EFFICIENCY	9 978,33	3	SUSTAINABLE	46 221,39
4	GM CROPS	8 785,71	4	ENVIRONMENTAL	45 450,69
5	RISK ASSESSMENT	8 449,36	5	WASTE	36 752,39
6	RENEWABLE ENERGY	7 648,53	6	GM	31 978,44
7	CARBON DIOXIDE	7 329,26	7	ENVIRONMENT	31 555,92
8	HUMAN HEALTH	5 657,29	8	CARBON	23 378,19
9	GREENHOUSE GAS	5 268,56	9	IMPACTS	22 736,11
10	OILSEED RAPE	5 052,84	10	DEVELOPMENT	21 207,26
11	GENETICALLY MODIFIED	5 029,59	11	CLIMATE	20 686,76
12	ENVIRONMENTAL IMPACTS	4 834,00	12	STRATEGY	20 027,51
13	ANIMAL HEALTH	4 457,23	13	CROPS	17 611,00
14	BEST PRACTICE	4 432,79	14	BIODIVERSITY	14 979,38
15	AIR POLLUTION	4 369,37	15	LANDFILL	14 239,37
16	GAS EMISSIONS	4 126,08	16	EFFECTS	14 102,59
17	LONG TERM	3 961,67	17	HEALTH	13 734,57
18	ADVISORY COMMITTEE	3 665,05	18	MEASURES	13 612,01
19	HEALTH EFFECTS	3 622,92	19	ELECTRICITY	13 500,90
20	ACTION PLAN	3 586,09	20	FUEL	13 318,71
21	FINAL REPORT	3 572,07	21	RENEWABLE	13 028,19
22	DEVOLVED ADMINISTRATIONS	3 544,66	22	IMPACT	12 615,98
23	NON GM	3 534,16	23	DIRECTIVE	12 103,90
24	DIOXIDE EMISSIONS	3 439,46	24	DATA	12 084,89
25	GENE FLOW	3 418,63	25	ASSESSMENT	11 686,39
26	CARBON DIOXIDE EMISSIONS	3 377,53	26	BENEFITS	11 460,42
27	ANNUAL MEAN	3 292,59	27	TRANSPORT	11 340,91
28	ENERGY RECOVERY	3 287,34	28	FOOD	11 211,59
29	LOCAL AUTHORITIES	3 266,71	29	CHEMICALS	11 187,88
30	ANIMAL WELFARE	3 084,82	30	RISK	10 805,43
31	LOW CARBON	3 024,77	31	REDUCTION	10 621,93
32	DISTRIBUTED GENERATION	3 019,52	32	QUALITY	10 606,80
33	AIR QUALITY STRATEGY	2 919,74	33	EFFICIENCY	10 515,40
34	GM PLANTS	2 919,74	34	GOVERNMENT	10 214,73
35	QUALITY STRATEGY	2 919,74	35	GENERATION	10 126,10
36	ENERGY CONSUMPTION	2 872,73	36	COSTS	9 937,59
37	GREENHOUSE GASES	2 857,89	37	DIOXIDE	9 752,68
38	CONSEQUENCES OF EMISSIONS	2 814,72	38	REVIEW	9 700,74
39	ENERGY USE	2 731,59	39	MANAGEMENT	9 655,35
40	CONSUMER PRODUCTS	2 681,18	40	REPORT	9 543,24
41	ENERGY CROPS	2 594,16	41	PLANT	9 439,34
42	RISK REDUCTION	2 570,17	42	INDICATORS	9 392,02
43	GM CROP	2 546,89	43	RENEWABLES	9 359,15

44	ENVIRONMENTAL IMPACT	2 545,71	44	RECYCLING	9 315,51
45	MARINE ENVIRONMENT	2 479,17	45	POTENTIAL	9 270,82
46	FUEL POVERTY	2 478,63	46	POLLUTION	9 225,86
47	HERBICIDE TOLERANT	2 478,63	47	EXPOSURE	9 070,98
48	DEVELOPING COUNTRIES	2 460,29	48	PRODUCTS	9 054,47
49	COSTS AND BENEFITS	2 441,39	49	GAS	8 962,26
50	CLIMATE CHANGE PROGRAMME	2 410,36	50	MONITORING	8 880,27
51	LANDFILL TAX	2 399,86	51	SOIL	8 753,72
52	ROAD TRANSPORT	2 370,14	52	ISSUES	8 428,14
53	CONSUMPTION AND PRODUCTION	2 356,71	53	ANIMAL	8 242,06
54	CHANGE PROGRAMME	2 334,85	54	SUSTAINABILITY	8 149,22
55	ECONOMIC INSTRUMENTS	2 305,33	55	CONSUMPTION	7 746,05
56	OFFSHORE WIND	2 298,48	56	LEVELS	7 691,20
57	CARBON EMISSIONS	2 296,39	57	STAKEHOLDERS	7 618,47
58	RENEWABLES OBLIGATION	2 237,06	58	REDUCE	7 481,74
59	FAULT LEVEL	2 221,31	59	POLICY	7 452,76
60	LANDFILL GAS	2 191,34	60	INCINERATION	7 335,33
61	EMISSIONS TRADING	2 168,80	61	WIND	7 260,29
62	RENEWABLE SOURCES	2 158,79	62	EMISSION	7 241,87
63	ADVERSE EFFECTS	2 050,89	63	TARGETS	7 235,90
64	ANAEROBIC DIGESTION	2 027,01	64	CONSULTATION	7 174,76
65	FOOD MILES	1 995,50	65	SITES	7 047,84
66	LIMIT VALUES	1 895,72	66	AIR	7 046,52
67	MICRO GENERATION	1 848,46	67	CONCENTRATIONS	6 954,77
68	FOSSIL FUELS	1 848,29	68	FISHERIES	6 953,52
69	HAZARDOUS WASTE	1 817,85	69	CHANGE	6 939,35
70	CHANGE LEVY	1 811,70	70	CROP	6 908,32
71	CLIMATE CHANGE LEVY	1 811,70	71	USE	6 833,04
72	ENVIRONMENTAL RISKS	1 765,71	72	SECTOR	6 758,81
73	KYOTO PROTOCOL	1 759,19	73	INDUSTRY	6 754,74
74	ANNUAL REPORT	1 758,23	74	WELFARE	6 725,71
75	FOSSIL FUEL	1 747,15	75	MAIZE	6 611,23
76	NETWORK SPLITTING	1 738,18	76	TECHNOLOGIES	6 567,51
77	ENVIRONMENTAL PROTECTION	1 724,14	77	MARINE	6 561,35
78	LAND USE	1 718,69	78	GREENHOUSE	6 514,39
79	COMMITTEE ON RELEASES	1 706,68	79	BIOMASS	6 392,31
80	REDUCTION STRATEGY	1 706,68	80	FRAMEWORK	6 311,24
81	ENERGY SOURCES	1 694,58	81	AGENCY	6 282,81
82	RELATIVE ERROR	1 669,92	82	RURAL	6 234,02
83	RISK MANAGEMENT	1 654,58	83	WASTES	6 139,50
84	LONGER TERM	1 652,10	84	HERBICIDE	6 119,01
85	DEVELOPMENT STRATEGY	1 644,79	85	REDUCTIONS	6 107,70
86	PRODUCT POLICY	1 622,65	86	EXAMPLE	6 056,37
87	COST EFFECTIVE	1 617,73	87	REGULATIONS	6 051,87
88	BIODIVERSITY ACTION	1 612,15	88	OBJECTIVES	6 030,81
89	ENERGY SAVING	1 592,24	89	SUBSTANCES	5 951,09
90	ENVIRONMENTAL EFFECTS	1 577,18	90	GENE	5 828,75
91	HEALTH CONSEQUENCES	1 570,14	91	PLANTS	5 825,05
92	NATURAL RESOURCES	1 561,17	92	RISKS	5 775,61
93	ELECTRICITY GENERATION	1 560,29	93	REGULATORY	5 766,61
94	FOOD CONSUMER	1 559,64	94	NETWORK	5 661,42
95	LIFE CYCLE	1 551,94	95	INFORMATION	5 659,20
96	CHEMICALS IN FOOD	1 535,55	96	GLOBAL	5 614,93
97	ENVIRONMENTAL POLLUTION	1 520,35	97	LOCAL	5 547,29

98	FUEL CELL	1 503,43		98	TOXICITY	5 498,14
99	RESOURCE PRODUCTIVITY	1 496,62		99	POLICIES	5 424,10
100	EMISSION REDUCTIONS	1 492,28		100	ORGANIC	5 406,98
101	ENVIRONMENTAL RISK	1 486,12		101	KEY	5 388,57
102	AIR POLLUTANTS	1 474,20		102	ENSURE	5 367,28
103	EPIDEMIOLOGICAL RESEARCH	1 470,37		103	GUIDANCE	5 354,12
104	NITROGEN DIOXIDE	1 464,50		104	BISPHENOL	5 333,88
105	DELIBERATE RELEASE	1 454,61		105	SECTORS	5 243,50
106	DIOXIN LIKE	1 454,61		106	CSR	5 242,53
107	ENVIRONMENTAL PERFORMANCE	1 451,41		107	COMPOSTING	5 185,24
108	COMMISSION ON ENVIRONMENTAL	1 443,88		108	SOURCES	5 168,28
109	ENVIRONMENTAL BENEFITS	1 438,15		109	AREAS	5 157,05
110	REDUCE EMISSIONS	1 424,22		110	SIGNIFICANT	5 142,79
111	CORPORATE SOCIAL RESPONSIBILITY	1 314,08		111	COST	5 077,56
112	DIOXIN LIKE PCBS	1 228,80		112	SCENARIOS	5 061,03
113	ECOLOGY FINAL REPORT	1 102,77		113	POLLUTANTS	5 009,40
114	DIOXINS AND DIOXIN	1 045,01		114	ANIMALS	5 005,93
115	ANCILLARY SERVICE PROVISION	1 008,25		115	WATER	4 875,99
116	BIODIVERSITY ACTION PLAN	929,48		116	LEVEL	4 864,99
117	CASE BY CASE	872,1		117	CONSUMERS	4 863,44
118	CENTRE URBAN CENTRE	866,46		118	RESEARCH	4 799,84
119	COEXISTENCE AND LIABILITY	855,96		119	VETERINARY	4 766,01
120	DEATHS BROUGHT FORWARD	829,7		120	OILSEED	4 733,89
121	EMISSION LIMIT VALUES	819,2		121	REDUCING	4 725,85
122	A LOW CARBON	777,19		122	INDICATOR	4 720,18
123	ADVERSE EFFECTS ON	769,77		123	PRODUCT	4 686,41
124	COMMITTEE ON TOXICITY	750,93		124	SCHEME	4 663,96
125	ACTIVE MANAGEMENT SCHEME	724,68		125	REGULATION	4 609,23
126	DIOXINS AND FURANS	714,17		126	EXISTING	4 605,30
127	EFFECTS OF CLIMATE	709,61		127	SPECIES	4 599,07
128	ASSESS AND ADAPT	703,67		128	FUELS	4 596,58
129	DEVELOPMENT AND REGENERATION	687,92		129	GENERATORS	4 580,65
130	COMMITTEE ON CONSUMER	661,66		130	OFFSHORE	4 561,86
131	AIR QUALITY OBJECTIVES	630,15		131	SCENARIO	4 523,86
132	CARCINOGENICITY OF CHEMICALS	588,14		132	STANDARDS	4 514,23
133	AIR QUALITY DAUGHTER	577,64		133	CURRENT	4 439,37
134	CLIMATE CHANGE IMPACTS	577,64		134	SITE	4 423,94
135	ELECTRICITY FROM RENEWABLE	577,64		135	INCREMENTS	4 308,45
136	ELECTRICAL AND ELECTRONIC	575,81		136	LOW	4 294,41
137	ECONOMIC AND ENVIRONMENTAL	574,41		137	CONSUMER	4 239,63
138	ALTERNATIVE NETWORK SPLITTING	572,39		138	SUPPLY	4 197,88
139	BIOLOGICAL TREATMENT MBT	540,88		139	ECOSYSTEM	4 161,07
140	CHEMICALS STAKEHOLDER FORUM	535,63		140	HABITATS	4 157,85
141	ACRYLAMIDE AND NMA	530,38		141	TRANSGENIC	4 144,27
142	BEST PRACTICE PROGRAMME	530,38		142	COMMISSION	4 136,71
143	COST OF CARBON	530,38		143	ADDITION	4 111,75
144	CODE OF PRACTICE	520,83		144	PESTICIDES	4 101,92
145	COMPOSTING IN VESSEL	519,88		145	ANNUAL	4 101,09
146	AGRI ENVIRONMENT SCHEMES	514,63		146	VOLTAGE	4 086,99
147	ANAEROBIC DIGESTION GASIFICATION	514,63		147	DEVELOPING	4 077,02
148	DIGESTION GASIFICATION PYROLYSIS	514,63		148	OPTIONS	4 040,00
149	AIR QUALITY MANAGEMENT	512,2		149	SCHEMES	4 035,34
150	COMPOSTING WINDROW MECHANICAL	509,37		150	GENETICALLY	4 005,72
				151	INCREASE	4 002,48

				152	TARGET	3 953,16
				153	ADVISORY	3 884,91
				154	ECONOMIC	3 860,82
				155	POVERTY	3 826,52
				156	STAKEHOLDER	3 825,66
				157	APPROACH	3 810,06
				158	PROGRAMME	3 775,77
				159	GMOS	3 718,81
				160	ADDITIONAL	3 704,25
				161	RESOURCE	3 697,76
				162	FUTURE	3 631,20
				163	HAZARDOUS	3 615,94
				164	PROGRESS	3 603,11
				165	ADVICE	3 583,54
				166	NOX	3 571,33
				167	AVAILABLE	3 562,22
				168	PRODUCTION	3 551,75
				169	ACTION	3 531,91
				170	DEVOLVED	3 517,23
				171	RELEASES	3 507,08
				172	CAPACITY	3 481,82
				173	URBAN	3 473,04
				174	PROVIDE	3 464,65
				175	INCLUDING	3 463,38
				176	HOUSEHOLDS	3 457,34
				177	PROCUREMENT	3 456,18
				178	DIOXINS	3 425,81
				179	TOTAL	3 416,11
				180	ANALYSIS	3 403,46
				181	TERM	3 401,66
				182	COMMUNITIES	3 394,96
				183	ESTIMATES	3 379,05
				184	SOURCE	3 330,36
				185	COMBUSTION	3 319,31
				186	TECHNOLOGY	3 318,76
				187	BASELINE	3 313,89
				188	KYOTO	3 292,31
				189	GENERATOR	3 276,87
				190	POPULATIONS	3 269,46
				191	MODELLING	3 220,48
				192	ECOSYSTEMS	3 202,28
				193	PROTECTION	3 200,16
				194	CONSIDERED	3 197,14
				195	RECOMMENDATION	3 195,49
				196	STUDIES	3 194,89
				197	CURRENTLY	3 179,71
				198	CHEMICAL	3 179,17
				199	IMPROVE	3 165,47
				200	AGRICULTURE	3 158,46

Appendix E – Linguistic plane – research question one

The two tables, E.1 and E.2, in this appendix, contain the top 150 two- and three-word keywords of green business and the radical NGOs. They provide supporting material to section 5.2 of chapter five, in which I attempt a response to research question one in the linguistic plane. Overall, tables E.1 and E.2 contain the same words as those listed in tables D.1 and D.2 of appendix D, but with two modifications. First, they are organised alphabetically, rather than in descending order of statistical keyness. This makes it easier to compare the two lists. Second, some of the words have background shading in their cells; red, yellow or lilac. This is to indicate that I have categorised them according to one of the three semantic fields of coherence, which I describe in sections 5.2.4, 5.2.5 and 5.2.6.

The three semantic fields, which have shaded colours, have been derived from my interpretive review of the 26 units of meaning which are common to the two lists. These are presented in figure 5.4 on page 187. A glance, at the two tables below, shows that there remains quite a high proportion of cells, which have been left with their white background. These words are 'unique' to their respective lists and neither does their meaning suggest any semantic coherence with the three fields which green business and the radical NGOs have in common. Under each of the two tables I have, therefore, listed some additional semantic fields of coherence that are suggested by the unshaded words in the list. In order to make comparison of the two lists easier, I start table E.1 at the top of the next page.

E.1 Green business

Table E.1: The semantic fields of coherence in the top 150 two- and three-word keywords of green business

ACROSS THE BUSINESS	GROUP COMPANIES
ACTION PLAN	GROUP OF COMPANIES
ACTION PLANS	GROUP WIDE
AIR QUALITY	HABITAT ACTION PLAN
ALL GROUP COMPANIES	HAZARDOUS WASTE
ANNUAL REPORT	HEALTH AND ENVIRONMENT
BEST PRACTICE	HEALTH AND SAFETY
BIODIVERSITY ACTION	HEALTH SAFETY
BIODIVERSITY ACTION PLAN	HIGH STANDARDS
BIODIVERSITY ACTION PLANS	HIV AIDS
BLACK ECONOMIC EMPOWERMENT	HUMAN RIGHTS
BUSINESS CONDUCT	ILLICIT TRADE
BUSINESS PARTNERS	INJURY AND ILLNESS
BUSINESS PRINCIPLES	INJURY FREQUENCY
BUSINESS UNITS	INJURY FREQUENCY RATE
CARBON DIOXIDE	INTERNATIONAL MARKETING STANDARDS
CARBON DIOXIDE EMISSIONS	JOINT VENTURE
CASE STUDY	KEY PERFORMANCE
CHILD LABOUR	KEY PERFORMANCE INDICATORS
CLIMATE CHANGE	LAND AND BIODIVERSITY
CLIMATE CHANGE LEVY	LAWS AND REGULATIONS
CODE OF BUSINESS	LIQUEFIED NATURAL GAS
CODE OF CONDUCT	LOCAL AIR QUALITY
COMMUNITY INVESTMENT	LOCAL COMMUNITIES
CONTINUOUS IMPROVEMENT	LOCAL COMMUNITY
CONTRACTORS AND SUPPLIERS	LONDON BENCHMARKING GROUP
CORPORATE GOVERNANCE	LONG TERM
CORPORATE RESPONSIBILITY	LOST TIME
CORPORATE RESPONSIBILITY REPORT	LOST TIME INJURIES
CORPORATE SOCIAL	LOST TIME INJURY
CORPORATE SOCIAL RESPONSIBILITY	MANAGEMENT SYSTEM
COUNCIL FOR SUSTAINABLE	MANAGEMENT SYSTEMS
DEVELOPING COUNTRIES	NATURAL GAS
DEVELOPING WORLD	NON GOVERNMENTAL ORGANISATIONS
DISCHARGES TO WATER	NON HAZARDOUS
DOW JONES SUSTAINABILITY	NON HAZARDOUS WASTE
ECONOMIC ENVIRONMENTAL	OBJECTIVES AND TARGETS
EMISSIONS PER GWH	OCCUPATIONAL HEALTH
EMISSIONS TO AIR	OIL AND GAS
EMISSIONS TRADING	OPERATING COMPANIES
EMISSIONS TRADING SCHEME	PERFORMANCE DATA
EMPLOYEES AND CONTRACTORS	PERFORMANCE INDICATORS
ENERGY CONSUMPTION	POWER STATIONS
ENERGY EFFICIENCY	POWER SYSTEMS
ENERGY SUPPLIED	PRODUCT STEWARDSHIP
ENERGY USE	RENEWABLE ENERGY

ENVIRONMENT HEALTH	REPORTING INITIATIVE
ENVIRONMENT REPORT	RESPONSIBILITY REPORT
ENVIRONMENTAL AND SOCIAL	RISK ASSESSMENT
ENVIRONMENTAL IMPACT	RISK MANAGEMENT
ENVIRONMENTAL IMPACTS	SAFETY HEALTH
ENVIRONMENTAL MANAGEMENT	SAFETY MANAGEMENT
ENVIRONMENTAL MANAGEMENT SYSTEM	SAFETY PERFORMANCE
ENVIRONMENTAL MANAGEMENT SYSTEMS	SOCIAL IMPACT
ENVIRONMENTAL PERFORMANCE	SOCIAL INVESTMENT
ENVIRONMENTAL PERFORMANCE REPORT	SOCIAL PERFORMANCE
ENVIRONMENTAL REPORT	SOCIAL REPORT
ENVIRONMENTAL REPORT APPENDICES	SOCIAL REPORTING
ENVIRONMENTAL SUSTAINABILITY	SOCIAL RESPONSIBILITY
ENVIRONMENTAL SUSTAINABILITY REPORT	SOCIALLY RESPONSIBLE
EXPLORATION AND PRODUCTION	STAKEHOLDER ENGAGEMENT
FIRED POWER STATIONS	SUPPLY CHAIN
FOSSIL FUELS	SUSTAINABILITY REPORT
FREQUENCY RATE	SUSTAINABILITY REPORTING
GAS EMISSIONS	SUSTAINABLE DEVELOPMENT
GLOBAL COMPACT	TIME INJURIES
GLOBAL REPORTING	TIME INJURY
GLOBAL REPORTING INITIATIVE	TOBACCO PRODUCTS
GLOBAL WARMING POTENTIAL	TREATMENT WORKS
GOOD CORPORATE CONDUCT	WASTE MANAGEMENT
GREEN ENERGY	WASTE SERVICES
GREENHOUSE GAS	WASTE WATER
GREENHOUSE GAS EMISSIONS	WATER CONSUMPTION
GREENHOUSE GASES	WATER QUALITY
GRI INDICATORS	WATER USE

E.1.1 Green business – other 'unique' semantic fields of coherence

From a review of the unshaded words in table E.1 above, I propose that the following six semantic fields of coherence can be identified.

(1) Water quality

(2) Air quality

(3) Health

(4) Employees/people

(5) The internal organisation of the corporation and its subsidiaries

(6) Biodiversity

E.2 The radical NGOs

Table E.2: The semantic fields of coherence in the top 150 two- and three-word keywords of the radical NGOs

ACTION ON CLIMATE	ENVIRONMENTAL DAMAGE
ACTION PLAN	ENVIRONMENTAL IMPACT
AFFECTED COMMUNITIES	ENVIRONMENTAL IMPACT ASSESSMENT
AGREEMENT ON AGRICULTURE	ENVIRONMENTAL IMPACTS
AGREEMENT ON TRADE	ENVIRONMENTAL JUSTICE
AIR POLLUTION	ENVIRONMENTAL JUSTICE IMPACT
AMOUNT OF WASTE	ENVIRONMENTAL PROTECTION
ANCIENT FORESTS	ETHICAL TRADING INITIATIVE
ANIMAL FEED	EU MEMBER STATES
AROUND THE WORLD	EVALUATION OF COMPLIANCE
BRETTON WOODS PROJECT	EXPORT CREDIT
BRIEFING PAPER	EXPORT CREDIT AGENCIES
BRITISH ENERGY	EXPORT SUBSIDIES
BROMINATED FLAME	EXTENT OF COMPLIANCE
BROMINATED FLAME RETARDANTS	EXTRACTIVE INDUSTRIES
CAPACITY BUILDING	EXTRACTIVE INDUSTRIES REVIEW
CAPITAL ACCOUNT LIBERALISATION	EXTREME WEATHER EVENTS
CARBON DIOXIDE	FARM SCALE
CARBON DIOXIDE EMISSIONS	FINANCIAL INSTITUTIONS
CARBON EMISSIONS	FLAME RETARDANTS
CHILD LABOUR	FOOD SECURITY
CIVIL SOCIETY	FOREST MANAGEMENT
CIVIL SOCIETY GROUPS	FOREST SCHOOL
CIVIL SOCIETY ORGANISATIONS	FOSSIL FUEL
CLIMATE CHANGE	FOSSIL FUELS
CLIMATE CHANGE LEVY	FREE TRADE
CLIMATE CHANGE PROGRAMME	GAS EMISSIONS
CLONE TOWN BRITAIN	GENETIC ENGINEERING
CODE OF CONDUCT	GENETICALLY ENGINEERED
CODE OF PRACTICE	GENETICALLY MODIFIED
COMBAT CLIMATE CHANGE	GLOBAL CLIMATE
COMMISSION ON ENVIRONMENTAL	GLOBAL ECONOMY
COMMUNITY BASED	GLOBAL WARMING
COMMUNITY BASED ORGANISATIONS	GM CONTAMINATION
COMMUNITY DEVELOPMENT	GM CROP
COMMUNITY DEVELOPMENT CREDIT	GM CROPS
COMMUNITY DEVELOPMENT FINANCE	GM FOOD
CONFLICT DIAMONDS	GM FOODS
CONTRACTION AND CONVERGENCE	GM FREE
CONTROL ARMS CAMPAIGN	GM MAIZE
CONVENTION ON CLIMATE	GREENHOUSE GAS
CORPORATE ACCOUNTABILITY	GREENHOUSE GASES
CORPORATE RESPONSIBILITY	HAZARDOUS CHEMICALS
CORPORATE SOCIAL	HEALTH EFFECTS
CORPORATE SOCIAL RESPONSIBILITY	HEALTH IMPACTS
CREDIT UNIONS	HIPC INITIATIVE
DANGEROUS CLIMATE CHANGE	HIV AIDS

DEBT CANCELLATION	HOUSEHOLD WASTE
DEBT RELIEF	HUMAN DEVELOPMENT
DEPARTMENT FOR INTERNATIONAL	HUMAN HEALTH
DEVELOPED COUNTRIES	HUMAN RIGHTS
DEVELOPING COUNTRIES	ILLEGAL LOGGING
DEVELOPING COUNTRY	IMPACT ASSESSMENT
DEVELOPING COUNTRY GOVERNMENTS	INDIGENOUS PEOPLES
DEVELOPING WORLD	INDUSTRIALISED COUNTRIES
DEVELOPMENT AND POVERTY	INNER CITY
DEVELOPMENT CREDIT UNIONS	INTELLECTUAL PROPERTY
DEVELOPMENT GOALS	INTERNATIONAL COMMUNITY
DEVELOPMENT REPORT	INTERNATIONAL DEVELOPMENT
DIAMOND INDUSTRY	INTERNATIONAL FINANCIAL
DIOXIDE EMISSIONS	INTERNATIONAL TRADE
EARTH SUMMIT	KIMBERLEY PROCESS
EFFECTS OF CLIMATE	KYOTO PROTOCOL
EMISSIONS OF CARBON	LANDFILL SITES
EMISSIONS OF GREENHOUSE	LANDFILL TAX
EMISSIONS TRADING	LEAST DEVELOPED
EMISSIONS TRADING SCHEME	LOCAL AUTHORITIES
ENERGY EFFICIENCY	LOCAL COMMUNITIES
ENERGY WHITE PAPER	LOCAL ECONOMY
ENVIRONMENT AND DEVELOPMENT	LOCAL PEOPLE
ENVIRONMENT AND HUMAN	LONG TERM
ENVIRONMENTAL AND HEALTH	MARKET ACCESS
ENVIRONMENTAL AND HUMAN	MILLENNIUM DEVELOPMENT
ENVIRONMENTAL AND SOCIAL	MUNICIPAL WASTE
ENVIRONMENTAL CAMPAIGN GROUP	NATURAL RESOURCES

E.2.1 The radical NGOs – other 'unique' semantic fields of coherence

From a review of the unshaded words in table E.2 above, I propose that the following five semantic fields of coherence can be identified.

(1) Food quality and (the threat of?) genetic modification of food and food supplies

(2) International trade and financing

(3) Community-based organisations and civil society groups

(4) Waste

(5) Smaller semantic fields – arms control, forest protection, cities, flame retardants

Appendix F – Linguistic plane – research question two

The three tables, F.1, F.2 and F.3, contain the top 300 two- and three-word keywords of green business, the radical NGOs and the UK government respectively. They are ranked from 1st to 300th position, according to their statistical keyness. However, in order to save space by organising them into two columns, I have not included the column containing the Wordsmith-calculated keyness value. These three tables are the object of study for my response to research question two in the linguistic plane, which is presented in section 5.3 of chapter five.

All the other tables, which follow in section F.4 of this appendix, contain my interpretive allocation of the 300 keywords into various different semantic fields of coherence. Sections F.4.1 to F.4.6 contain the analysis work for the six shared semantic fields of coherence, which are presented and discussed in sections 5.3.2 to 5.3.7 on pages 202 to 209. In section F.4.7, I present the tables of the keywords which remained 'unallocated' after the procedure just mentioned, and after each of these three tables, my attempt to identify 'unique' semantic fields of coherence among the keywords of each player.

In order to make a comparison of the three lists easier, I start table F.1 at the top of the next page.

F.1 Green business

Table F.1: The top 200 two-word and the top 100 three-word keywords of green business ranked according to their statistical keyness

N	Key word		N	Key word
1	SUSTAINABLE DEVELOPMENT		151	STEEL PACKAGING
2	HEALTH AND SAFETY		152	WASTE MINIMISATION
3	CLIMATE CHANGE		153	COMMUNITY ENGAGEMENT
4	ENVIRONMENTAL PERFORMANCE		154	EMPLOYEE HEALTH
5	CORPORATE RESPONSIBILITY		155	ENERGY COMPANIES
6	ENVIRONMENTAL MANAGEMENT		156	TOBACCO INDUSTRY
7	BUSINESS PRINCIPLES		157	DIOXIDE EMISSIONS
8	GREENHOUSE GAS		158	HABITAT ACTION
9	ENERGY EFFICIENCY		159	WORLD BUSINESS
10	SOCIAL RESPONSIBILITY		160	SHAREHOLDER VALUE
11	GROUP COMPANIES		161	SUSTAINABLE ENERGY
12	HIV AIDS		162	BUSINESS ETHICS
13	CORPORATE SOCIAL		163	RESOURCE USE
14	ENVIRONMENTAL AND SOCIAL		164	SPECIAL WASTE
15	BEST PRACTICE		165	POWER GENERATION
16	MANAGEMENT SYSTEMS		166	KEY ISSUES
17	CORPORATE SOCIAL RESPONSIBILITY		167	COAL FIRED
18	NATURAL GAS		168	OZONE DEPLETING
19	RESPONSIBILITY REPORT		169	JOINT VENTURES
20	HUMAN RIGHTS		170	MANUFACTURING SITES
21	GAS EMISSIONS		171	OPERATING COMPANY
22	LOST TIME		172	BASE STATIONS
23	GREENHOUSE GAS EMISSIONS		173	ENVIRONMENTAL DATA
24	HEALTH SAFETY		174	IMPACT ASSESSMENT
25	SUPPLY CHAIN		175	INJURY FREQUENCY RATE
26	OCCUPATIONAL HEALTH		176	TOBACCO GROWING
27	ACTION PLAN		177	SOCIAL REVIEW
28	LOCAL COMMUNITIES		178	NON GOVERNMENTAL
29	OPERATING COMPANIES		179	CARBON DIOXIDE EMISSIONS
30	ENERGY USE		180	REDUCE EMISSIONS
31	ENVIRONMENT REPORT		181	SUSTAINABLE BUSINESS
32	RENEWABLE ENERGY		182	GOVERNMENTAL ORGANISATIONS
33	WASTE MANAGEMENT		183	ENVIRONMENTAL GOVERNANCE
34	ENVIRONMENTAL IMPACT		184	RAISE AWARENESS
35	CORPORATE RESPONSIBILITY REPORT		185	SEWAGE SLUDGE
36	HAZARDOUS WASTE		186	FUEL OIL
37	MANAGEMENT SYSTEM		187	ECONOMIC EMPOWERMENT
38	CARBON DIOXIDE		188	STAKEHOLDER DIALOGUE
39	OIL AND GAS		189	CODE OF BUSINESS
40	LONG TERM		190	ENVIRONMENTAL POLICY
41	AIR QUALITY		191	GLOBAL WARMING
42	ENVIRONMENT HEALTH		192	BUSINESS ACTIVITIES
43	ENVIRONMENTAL IMPACTS		193	WARMING POTENTIAL
44	SAFETY HEALTH		194	NON GOVERNMENTAL ORGANISATIONS
45	PERFORMANCE INDICATORS		195	GENERATION WHOLESALE
46	POWER SYSTEMS		196	RENEWABLE SOURCES

47	ACTION PLANS		197	BIODIVERSITY ACTION PLANS
48	BIODIVERSITY ACTION		198	WASTE RECYCLED
49	ENERGY CONSUMPTION		199	FUEL CELL
50	SAFETY PERFORMANCE		200	RISK ASSESSMENTS
51	SOCIAL INVESTMENT		201	ENERGY SUPPLY
52	SOCIAL REPORT		202	ENVIRONMENTAL STANDARDS
53	WATER USE		203	ECO EFFICIENCY
54	CHILD LABOUR		204	ENVIRONMENTAL SOCIAL
55	COMMUNITY INVESTMENT		205	ENERGY SOURCES
56	SOCIAL PERFORMANCE		206	ETHICAL CONDUCT
57	EMISSIONS TRADING		207	NATURAL RESOURCES
58	FOSSIL FUELS		208	BIODIVERSITY PARTNERSHIP
59	ENVIRONMENTAL MANAGEMENT SYSTEMS		209	CORPORATE CITIZENSHIP
60	WATER CONSUMPTION		210	SOCIAL IMPACTS
61	SOCIAL REPORTING		211	INTERNAL AUDIT
62	TOBACCO PRODUCTS		212	PROTECTED AREAS
63	GROUP WIDE		213	ENVIRONMENTAL RISK
64	TIME INJURY		214	MARKETING STANDARDS
65	LOST TIME INJURY		215	YOUTH SMOKING
66	GREENHOUSE GASES		216	EMISSIONS TO AIR
67	CONTINUOUS IMPROVEMENT		217	GLOBAL WARMING POTENTIAL
68	NON HAZARDOUS		218	DOW JONES SUSTAINABILITY
69	KEY PERFORMANCE		219	ENVIRONMENT REVIEW
70	GLOBAL COMPACT		220	CORPORATE CONDUCT
71	CORPORATE GOVERNANCE		221	KYOTO PROTOCOL
72	ENVIRONMENTAL REPORT		222	WIND FARM
73	SUSTAINABILITY REPORTING		223	HEALTH ENVIRONMENT
74	BIODIVERSITY ACTION PLAN		224	ANIMAL TESTING
75	BUSINESS CONDUCT		225	SUSTAINABLE FUTURE
76	SAFETY MANAGEMENT		226	GLOBAL BUSINESS
77	ENVIRONMENTAL MANAGEMENT SYSTEM		227	WATER EFFICIENCY
78	CASE STUDY		228	OIL PRODUCTS
79	RISK MANAGEMENT		229	INJURY AND ILLNESS
80	STAKEHOLDER ENGAGEMENT		230	ENVIRONMENTAL SUSTAINABILITY REPORT
81	RISK ASSESSMENT		231	ENVIRONMENTAL REPORT APPENDICES
82	LOCAL COMMUNITY		232	HABITAT ACTION PLAN
83	SOCIALLY RESPONSIBLE		233	LOCAL AIR QUALITY
84	SOCIAL IMPACT		234	CODE OF CONDUCT
85	ENERGY SUPPLIED		235	EMISSIONS PER GWH
86	DEVELOPING WORLD		236	BLACK ECONOMIC EMPOWERMENT
87	NON HAZARDOUS WASTE		237	INTERNATIONAL MARKETING STANDARDS
88	WATER QUALITY		238	CLIMATE CHANGE LEVY
89	ENVIRONMENTAL SUSTAINABILITY		239	LAWS AND REGULATIONS
90	BUSINESS UNITS		240	GOOD CORPORATE CONDUCT
91	PRODUCT STEWARDSHIP		241	LIQUEFIED NATURAL GAS
92	SUSTAINABILITY REPORT		242	ACROSS THE BUSINESS
93	WASTE WATER		243	CONTRACTORS AND SUPPLIERS
94	EXPLORATION AND PRODUCTION		244	EMISSIONS TRADING SCHEME
95	INJURY FREQUENCY		245	OBJECTIVES AND TARGETS
96	PERFORMANCE DATA		246	FIRED POWER STATIONS
97	GLOBAL REPORTING		247	DISCHARGES TO WATER
98	BUSINESS PARTNERS		248	LAND AND BIODIVERSITY

99	DEVELOPING COUNTRIES		249	LONDON BENCHMARKING GROUP
100	FREQUENCY RATE		250	ALL GROUP COMPANIES
101	ANNUAL REPORT		251	HEAT AND POWER
102	WASTE SERVICES		252	COAL FIRED POWER
103	ILLICIT TRADE		253	ENVIRONMENTAL PERFORMANCE INDICATORS
104	GRI INDICATORS		254	GLOBAL MINING INITIATIVE
105	TIME INJURIES		255	OCCUPATIONAL HEALTH MANAGEMENT
106	GREEN ENERGY		256	EMISSIONS OF GREENHOUSE
107	REPORTING INITIATIVE		257	CORPORATE ENVIRONMENT HEALTH
108	JOINT VENTURE		258	INJURIES AND ILLNESSES
109	POWER STATIONS		259	BRIBERY AND CORRUPTION
110	GLOBAL REPORTING INITIATIVE		260	HEALTH AND ENVIRONMENTAL
111	GROUP OF COMPANIES		261	FREEDOM OF ASSOCIATION
112	LOST TIME INJURIES		262	GLOBAL CLIMATE CHANGE
113	ECONOMIC ENVIRONMENTAL		263	ENERGY EFFICIENCY MEASURES
114	EMPLOYEES AND CONTRACTORS		264	EACH OPERATING COMPANY
115	TREATMENT WORKS		265	KEY ISSUES ENVIRONMENT
116	HIGH STANDARDS		266	MINING AND METALS
117	PERFORMANCE REPORT		267	DIVERSITY AND INCLUSIVENESS
118	ENVIRONMENTAL PERFORMANCE REPORT		268	INSTITUTE OF BUSINESS
119	BUSINESS COUNCIL		269	OUR BUSINESS ACTIVITIES
120	EMPLOYMENT PRINCIPLES		270	CORPORATE SOCIAL INVESTMENT
121	BUSINESS UNIT		271	COUNSELLING AND TESTING
122	BASE METALS		272	FRAMEWORK FOR CORPORATE
123	GROUP LEVEL		273	OIL AND NATURAL
124	KEY PERFORMANCE INDICATORS		274	HUMAN RIGHTS ISSUES
125	DRINKING WATER		275	NUMBER OF EMPLOYEES
126	CLEANER FUELS		276	EXTRACTIVE INDUSTRIES TRANSPARENCY
127	HEALTH MANAGEMENT		277	INDUSTRIES TRANSPARENCY INITIATIVE
128	POWER STATION		278	INTERNAL ENERGY USE
129	WATER TREATMENT		279	DIALOGUE FOCUS MATERIAL
130	WASTEWATER TREATMENT		280	ENVIRONMENT AND COMMUNITY
131	WORK RELATED		281	FOCUS MATERIAL ISSUES
132	COMMUNITY INVOLVEMENT		282	HOW WE MANAGE
133	SUSTAINABLE AGRICULTURE		283	JONES SUSTAINABILITY INDEX
134	RESPONSIBLE MARKETING		284	AREAS FOR IMPROVEMENT
135	ENVIRONMENTAL INCIDENTS		285	FUNDAMENTAL HUMAN RIGHTS
136	GHG EMISSIONS		286	EMISSIONS FOR ENERGY
137	GOOD CORPORATE		287	EMISSIONS TRADING SYSTEM
138	INFORMATION REVIEWED		288	EMPLOYEE HEALTH MANAGEMENT
139	WATER SERVICES		289	DEVELOPMENT AND IMPLEMENTATION
140	NOX EMISSIONS		290	DECLARATION OF HUMAN
141	COUNCIL FOR SUSTAINABLE		291	CARS TOTAL MILEAGE
142	CASE STUDIES		292	CORPORATE RESPONSIBILITY INDEX
143	WASTE DISPOSED		293	DESCRIPTION OF POLICY
144	AIR EMISSIONS		294	MILEAGE FROM EHR
145	HEALTH RISKS		295	HEALTH SAFETY SECURITY
146	HEALTH AND ENVIRONMENT		296	NITROGEN OXIDES NOX
147	MANAGED OPERATIONS		297	CHEMICAL OXYGEN DEMAND
148	HUMAN RESOURCES		298	LONG TERM ENERGY
149	DATA COLLECTION		299	ACTION POTENTIAL PARTNERS
150	TOTAL ENERGY		300	CORPORATE ENVIRONMENTAL ENGAGEMENT

F.2 The radical NGOs

Table F.2: The top 200 two-word and the top 100 three-word keywords of the radical NGOs ranked according to their statistical keyness

N	Key word		N	Key word
1	CLIMATE CHANGE		151	DOORSTEP RECYCLING
2	DEVELOPING COUNTRIES		152	ECONOMIC SOCIAL
3	HUMAN RIGHTS		153	GM SOYA
4	GM CROPS		154	ENVIRONMENTAL ASSESSMENT
5	CIVIL SOCIETY		155	EXTREME WEATHER
6	GLOBAL WARMING		156	FOREIGN DIRECT
7	DEBT RELIEF		157	BIOTECH INDUSTRY
8	INDIGENOUS PEOPLES		158	FUEL POVERTY
9	FOOD SECURITY		159	HAZARDOUS SUBSTANCES
10	LOCAL COMMUNITIES		160	DANGEROUS CLIMATE
11	LOCAL PEOPLE		161	ENVIRONMENTAL STANDARDS
12	GENETICALLY MODIFIED		162	AFFECTED PEOPLE
13	CARBON DIOXIDE		163	DANGEROUS CLIMATE CHANGE
14	GM FOOD		164	NEW NUCLEAR
15	HUMAN HEALTH		165	LOCAL COMMUNITY
16	GREENHOUSE GAS		166	METHYL BROMIDE
17	KYOTO PROTOCOL		167	LOCAL FOOD
18	NATURAL RESOURCES		168	GOOD GOVERNANCE
19	DEVELOPED COUNTRIES		169	INTERNATIONAL HUMAN
20	IMPACT ASSESSMENT		170	AVIATION INDUSTRY
21	INNER CITY		171	BRETTON WOODS PROJECT
22	GM FREE		172	ECONOMIC DEVELOPMENT
23	FOSSIL FUELS		173	LOW CARBON
24	ENVIRONMENTAL AND SOCIAL		174	MAKING TRADE
25	GAS EMISSIONS		175	DRINKING WATER
26	ILLEGAL LOGGING		176	NATIONAL GOVERNMENTS
27	DEVELOPING COUNTRY		177	GHOST TOWN
28	ENVIRONMENTAL IMPACTS		178	INTERNATIONAL FINANCE
29	FOSSIL FUEL		179	COMMON CONCERNS
30	ENVIRONMENTAL IMPACT		180	DEBT SUSTAINABILITY
31	MARKET ACCESS		181	MODIFIED GM
32	BRIEFING PAPER		182	INDUSTRIES REVIEW
33	ENERGY EFFICIENCY		183	MINING COMPANY
34	INTERNATIONAL DEVELOPMENT		184	INTERGOVERNMENTAL PANEL
35	HUMAN DEVELOPMENT		185	DEVELOPMENT FINANCE
36	KIMBERLEY PROCESS		186	FOREST DESTRUCTION
37	GM MAIZE		187	DEBT SERVICE
38	INTELLECTUAL PROPERTY		188	ETHICAL TRADING
39	DEBT CANCELLATION		189	CLONE TOWN
40	LONG TERM		190	FUTURE GENERATIONS
41	LOCAL ECONOMY		191	EXTRACTIVE INDUSTRIES REVIEW
42	FARM SCALE		192	LEVEL RISE
43	CONFLICT DIAMONDS		193	AIR TRAVEL
44	INTERNATIONAL TRADE		194	AIRPORT EXPANSION
45	HIV AIDS		195	ENVIRONMENTAL ISSUES
46	GM FOODS		196	DISTRIBUTIONAL ANALYSIS
47	LEAST DEVELOPED		197	NATIONAL PARK

48	CREDIT UNIONS		198	HAZARDOUS WASTE
49	EXPORT SUBSIDIES		199	FOREST FIRES
50	EXTRACTIVE INDUSTRIES		200	LEGALLY BINDING
51	DEVELOPMENT GOALS		201	CLEAN UP
52	INDUSTRIALISED COUNTRIES		202	GOVERNMENTAL ORGANISATIONS
53	GLOBAL CLIMATE		203	LOAN FUNDS
54	GREENHOUSE GASES		204	MODIFIED CROPS
55	AROUND THE WORLD		205	ECOLOGICAL DEBT
56	MUNICIPAL WASTE		206	GLOBAL COMPACT
57	HAZARDOUS CHEMICALS		207	INVESTMENT AGREEMENT
58	FLAME RETARDANTS		208	FOREIGN INVESTMENT
59	GLOBAL ECONOMY		209	CULTURAL RIGHTS
60	COMMUNITY DEVELOPMENT		210	LOGGING COMPANIES
61	CARBON DIOXIDE EMISSIONS		211	ENVIRONMENTAL PROBLEMS
62	MILLENNIUM DEVELOPMENT		212	DIFFERENTIAL TREATMENT
63	DIAMOND INDUSTRY		213	ANCIENT WOODLAND
64	HEALTH IMPACTS		214	COMPETITION COMMISSION
65	AGREEMENT ON AGRICULTURE		215	LIFE SATISFACTION
66	DIOXIDE EMISSIONS		216	COMMUNITY BASED ORGANISATIONS
67	GM CONTAMINATION		217	ACTION ON CLIMATE
68	BRITISH ENERGY		218	DEVELOPING COUNTRY GOVERNMENTS
69	LOCAL AUTHORITIES		219	EU MEMBER STATES
70	FOREST SCHOOL		220	EXTENT OF COMPLIANCE
71	DEVELOPING WORLD		221	EXPORT CREDIT AGENCIES
72	HIPC INITIATIVE		222	COMMUNITY DEVELOPMENT FINANCE
73	CHILD LABOUR		223	EMISSIONS TRADING SCHEME
74	FREE TRADE		224	CODE OF CONDUCT
75	FOREST MANAGEMENT		225	EXTREME WEATHER EVENTS
76	CORPORATE SOCIAL		226	CLIMATE CHANGE LEVY
77	ENVIRONMENTAL PROTECTION		227	EFFECTS OF CLIMATE
78	GENETICALLY ENGINEERED		228	COMMUNITY DEVELOPMENT CREDIT
79	HOUSEHOLD WASTE		229	AGREEMENT ON TRADE
80	CARBON EMISSIONS		230	ENVIRONMENT AND HUMAN
81	EXPORT CREDIT		231	COMMISSION ON ENVIRONMENTAL
82	CAPACITY BUILDING		232	ETHICAL TRADING INITIATIVE
83	CORPORATE RESPONSIBILITY		233	ENVIRONMENTAL AND HUMAN
84	COMMUNITY BASED		234	ENERGY WHITE PAPER
85	ANIMAL FEED		235	CLONE TOWN BRITAIN
86	ENVIRONMENTAL DAMAGE		236	CONVENTION ON CLIMATE
87	FINANCIAL INSTITUTIONS		237	CODE OF PRACTICE
88	LANDFILL TAX		238	AMOUNT OF WASTE
89	EMISSIONS TRADING		239	EMISSIONS OF CARBON
90	BROMINATED FLAME		240	COMBAT CLIMATE CHANGE
91	ACTION PLAN		241	EVALUATION OF COMPLIANCE
92	GM CROP		242	DEVELOPMENT AND POVERTY
93	CORPORATE ACCOUNTABILITY		243	DEVELOPMENT CREDIT UNIONS
94	ENVIRONMENTAL JUSTICE		244	ENVIRONMENTAL CAMPAIGN GROUP
95	CIVIL SOCIETY GROUPS		245	ENVIRONMENTAL JUSTICE IMPACT
96	INTERNATIONAL FINANCIAL		246	ENVIRONMENT AND DEVELOPMENT
97	AIR POLLUTION		247	ENVIRONMENTAL AND HEALTH
98	CIVIL SOCIETY ORGANISATIONS		248	EMISSIONS OF GREENHOUSE
99	ANCIENT FORESTS		249	CLIMATE CHANGE PROGRAMME

100	EARTH SUMMIT		250	CONTROL ARMS CAMPAIGN
101	LANDFILL SITES		251	ENVIRONMENTAL AUDIT COMMITTEE
102	GENETIC ENGINEERING		252	ENVIRONMENTAL AND ECONOMIC
103	AFFECTED COMMUNITIES		253	ANCIENT FOREST FRIENDLY
104	INTERNATIONAL COMMUNITY		254	ECONOMIC AND ENVIRONMENTAL
105	HEALTH EFFECTS		255	ENVIRONMENTAL HEALTH PERSPECTIVES
106	CORPORATE SOCIAL RESPONSIBILITY		256	AGREEMENT ON INVESTMENT
107	DEVELOPMENT REPORT		257	ENERGY FROM WASTE
108	LOW INCOME		258	COST OF PRODUCTION
109	DEPARTMENT FOR INTERNATIONAL		259	DISASTER RISK REDUCTION
110	DIAMOND TRADE		260	CONFERENCE ON TRADE
111	FAIR TRADE		261	COMMITTEE ON AGRICULTURE
112	BROMINATED FLAME RETARDANTS		262	CLEAN DEVELOPMENT MECHANISM
113	DOMESTIC SUPPORT		263	ACROSS THE GLOBE
114	CAMPAIGN GUIDE		264	CHAIN OF CUSTODY
115	NEGATIVE IMPACTS		265	EU EMISSIONS TRADING
116	INDIGENOUS COMMUNITIES		266	ACCESS TO FINANCE
117	ENVIRONMENTAL IMPACT ASSESSMENT		267	ALONG THE PIPELINE
118	GM OILSEED		268	ANTIBIOTICS IN UK
119	GLOBAL TRADE		269	ENVIRONMENTAL PROTECTION AGENCY
120	ACCOUNT LIBERALISATION		270	BRETTON WOODS INSTITUTIONS
121	INCOME COUNTRIES		271	COMMISSION ON DAMS
122	INDIGENOUS PEOPLE		272	CONDEMNED TO DEBT
123	CAPITAL ACCOUNT LIBERALISATION		273	CARBON DIOXIDE LEVELS
124	CAPITAL ACCOUNT		274	DECLARATION OF HUMAN
125	MOX FUEL		275	DEVELOPING COUNTRIES NEED
126	FOOD CHAIN		276	CIVIL SOCIETY PARTICIPATION
127	BRETTON WOODS		277	DEBT SERVICE PAYMENTS
128	MEMBER STATES		278	BARRIERS TO TRADE
129	ANCIENT FOREST		279	CANCER CAUSING CHEMICALS
130	COUNTRY GOVERNMENTS		280	CONVENTION ON BIOLOGICAL
131	CASE STUDY		281	AIDS AFFECTED CHILDREN
132	AIR QUALITY		282	BEHIND THE MASK
133	AFRICAN COUNTRIES		283	CLIMATE CHANGE IMPACTS
134	FOOD PRODUCTION		284	COMMUNITY BASED INDICATORS
135	MINING COMPANIES		285	ENERGY EFFICIENCY MEASURES
136	BIG BUSINESS		286	COMMON AGRICULTURAL POLICY
137	BEST PRACTICE		287	ACCESS TO BASIC
138	ENVIRONMENT TRANSPORT		288	COMMUNITY RECYCLING NETWORK
139	CASE STUDIES		289	ENVIRONMENT AND HEALTH
140	DECISION MAKING		290	AGRI ENVIRONMENT SCHEMES
141	HEAVY METALS		291	CIVIL AND POLITICAL
142	ECONOMIC GROWTH		292	CLIMATE CHANGE POLICY
143	BUSINESS ENTERPRISES		293	ECONOMIC PARTNERSHIP AGREEMENTS
144	LABOUR STANDARDS		294	ACCESS TO INFORMATION
145	NATURAL RESOURCE		295	ACCESS TO SAFE
146	HERBICIDE TOLERANT		296	ADAPTATION AND VULNERABILITY
147	LOCAL ECONOMIES		297	AIR PASSENGER DUTY
148	CONTRACTION AND CONVERGENCE		298	ASIA PULP PAPER
149	GM INGREDIENTS		299	ECONOMIC IMPACT OF
150	ILLEGAL TRADE		300	ASIAN DEVELOPMENT BANK

F.3 The UK government

Table F.3: The top 200 two-word and the top 100 three-word keywords of the UK government ranked according to their statistical keyness

N	Key word		N	Key word
1	CLIMATE CHANGE		151	MANAGEMENT OPTIONS
2	AIR QUALITY		152	DIOXIN LIKE PCBS
3	ENERGY EFFICIENCY		153	GENE TRANSFER
4	GM CROPS		154	HEALTH BENEFITS
5	RISK ASSESSMENT		155	COMBINED HEAT
6	RENEWABLE ENERGY		156	ENERGY DEMAND
7	CARBON DIOXIDE		157	SCALE INCINERATION
8	HUMAN HEALTH		158	FOOD STANDARDS
9	GREENHOUSE GAS		159	ACTION PLANS
10	OILSEED RAPE		160	LOW INCOME
11	GENETICALLY MODIFIED		161	HERBICIDE TOLERANCE
12	ENVIRONMENTAL IMPACTS		162	GM PLANT
13	ANIMAL HEALTH		163	SAMPLE REDUCTION
14	BEST PRACTICE		164	EMISSION LIMIT
15	AIR POLLUTION		165	GASIFICATION PYROLYSIS
16	GAS EMISSIONS		166	MATERIALS RECYCLING
17	LONG TERM		167	MECHANICAL BIOLOGICAL
18	ADVISORY COMMITTEE		168	GOVERNMENT DEPARTMENTS
19	HEALTH EFFECTS		169	HEALTH PLANNING
20	ACTION PLAN		170	FARMED ANIMALS
21	FINAL REPORT		171	MARKET MONITORING
22	DEVOLVED ADMINISTRATIONS		172	POVERTY REDUCTION
23	NON GM		173	HOSPITAL ADMISSIONS
24	DIOXIDE EMISSIONS		174	ECOLOGY FINAL
25	GENE FLOW		175	ECOLOGY FINAL REPORT
26	CARBON DIOXIDE EMISSIONS		176	ISLANDED OPERATION
27	ANNUAL MEAN		177	EMISSIONS REDUCTIONS
28	ENERGY RECOVERY		178	HEALTH IMPACTS
29	LOCAL AUTHORITIES		179	POTENTIAL EFFECTS
30	ANIMAL WELFARE		180	ANIMAL FEED
31	LOW CARBON		181	ENVIRONMENTAL CLAIMS
32	DISTRIBUTED GENERATION		182	ENVIRONMENTAL ISSUES
33	AIR QUALITY STRATEGY		183	LANDFILL DIRECTIVE
34	GM PLANTS		184	DIOXINS AND DIOXIN
35	QUALITY STRATEGY		185	HAZARDOUS SUBSTANCES
36	ENERGY CONSUMPTION		186	ENERGY STORAGE
37	GREENHOUSE GASES		187	SCIENCE REVIEW
38	CONSEQUENCES OF EMISSIONS		188	LANDFILL SITES
39	ENERGY USE		189	REACTIVE POWER
40	CONSUMER PRODUCTS		190	SEPARATION DISTANCES
41	ENERGY CROPS		191	HOUSEHOLD WASTE
42	RISK REDUCTION		192	ASSEMBLY GOVERNMENT
43	GM CROP		193	ENVIRONMENTAL MANAGEMENT
44	ENVIRONMENTAL IMPACT		194	POLICY MEASURES
45	MARINE ENVIRONMENT		195	ANCILLARY SERVICE PROVISION
46	FUEL POVERTY		196	DISTRIBUTION NETWORK

47	HERBICIDE TOLERANT		197	DANGEROUS SUBSTANCES
48	DEVELOPING COUNTRIES		198	PPC REGULATIONS
49	COSTS AND BENEFITS		199	ENERGY POLICY
50	CLIMATE CHANGE PROGRAMME		200	DISTRIBUTION NETWORKS
51	LANDFILL TAX		201	RESOURCE USE
52	ROAD TRANSPORT		202	CARBON OFFSET
53	CONSUMPTION AND PRODUCTION		203	CO FIRING
54	CHANGE PROGRAMME		204	RECYCLING FACILITIES
55	ECONOMIC INSTRUMENTS		205	INCINERATION LANDFILL
56	OFFSHORE WIND		206	ADVENTITIOUS PRESENCE
57	CARBON EMISSIONS		207	ENERGY WHITE
58	RENEWABLES OBLIGATION		208	RISK ASSESSMENTS
59	FAULT LEVEL		209	AGRI ENVIRONMENT
60	LANDFILL GAS		210	FOOD SAFETY
61	EMISSIONS TRADING		211	CONSULTATION PAPER
62	RENEWABLE SOURCES		212	ROAD USER
63	ADVERSE EFFECTS		213	MANAGEMENT FACILITIES
64	ANAEROBIC DIGESTION		214	REDUCTION MEASURES
65	FOOD MILES		215	ACTIVE MANAGEMENT
66	LIMIT VALUES		216	BIODIVERSITY ACTION PLAN
67	MICRO GENERATION		217	CASE BY CASE
68	FOSSIL FUELS		218	CENTRE URBAN CENTRE
69	HAZARDOUS WASTE		219	COEXISTENCE AND LIABILITY
70	CHANGE LEVY		220	DEATHS BROUGHT FORWARD
71	CLIMATE CHANGE LEVY		221	EMISSION LIMIT VALUES
72	ENVIRONMENTAL RISKS		222	A LOW CARBON
73	KYOTO PROTOCOL		223	ADVERSE EFFECTS ON
74	ANNUAL REPORT		224	COMMITTEE ON TOXICITY
75	FOSSIL FUEL		225	ACTIVE MANAGEMENT SCHEME
76	NETWORK SPLITTING		226	DIOXINS AND FURANS
77	ENVIRONMENTAL PROTECTION		227	EFFECTS OF CLIMATE
78	LAND USE		228	ASSESS AND ADAPT
79	COMMITTEE ON RELEASES		229	DEVELOPMENT AND REGENERATION
80	REDUCTION STRATEGY		230	COMMITTEE ON CONSUMER
81	ENERGY SOURCES		231	AIR QUALITY OBJECTIVES
82	RELATIVE ERROR		232	CARCINOGENICITY OF CHEMICALS
83	RISK MANAGEMENT		233	AIR QUALITY DAUGHTER
84	LONGER TERM		234	CLIMATE CHANGE IMPACTS
85	DEVELOPMENT STRATEGY		235	ELECTRICITY FROM RENEWABLE
86	PRODUCT POLICY		236	ELECTRICAL AND ELECTRONIC
87	COST EFFECTIVE		237	ECONOMIC AND ENVIRONMENTAL
88	BIODIVERSITY ACTION		238	ALTERNATIVE NETWORK SPLITTING
89	ENERGY SAVING		239	BIOLOGICAL TREATMENT MBT
90	ENVIRONMENTAL EFFECTS		240	CHEMICALS STAKEHOLDER FORUM
91	HEALTH CONSEQUENCES		241	ACRYLAMIDE AND NMA
92	NATURAL RESOURCES		242	BEST PRACTICE PROGRAMME
93	ELECTRICITY GENERATION		243	COST OF CARBON
94	FOOD CONSUMER		244	CODE OF PRACTICE
95	LIFE CYCLE		245	COMPOSTING IN VESSEL
96	CHEMICALS IN FOOD		246	AGRI ENVIRONMENT SCHEMES
97	ENVIRONMENTAL POLLUTION		247	ANAEROBIC DIGESTION GASIFICATION
98	FUEL CELL		248	DIGESTION GASIFICATION PYROLYSIS

99	RESOURCE PRODUCTIVITY		249	AIR QUALITY MANAGEMENT
100	EMISSION REDUCTIONS		250	COMPOSTING WINDROW MECHANICAL
101	ENVIRONMENTAL RISK		251	BIODEGRADABLE MUNICIPAL WASTE
102	AIR POLLUTANTS		252	BIODIVERSITY ACTION PLANS
103	EPIDEMIOLOGICAL RESEARCH		253	COMMON FISHERIES POLICY
104	NITROGEN DIOXIDE		254	AMOUNT OF WASTE
105	DELIBERATE RELEASE		255	CONSTRUCTION AND DEMOLITION
106	DIOXIN LIKE		256	AIR QUALITY STANDARDS
107	ENVIRONMENTAL PERFORMANCE		257	DIRECTING THE FLOW
108	COMMISSION ON ENVIRONMENTAL		258	EFFECTS OF CHEMICALS
109	ENVIRONMENTAL BENEFITS		259	CENTRE FOR ECOLOGY
110	REDUCE EMISSIONS		260	CLIMATE IMPACTS PROGRAMME
111	MODIFIED ORGANISMS		261	ECONOMY SUSTAINABLE CONSUMPTION
112	FOOD CHAIN		262	EDUCATION AND SKILLS
113	IMPACT ASSESSMENT		263	ECOLOGY AND HYDROLOGY
114	QUANTIFIED HEALTH		264	CARBON OFFSET SCHEMES
115	ENVIRONMENTAL CONSEQUENCES		265	ABDOMINAL WALL DEFECTS
116	GM SOIL		266	CREATING SUSTAINABLE COMMUNITIES
117	PERCEPTION ISSUES		267	COMMITTEE ON CARCINOGENICITY
118	MEMBER STATES		268	CASE SPECIFIC MONITORING
119	CORPORATE SOCIAL		269	CURRENT ACTION PROGRAMME
120	IN VITRO		270	DRAFT RISK ASSESSMENT
121	EMISSIONS CONTEXT		271	COMMITTEE ON HAZARDOUS
122	EMISSIONS QUANTIFICATION		272	COMMITTEE ON NOVEL
123	EMISSIONS REVIEW		273	A RISK ASSESSMENT
124	GREEN CLAIMS		274	CLIMATE CHANGE SCENARIOS
125	INTRODUCTION REVIEW		275	CONDITION OF SITES
126	ISSUES CONCLUSIONS		276	DELIBERATE RELEASE REGULATIONS
127	RESEARCH QUANTIFICATION		277	ANIMAL WELFARE BILL
128	RISKS REVIEW		278	COMPOSTING OTHER WASTE
129	ECONOMIC GROWTH		279	DISPOSAL OPTIONS INCINERATION
130	LOCAL AIR		280	CLIMATE CHANGE AGREEMENTS
131	MICRO CHP		281	CONSUMER CARBON OFFSET
132	GENETIC MODIFICATION		282	CULTIVATION OF GM
133	RESOURCE EFFICIENCY		283	AIRCRAFT IN FLIGHT
134	BIOLOGICAL TREATMENT		284	COMMITTEE ON ANIMAL
135	PUBLIC PERCEPTION		285	CAUSE UNNECESSARY SUFFERING
136	CORPORATE SOCIAL RESPONSIBILITY		286	AIR QUALITY POLICY
137	CARBON TRUST		287	BIOREGIONAL DEVELOPMENT GROUP
138	GM MAIZE		288	CONVENTION ON BIOLOGICAL
139	HEADLINE INDICATORS		289	DEPRIVATION ADJUSTED ESTIMATE
140	CASE STUDY		290	DEPRIVATION UNADJUSTED DEPRIVATION
141	FARM HEALTH		291	ASSESSMENT OF INDICATOR
142	ENVIRONMENTAL QUALITY		292	CURRENT RURAL URBAN
143	FISHERIES MANAGEMENT		293	BEST AVAILABLE TECHNIQUES
144	FRAMEWORK DIRECTIVE		294	CONCLUSIONS AND RECOMMENDATIONS
145	PAPER RECYCLING		295	CONVENTION ON CLIMATE
146	FARM SCALE		296	CLASSIFICATION AND LABELLING
147	ANCILLARY SERVICE		297	CHANGING MANAGER MINDSETS
148	RADIOACTIVE WASTE		298	COMMITTEE ON PESTICIDES
149	CROSS POLLINATION		299	DEVELOPMENT OF SUSTAINABILITY
150	POLLUTION PREVENTION		300	A PRECAUTIONARY APPROACH

F.4 Identifying semantic fields

In this section of appendix F, I present the material which supports sections 5.3.2 to 5.3.8 on pages 202 to 210. It is divided into subsections, each one providing material on one of the semantic fields of coherence that I identify in the linguistic discourse of the three players. Within each subsection, I present two tables of information. The first table contains the four different groups of two- and three-word keywords, which are located within the central, shared sections of the three-way Venn diagrams. The second table contains the three groups of two- and three-word keywords, which, we might say, are 'unique' to the linguistic discourse of the three players. The last section, F.4.7, is slightly different from the six subsections which precede it. This is because I present all of the, as yet, unallocated 'unique' keywords, of each of the three protagonists. Then I present my attempts to identify possible semantic fields of coherence that are 'unique' to each player. This material is presented and discussed in section 5.3.8 on page 210.

F.4.1 Semantic field one: the challenge of climate change

Table F.4: The shared two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF1 – CLIMATE CHANGE - SHARED TWO-WORD AND THREE-WORD KEYWORDS			
Common to all	**Just GB and NGOs**	**Just NGOs and UK Gov**	**Just UK Gov and GB**
CARBON DIOXIDE	EMISSIONS OF GREENHOUSE	CARBON EMISSIONS	ENERGY CONSUMPTION
CARBON DIOXIDE EMISSIONS	EMISSIONS TRADING SCHEME	CLIMATE CHANGE IMPACTS	ENERGY USE
CLIMATE CHANGE	ENERGY EFFICIENCY MEASURES	CLIMATE CHANGE PROGRAMME	FUEL CELL
CLIMATE CHANGE LEVY	GLOBAL WARMING	CONVENTION ON CLIMATE	RENEWABLE ENERGY
DIOXIDE EMISSIONS		EFFECTS OF CLIMATE	RENEWABLE SOURCES
EMISSIONS TRADING		FOSSIL FUEL	
ENERGY EFFICIENCY		LOW CARBON	
FOSSIL FUELS			
GAS EMISSIONS			
GREENHOUSE GAS			
GREENHOUSE GASES			
KYOTO PROTOCOL			

Table F.5: The 'unique' two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF1 – CLIMATE CHANGE - UNIQUE 2-WORD AND 3-WORD KEYWORDS		
Green Business	**NGOs**	**UK Government**
CARS TOTAL MILEAGE	ACTION ON CLIMATE	A LOW CARBON
COAL FIRED	AIR PASSENGER DUTY	AIRCRAFT IN FLIGHT
COAL FIRED POWER	AIR TRAVEL	CARBON OFFSET
EMISSIONS FOR ENERGY	AIRPORT EXPANSION	CARBON OFFSET SCHEMES
EMISSIONS PER GWH	AVIATION INDUSTRY	CARBON TRUST
EMISSIONS TRADING SYSTEM	BRITISH ENERGY	CHANGE LEVY
ENERGY COMPANIES	CARBON DIOXIDE LEVELS	CHANGE PROGRAMME
ENERGY SUPPLIED	CLIMATE CHANGE POLICY	CLIMATE CHANGE AGREEMENTS
ENERGY SUPPLY	DANGEROUS CLIMATE	CLIMATE CHANGE SCENARIOS
FIRED POWER STATIONS	DANGEROUS CLIMATE CHANGE	CLIMATE IMPACTS PROGRAMME
GHG EMISSIONS	EMISSIONS OF CARBON	CO FIRING

GLOBAL CLIMATE CHANGE	ENERGY FROM WASTE	COMBINED HEAT
GLOBAL WARMING POTENTIAL	ENERGY WHITE PAPER	CONSEQUENCES OF EMISSIONS
GREEN ENERGY	EU EMISSIONS TRADING	CONSUMER CARBON OFFSET
GREENHOUSE GAS EMISSIONS	EXTREME WEATHER	COST OF CARBON
HEAT AND POWER	EXTREME WEATHER EVENTS	ELECTRICITY FROM RENEWABLE
INTERNAL ENERGY USE	GLOBAL CLIMATE	ELECTRICITY GENERATION
LIQUEFIED NATURAL GAS		ENERGY DEMAND
NATURAL GAS		ENERGY POLICY
OIL AND GAS		ENERGY RECOVERY
OIL AND NATURAL		ENERGY SAVING
POWER GENERATION		ENERGY STORAGE
POWER STATION		ENERGY WHITE
POWER STATIONS		LANDFILL GAS
POWER SYSTEMS		LIFE CYCLE
SUSTAINABLE ENERGY		OFFSHORE WIND
TOTAL ENERGY		RENEWABLES OBLIGATION
WARMING POTENTIAL		
WIND FARM		

F.4.2 Semantic field two: management

Table F.6: The shared two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF2 – MANAGEMENT - SHARED TWO-WORD AND THREE-WORD KEYWORDS			
Common to all	**Just GB and NGOs**	**Just NGOs and UK Gov**	**Just UK Gov and GB**
ACTION PLAN	CODE OF CONDUCT	CODE OF PRACTICE	ACTION PLANS
BEST PRACTICE	CORPORATE RESPONSIBILITY	CONVENTION ON BIOLOGICAL	ANNUAL REPORT
CORPORATE SOCIAL	ENVIRONMENTAL STANDARDS	CONVENTION ON CLIMATE	BIODIVERSITY ACTION
CORPORATE SOCIAL RESPONSIBILITY	GLOBAL COMPACT	ENVIRONMENTAL PROTECTION	BIODIVERSITY ACTION PLAN
ENVIRONMENTAL IMPACT		HEALTH EFFECTS	BIODIVERSITY ACTION PLANS
ENVIRONMENTAL IMPACTS		HEALTH IMPACTS	ENVIRONMENTAL MANAGEMENT
IMPACT ASSESSMENT			ENVIRONMENTAL PERFORMANCE
			ENVIRONMENTAL RISK
			RISK ASSESSMENT
			RISK ASSESSMENTS
			RISK MANAGEMENT

Table F.7: The 'unique' two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF2 – MANAGEMENT - UNIQUE TWO-WORD AND THREE-WORD KEYWORDS		
Green Business	**NGOs**	**UK Government**
AREAS FOR IMPROVEMENT	ADAPTATION AND VULNERABILITY	A PRECAUTIONARY APPROACH
BUSINESS CONDUCT	AFFECTED COMMUNITIES	A RISK ASSESSMENT
BUSINESS ETHICS	AFFECTED PEOPLE	ABDOMINAL WALL DEFECTS
BUSINESS PRINCIPLES	AGREEMENT ON AGRICULTURE	ACTIVE MANAGEMENT
CODE OF BUSINESS	AGREEMENT ON INVESTMENT	ACTIVE MANAGEMENT SCHEME
CONTINUOUS IMPROVEMENT	AGREEMENT ON TRADE	ADVERSE EFFECTS
CORPORATE CITIZENSHIP	BIG BUSINESS	ADVERSE EFFECTS ON
CORPORATE CONDUCT	BRIEFING PAPER	ADVISORY COMMITTEE
CORPORATE GOVERNANCE	CAMPAIGN GUIDE	AIR QUALITY MANAGEMENT
CORPORATE RESPONSIBILITY INDEX	CANCER CAUSING CHEMICALS	AIR QUALITY OBJECTIVES
CORPORATE RESPONSIBILITY REPORT	COMMITTEE ON AGRICULTURE	AIR QUALITY POLICY

COUNSELLING AND TESTING	COMMON CONCERNS	AIR QUALITY STANDARDS
DATA COLLECTION	CORPORATE ACCOUNTABILITY	AIR QUALITY STRATEGY
DEVELOPMENT AND IMPLEMENTATION	DEVELOPMENT GOALS	ASSESS AND ADAPT
DOW JONES SUSTAINABILITY	DEVELOPMENT REPORT	ASSESSMENT OF INDICATOR
ECO EFFICIENCY	DISASTER RISK REDUCTION	BEST AVAILABLE TECHNIQUES
EMPLOYEE HEALTH MANAGEMENT	ECOLOGICAL DEBT	BEST PRACTICE PROGRAMME
EMPLOYMENT PRINCIPLES	ENVIRONMENTAL ASSESSMENT	CARCINOGENICITY OF CHEMICALS
ENVIRONMENT REPORT	ENVIRONMENTAL AUDIT COMMITTEE	CASE SPECIFIC MONITORING
ENVIRONMENT REVIEW	ENVIRONMENTAL CAMPAIGN GROUP	CHEMICALS IN FOOD
ENVIRONMENTAL DATA	ENVIRONMENTAL DAMAGE	CHEMICALS STAKEHOLDER FORUM
ENVIRONMENTAL GOVERNANCE	ENVIRONMENTAL HEALTH PERSPECTIVES	COMMITTEE ON ANIMAL
ENVIRONMENTAL MANAGEMENT SYSTEM	ENVIRONMENTAL IMPACT ASSESSMENT	COMMITTEE ON CARCINOGENICITY
ENVIRONMENTAL MANAGEMENT SYSTEMS	ENVIRONMENTAL JUSTICE	COMMITTEE ON CONSUMER
ENVIRONMENTAL PERFORMANCE INDICATORS	ENVIRONMENTAL JUSTICE IMPACT	COMMITTEE ON HAZARDOUS
ENVIRONMENTAL PERFORMANCE REPORT	ENVIRONMENTAL PROBLEMS	COMMITTEE ON NOVEL
ENVIRONMENTAL POLICY	ENVIRONMENTAL PROTECTION AGENCY	COMMITTEE ON PESTICIDES
ENVIRONMENTAL REPORT	ETHICAL TRADING	COMMITTEE ON RELEASES
ENVIRONMENTAL REPORT APPENDICES	ETHICAL TRADING INITIATIVE	COMMITTEE ON TOXICITY
ENVIRONMENTAL SUSTAINABILITY REPORT	EVALUATION OF COMPLIANCE	CONCLUSIONS AND RECOMMENDATIONS
ETHICAL CONDUCT	EXTENT OF COMPLIANCE	CONSULTATION PAPER
EXTRACTIVE INDUSTRIES TRANSPARENCY	EXTRACTIVE INDUSTRIES REVIEW	CURRENT ACTION PROGRAMME
FREQUENCY RATE	GOOD GOVERNANCE	DANGEROUS SUBSTANCES
GLOBAL MINING INITIATIVE	HAZARDOUS CHEMICALS	DELIBERATE RELEASE REGULATIONS
GLOBAL REPORTING	HEAVY METALS	DIOXIN LIKE PCBS
GLOBAL REPORTING INITIATIVE	LABOUR STANDARDS	DIOXINS AND DIOXIN
GOOD CORPORATE	LEGALLY BINDING	DIOXINS AND FURANS
GOOD CORPORATE CONDUCT	NEGATIVE IMPACTS	DRAFT RISK ASSESSMENT
GRI INDICATORS		ECOLOGY FINAL REPORT
HABITAT ACTION PLAN		ECONOMIC INSTRUMENTS
HEALTH MANAGEMENT		EFFECTS OF CHEMICALS
HEALTH RISKS		ENVIRONMENTAL CONSEQUENCES
HIGH STANDARDS		ENVIRONMENTAL EFFECTS
HOW WE MANAGE		ENVIRONMENTAL POLLUTION
INDUSTRIES TRANSPARENCY INITIATIVE		ENVIRONMENTAL QUALITY
INFORMATION REVIEWED		ENVIRONMENTAL RISKS

INJURY FREQUENCY		FINAL REPORT
INJURY FREQUENCY RATE		FISHERIES MANAGEMENT
INTERNAL AUDIT		FOOD SAFETY
INTERNATIONAL MARKETING STANDARDS		FOOD STANDARDS
JONES SUSTAINABILITY INDEX		FRAMEWORK DIRECTIVE
KEY ISSUES		HEADLINE INDICATORS
KEY PERFORMANCE		HEALTH CONSEQUENCES
KEY PERFORMANCE INDICATORS		HEALTH PLANNING
LAWS AND REGULATIONS		HERBICIDE TOLERANCE
LONDON BENCHMARKING GROUP		LANDFILL DIRECTIVE
LOST TIME INJURIES		MARKET MONITORING
LOST TIME INJURY		POLICY MEASURES
MANAGED OPERATIONS		POTENTIAL EFFECTS
MANAGEMENT SYSTEM		PPC REGULATIONS
MANAGEMENT SYSTEMS		PRODUCT POLICY
MARKETING STANDARDS		QUALITY STRATEGY
OBJECTIVES AND TARGETS		QUANTIFIED HEALTH
OCCUPATIONAL HEALTH MANAGEMENT		REDUCTION STRATEGY
PERFORMANCE DATA		RENEWABLES OBLIGATION
PERFORMANCE INDICATORS		RESEARCH QUANTIFICATION
PERFORMANCE REPORT		RISK REDUCTION
PRODUCT STEWARDSHIP		RISKS REVIEW
REPORTING INITIATIVE		SCIENCE REVIEW
RESPONSIBILITY REPORT		
RESPONSIBLE MARKETING		
SAFETY MANAGEMENT		
SAFETY PERFORMANCE		
SOCIAL IMPACT		
SOCIAL IMPACTS		
SOCIAL PERFORMANCE		
SOCIAL REPORT		
SOCIAL REPORTING		
SOCIAL RESPONSIBILITY		
SOCIAL REVIEW		
SOCIALLY RESPONSIBLE		

SUSTAINABILITY REPORT		
SUSTAINABILITY REPORTING		
WASTE MANAGEMENT		

F.4.3 Semantic field three: the problems of people and communities in the developing world who are affected by business activity

Table F.8: The shared two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF3 – THE PROBLEMS OF PEOPLE AND COMMUNITIES IN DEVELOPING COUNTRIES AFFECTED BY BUSINESS ACTIVITY – SHARED KEYWORDS			
Common to all	**Just GB and NGOs**	**Just NGOs and UK Gov**	**Just UK Gov and GB**
DEVELOPING COUNTRIES	CHILD LABOUR		
	DECLARATION OF HUMAN		
	DEVELOPING WORLD		
	HIV AIDS		
	HUMAN RIGHTS		
	LOCAL COMMUNITIES		
	LOCAL COMMUNITY		

Table F.9: The 'unique' two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF3 – THE PROBLEMS OF PEOPLE AND COMMUNITIES IN DEVELOPING COUNTRIES AFFECTED BY BUSINESS ACTIVITY – UNIQUE KEYWORDS		
Green Business	**NGOs**	**UK Government**
BLACK ECONOMIC EMPOWERMENT	ACCESS TO BASIC	
BRIBERY AND CORRUPTION	ACCESS TO SAFE	
COMMUNITY ENGAGEMENT	ACCOUNT LIBERALISATION	
COMMUNITY INVESTMENT	ADAPTATION AND VULNERABILITY	
COMMUNITY INVOLVEMENT	AFFECTED COMMUNITIES	
ECONOMIC EMPOWERMENT	AFFECTED PEOPLE	
EXTRACTIVE INDUSTRIES TRANSPARENCY	AFRICAN COUNTRIES	
FUNDAMENTAL HUMAN RIGHTS	AGREEMENT ON AGRICULTURE	
GLOBAL MINING INITIATIVE	AGREEMENT ON INVESTMENT	
HUMAN RIGHTS ISSUES	AGREEMENT ON TRADE	
INDUSTRIES TRANSPARENCY INITIATIVE	AIDS AFFECTED CHILDREN	
	ASIAN DEVELOPMENT BANK	
	BARRIERS TO TRADE	
	BRETTON WOODS	
	BRETTON WOODS INSTITUTIONS	

	BRETTON WOODS PROJECT	
	CAPITAL ACCOUNT	
	CAPITAL ACCOUNT LIBERALISATION	
	CONDEMNED TO DEBT	
	CONFERENCE ON TRADE	
	CONFLICT DIAMONDS	
	CONTROL ARMS CAMPAIGN	
	CULTURAL RIGHTS	
	DEBT CANCELLATION	
	DEBT RELIEF	
	DEBT SERVICE	
	DEBT SERVICE PAYMENTS	
	DEBT SUSTAINABILITY	
	DEPARTMENT FOR INTERNATIONAL	
	DEVELOPING COUNTRIES NEED	
	DEVELOPING COUNTRY	
	DEVELOPING COUNTRY GOVERNMENTS	
	DEVELOPMENT AND POVERTY	
	DEVELOPMENT CREDIT UNIONS	
	DEVELOPMENT FINANCE	
	DEVELOPMENT GOALS	
	DEVELOPMENT REPORT	
	DIAMOND INDUSTRY	
	DIAMOND TRADE	
	ETHICAL TRADING	
	ETHICAL TRADING INITIATIVE	
	EXPORT CREDIT	
	EXPORT CREDIT AGENCIES	
	EXPORT SUBSIDIES	
	EXTRACTIVE INDUSTRIES	
	EXTRACTIVE INDUSTRIES REVIEW	
	FAIR TRADE	
	FINANCIAL INSTITUTIONS	
	FOREIGN INVESTMENT	
	FREE TRADE	

	GLOBAL ECONOMY	
	GLOBAL TRADE	
	HIPC INITIATIVE	
	INDIGENOUS COMMUNITIES	
	INDIGENOUS PEOPLE	
	INDIGENOUS PEOPLES	
	INTERNATIONAL DEVELOPMENT	
	INTERNATIONAL FINANCE	
	INTERNATIONAL FINANCIAL	
	INTERNATIONAL TRADE	
	KIMBERLEY PROCESS	
	LABOUR STANDARDS	
	LEAST DEVELOPED	
	LOAN FUNDS	
	LOCAL ECONOMIES	
	LOCAL ECONOMY	
	MINING COMPANIES	
	MINING COMPANY	

F.4.4 Semantic field four: waste

Table F.10: The shared two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF4 – WASTE – SHARED KEYWORDS			
Common to all	**Just GB and NGOs**	**Just NGOs and UK Gov**	**Just UK Gov and GB**
AIR QUALITY		AIR POLLUTION	REDUCE EMISSIONS
HAZARDOUS WASTE		AMOUNT OF WASTE	
		HAZARDOUS SUBSTANCES	
		HOUSEHOLD WASTE	
		LANDFILL SITES	
		LANDFILL TAX	

Table F.11: The 'unique' two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF4 – WASTE - UNIQUE KEYWORDS		
Green Business	**NGOs**	**UK Government**
AIR EMISSIONS	CLEAN UP	AIR POLLUTANTS
BASE METALS	HAZARDOUS CHEMICALS	AIR QUALITY DAUGHTER
CLEANER FUELS	HEAVY METALS	AIR QUALITY MANAGEMENT
DISCHARGES TO WATER	MUNICIPAL WASTE	AIR QUALITY OBJECTIVES
EMISSIONS TO AIR		AIR QUALITY POLICY
LOCAL AIR QUALITY		AIR QUALITY STANDARDS
NITROGEN OXIDES NOX		AIR QUALITY STRATEGY
NON HAZARDOUS		BIODEGRADABLE MUNICIPAL WASTE
NON HAZARDOUS WASTE		COMMITTEE ON HAZARDOUS
NOX EMISSIONS		COMMITTEE ON PESTICIDES
OZONE DEPLETING		COMMITTEE ON RELEASES
SEWAGE SLUDGE		COMMITTEE ON TOXICITY
SPECIAL WASTE		COMPOSTING IN VESSEL
WASTE DISPOSED		COMPOSTING OTHER WASTE
WASTE MANAGEMENT		COMPOSTING WINDROW MECHANICAL
WASTE MINIMISATION		CONSTRUCTION AND DEMOLITION

WASTE RECYCLED		DANGEROUS SUBSTANCES
WASTE SERVICES		DISPOSAL OPTIONS INCINERATION
WASTE WATER		EMISSION LIMIT
WASTEWATER TREATMENT		EMISSION LIMIT VALUES
WATER QUALITY		EMISSION REDUCTIONS
WATER TREATMENT		EMISSIONS CONTEXT
		EMISSIONS QUANTIFICATION
		EMISSIONS REDUCTIONS
		EMISSIONS REVIEW
		ENVIRONMENTAL POLLUTION
		ENVIRONMENTAL QUALITY
		ENVIRONMENTAL RISKS
		INCINERATION LANDFILL
		LANDFILL DIRECTIVE
		LANDFILL GAS
		LOCAL AIR
		NITROGEN DIOXIDE
		POLLUTION PREVENTION
		RADIOACTIVE WASTE
		SCALE INCINERATION

F.4.5 Semantic field five: food security

Table F.12: The shared two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF5 – FOOD SECURITY – SHARED KEYWORDS			
Common to all	**Just GB and NGOs**	**Just NGOs and UK Gov**	**Just UK Gov and GB**
		AGRI ENVIRONMENT SCHEMES	
		ANIMAL FEED	
		FARM SCALE	
		FOOD CHAIN	
		GENETICALLY MODIFIED	
		GM CROP	
		GM CROPS	
		GM MAIZE	
		HERBICIDE TOLERANT	

Table F.13: The 'unique' two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF5 – FOOD SECURITY - UNIQUE KEYWORDS		
Green Business	**NGOs**	**UK Government**
ANIMAL TESTING	AGREEMENT ON AGRICULTURE	ABDOMINAL WALL DEFECTS
SUSTAINABLE AGRICULTURE	ANTIBIOTICS IN UK	AGRI ENVIRONMENT
	BIOTECH INDUSTRY	ANIMAL HEALTH
	CANCER CAUSING CHEMICALS	ANIMAL WELFARE
	COMMITTEE ON AGRICULTURE	ANIMAL WELFARE BILL
	COMMON AGRICULTURAL POLICY	CARCINOGENICITY OF CHEMICALS
	FOOD PRODUCTION	CAUSE UNNECESSARY SUFFERING
	FOOD SECURITY	CHEMICALS IN FOOD
	GENETIC ENGINEERING	COMMITTEE ON ANIMAL
	GENETICALLY ENGINEERED	COMMITTEE ON CARCINOGENICITY
	GM CONTAMINATION	COMMITTEE ON HAZARDOUS
	GM FOOD	COMMITTEE ON PESTICIDES
	GM FOODS	COMMITTEE ON TOXICITY
	GM FREE	COMMON FISHERIES POLICY

	GM INGREDIENTS	CROSS POLLINATION
	GM OILSEED	CULTIVATION OF GM
	GM SOYA	DANGEROUS SUBSTANCES
	HAZARDOUS CHEMICALS	DELIBERATE RELEASE
	HEAVY METALS	DELIBERATE RELEASE REGULATIONS
	LOCAL FOOD	EFFECTS OF CHEMICALS
	MODIFIED CROPS	EPIDEMIOLOGICAL RESEARCH
	MODIFIED GM	FARM HEALTH
		FARMED ANIMALS
		FISHERIES MANAGEMENT
		FOOD CONSUMER
		FOOD MILES
		FOOD SAFETY
		FOOD STANDARDS
		GENE FLOW
		GENE TRANSFER
		GENETIC MODIFICATION
		GM PLANT
		GM PLANTS
		GM SOIL
		HERBICIDE TOLERANCE
		MODIFIED ORGANISMS
		NON GM
		OILSEED RAPE

F.4.6 Semantic field six: biodiversity 'activity'

Table F.14: The shared two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF6 – BIODIVERSITY 'ACTIVITY' – SHARED KEYWORDS			
Common to all	**Just GB and NGOs**	**Just NGOs and UK Gov**	**Just UK Gov and GB**
			BIODIVERSITY ACTION
			BIODIVERSITY ACTION PLAN
			BIODIVERSITY ACTION PLANS

Table F.15: The 'unique' two- and three-word keywords in the linguistic discourses of green business, the radical NGOs and the UK government

SF6 – BIODIVERSITY 'ACTIVITY' - UNIQUE KEYWORDS		
Green Business	**NGOs**	**UK Government**
BIODIVERSITY PARTNERSHIP		
DIVERSITY AND INCLUSIVENESS		
HABITAT ACTION		
HABITAT ACTION PLAN		
LAND AND BIODIVERSITY		
PROTECTED AREAS		

F.4.7 'Unique' semantic fields

Table F.16: The unallocated 'unique' keywords of green business

GREEN BUSINESS – UNALLOCATED 'UNIQUE' KEYWORDS		
ACROSS THE BUSINESS	FREEDOM OF ASSOCIATION	OIL PRODUCTS
ACTION POTENTIAL PARTNERS	FUEL OIL	OPERATING COMPANIES
ALL GROUP COMPANIES	GENERATION WHOLESALE	OPERATING COMPANY
BASE STATIONS	GLOBAL BUSINESS	OUR BUSINESS ACTIVITIES
BUSINESS ACTIVITIES	GROUP COMPANIES	RAISE AWARENESS
BUSINESS COUNCIL	GROUP LEVEL	SAFETY HEALTH
BUSINESS PARTNERS	GROUP OF COMPANIES	SHAREHOLDER VALUE
BUSINESS UNIT	GROUP WIDE	SOCIAL INVESTMENT
BUSINESS UNITS	HEALTH AND ENVIRONMENT	STAKEHOLDER DIALOGUE
CHEMICAL OXYGEN DEMAND	HEALTH AND ENVIRONMENTAL	STAKEHOLDER ENGAGEMENT
CONTRACTORS AND SUPPLIERS	HEALTH AND SAFETY	STEEL PACKAGING
CORPORATE ENVIRONMENT HEALTH	HEALTH ENVIRONMENT	SUPPLY CHAIN
CORPORATE ENVIRONMENTAL ENGAGEMENT	HEALTH SAFETY	SUSTAINABLE BUSINESS
CORPORATE SOCIAL INVESTMENT	HEALTH SAFETY SECURITY	SUSTAINABLE DEVELOPMENT
COUNCIL FOR SUSTAINABLE	ILLICIT TRADE	SUSTAINABLE FUTURE
DESCRIPTION OF POLICY	INJURIES AND ILLNESSES	TIME INJURIES
DIALOGUE FOCUS MATERIAL	INJURY AND ILLNESS	TIME INJURY
EACH OPERATING COMPANY	INSTITUTE OF BUSINESS	TOBACCO GROWING
ECONOMIC ENVIRONMENTAL	JOINT VENTURE	TOBACCO INDUSTRY
EMPLOYEE HEALTH	JOINT VENTURES	TOBACCO PRODUCTS
EMPLOYEES AND CONTRACTORS	KEY ISSUES ENVIRONMENT	TREATMENT WORKS
ENVIRONMENT AND COMMUNITY	LONG TERM ENERGY	WATER CONSUMPTION
ENVIRONMENT HEALTH	LOST TIME	WATER EFFICIENCY
ENVIRONMENTAL INCIDENTS	MANUFACTURING SITES	WATER SERVICES
ENVIRONMENTAL SOCIAL	MILEAGE FROM EHR	WATER USE
ENVIRONMENTAL SUSTAINABILITY	MINING AND METALS	WORK RELATED
EXPLORATION AND PRODUCTION	NON GOVERNMENTAL	WORLD BUSINESS
FOCUS MATERIAL ISSUES	NON GOVERNMENTAL ORGANISATIONS	YOUTH SMOKING
FRAMEWORK FOR CORPORATE	NUMBER OF EMPLOYEES	

Table F.17: Two ‘unique’ semantic fields of green business

GBSF1 – HEALTH, INJURIES AND HEALTH AND SAFETY		GBSF2 – REFERENCE TO BUSINESS ENTITIES
CORPORATE ENVIRONMENT HEALTH		ACROSS THE BUSINESS
EMPLOYEE HEALTH		ACTION POTENTIAL PARTNERS
ENVIRONMENT HEALTH		ALL GROUP COMPANIES
HEALTH AND ENVIRONMENT		BUSINESS ACTIVITIES
HEALTH AND ENVIRONMENTAL		BUSINESS PARTNERS
HEALTH AND SAFETY		BUSINESS UNIT
HEALTH ENVIRONMENT		BUSINESS UNITS
HEALTH SAFETY		EACH OPERATING COMPANY
HEALTH SAFETY SECURITY		GLOBAL BUSINESS
INJURIES AND ILLNESSES		GROUP COMPANIES
INJURY AND ILLNESS		GROUP LEVEL
OCCUPATIONAL HEALTH		GROUP OF COMPANIES
SAFETY HEALTH		GROUP WIDE
TIME INJURIES		JOINT VENTURE
TIME INJURY		JOINT VENTURES
		MANUFACTURING SITES
		OPERATING COMPANIES
		OPERATING COMPANY
		OUR BUSINESS ACTIVITIES

Table F.18: The unallocated 'unique' keywords of the radical NGOs

RADICAL NGOS – UNALLOCATED 'UNIQUE' KEYWORDS		
ACCESS TO FINANCE	COMMUNITY DEVELOPMENT CREDIT	FOREST FIRES
ACCESS TO INFORMATION	COMMUNITY DEVELOPMENT FINANCE	FOREST MANAGEMENT
ACROSS THE GLOBE	COMMUNITY RECYCLING NETWORK	FOREST SCHOOL
ALONG THE PIPELINE	COMPETITION COMMISSION	FUTURE GENERATIONS
ANCIENT FOREST	CONTRACTION AND CONVERGENCE	GHOST TOWN
ANCIENT FOREST FRIENDLY	COST OF PRODUCTION	HUMAN DEVELOPMENT
ANCIENT FORESTS	COUNTRY GOVERNMENTS	ILLEGAL LOGGING
ANCIENT WOODLAND	CREDIT UNIONS	ILLEGAL TRADE
AROUND THE WORLD	DECISION MAKING	INCOME COUNTRIES
ASIA PULP PAPER	DEVELOPED COUNTRIES	INDUSTRIALISED COUNTRIES
BEHIND THE MASK	DIFFERENTIAL TREATMENT	INDUSTRIES REVIEW
BROMINATED FLAME	DISTRIBUTIONAL ANALYSIS	INNER CITY
BROMINATED FLAME RETARDANTS	DOMESTIC SUPPORT	INTELLECTUAL PROPERTY
BUSINESS ENTERPRISES	DOORSTEP RECYCLING	INTERGOVERNMENTAL PANEL
CAPACITY BUILDING	EARTH SUMMIT	INTERNATIONAL COMMUNITY
CHAIN OF CUSTODY	ECONOMIC DEVELOPMENT	INTERNATIONAL HUMAN
CIVIL AND POLITICAL	ECONOMIC IMPACT OF	INVESTMENT AGREEMENT
CIVIL SOCIETY	ECONOMIC PARTNERSHIP AGREEMENTS	LEVEL RISE
CIVIL SOCIETY GROUPS	ECONOMIC SOCIAL	LIFE SATISFACTION
CIVIL SOCIETY ORGANISATIONS	ENVIRONMENT AND DEVELOPMENT	LOCAL PEOPLE
CIVIL SOCIETY PARTICIPATION	ENVIRONMENT AND HEALTH	LOGGING COMPANIES
CLEAN DEVELOPMENT MECHANISM	ENVIRONMENT AND HUMAN	MAKING TRADE
CLONE TOWN	ENVIRONMENT TRANSPORT	MARKET ACCESS
CLONE TOWN BRITAIN	ENVIRONMENTAL AND ECONOMIC	METHYL BROMIDE
COMBAT CLIMATE CHANGE	ENVIRONMENTAL AND HEALTH	MILLENNIUM DEVELOPMENT
COMMISSION ON DAMS	ENVIRONMENTAL AND HUMAN	MOX FUEL
COMMUNITY BASED	EU MEMBER STATES	NATIONAL GOVERNMENTS
COMMUNITY BASED INDICATORS	FLAME RETARDANTS	NATIONAL PARK
COMMUNITY BASED ORGANISATIONS	FOREIGN DIRECT	NATURAL RESOURCE
COMMUNITY DEVELOPMENT	FOREST DESTRUCTION	NEW NUCLEAR

Table F.19: Two ‘unique’ semantic fields of the radical NGOs

NGOSF1 – FORESTS, LOGGING, RESOURCE USE		NGOSF2 – SOCIAL AGENTS OF ALL DESCRIPTION
ANCIENT FOREST		BUSINESS ENTERPRISES
ANCIENT FOREST FRIENDLY		CIVIL AND POLITICAL
ANCIENT FORESTS		CIVIL SOCIETY
ANCIENT WOODLAND		CIVIL SOCIETY GROUPS
ASIA PULP PAPER		CIVIL SOCIETY ORGANISATIONS
FOREST DESTRUCTION		CIVIL SOCIETY PARTICIPATION
FOREST FIRES		COMMISSION ON DAMS
FOREST MANAGEMENT		COMMUNITY BASED
FOREST SCHOOL		COMMUNITY BASED ORGANISATIONS
ILLEGAL LOGGING		COMMUNITY RECYCLING NETWORK
LOGGING COMPANIES		COMPETITION COMMISSION
NATURAL RESOURCE		COUNTRY GOVERNMENTS
		CREDIT UNIONS
		DEVELOPED COUNTRIES
		EU MEMBER STATES
		INCOME COUNTRIES
		INDUSTRIALISED COUNTRIES
		INTERGOVERNMENTAL PANEL
		INTERNATIONAL COMMUNITY
		LOCAL PEOPLE
		LOGGING COMPANIES
		NATIONAL GOVERNMENTS

Table F.20: The unallocated ‘unique’ keywords of the UK government

THE UK GOVERNMENT – UNALLOCATED ‘UNIQUE’ KEYWORDS		
ACRYLAMIDE AND NMA	DEPRIVATION UNADJUSTED DEPRIVATION	ISLANDED OPERATION
ADVENTITIOUS PRESENCE	DEVELOPMENT AND REGENERATION	ISSUES CONCLUSIONS
ALTERNATIVE NETWORK SPLITTING	DEVELOPMENT OF SUSTAINABILITY	LAND USE
ANAEROBIC DIGESTION	DEVELOPMENT STRATEGY	LIMIT VALUES
ANAEROBIC DIGESTION GASIFICATION	DEVOLVED ADMINISTRATIONS	LONGER TERM
ANCILLARY SERVICE	DIGESTION GASIFICATION PYROLYSIS	MANAGEMENT FACILITIES
ANCILLARY SERVICE PROVISION	DIOXIN LIKE	MANAGEMENT OPTIONS
ANNUAL MEAN	DIRECTING THE FLOW	MARINE ENVIRONMENT
ASSEMBLY GOVERNMENT	DISTRIBUTED GENERATION	MATERIALS RECYCLING
BIOLOGICAL TREATMENT	DISTRIBUTION NETWORK	MECHANICAL BIOLOGICAL
BIOLOGICAL TREATMENT MBT	DISTRIBUTION NETWORKS	MICRO CHP
BIOREGIONAL DEVELOPMENT GROUP	ECOLOGY AND HYDROLOGY	MICRO GENERATION
CASE BY CASE	ECOLOGY FINAL	NETWORK SPLITTING
CENTRE FOR ECOLOGY	ECONOMY SUSTAINABLE CONSUMPTION	PAPER RECYCLING
CENTRE URBAN CENTRE	EDUCATION AND SKILLS	PERCEPTION ISSUES
CHANGING MANAGER MINDSETS	ELECTRICAL AND ELECTRONIC	POVERTY REDUCTION
CLASSIFICATION AND LABELLING	ENERGY CROPS	PUBLIC PERCEPTION
COEXISTENCE AND LIABILITY	ENVIRONMENTAL BENEFITS	REACTIVE POWER
CONDITION OF SITES	ENVIRONMENTAL CLAIMS	RECYCLING FACILITIES
CONSUMER PRODUCTS	FAULT LEVEL	REDUCTION MEASURES
CONSUMPTION AND PRODUCTION	GASIFICATION PYROLYSIS	RELATIVE ERROR
COST EFFECTIVE	GOVERNMENT DEPARTMENTS	RESOURCE EFFICIENCY
COSTS AND BENEFITS	GREEN CLAIMS	RESOURCE PRODUCTIVITY
CREATING SUSTAINABLE COMMUNITIES	HEALTH BENEFITS	ROAD TRANSPORT
CURRENT RURAL URBAN	HOSPITAL ADMISSIONS	ROAD USER
DEATHS BROUGHT FORWARD	IN VITRO	SAMPLE REDUCTION
DEPRIVATION ADJUSTED ESTIMATE	INTRODUCTION REVIEW	SEPARATION DISTANCES

Table F.21: One ‘unique’ semantic field of the UK government

UK GOVSF1 – POVERTY AND DEPRIVATION
CREATING SUSTAINABLE COMMUNITIES
DEPRIVATION ADJUSTED ESTIMATE
DEPRIVATION UNADJUSTED DEPRIVATION
DEVELOPMENT AND REGENERATION
POVERTY REDUCTION

Appendix G – The appropriation claim - contextualisation

The material in this appendix supports section 6.2 to 6.5 of chapter six. I present and discuss a methodology which I developed called *comparative collocate contextualisation*, and the visual results of the technique, as it was applied to a selection of one-word 'keywords', common to the linguistic discourses of the radical NGOs and green business. The material in G.1 supports section 6.2.2. It discusses ways of measuring contextualisation around a keyword and argues for my chosen procedure, based on a statistical correlation known as *specific mutual information*, often referred to with the acronym, MI.[1] It concludes with a table which contains the statistically significant contextualising collocates of the keyword BIODIVERSITY, as it is used by the two discourse communities: the radical NGOs and green business. The material in G.2 supports section 6.3, in which I discuss the reliability of my procedure for showing *comparative collocate contextualisation*. It also contains the eight Venn diagrams which I use in figure 6.4. There, the scale is too small for the collocates to be legible, but here, I have presented them in half-page size, and all the words can be read without difficulty. The material in G.3 supports section 6.4, in which I identify the radical NGOs' semantic field of concern, and then assess which of the radical NGOs' keywords have been adopted into green business's semantic field of concern. In section G.4, I present the *comparative collocate contextualisation* of the eighteen 'keywords' that make up the shared semantic field of concern between the radical NGOs and green business. This section contains the large-scale Venn diagrams which I present in smaller scale in section 6.5 on page 235, in figures 6.5, 6.6 and 6.7.

G.1 Collocate contextualisation

G.1.1 Introduction

In section G.1.2, I present a method based, not on MI, but rather on the absolute numbers of the collocates around BIODIVERSITY, as it is used in the linguistic discourse of green business. I do this, in order to point out the shortcomings of the procedure. In this way, I can then proceed, in section G.1.3, to an MI-based methodology which, I argue, has several advantages over the first procedure. In the demonstration and discussion of this technique I generate the 'significant' contextualising collocates of BIODIVERSITY, as it is used in the linguistic discourses of both the radical NGOs and green business.

[1] For more information about MI and other statistical techniques used in Corpus linguistics see (1) Tony McEnery and Andrew Wilson, *Corpus Linguistics,* (Edinburgh: Edinburgh University Press, 1996), and (2) Michael Oakes, *Statistics for Corpus Linguistics,* (Edinburgh: Edinburgh University Press, 1998).

G.1.2 Contextualisation based on absolute number of co-occurrences

In the green business corpus, there are 2,778 occurrences of BIODIVERSITY. In the list of edited keywords it ranks as the 12th most key keyword (see table D.1 in appendix D). In its concordance report there are 809 collocates which co-occur a minimum of five times with BIODIVERSITY. The number of collocates that Wordsmith registers also depends upon the setting that one chooses for the collocational span. My practice, throughout the project, has been to follow the default setting in Wordsmith of +/-5 from the node word. This may be slightly generous compared with corpus-linguistic 'practice'. I found a useful reference to this question in an interview of John Sinclair by Wolfgang Teubert:

> Our project, within its severe constraints and limitations, was able to set up the apparatus, the basic terminology and aspects of methodology which are still relevant to corpus linguistics. To take one example, the calculation of the relevant span of collocation, which is very elaborately and ingeniously worked out by our colleague, Bob Daley, in Chapter 3. He calculated that the optimal span was four words before and four words after the node. We recalculated it a few years ago on the basis of a much larger corpus of English and came to almost the same result, finding that five words to the left and four words to the right might result in a slight improvement of semantic relevance.[2]

On the strength of Sinclair's comments, then, my results award the status of being a collocate to a word which is fifth after the node, when he would not have done. If I had read this comment at the start of my project, I would, of course, have followed his advice. However, this is not a serious difference. It is hard to imagine that a node word would have such a regular contextualisation that one particular word appeared five places after it so many times as to become a significant collocate under my procedure when it would have been ignored by his recommended procedure.

The default order of presentation in the Wordsmith report is in descending number of absolute co-occurrences. In starting from the list of 809 collocates in the concordance report for BIODIVERSITY, I first had to decide on a minimum cut-off point, below which collocates would be rejected as being not significant, in terms of their possible influence on the meaning of BIODIVERSITY. In the absence of any formal guidance on the subject, I chose an arbitrary figure of 1% of the number of concordance lines. Below 1%, it was certainly not credible to argue that the collocate had any pervasive effect on the contextualisation of its node word. With 2,778 concordance lines in total, the 1% rule required that a collocate should have a minimum of 27 absolute co-occurrences with

[2] Ramesh Krishnamurthy (ed.), *English Collocation Studies: The OSTI Report,* (London: Continuum, 2004), xix. I have referred to this quote in footnote 45 of chapter three and footnote 2 of chapter six.

BIODIVERSITY, in order to be retained in the list. This minimum figure allowed 167 words through the net. The results are presented below in table G.1.

Table G.1: 167 collocates of BIODIVERSITY ranked in descending order of absolute number of co-occurrences

N	Word	Total	N	Word	Total	N	Word	Total
1	BIODIVERSITY	3 053	57	ACTIVITIES	73	113	FURTHER	37
2	THE	1 365	58	ENHANCE	72	114	DEVELOPING	37
3	AND	1 293	59	BE	71	115	NATURAL	36
4	OF	889	60	REPORT	70	116	SUCH	36
5	TO	801	61	THROUGH	68	117	IMPORTANT	36
6	IN	638	62	OR	65	118	CAN	36
7	ACTION	495	63	WHERE	63	119	RESOURCE	36
8	A	416	64	PERFORMANCE	63	120	TARGETS	35
9	ON	354	65	WORK	61	121	POLICY	35
10	FOR	352	66	2	60	122	SUPPORT	35
11	OUR	351	67	STANDARD	59	123	MANAGE	34
12	IS	308	68	OPERATIONS	59	124	INFORMATION	33
13	WE	277	69	WHICH	57	125	COMPANIES	33
14	PLAN	277	70	ENVIRONMENT	55	126	ENSURE	32
15	MANAGEMENT	245	71	HABITATS	53	127	QUALITY	32
16	LAND	214	72	SITE	53	128	INITIATIVES	32
17	PLANS	193	73	KEY	53	129	PROGRESS	32
18	CONSERVATION	183	74	MORE	53	130	CONSERVE	32
19	THAT	170	75	SUSTAINABLE	52	131	2002	32
20	WITH	170	76	COMPANY	52	132	2003	31
21	ARE	164	77	BAP	52	133	ACROSS	31
22	BY	159	78	STEWARDSHIP	51	134	IMPROVE	31
23	AS	150	79	CLIMATE	51	135	AREA	31
24	GROUP	145	80	SEE	51	136	STEERING	31
25	PARTNERSHIP	138	81	CHANGE	49	137	DEVELOPED	31
26	ENVIRONMENTAL	138	82	PART	48	138	LOSS	31
27	UK	129	83	IT	47	139	ASSESSMENT	31
28	S	125	84	WORKING	47	140	AIR	31
29	USE	119	85	SERVICES	46	141	SCOTTISHPOWER	30
30	BUSINESS	115	86	SPECIES	46	142	RESOURCES	30
31	WATER	110	87	DEVELOP	46	143	HEALTH	30
32	WILL	109	88	WAS	46	144	COM	30
33	HAS	105	89	PROJECTS	45	145	WILDLIFE	30
34	HAVE	97	90	PROTECTION	44	146	VALUE	30
35	LOCAL	96	91	2001	43	147	PROJECT	30
36	IMPACT	94	92	AWARENESS	43	148	INTEGRATING	30
37	O	93	93	FROM	43	149	ONE	29
38	ENERGY	92	94	INCLUDING	42	150	CONTRIBUTION	29
39	SITES	90	95	ALSO	42	151	SET	29
40	BIFFA	90	96	RICH	42	152	PROTECT	29
41	AT	90	97	NATIONAL	42	153	HUMAN	29
42	ITS	89	98	NEW	42	154	HABITAT	29
43	INTO	89	99	1	42	155	OTHER	28
44	ALL	89	100	WWW	41	156	HOW	28
45	DEVELOPMENT	86	101	ABOUT	40	157	FIRST	28

46	ISSUES	85	102	WITHIN	39	158	INCLUDED	28
47	THIS	84	103	BEEN	39	159	CORPORATE	28
48	WASTE	84	104	PROGRAMME	39	160	IMPLEMENT	28
49	STRATEGY	83	105	THEIR	38	161	THESE	28
50	AREAS	82	106	APPROACH	38	162	ENHANCEMENT	27
51	AMERICAN	81	107	MANAGING	38	163	5	27
52	SHELL	81	108	COMMITMENT	38	164	INITIATIVE	27
53	AN	79	109	PROTECTING	38	165	CONSIDERATIONS	27
54	TOBACCO	78	110	MONITORING	38	166	AUDIT	27
55	IMPACTS	78	111	PROMOTE	38	167	GLOBAL	27
56	BRITISH	76	112	PAGE	37			

This ranking procedure has three weaknesses. First, having no statistical advice to refer to, I was forced to make an arbitrary decision to set the lower cut-off point at "absolute number of occurrences ≥ 1% of the total number of concordance lines." This cut-off point generated a list of 167 collocates. By raising the lower cut-off point to 2%, 3% and 4%, I reduced the list to 70, 49 and 30 collocates respectively. Clearly, an increase in the lower cut-off point strengthens the claim that one is looking at the 'significant' collocates, but, regardless of where I place the bar, the decision is difficult to defend. Second, because the ranking of the collocates is on the basis of the absolute number of co-occurrences, the view of which of the collocates are significant is being made from the vantage point of an observer, who has absolutely no language frame of reference against which to compare them. In defence of this ranking procedure, it might be argued that having no language reference lends the view a form of neutrality. But this claimed neutrality, which is really the result of the computer programme's ignorance of English, is exposed by the third weakness.

The third weakness is that the common function words: THE, AND, OF, TO, OR, CAN, WILL, AN, BEEN etc. dominate the upper end of the list and pepper the rest of it. Anyone, with a rudimentary understanding of language, will recognise intuitively that these words have a high frequency in any text, and their presence at the top end of this list is not necessarily 'significant'. One way to deal with this issue would be to strip them from the list by manual intervention. But that would risk removing a function word that *was* a 'significant' collocate of BIODIVERSITY. It would be much better to have a procedure, which demoted them for sound statistical reasons. For these three reasons, therefore, I was obliged to recognise that the absolute number of co-occurrences of a collocate, would not make for a reliable view of which are the significant collocates of a 'keyword'.

Having criticised this view of contextualisation for statistical and grammatical reasons, I would also like to remind the reader what this procedure is trying to emulate. The empirical inspiration comes from Welford's suspicions about the way in which the language of the

environment seemed to be surrounded with business-oriented words which sounded, to his ear, strange. Welford based his case on a *comparison,* between what he heard and what he expected to hear, or between what he read and what he expected to read. In the next section, I present the MI-based view, which both addresses the three weaknesses I presented above, and also attempts to emulate Welford's experience.

G.1.3 Contextualisation based on specific mutual information

The MI procedure recognises that the 'significance' of the co-occurrence of a collocate with its node word, is also a function of the independent frequency of the collocate itself. In order to calculate the MI relation for each of the 809 collocates, Wordsmith requires a reference wordlist. It is from this vantage point, that Wordsmith will gain its own view of the general frequency of a collocate. It reads the first collocate on the list of 809 and then consults with its reference wordlist, to find out how frequent this collocate is within the reference corpus. Knowing both the frequency of the collocate in the reference corpus, as well as the frequency of the node word and collocate in the sample corpus of green business, Wordsmith can calculate the probability that these two words would appear *by chance* within +/- 5 words of each other. It then compares this 'quite-by-chance' probability of co-occurrence with the actual instances of co-occurrence, which are recorded in its collocates report. The greater is the divergence between the two, the greater is the MI-based significance that Wordsmith calculates.

As an aid in understanding this procedure, I like to think of a fictitious person with extraordinary powers of both memory, recall and calculation (rather like Wordsmith). In contrast to Wordsmith, however, this person also reads, writes, listens and speaks, but she has very strange taste – her world of representation lies exclusively within the textual discourse of the BNC written corpus. This is the vantage point, from which I have elected to view the significance of a collocate's co-occurrence with its node word. She only ever reads and writes text from the BNC written texts, and her conversation is, also, exclusively on the same subjects. Thanks to her powers of memory and recall, every bit of text and conversation that she has ever come across in the BNC, lies in her pre-conscious mind, where it functions as an active frame of reference against which she interprets new material. Imagine now that she reads down the original list of 809 collocates of BIODIVERSITY in the green business corpus, ranked by their absolute number of co-occurrences. As she does so, her linguistic frame of reference, combined with her amazing powers of calculation, enable her to register which of the 809 collocates have a tendency to combine with BIODIVERSITY to a greater

extent, than their respective frequencies of occurrence in the BNC would suggest they should. As she goes about the process of reorganising the list of collocates in this way, we might observe that she is now ranking the collocates of BIODIVERSITY in terms of their significance, with reference to the language community she represents. It might be argued that my personification of the reference viewpoint merely serves to illustrate the absurdity of her language experience, and to this charge I must concede that it is certainly not typical of most people's experience of language. Neither can I argue that it emulates Welford's native British English, coloured, as is everyone's, by his particular social and professional experience. Nonetheless, it is a standard which is recognised publicly. My measure of the significance of collocates, as measured from the viewpoint of the BNC, may be applied without bias on all three of the sample corpora. In short, it is important to use just one reference, so that the viewpoint is from the same place each time, and the BNC written corpus is the best reference available.

The results from this process of comparison can fall into one of three different categories. First, if the actual incidence is greater than the 'quite-by-chance' probability, then Wordsmith observes that there is some degree of deliberate affinity between the collocate and the node word, in their usage by this particular language community. Accordingly, it assigns the relationship a positive MI value, where the size of the MI number is proportional to the strength of the affinity. Second, it is perfectly possible for Wordsmith to find that the actual incidence of co-occurrence is less than the 'quite-by-chance' probability. In this case, it observes that there is some degree of deliberate avoidance between the collocate and the node word, in their usage by this language community. Therefore, it assigns the relationship a negative MI value, where the absolute size of the number is, again, proportional to the strength of the avoidance. Third, it is also possible indeed experience shows that it is most probable, that Wordsmith finds that the actual incidence of co-occurrence is roughly the same as the 'quite-by-chance' probability, or that the variation between the two is so small as to be statistically insignificant. In this case, it observes that there is neither deliberate affinity nor deliberate avoidance between the collocate and the node word, and it assigns the relationship an MI value of zero. In the list of the 809 collocates of BIODIVERSITY, the MI calculation, using the BNC corpus as the reference, led to 42 collocates being assigned a positive MI, between the lowest possible MI of 0.001 and a maximum of 24.807. There were also 23 collocates which received a negative MI, from – 0.213 to – 6.896. But the overwhelming number, 744 out of the total of 809 collocates, were assigned an MI of zero by Wordsmith,

indicating that their co-occurrence with BIODIVERSITY was not significant. In table G.2 below, I now present the 42 collocates of BIODIVERSITY which received a positive MI value, as the word is contextualised within the green business corpus, and as it is viewed from the standpoint of the BNC written reference corpus.

Table G.2: 42 collocates of BIODIVERSITY with an MI > zero

N	Word	Relation	Total		N	Word	Relation	Total
1	BIODIVERSITY	24,807	3 053		22	AMERICAN	4,279	81
2	SITES	17,69	90		23	ACTIVITIES	4,057	73
3	TOBACCO	14,258	78		24	AN	3,199	79
4	BIFFA	11,171	90		25	WATER	3,103	110
5	PARTNERSHIP	8,844	138		26	BE	2,936	71
6	ENHANCE	8,677	72		27	WE	2,913	277
7	CONSERVATION	8,559	183		28	ALL	2,705	89
8	THE	7,789	1 365		29	BUSINESS	2,392	115
9	STRATEGY	7,648	83		30	WHERE	2,212	63
10	UK	7,57	129		31	THAT	2,158	170
11	O	7,522	93		32	MANAGEMENT	2,081	245
12	SHELL	7,495	81		33	THROUGH	1,695	68
13	BRITISH	7,14	76		34	WASTE	1,556	84
14	ENERGY	6,729	92		35	PLAN	1,036	277
15	IMPACTS	6,399	78		36	THIS	0,698	84
16	PLANS	6,265	193		37	DEVELOPMENT	0,625	86
17	AREAS	5,832	82		38	AT	0,438	90
18	LAND	5,463	214		39	PERFORMANCE	0,326	63
19	ENVIRONMENTAL	5,263	138		40	WILL	0,316	109
20	IMPACT	4,774	94		41	ACTION	0,167	495
21	ISSUES	4,412	85		42	S	0,001	125

The MI ranking has a number of strengths over the absolute number of occurrences approach. First, the MI calculation is a recognised statistical method for calculating the strength of affinities between two occurrences. Further, empirical work by corpus linguists has led to the development of a rule-of-thumb, which states that an MI of three is a prudent minimum standard of 'significance' for co-occurrences. In the Wordsmith help manual, Mike Scott includes advice to this effect:

> MI is computed using a formula derived from Gaussier, Lange and Meunier described in Oakes, p. 174; here the probability is based on total corpus size in tokens […] min. mutual info: the minimum number which the MI must come up with to be reported…a useful limit is 3.0. Below this, the linkage between node and collocate is likely to be rather tenuous.[3]

[3] Mike Scott, *Oxford Wordsmith Tools Help Manual*, (Oxford: OUP, 2004), 111. This manual is only available electronically and may be printed off by users. Since the printing process may lead to different paginations I include the reference that this appears in section 9.15 "mutual information scores." I have already cited his reference to Oakes, but repeat it here for convenience: Michael Oakes, *Statistics for Corpus Linguistics* (Edinburgh: Edinburgh University Press, 1998).

I have elected to follow the corpus linguists' rule of thumb in developing my empirical procedure. The more prudent the procedure, the greater is the confidence that the result provides a reliable indicator of significant contextualisations. The number of collocates is therefore reduced from the 42 in table G.2, to 25, as shown in table G.3 below.

Table G.3: 25 collocates of BIODIVERSITY with an MI ≥ 3.0

N	Word	Relation	Total		N	Word	Relation	Total
1	BIODIVERSITY	24,807	3 053		14	ENERGY	6,729	92
2	SITES	17,69	90		15	IMPACTS	6,399	78
3	TOBACCO	14,258	78		16	PLANS	6,265	193
4	BIFFA	11,171	90		17	AREAS	5,832	82
5	PARTNERSHIP	8,844	138		18	LAND	5,463	214
6	ENHANCE	8,677	72		19	ENVIRONMENTAL	5,263	138
7	CONSERVATION	8,559	183		20	IMPACT	4,774	94
8	THE	7,789	1 365		21	ISSUES	4,412	85
9	STRATEGY	7,648	83		22	AMERICAN	4,279	81
10	UK	7,57	129		23	ACTIVITIES	4,057	73
11	O	7,522	93		24	AN	3,199	79
12	SHELL	7,495	81		25	WATER	3,103	110
13	BRITISH	7,14	76					

The second strength of MI is that the viewpoint, from which the significance of the co-occurrence is being judged, is no longer that of someone with no experience of language whatsoever. Criticisms can be levelled at the BNC, which call into question its representativeness of British English. However, it does provide a recognised standard of language usage, with which one can make useful comparisons. A third strength, which MI has over the absolute number of occurrences procedure, is that the function words are, for the most part, demoted down the ranking list. The fate of THE also illustrates a further strength of MI over the absolute number of occurrences. With the first procedure, I would have had no alternative but to cut it out of the list from where it ranked second. But with the MI calculation, we discover that, despite being a common function word, THE shares a statistically significant affinity with BIODIVERSITY, and has been ranked eighth in the list. Ironically, this prompted a small empirical debate, on the question of whether or not to retain such function words that have no semantic content. As I discussed in the previous section, with just the absolute number of occurrences as a guide, my only recourse would have been to delete all function words from the list. But with the advantage of the MI ranking, there is a very clear message that THE and BIODIVERSITY have a significant affinity with each other within the green business corpus. This fact ought not to be ignored, in the process of viewing the contextualisation of BIODIVERSITY.

One minor inconvenience of using the BNC reference, is illustrated by the statistical significance assigned to collocates, which are proper nouns associated with the test corpus. Reading down the list one can find TOBACCO (British American *Tobacco*), BIFFA (a subsidiary of Severn-Trent Water), SHELL, BRITISH (*British* American Tobacco, *British* Gas, *British* Petroleum), AMERICAN (British *American* Tobacco), and WATER (Severn-Trent *Water*, Anglia *Water*). In an attempt to deal with this problem, I conducted tests, in which I used the green business corpus as the reference, instead of the BNC. This had the effect of demoting the proper names in the list above, since they have a much higher frequency of occurrence in the green business corpus, than they do in the BNC. But I came to the conclusion that this is an irritant in the listing which I must accept, because it is outweighed by the importance of having the single BNC reference point, from which to view all three sample corpora. Another minor difficulty with the listing is the presence of O and S in eleventh and 42nd place respectively. This is the result of a certain amount of undesired 'rubbish' in the corpora, which was caused by weaknesses in converting files from pdf format to txt. My concordance reports show that large font styles in, say, report titles at the front of a pdf file, can be formatted such that each letter in the word is interpreted, by the text extraction process, as a separate word in its own right. Thus REPORT is converted into six, single-letter words: R, E, P, O, R, and T. Within the overall size of the corpora, this phenomenon is not statistically significant, but it does mean that, along with the proper nouns, these oddities also need to be edited out of lists.

The MI-based calculation to decide which are the significant collocates of a node word, is not without its drawbacks. But my experimentation led me to the conclusion that it is the most reliable indicator of possible differences in contextualisation. I adopted a procedure, therefore, in which Wordsmith calculates the MIs of all collocates using the BNC reference wordlist. Then I set a minimum cut-off point of MI $\geq$3.0, and edited this list, removing any collocates that might be present because they are proper nouns referring to the names of the protagonists or clearly 'rubbish'. There is also a strong statistical probability that one of the most significant collocates of a node-word is the node-word itself. Note that BIODIVERSITY is top of the list of collocates of BIODIVERSITY in table G.3. Experience shows that this is the rule rather than the exception – when a word has first been used, there are good chances that it will be repeated very soon after. If, for example, a heading includes the word BIODIVERSITY, intuition tells us that there is a strong possibility that BIODIVERSITY will also appear at or near the start, of the first sentence under the heading. This curious result

does not provide any value in studying contextualisation, and I made it a practice, therefore, to edit out the node word from its own list of collocates.

Table G.4: The edited lists of significant collocates of BIODIVERSITY in the corpora of (i) green business and (ii) the radical NGOs

Green Business			The radical NGOs	
Word	**Relation**		**Word**	**Relation**
SITES	17,69		DEGRADATION	13,506
PARTNERSHIP	8,844		GM	12,013
ENHANCE	8,677		INDICATORS	11,385
CONSERVATION	8,559		FOREST	10,253
THE	7,789		SUSTAINABILITY	10,041
STRATEGY	7,648		IMPACTS	9,921
ENERGY	6,729		CHANGE	9,413
IMPACTS	6,399		FARMLAND	9,321
PLANS	6,265		CONSERVE	9,21
AREAS	5,832		WOODLAND	8,438
LAND	5,463		ISSUES	8,301
ENVIRONMENTAL	5,263		GLOBAL	7,81
IMPACT	4,774		CLIMATE	7,601
ISSUES	4,412		UNDER	7,568
ACTIVITIES	4,057		MARINE	7,194
AN	3,199		THE	6,931
			ACTION	6,689
			COMMUNITY	6,159
			RESOURCES	6,032
			CROPS	5,941
			PEOPLE	5,902
			ENVIRONMENTAL	5,692
			THREAT	5,682
			IMPACT	5,505
			AGRICULTURAL	5,297
			ENVIRONMENT	5,288
			SOIL	5,086
			ASSOCIATED	5,068
			DESTRUCTION	4,983
			SUSTAINABLE	4,891
			BUT	4,35
			BIRDS	4,235
			DAMAGE	4,147
			INCLUDING	4,12
			HABITATS	3,96
			INTERNATIONAL	3,764
			LANDSCAPE	3,471
			NATURAL	3,128
			HAS	3,11

On the basis of the work presented thus far and my discussion of the strengths and minor weaknesses of the MI procedure, I now present above, in table G.4, the edited listings

of the significant collocates of BIODIVERSITY in the two corpora, as they are viewed from the standpoint of the BNC. I edited out nine of the 25 collocates in the list for green business in table G.3, and then repeated the entire procedure looking at the usage of BIODIVERSITY in the corpus of the radical NGOs. There are sixteen significant collocates in the Green Business corpus and 39 in the radical NGO corpus.

G.2 Comparative collocate contextualisation - examples

The material in this section supports 6.3 in chapter six. There, I present, in figure 6.4, eight Venn diagram pairings, which I use to illustrate my discussion of the comparative collocate contextualisation tool. Here, I present the same eight Venn diagrams, but in a scale which makes the reading of the individual collocates possible. The order of presentation follows that of figure 6.4, reading first from left to right within the top row and then down through the rows. As my discussion of these Venn diagrams is contained in section 6.3, the eight figures below are presented without commentary.

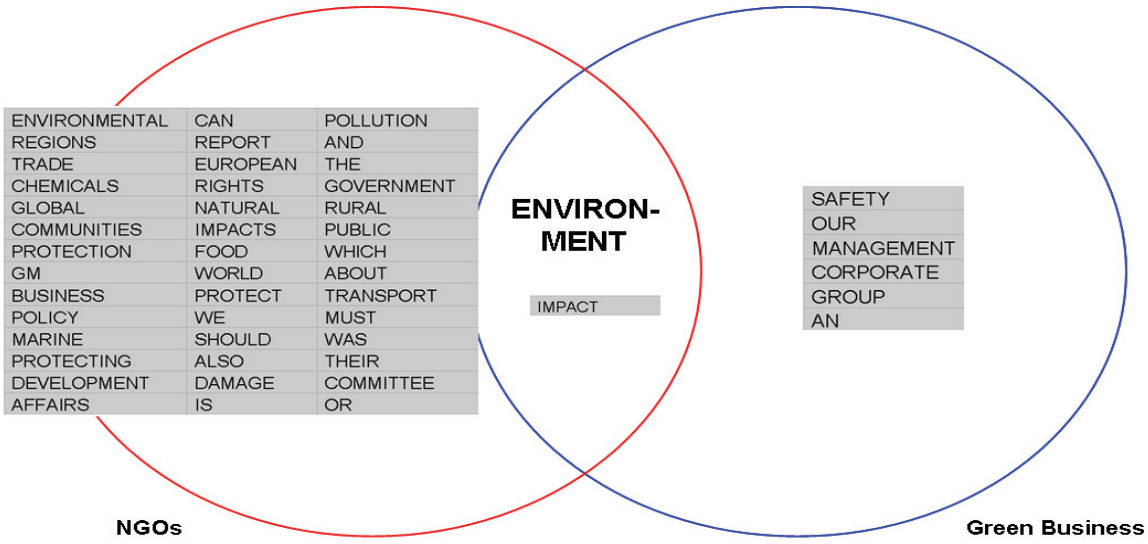

Figure G.1: The comparative collocate contextualisation of ENVIRONMENT

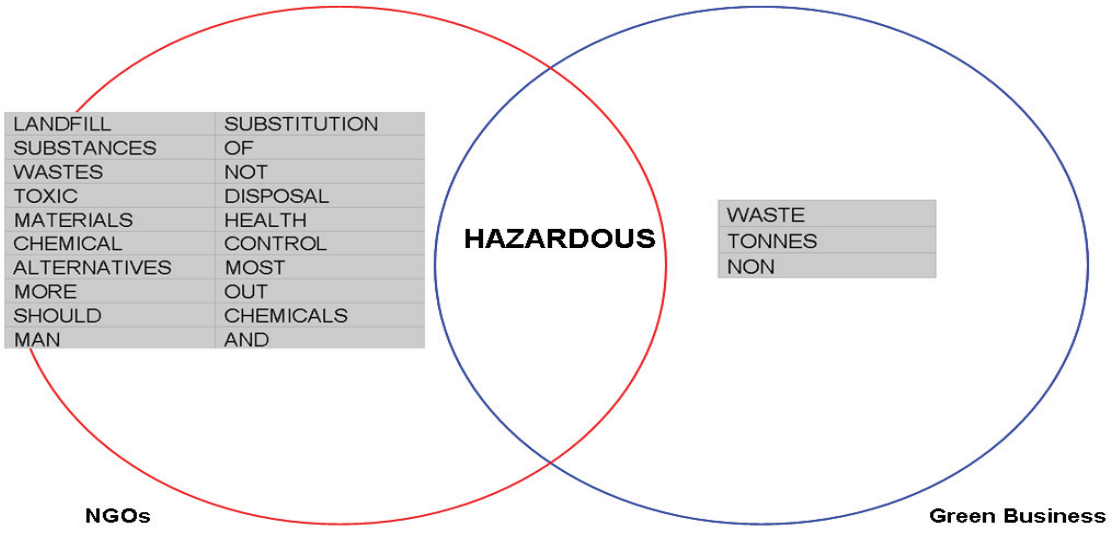

Figure G.2: The comparative collocate contextualisation of HAZARDOUS

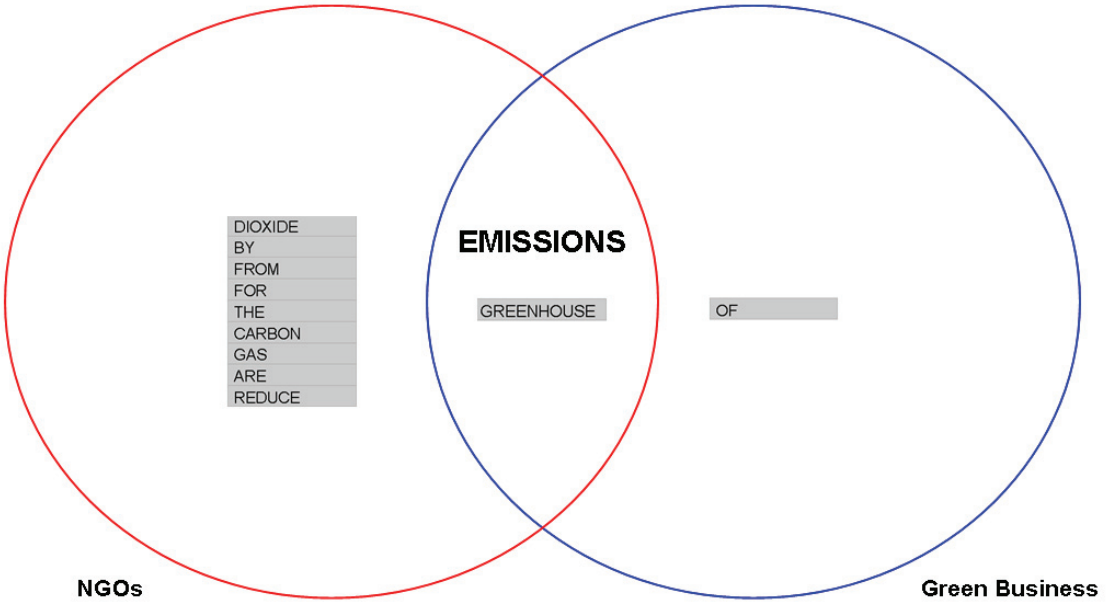

Figure G.3: The comparative collocate contextualisation of EMISSIONS

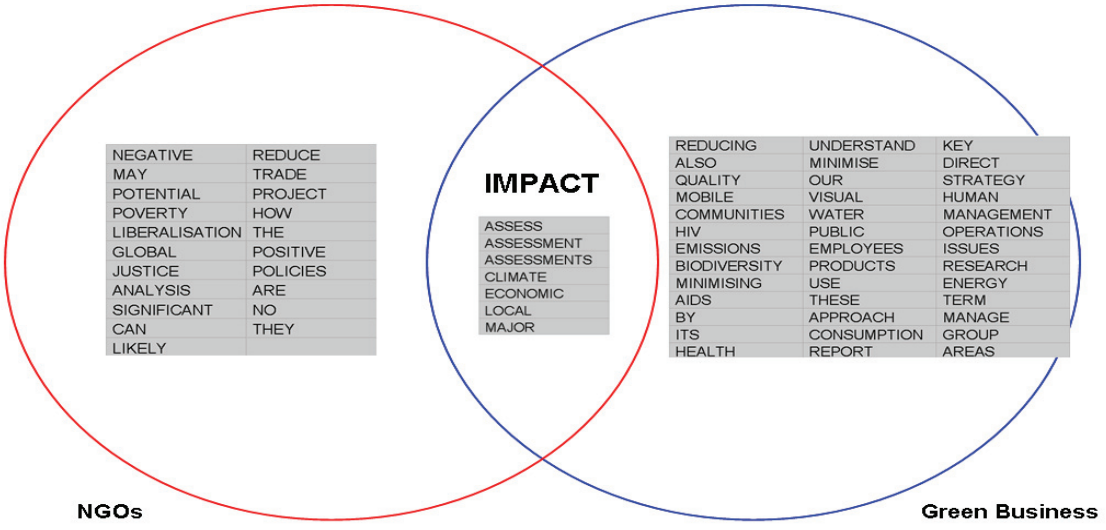

Figure G.4: The comparative collocate contextualisation of IMPACT

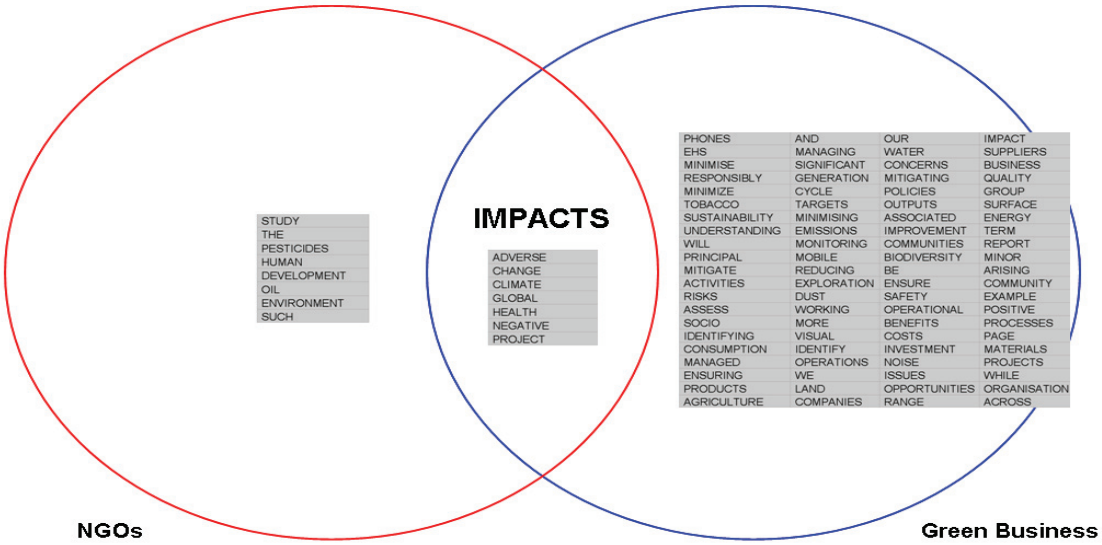

Figure G.5: The comparative collocate contextualisation of IMPACTS

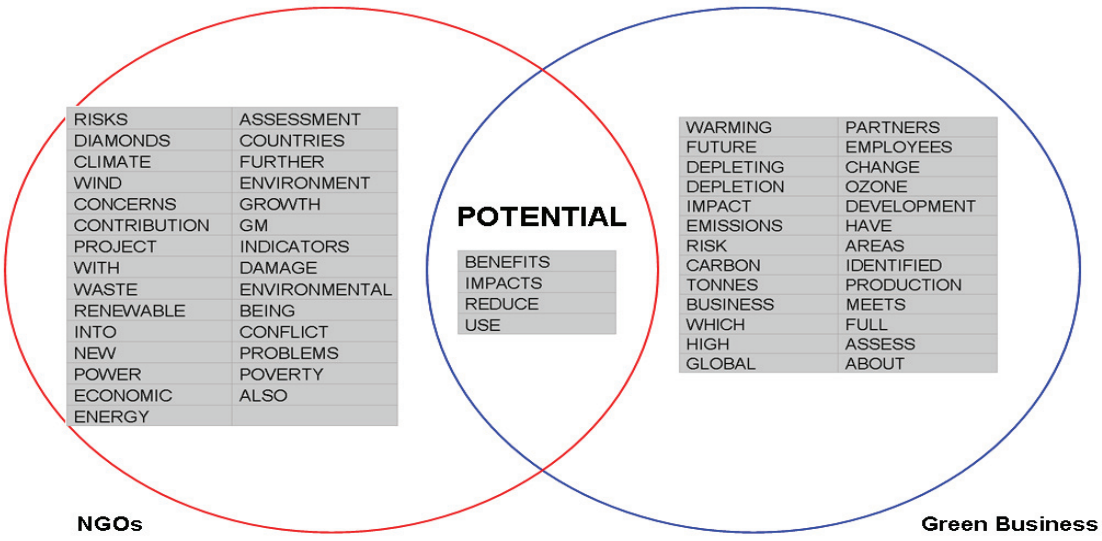

Figure G.6: The comparative collocate contextualisation of POTENTIAL

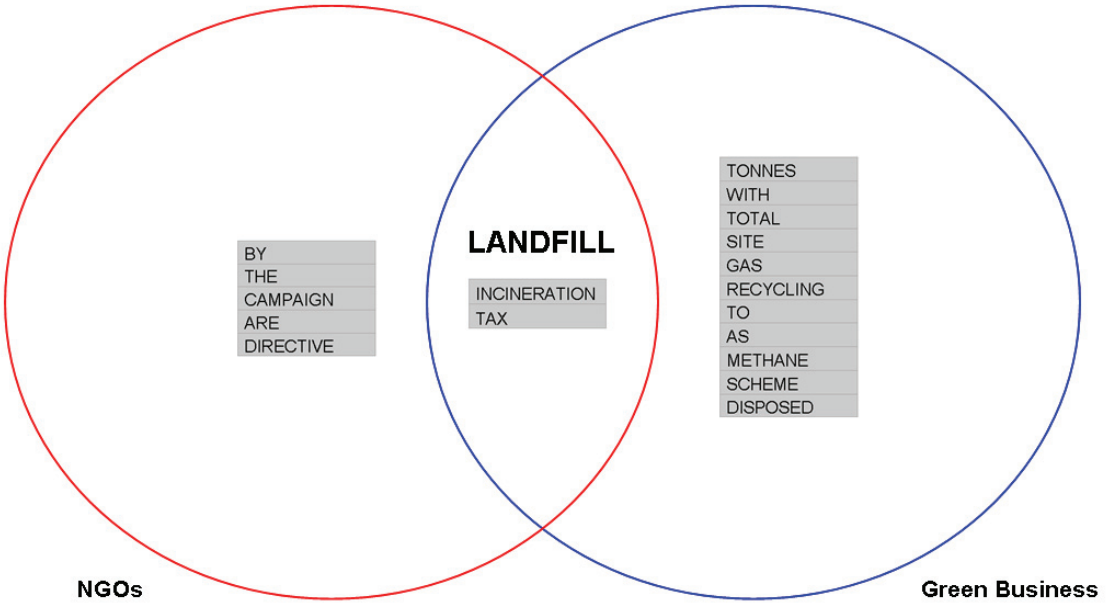

Figure G.7: The comparative collocate contextualisation of LANDFILL

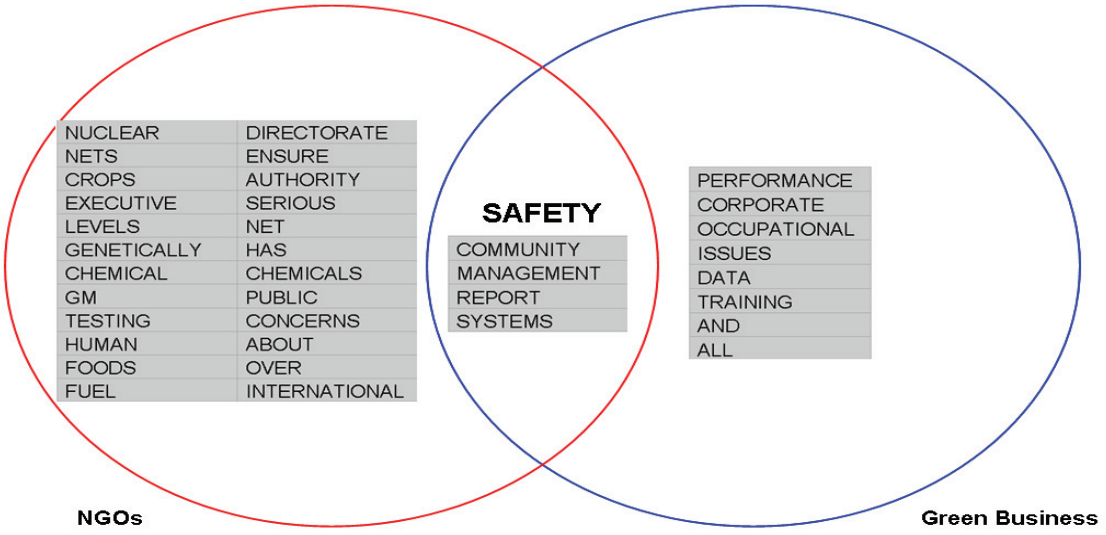

Figure G.8: The comparative collocate contextualisation of SAFETY

G.3 A semantic field of concern

This material supports section 6.4.1 on page 231. Table G.5 overleaf, contains the top 500 one-word 'keywords' of the radical NGOs. It is from this table of raw material, that I identified the radical NGOs' semantic field of concern, which is presented in table 6.3 on page 233.

Table G.5: The top 500 one-word 'keywords' of the radical NGOs

N	Key word	Keyness	N	Key word	Keyness	N	Key word	Keyness
1	COUNTRIES	52 324,16	51	CHANGE	9 441,42	101	INCINERATOR	5 431,40
2	GM	47 416,43	52	EXPORT	9 335,05	102	CONSULTATION	5 371,11
3	ENVIRONMENTAL	43 033,27	53	LANDFILL	9 292,48	103	LIVELIHOODS	5 286,98
4	CLIMATE	38 081,11	54	ECONOMIC	9 285,29	104	CORPORATIONS	5 255,29
5	WASTE	32 377,04	55	TRANSPORT	9 147,59	105	LAND	5 251,05
6	GLOBAL	31 051,83	56	INVESTMENT	9 080,86	106	STRATEGY	5 134,14
7	TRADE	27 796,00	57	COMMUNITY	8 930,47	107	REDUCE	5 109,56
8	DEVELOPMENT	27 328,30	58	NUCLEAR	8 860,54	108	AREAS	5 106,59
9	INTERNATIONAL	24 657,52	59	GOVERNMENT'S	8 626,35	109	AGENCY	5 089,28
10	GOVERNMENT	24 336,51	60	AGRICULTURE	8 454,26	110	GOVERNANCE	4 964,24
11	ENVIRONMENT	23 714,98	61	REDUCTION	8 402,39	111	POOREST	4 854,49
12	SUSTAINABLE	23 457,88	62	INDIGENOUS	8 395,95	112	BENEFITS	4 836,67
13	IMPACTS	23 112,00	63	POOR	8 222,69	113	NGO	4 820,52
14	COMPANIES	22 534,08	64	RESOURCES	8 150,15	114	FUELS	4 820,09
15	EMISSIONS	22 457,07	65	EXAMPLE	8 005,04	115	PROTOCOL	4 809,52
16	DEVELOPING	20 773,28	66	FORESTS	7 996,78	116	SUPPORT	4 809,20
17	LOCAL	20 759,66	67	CAMPAIGNER	7 838,18	117	BANK'S	4 779,37
18	EARTH	20 634,78	68	SUBSIDIES	7 764,13	118	NEGOTIATIONS	4 753,05
19	CROPS	20 218,93	69	INCINERATION	7 754,50	119	STAKEHOLDERS	4 704,17
20	ENERGY	20 130,74	70	PRODUCTS	7 443,84	120	INCINERATORS	4 687,81
21	POVERTY	18 373,23	71	AID	7 403,97	121	GENETICALLY	4 640,06
22	COMMUNITIES	18 344,02	72	POLICIES	7 160,07	122	FOSSIL	4 624,92
23	BANK	17 346,65	73	PROJECTS	7 067,89	123	CROP	4 609,04
24	FARMERS	17 094,32	74	SUSTAINABILITY	6 843,88	124	WARMING	4 570,22
25	CHEMICALS	16 435,44	75	PRODUCTION	6 724,35	125	FINANCIAL	4 563,81
26	RIGHTS	15 194,16	76	GATS	6 664,43	126	HAZARDOUS	4 552,07
27	FOOD	15 064,80	77	ORGANIC	6 628,98	127	EARTH'S	4 502,62
28	IMPACT	14 502,96	78	MEASURES	6 458,90	128	STANDARDS	4 494,71
29	REPORT	14 180,37	79	CORPORATE	6 442,74	129	ACTION	4 477,23
30	RECYCLING	14 161,44	80	ISSUES	6 426,67	130	COSTS	4 417,95
31	DEBT	13 732,08	81	LEVELS	6 425,38	131	SUPERMARKETS	4 395,59
32	GOVERNMENTS	13 652,14	82	TARGETS	6 415,74	132	GROWTH	4 368,65
33	WORLD	12 899,03	83	AGRICULTURAL	6 364,67	133	COMMISSION	4 292,66
34	CARBON	12 342,78	84	WORLD'S	6 343,96	134	TOXIC	4 287,94
35	INDUSTRY	12 022,32	85	TRANSPARENCY	6 269,56	135	GREENHOUSE	4 280,07
36	NGOS	11 489,02	86	ORGANISATIONS	6 168,55	136	CAPACITY	4 259,75
37	PIPELINE	11 304,49	87	REGULATION	6 069,64	137	PAPER	4 259,59
38	POLICY	11 213,59	88	WILDLIFE	6 029,69	138	ASSESSMENT	4 258,94
39	MINING	10 800,44	89	ILLEGAL	5 981,55	139	MARKETS	4 224,86
40	HUMAN	10 701,54	90	BRIEFING	5 967,67	140	DIOXIDE	4 218,33
41	FUEL	10 596,91	91	CONCERNS	5 966,06	141	CONSUMERS	4 193,46
42	POLLUTION	10 039,64	92	ENSURE	5 950,27	142	ACCESS	4 167,14
43	SECTOR	10 006,10	93	CONTAMINATION	5 921,91	143	AGREEMENTS	4 114,34
44	RENEWABLE	9 951,00	94	FARMING	5 917,07	144	INFRASTRUCTURE	4 079,87
45	FOREST	9 935,15	95	FORESTRY	5 766,76	145	FUND	4 079,31
46	PROJECT	9 903,65	96	LEAST	5 587,71	146	PROTECT	4 075,24
47	LIBERALISATION	9 879,10	97	PESTICIDES	5 578,85	147	INCLUDING	4 071,06
48	HEALTH	9 774,92	98	BIODIVERSITY	5 558,39	148	RENEWABLES	4 067,22
49	LOGGING	9 741,09	99	INDICATORS	5 527,31	149	SITES	4 017,94
50	PUBLIC	9 625,44	100	GLOBALISATION	5 433,06	150	PLANTATIONS	3 998,99

N	Key word	Keyness	N	Key word	Keyness	N	Key word	Keyness
151	NATIONAL	3 917,50	201	DOMESTIC	2 943,88	251	GMOS	2 370,80
152	PROTECTION	3 871,83	202	LOANS	2 935,97	252	ORGANISATION	2 356,33
153	REVIEW	3 863,10	203	AVIATION	2 918,14	253	INITIATIVE	2 315,73
154	CAMPAIGN	3 862,61	204	PLUTONIUM	2 912,36	254	STATES	2 310,17
155	PEOPLE	3 852,22	205	PRIVATISATION	2 899,48	255	TARIFF	2 294,02
156	PLANT	3 794,92	206	MARKET	2 899,31	256	RECOMMENDATIONS	2 289,91
157	PEOPLES	3 785,52	207	REFORM	2 889,70	257	REPROCESSING	2 287,93
158	SECTORS	3 776,90	208	RISKS	2 879,84	258	DONORS	2 286,95
159	RESOURCE	3 740,82	209	FRAMEWORK	2 862,96	259	MORATORIUM	2 282,76
160	PROCESS	3 727,04	210	FISHERIES	2 861,79	260	STAKEHOLDER	2 255,46
161	CURRENTLY	3 717,75	211	TRAFFIC	2 838,83	261	VIOLATIONS	2 253,76
162	COMPANY	3 640,21	212	EXPOSURE	2 822,00	262	CORRUPTION	2 248,73
163	PARTICIPATION	3 574,62	213	AGREEMENT	2 807,24	263	CONSERVATION	2 222,85
164	HERBICIDE	3 561,28	214	HABITATS	2 800,11	264	FUNDS	2 217,39
165	COMPOSTING	3 558,09	215	CAMPAIGNERS	2 778,55	265	SECURITY	2 204,73
166	ECONOMY	3 552,74	216	MULTILATERAL	2 756,59	266	INDUSTRIALISED	2 200,68
167	NATIONS	3 521,91	217	SEED	2 740,37	267	RETAILERS	2 199,52
168	COMPLIANCE	3 497,38	218	RISK	2 731,55	268	SUBSTANCES	2 184,34
169	KEY	3 475,70	219	BUSINESS	2 712,68	269	DIRECTIVE	2 183,20
170	RURAL	3 473,83	220	ENVIRONMENTALLY	2 703,29	270	UNSUSTAINABLE	2 182,58
171	MONITORING	3 439,34	221	PROMOTE	2 688,04	271	INSTITUTIONS	2 171,79
172	REGIONAL	3 402,82	222	PLANTATION	2 682,44	272	DUMPING	2 171,17
173	CURRENT	3 390,95	223	MULTINATIONAL	2 676,34	273	FINANCING	2 168,94
174	FUNDING	3 382,99	224	GROUPS	2 648,06	274	TECHNOLOGIES	2 157,45
175	IMPORTS	3 371,14	225	FARMS	2 644,70	275	TRADING	2 153,15
176	SAFETY	3 360,15	226	WHALING	2 640,70	276	RESEARCH	2 135,88
177	POTENTIAL	3 318,51	227	MANAGEMENT	2 635,42	277	DAMAGE	2 135,30
178	ADDITION	3 315,90	228	WATER	2 632,12	278	BASED	2 129,07
179	SOCIAL	3 298,62	229	BIOTECH	2 626,58	279	TOTAL	2 127,37
180	PESTICIDE	3 291,30	230	REGULATORY	2 619,98	280	CAMPAIGNS	2 126,19
181	AFFECTED	3 285,50	231	SERVICES	2 616,98	281	RADIOACTIVE	2 115,75
182	BUSINESSES	3 208,29	232	ECONOMIES	2 611,41	282	ABUSES	2 114,00
183	PLANNING	3 146,36	233	ALTERNATIVES	2 609,54	283	DIOXIN	2 113,39
184	EFFECTS	3 122,44	234	CONTAMINATED	2 586,35	284	REDUCTIONS	2 108,84
185	PIPELINES	3 120,70	235	OPERATIONS	2 584,09	285	PRECAUTIONARY	2 104,70
186	ETHICAL	3 117,43	236	ENTERPRISES	2 571,77	286	TARGET	2 097,33
187	EXPORTS	3 116,59	237	RECYCLED	2 568,91	287	DAM	2 086,55
188	INCREASE	3 077,20	238	CONFLICT	2 512,36	288	SOURCES	2 086,35
189	COMMITMENTS	3 076,36	239	ECOLOGICAL	2 482,57	289	CREDIT	2 071,04
190	AGENDA	3 058,70	240	PEOPLE'S	2 478,29	290	PROPOSED	2 068,82
191	COUNTRY	3 057,23	241	REGENERATION	2 465,20	291	DISPOSAL	2 064,56
192	PULP	3 021,45	242	PHTHALATES	2 449,14	292	GASES	2 058,30
193	PRODUCERS	2 996,48	243	IMPORT	2 439,95	293	REVENUES	2 054,51
194	OFFSHORE	2 993,26	244	PROCUREMENT	2 438,52	294	CONSUMER	2 051,83
195	EXTRACTIVE	2 977,77	245	COMPANY'S	2 434,65	295	FUTURE	2 047,81
196	SCALE	2 974,77	246	TARIFFS	2 433,31	296	WIND	2 047,45
197	IMPLEMENTATION	2 963,93	247	ACCOUNTABILITY	2 428,77	297	DISASTERS	2 043,94
198	DIOXINS	2 955,15	248	REDUCING	2 393,85	298	SOIL	2 030,31
199	SUPPLIERS	2 947,49	249	ECONOMICS	2 376,88	299	REACTOR	1 998,65
200	CHEMICAL	2 944,38	250	SIGNIFICANT	2 371,17	300	INCREASED	1 997,53

N	Key word	Keyness	N	Key word	Keyness	N	Key word	Keyness
301	CAMPAIGNING	1 971,07	351	MINE	1 725,96	401	EFFICIENCY	1 503,34
302	MAHOGANY	1 970,28	352	CO	1 717,99	402	RESIDUES	1 501,86
303	INITIATIVES	1 969,98	353	CONSUMPTION	1 696,10	403	PHTHALATE	1 500,14
304	INDUSTRIES	1 958,51	354	SCHEMES	1 693,24	404	GROWING	1 497,00
305	MILLENNIUM	1 956,14	355	THREAT	1 691,35	405	INFO	1 495,55
306	FARM	1 954,91	356	RICH	1 680,30	406	MARINE	1 494,08
307	GENETIC	1 954,60	357	COMMITMENT	1 678,95	407	DROUGHT	1 490,37
308	FINANCE	1 950,39	358	AGENCIES	1 666,79	408	INVESTMENTS	1 483,45
309	INCLUDE	1 947,54	359	DIVERSITY	1 660,53	409	FLOWS	1 480,58
310	DEVELOPED	1 947,07	360	PROMOTING	1 659,09	410	VILLAGERS	1 474,11
311	CIVIL	1 932,12	361	RETARDANTS	1 658,95	411	EXTRACTION	1 467,15
312	LOBBYING	1 922,94	362	AUTHORITIES	1 651,68	412	DEFORESTATION	1 466,44
313	WHALES	1 919,75	363	PCBS	1 649,68	413	PROGRAMMES	1 465,30
314	COMMERCIAL	1 911,96	364	PRICES	1 640,19	414	CREDITS	1 463,91
315	COUNTRY'S	1 911,82	365	DAMAGING	1 633,59	415	CAPITAL	1 458,87
316	IMPLEMENT	1 906,50	366	SUPPLY	1 629,47	416	EVALUATION	1 452,21
317	POLLUTING	1 899,80	367	NEEDS	1 628,94	417	VILLAS	1 450,92
318	POWER	1 896,20	368	INVESTORS	1 628,44	418	REINDEER	1 448,35
319	PROPOSAL	1 894,54	369	RESETTLEMENT	1 618,76	419	MECHANISMS	1 432,24
320	CSR	1 893,86	370	MODIFIED	1 613,80	420	BIOMASS	1 429,65
321	COUNTRYSIDE	1 891,80	371	PROVIDE	1 611,81	421	AVERAGE	1 420,90
322	BROMINATED	1 857,67	372	SCENARIOS	1 609,60	422	LEGISLATION	1 415,84
323	TRANSNATIONAL	1 846,04	373	TRIALS	1 607,40	423	ACCOUNTABLE	1 415,22
324	SITE	1 844,36	374	JUBILEE	1 606,87	424	COMPENSATION	1 414,40
325	REGULATIONS	1 841,25	375	RAPE	1 605,40	425	SPECIES	1 413,19
326	ESTIMATED	1 841,06	376	LENDING	1 603,08	426	NETWORK	1 406,46
327	TODAY'S	1 839,58	377	NEW	1 595,43	427	ADDRESS	1 404,45
328	SOURCE	1 832,44	378	ACCORDING	1 590,62	428	APPROACH	1 402,81
329	VULNERABLE	1 821,81	379	CANCELLATION	1 587,67	429	TRANSPARENT	1 396,10
330	TACKLE	1 821,59	380	ROADS	1 587,52	430	POLLUTANTS	1 392,70
331	UNDP	1 821,08	381	PLANS	1 582,47	431	FORUM	1 392,13
332	EXISTING	1 820,53	382	CONDITIONALITY	1 580,22	432	IMPROVE	1 382,61
333	PAYMENTS	1 818,71	383	COMPOUNDS	1 578,52	433	BIOTECHNOLOGY	1 376,40
334	SUMMIT	1 816,13	384	LOAN	1 575,85	434	SCENARIO	1 374,79
335	RULES	1 805,62	385	COST	1 572,50	435	BYPASS	1 371,76
336	FOODS	1 802,98	386	WASTES	1 569,83	436	PRACTICES	1 368,20
337	NATURAL	1 802,49	387	BEET	1 563,15	437	PRIVATE	1 366,05
338	FEED	1 790,85	388	WITNESS	1 562,80	438	BELIEVES	1 364,76
339	PROPOSALS	1 785,46	389	STRATEGIES	1 562,42	439	CONCESSIONS	1 364,30
340	LEGAL	1 760,35	390	FOUNDATION	1 561,17	440	TOXICITY	1 362,60
341	INCOME	1 758,88	391	REACTORS	1 554,00	441	REGION	1 332,38
342	DESTRUCTION	1 757,73	392	PROTECTED	1 550,61	442	ESTIMATES	1 327,37
343	WHALE	1 757,23	393	VOLUNTARY	1 540,42	443	TRIPS	1 320,50
344	CERTIFICATION	1 756,85	394	PARTICIPATORY	1 535,89	444	RESERVES	1 317,68
345	DISASTER	1 752,09	395	ADJUSTMENT	1 535,27	445	LABELLING	1 308,71
346	RAINFOREST	1 747,78	396	LARGEST	1 524,56	446	LEAKS	1 308,06
347	ACTIVITIES	1 744,64	397	ANNUAL	1 519,46	447	LEVEL	1 305,60
348	ECOSYSTEMS	1 733,08	398	GREEN	1 514,19	448	CALLING	1 302,66
349	DELIVER	1 731,59	399	CONGESTION	1 509,70	449	TACKLING	1 301,16
350	INCREASING	1 729,04	400	FLOODS	1 505,92	450	PLANTS	1 289,52

N	Key word	Keyness
451	GLOBALLY	1 281,79
452	TERM	1 281,33
453	ENGINEERED	1 276,09
454	WOMEN'S	1 270,12
455	RESPONSIBILITY	1 264,61
456	CONSORTIUM	1 262,34
457	INTERNATIONALLY	1 262,03
458	GMO	1 261,36
459	MITIGATION	1 260,36
460	SUPERMARKET	1 252,81
461	NEED	1 240,67
462	CONSTRUCTION	1 240,50
463	ENSURING	1 218,53
464	ACCORDANCE	1 217,53
465	MULTINATIONALS	1 214,40
466	POULTRY	1 212,48
467	FUNDED	1 212,26
468	UNDERMINE	1 209,57
469	RECYCLE	1 208,92
470	AFFORDABLE	1 204,30
471	GUIDELINES	1 201,43
472	MUNICIPAL	1 199,72
473	MINISTERIAL	1 196,43
474	FOEI	1 191,24
475	URUGUAY	1 188,70
476	SOUTH	1 187,90
477	LIBERIA	1 184,13
478	G	1 178,88
479	ACTIONAID	1 177,50
480	JUNIPER	1 171,42
481	GEORGIA	1 168,72
482	CASPIAN	1 167,09
483	WON'T	1 159,09
484	SULAWESI	1 158,01
485	HOMEPAGE	1 157,92
486	AVENTIS	1 153,75
487	IBAMA	1 143,37
488	BANGLADESH	1 137,59
489	GENEVA	1 118,54
490	ANNUM	1 113,08
491	CPRE'S	1 107,94
492	EITI	1 107,94
493	DTI	1 106,84
494	CANADA	1 096,79
495	KG	1 091,32
496	FALCONE	1 070,07
497	UNEP	1 064,66
498	HSBC	1 058,68
499	MALAYSIA	1 042,45
500	BP'S	1 041,29

G.3.1 Minimum criteria for inclusion in the semantic field of concern

The two procedures, described in this section, support the results presented in section 6.4.2 on page 233. There, I had to decide which of the one-word 'keywords' of the radical NGOs' semantic field of concern, had actually been adopted into the green corporations' semantic field of concern. I begin by presenting the results of my search for the keywords of this field in table G.6 below.

Table G.6: A comparison of the usage of the semantic field of concern by the radical NGOs and green business

NGOs top 500			Green Business top 500			GB – list of 9,728 keywords			Not found
N	Key word	Keyness	N	Key word	Keyness	N	Key word	Keyness	
13	IMPACTS	23 112,00	30	IMPACTS	9 017,55				
15	EMISSIONS	22 457,07	5	EMISSIONS	27 957,12				
28	IMPACT	14 502,96	33	IMPACT	8 470,03				
42	POLLUTION	10 039,64	404	POLLUTION	801,33				
89	ILLEGAL	5 981,55							ILLEGAL
91	CONCERNS	5 966,06	218	CONCERNS	1 698,29				
93	CONTAMINATION	5 921,91				1074	CONTAMINATION	299,47	
126	HAZARDOUS	4 552,07	115	HAZARDOUS	3 130,90				
134	TOXIC	4 287,94							TOXIC
146	PROTECT	4 075,24				851	PROTECT	421,15	
152	PROTECTION	3 871,83	497	PROTECTION	590,1				
176	SAFETY	3 360,15	7	SAFETY	21 059,48				
177	POTENTIAL	3 318,51	138	POTENTIAL	2 646,17				
184	EFFECTS	3 122,44							EFFECTS
208	RISKS	2 879,84	76	RISKS	4 538,33				
212	EXPOSURE	2 822,00				704	EXPOSURE	547,61	
218	RISK	2 731,55	123	RISK	3 023,30				
234	CONTAMINATED	2 586,35				897	CONTAMINATED	394,29	
261	VIOLATIONS	2 253,76							VIOLATIONS
270	UNSUSTAINABLE	2 182,58				1942	UNSUSTAINABLE	121,69	
277	DAMAGE	2 135,30							DAMAGE
282	ABUSES	2 114,00				5066	ABUSES	20,94	
297	DISASTERS	2 043,94							DISASTERS
317	POLLUTING	1 899,80				5113	POLLUTING	20,77	
329	VULNERABLE	1 821,81							VULNERABLE
342	DESTRUCTION	1 757,73				5983	DESTRUCTION	-29,88	
345	DISASTER	1 752,09							DISASTER
355	THREAT	1 691,35							THREAT
365	DAMAGING	1 633,59							DAMAGING
392	PROTECTED	1 550,61				1145	PROTECTED	269,63	
430	POLLUTANTS	1 392,70							POLLUTANTS
440	TOXICITY	1 362,60				3201	TOXICITY	51,18	
446	LEAKS	1 308,06							LEAKS
468	UNDERMINE	1 209,57							UNDERMINE

G.3.1.1 Minimum keyness

If we consider the 'keywords' in column three of table G.6, the spread of green business's usage of them varies enormously. EXPOSURE, with a ranking of 704th and a keyness of about 500, may still be considered to be a relatively key word for green business (it is used 431 times in the green business corpus of approximately 3.3 million words). But when we progress further down the list, to a word such as TOXICITY, it is not sensible to talk any more about key words, even though Wordsmith continues to assign a positive value of

keyness. With 35 absolute occurrences in the entire green business corpus, TOXICITY appears, on average, once in every 100,000 words of running text. Using my rule of thumb of 500 words per A4 page, this equates to finding TOXICITY in the linguistic discourse of green business once in every 200 pages![1] Clearly, on the strength of this example there are several candidate 'keywords' in the third column, whose usage is so sporadic that we should refrain from calling them by that name. In table G.7 below, I present seven of the ten original words that appear in the third column of table G.6. In that table the ranking was dictated by their keyness coefficient within the radical NGO corpus. Here, I have reordered them in descending order of their keyness in the green business corpus. Alongside their keyness coefficient, I have added a new column, which tells us how many significant collocates the word has in the green business corpus.

Table G.7: Less 'key' keywords of green business and the number of their significant collocates

N	Key word	Keyness	Collocates
704	EXPOSURE	547,61	13
851	PROTECT	421,15	46
897	CONTAMINATED	394,29	15
1074	CONTAMINATION	299,47	12
1145	PROTECTED	269,63	13
1942	UNSUSTAINABLE	121,69	0
3201	TOXICITY	51,18	2

The reason for the blank line in the table is to draw attention to the clear fall off in the number of significant collocates, which occurs below PROTECTED, with its keyness coefficient of 269. Below a certain level of keyness, it would seem that there is little likelihood of finding that a 'keyword' is contextualised significantly. Erring on the side of caution, I decided, therefore, that one qualification criterion for inclusion should be that the keyword in question would need to have a keyness coefficient of at least 250. But as I shall now show, there are cases in which, although the word is not rated as being statistically key by Wordsmith, it is, nonetheless, used in sufficient numbers and in sufficiently significant ways, to have a reasonable number of significant collocates.

[1] This sort of common sense thinking is a useful counterbalance to the tendency to get dazzled by the statistics.

G.3.1.2 Minimum number of absolute occurrences

If we study the fourth column of table G.6, there are some words that are not key, simply because green business has declined to use the word with any great frequency. In table G.8, below, I have taken each of these words and found (i) its absolute number of occurrences in the green business corpus, and (ii) the number of its significant collocates.

Table G.8: The 'non-key' words of green business with their absolute number of occurrences and the number of significant collocates

'Non-key' word	Absolute number of occurrences in green business corpus	Number of significant collocates
ILLEGAL	87	3
TOXIC	53	3
EFFECTS	486	37
VIOLATIONS	57	6
DAMAGE	310	27
DISASTERS	29	1
VULNERABLE	130	11
DISASTER	77	5
THREAT	159	8
DAMAGING	69	1
POLLUTANTS	91	2
LEAKS	65	8
UNDERMINE	38	7

From the table we can see, for example, that the first word, ILLEGAL, has only 87 occurrences and the second, TOXIC, just 53. But EFFECTS, on the other hand, occurs in the green business corpus 486 times. With 486 concordance lines to test, Wordsmith demonstrates that there are a good many collocates, whose frequency of presence in the neighbourhood of EFFECTS is statistically significant. The results from the table make for a fairly easy decision as to where to set the minimum cut-off for inclusion. EFFECTS and DAMAGE demonstrate a good deal of significant collocation in the green business corpus with 37 and 27 respectively. With 310 absolute occurrences, DAMAGE appears roughly once in every 10,000 words of running text, approximately every twenty pages. Below this level of

frequency, I did not feel that there was any value in studying usage, so I set my second criterion at 300 absolute occurrences.

G.3.1.3 Green business adoption of the semantic field of concern

The 'either-or' application of the two criteria just described, led to my defining the green business semantic field of concern. It is indicated by the grey-shaded 'keywords' in table G.9, below. This is identical to table 6.4, on page 234.

Table G.9: The adoption by green business of the semantic field of concern

NGOs top 500			Green Business top 500			GB – list of 9,728 keywords			Not found
N	Key word	Keyness	N	Key word	Keyness	N	Key word	Keyness	
13	IMPACTS	23 112,00	30	IMPACTS	9 017,55				
15	EMISSIONS	22 457,07	5	EMISSIONS	27 957,12				
28	IMPACT	14 502,96	33	IMPACT	8 470,03				
42	POLLUTION	10 039,64	404	POLLUTION	801,33				
89	ILLEGAL	5 981,55							ILLEGAL
91	CONCERNS	5 966,06	218	CONCERNS	1 698,29				
93	CONTAMINATION	5 921,91				1074	CONTAMINATION	299,47	
126	HAZARDOUS	4 552,07	115	HAZARDOUS	3 130,90				
134	TOXIC	4 287,94							TOXIC
146	PROTECT	4 075,24				851	PROTECT	421,15	
152	PROTECTION	3 871,83	497	PROTECTION	590,1				
176	SAFETY	3 360,15	7	SAFETY	21 059,48				
177	POTENTIAL	3 318,51	138	POTENTIAL	2 646,17				
184	EFFECTS	3 122,44							EFFECTS
208	RISKS	2 879,84	76	RISKS	4 538,33				
212	EXPOSURE	2 822,00				704	EXPOSURE	547,61	
218	RISK	2 731,55	123	RISK	3 023,30				
234	CONTAMINATED	2 586,35				897	CONTAMINATED	394,29	
261	VIOLATIONS	2 253,76							VIOLATIONS
270	UNSUSTAINABLE	2 182,58				1942	UNSUSTAINABLE	121,69	
277	DAMAGE	2 135,30							DAMAGE
282	ABUSES	2 114,00				5066	ABUSES	20,94	
297	DISASTERS	2 043,94							DISASTERS
317	POLLUTING	1 899,80				5113	POLLUTING	20,77	
329	VULNERABLE	1 821,81							VULNERABLE
342	DESTRUCTION	1 757,73				5983	DESTRUCTION	-29,88	
345	DISASTER	1 752,09							DISASTER
355	THREAT	1 691,35							THREAT
365	DAMAGING	1 633,59							DAMAGING
392	PROTECTED	1 550,61				1145	PROTECTED	269,63	
430	POLLUTANTS	1 392,70							POLLUTANTS
440	TOXICITY	1 362,60				3201	TOXICITY	51,18	
446	LEAKS	1 308,06							LEAKS
468	UNDERMINE	1 209,57							UNDERMINE

G.4 Comparative collocate contextualisation – the semantic field of concern

This material supports section 6.5 in chapter six. There, I present, in figures 6.5, 6.6 and 6.7, eighteen Venn diagram pairings, which show the comparative collocate contextualisation of the eighteen 'keywords' in the common semantic field of concern. Here, I present the same eighteen Venn diagrams, but in a half-page scale which makes the reading of the individual

collocates possible. The order of presentation follows that of figures 6.5, 6.6 and 6.7, reading first from left to right within the top row and then down through the rows. As my discussion of these Venn diagrams is contained in section 6.5, the eighteen figures are presented without commentary.

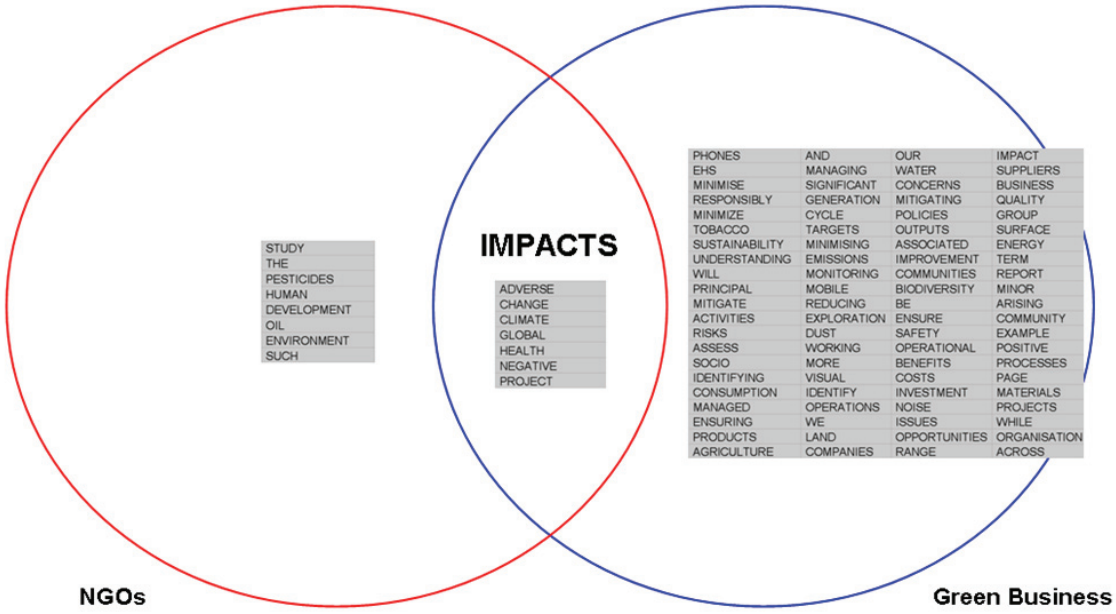

Figure G.9: The comparative collocate contextualisation of IMPACTS

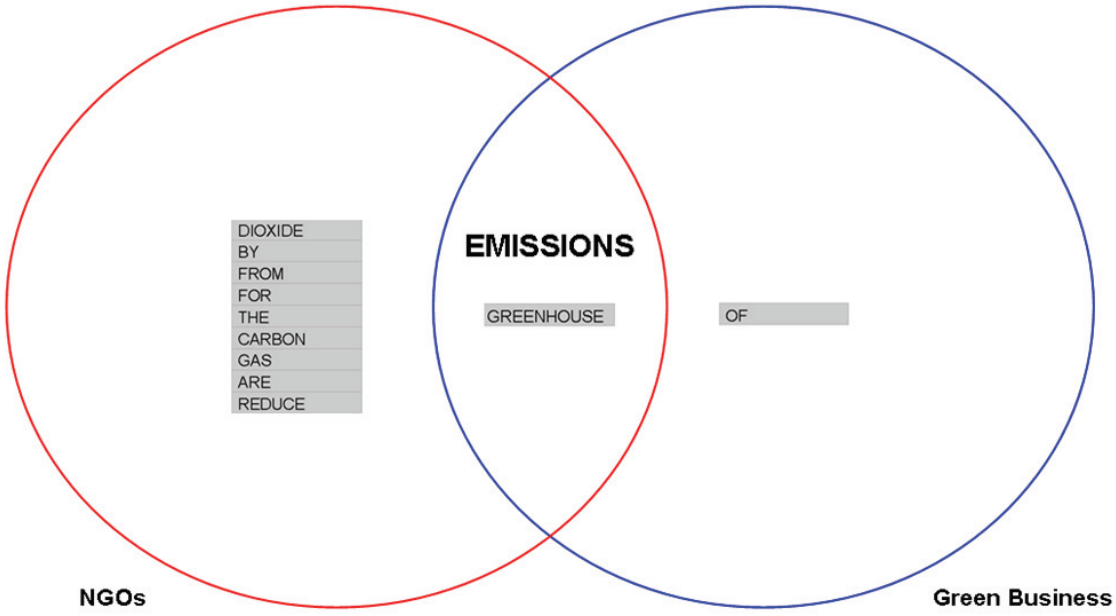

Figure G.10: The comparative collocate contextualisation of EMISSIONS

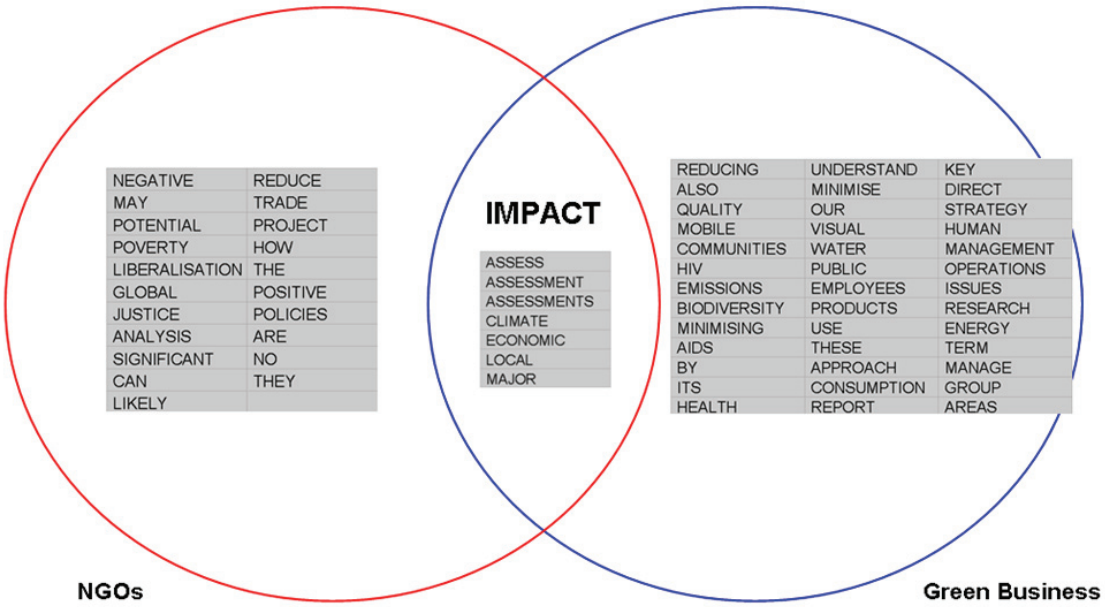

Figure G.11: The comparative collocate contextualisation of IMPACT

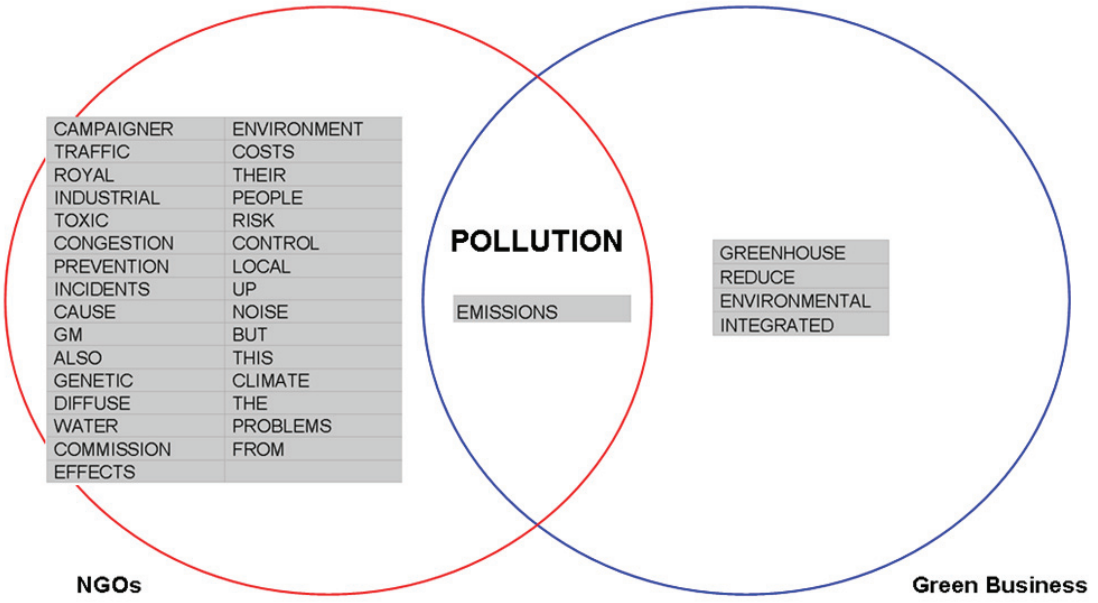

Figure G.12: The comparative collocate contextualisation of POLLUTION

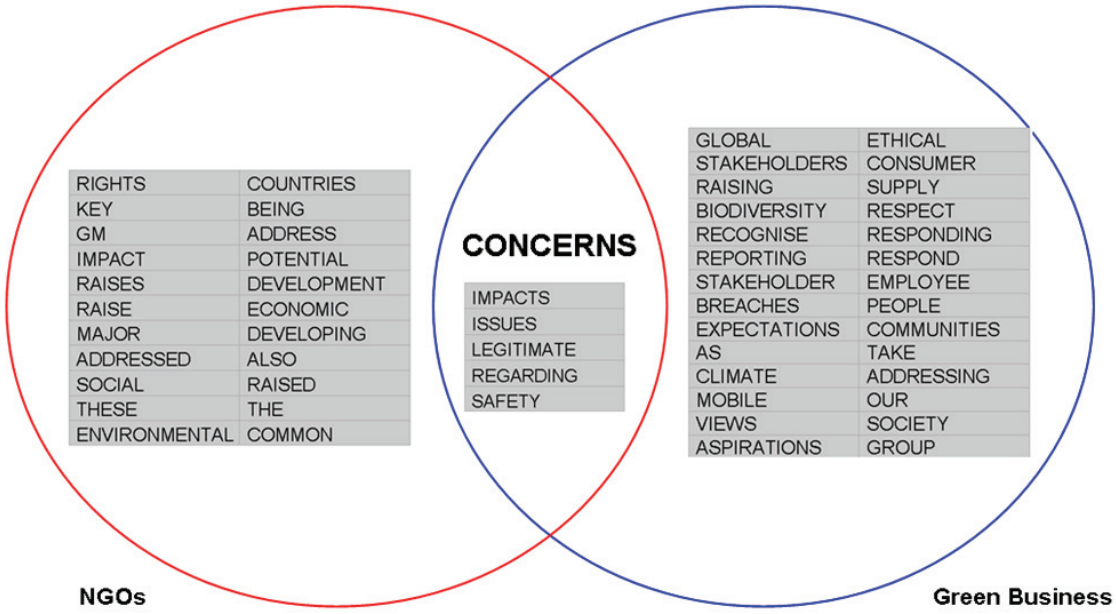

Figure G.13: The comparative collocate contextualisation of CONCERNS

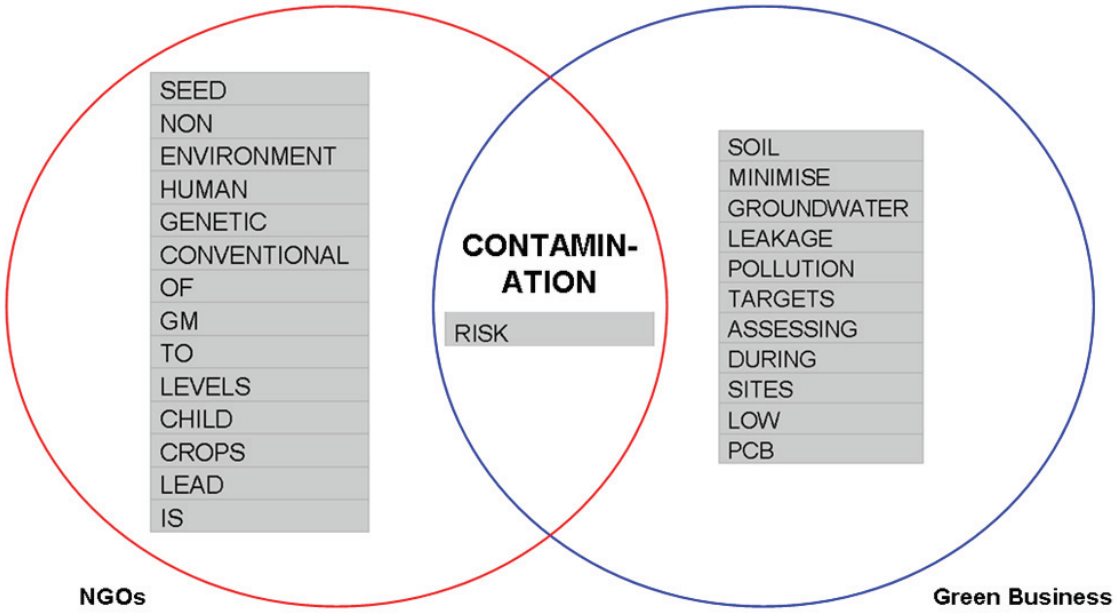

Figure G.14: The comparative collocate contextualisation of CONTAMINATION

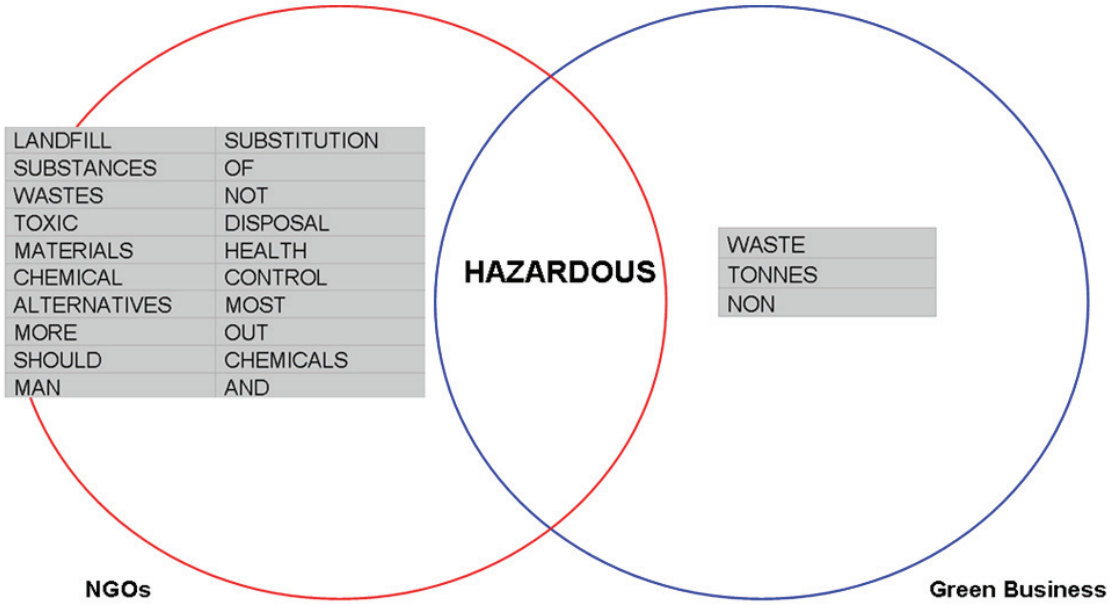

Figure G.15: The comparative collocate contextualisation of HAZARDOUS

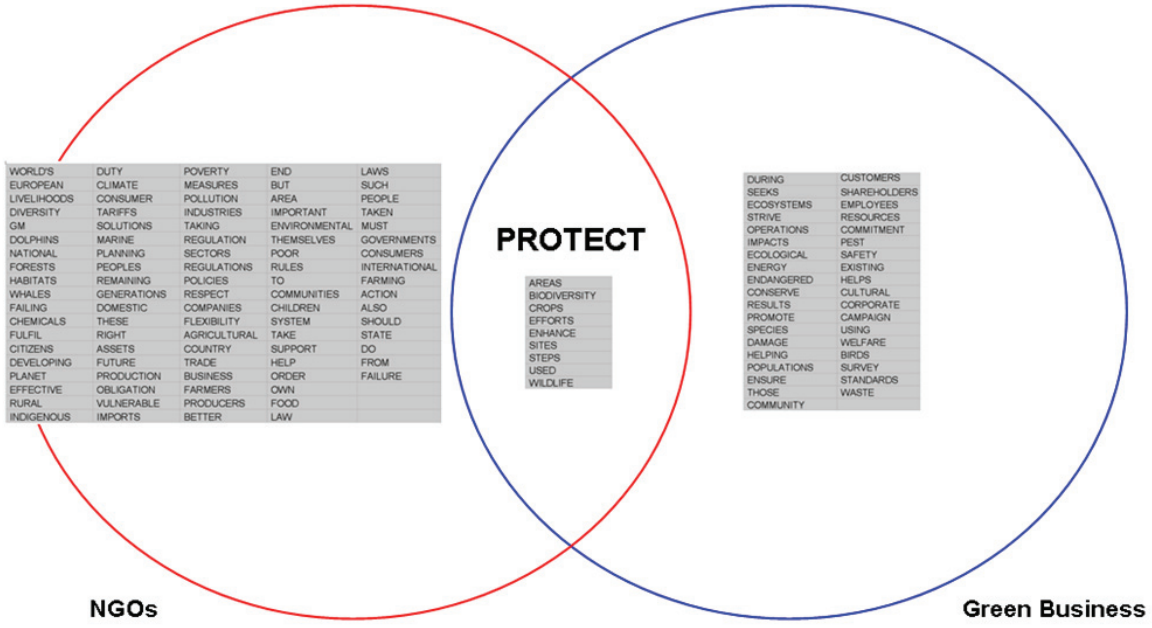

Figure G.16: The comparative collocate contextualisation of PROTECT

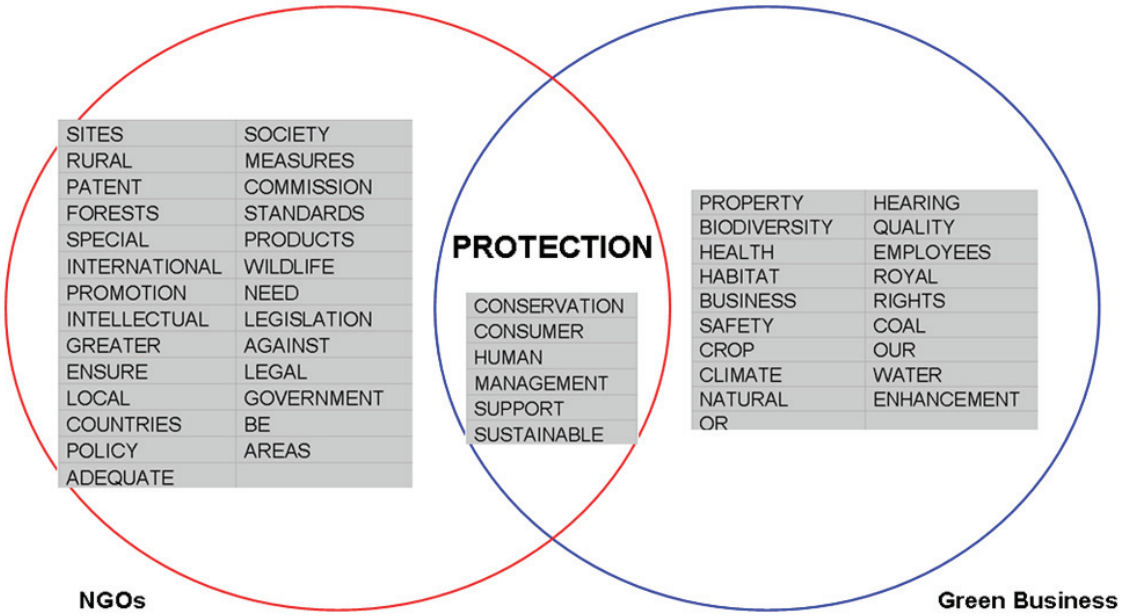

Figure G.17: The comparative collocate contextualisation of PROTECTION

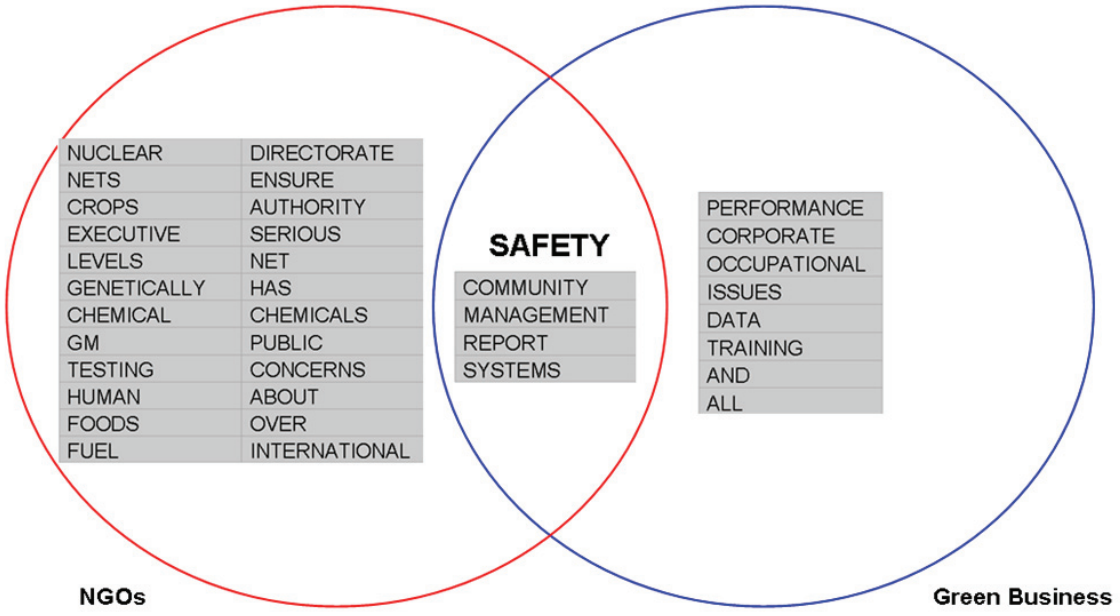

Figure G.18: The comparative collocate contextualisation of SAFETY

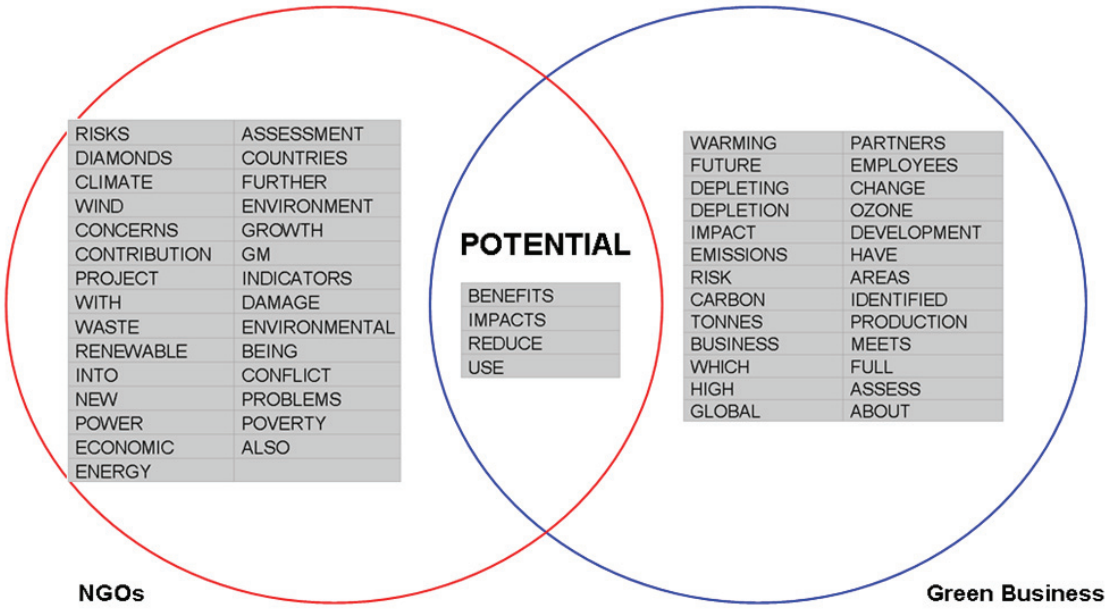

Figure G.19: The comparative collocate contextualisation of POTENTIAL

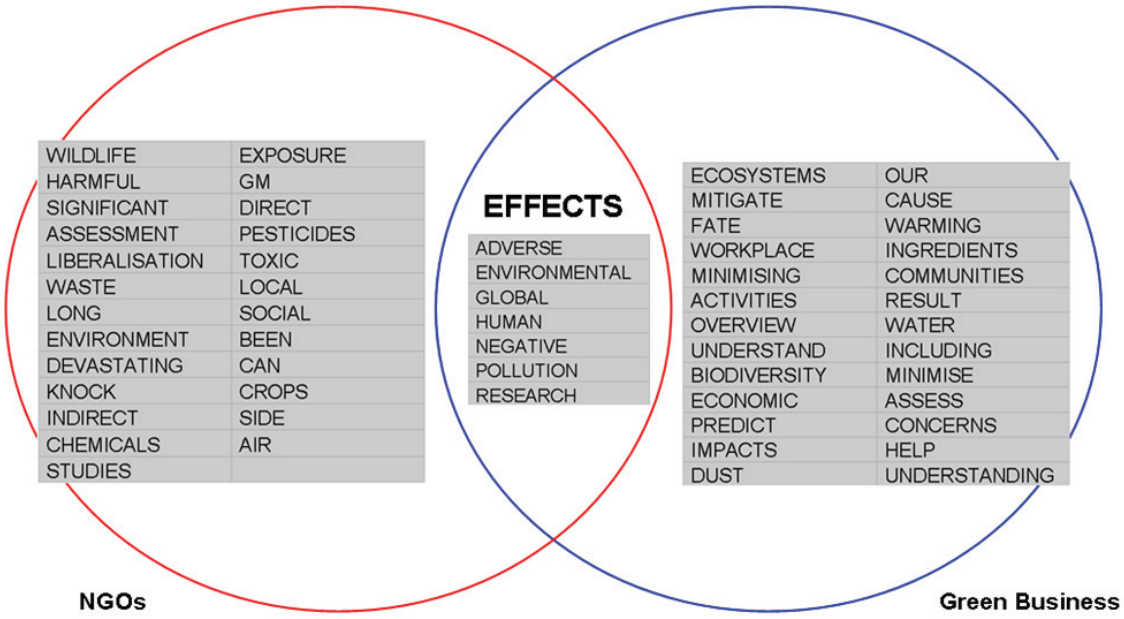

Figure G.20: The comparative collocate contextualisation of EFFECTS

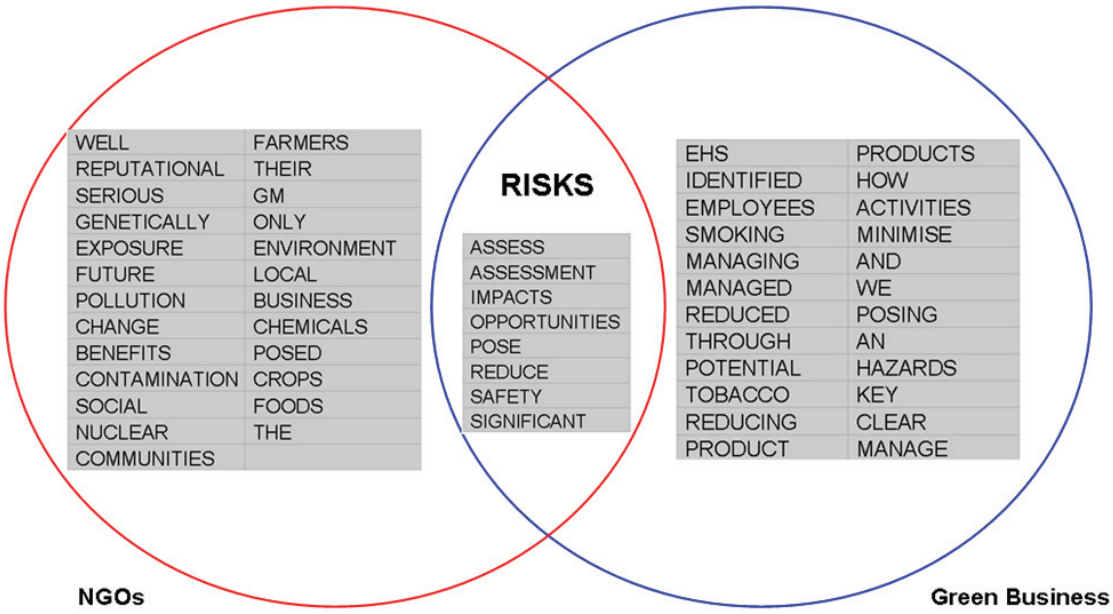

Figure G.21: The comparative collocate contextualisation of RISKS

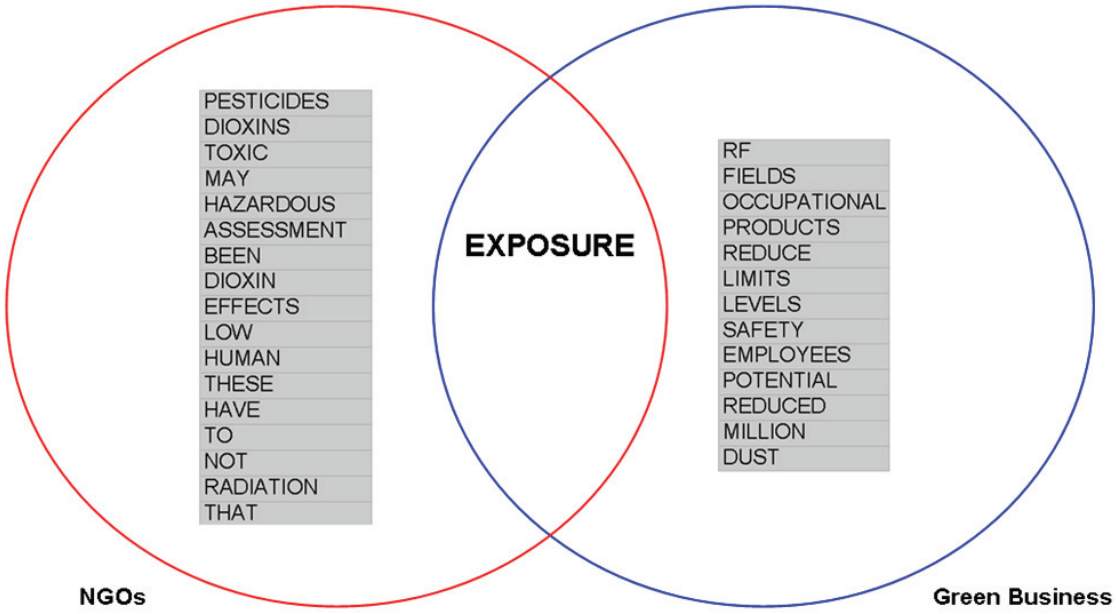

Figure G.22: The comparative collocate contextualisation of EXPOSURE

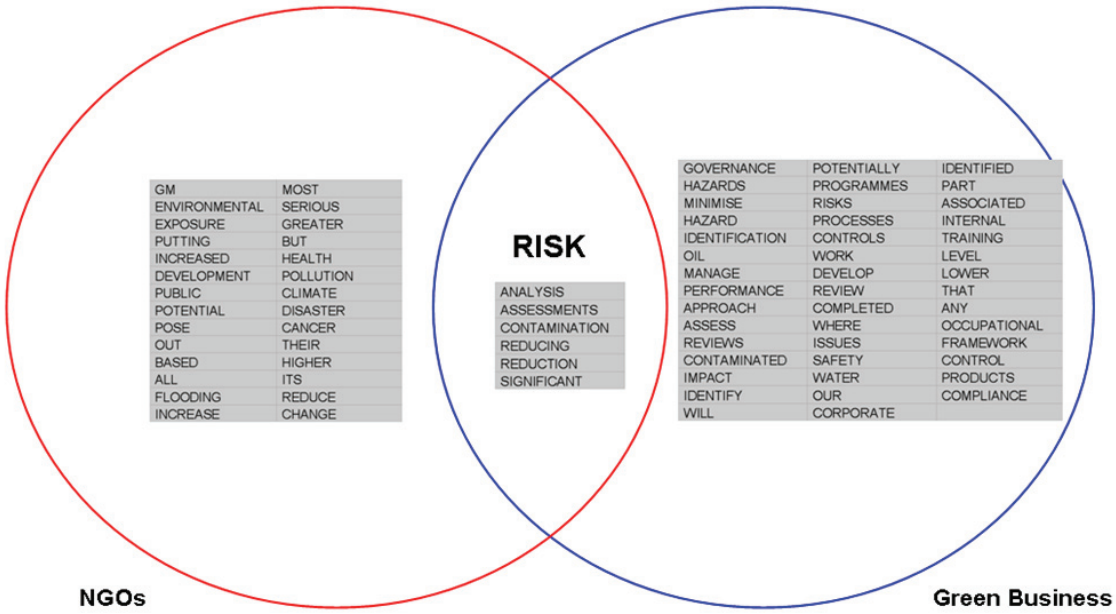

Figure G.23: The comparative collocate contextualisation of RISK

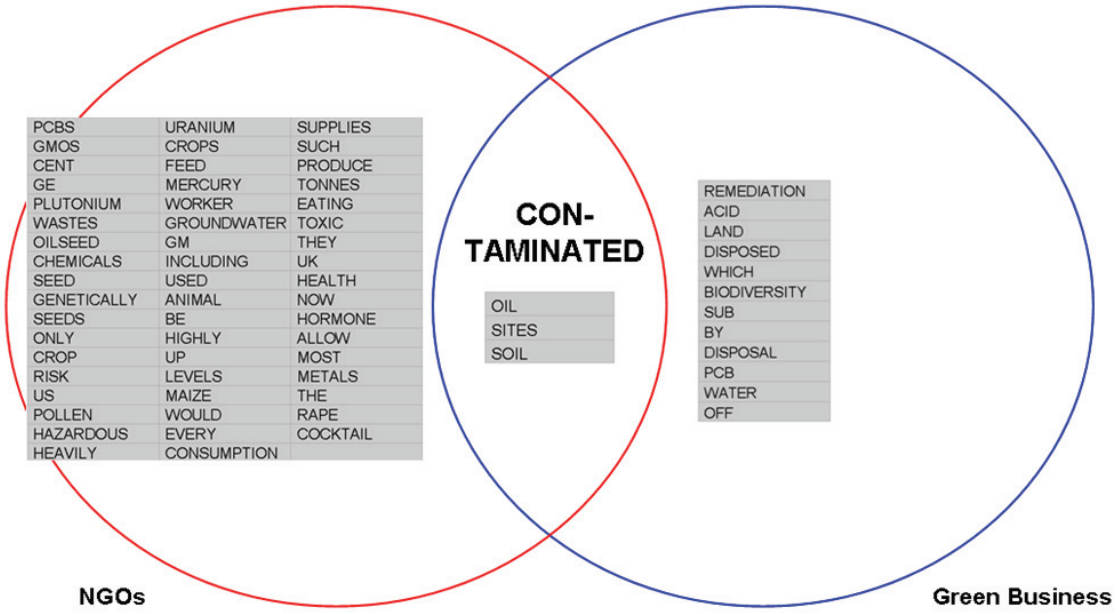

Figure G.24: The comparative collocate contextualisation of CONTAMINATED

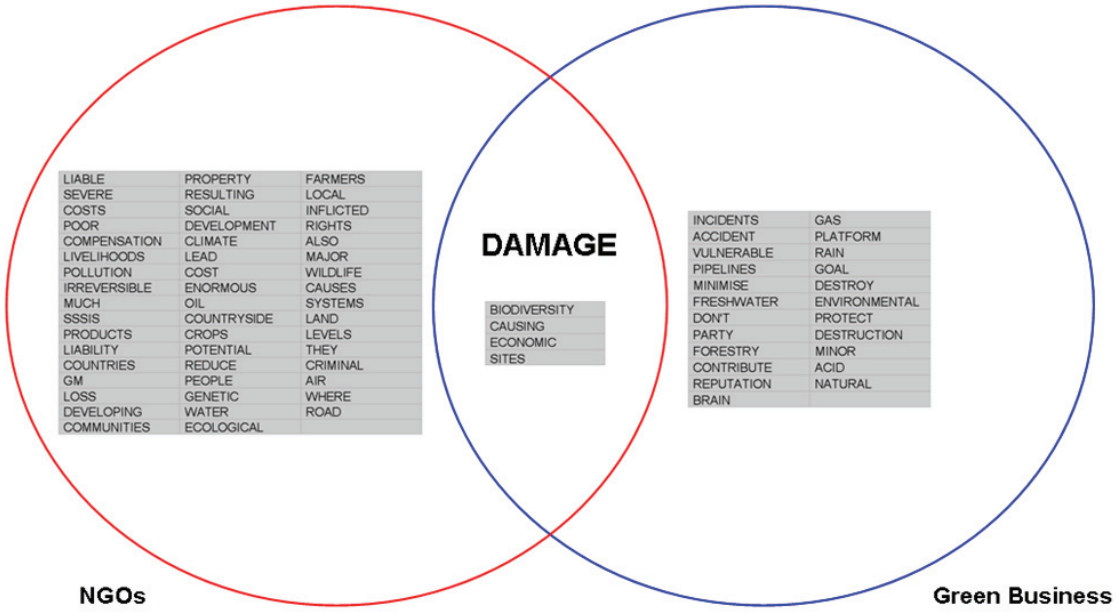

Figure G.25: The comparative collocate contextualisation of DAMAGE

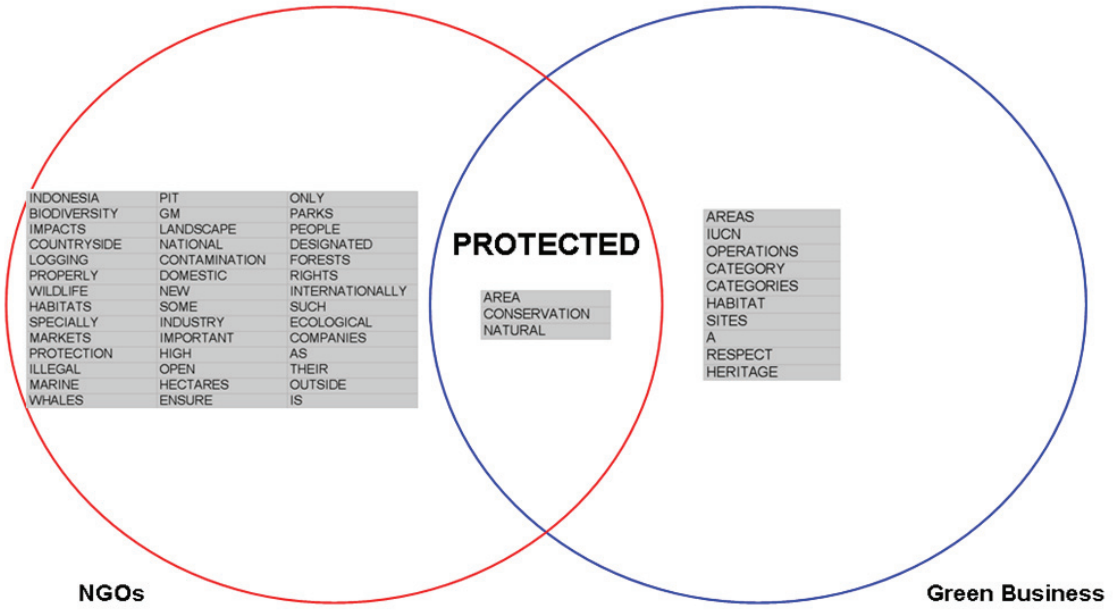

Figure G.26: The comparative collocate contextualisation of PROTECTED

Appendix H – The appropriation claim – concordancing

The material in this appendix supports sections 6.6 and 6.7 of chapter six. In section H.1, I describe my procedure for producing randomly-generated, twenty-line, contextualised concordance reports on particular one-word 'keywords'. In section H.2, I present the results of this procedure, as it was applied to some of the 'keywords' in the common semantic field of concern.

H.1 Producing contextualised concordance reports

To illustrate this procedure, consider the example of POTENTIAL in the Venn diagram in figure H.1 below. In addition to searching for the occurrence of the node word, POTENTIAL, Wordsmith also has the ability to apply certain refinements to its search process. I can, for example, request that it examine all the words up to five before and five after POTENTIAL, looking for the occurrence of particular words, whose co-occurrence with POTENTIAL I am interested in seeing. In order to do this, I key in the words whose co-occurrence I am interested in observing, into Wordsmith's "context" field, prior to running the report. The field's upper limit for the contextual search is 80 characters. This means that Wordsmith can search for concordances of the node word, with several alternative context words at the same time. But the 80-character limit means that, often, it cannot include all the significant collocates in one search operation. In order, therefore, to prepare the shorter *contextualised* concordance report for many of these node words, I had to run several reports and then combine them.

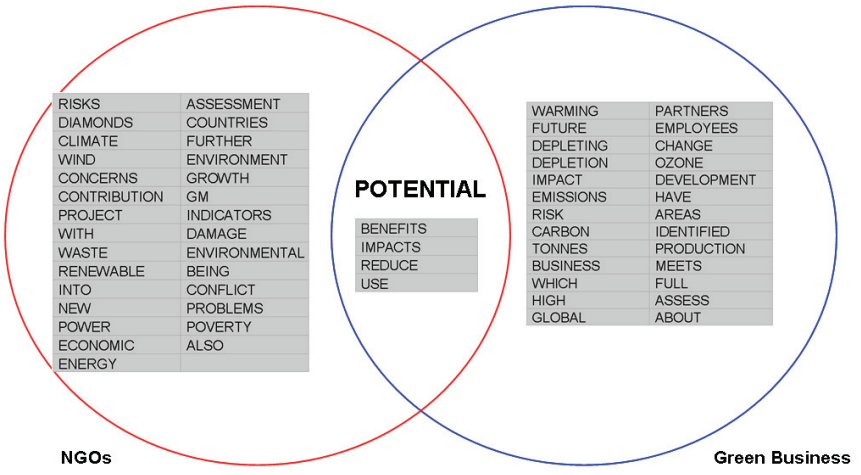

Figure H.1: The significant collocate contextualisation of POTENTIAL

In the first contextualised concordance report for POTENTIAL, as it is used in the green business corpus, I included all the significant collocates from WARMING down to

BUSINESS, a total, including one space for a forward slash (/) between each word, of 78 characters. In the second report, I contextualised the concordance on POTENTIAL with all of the significant collocates between WHICH and AREAS (a total of 70 characters), and in the third report, I used IDENTIFIED down to ABOUT (45 characters). The three 'sub-reports' contained 504, 587 and 210 concordance lines respectively.

In the next stage of the procedure, I used Wordsmith's "merge file" function to combine the three sub-reports into one large contextualised concordance report of 1,301 (= 504 + 587 + 210) lines. Given that the context horizon which I chose is +/- 5 words, there are ten 'slots' where Wordsmith looks for one of the context words I specified. Theoretically, therefore, the same line of concordance, assuming that it was extremely highly contextualised with a different context word in each of the slots, could appear in this report ten times! In practice this probably never happens. But it is not unusual for a concordance line to contain two, or maybe even three, of the context words, and be registered in the report, therefore, twice or even three times. Fortunately, Wordsmith has a procedure for registering that one line is a duplicate of a previous line. It marks all the duplicates and will then delete them, if the operator wishes. When I applied this function to my overall 1,301-line report, Wordsmith registered 419 duplicates, which I deleted. That left an 882-line contextualised concordance report for the usage of POTENTIAL within the green business corpus.

Wordsmith conducts its search for duplicates by looking for identical word strings in the concordance lines. When it finds a duplicate, however, it does not cross-check the file names from which the two concordance lines have come. This means that an identical character string, from a different original document, will still be listed as being a duplicate of the earlier concordance line, even though the former comes from another document. This situation arises when an organisation, in the production of a new document, copies material from a previously issued publication, into the new one. This is a practice which, experience from this project suggests, is perhaps more widespread than one might think. Given that the purpose of the exercise is to study the contextualisation of POTENTIAL, I do not think that the eradication of such duplicates is problematic. For purposes of reference, I mention that the overall concordance report for POTENTIAL, i.e. the one based on the total number of occurrences of POTENTIAL within the green business corpus, contains 1,973 lines. So the 882-line contextualised concordance report is roughly 45% of the size of the original.

The new report, of contextualised concordance lines of POTENTIAL, may only be 45% of the size of the original, but, at 882 lines, it was still too large for the human brain to

process. The standard practice, which has developed in corpus linguistics, is to take twenty lines at random from the total report, and study these to find ways of categorising the usage of the node word. This is a function which Wordsmith also carries out with a few key strokes. Wordsmith can save its randomly-generated, twenty-line concordance report in Excel and, from this, I copied the appropriate cells into a Word document with a landscape-style page set up. Below, in figure H.2, I provide an illustration of what the report looks like. The only modification I have made is to mark POTENTIAL in bold type face to make it easier to see. The figure has also been copied into the main body of the thesis, where it appears in chapter six as figure 6.9.

N	Concordance
1	us identify priority areas for action, set targets for improvement and explore **potential** new business opportunities. We are tackling our impact upstream prima
2	ild-up of greenhouse gases in the atmosphere. Climate change looms large in its **potential** impact on society and as a business matter. With its interests in agri
3	minate the air we breathe. And, in recent years, we have begun to appreciate the **potential** impact on the earth's climate system of the carbon dioxide emitted to
4	ss the Group at the start of 2005. this is called the Performance, Development, **Potential** process or PDP for short. Overall our aims were to: ▪ ▪ ▪ ▪ ▪ Provi
5	ing devices to discourage landing in high-risk areas. Overhead lines have the **potential** to harm birds so we have conducted surveys to identify high-risk area
6	xample, Power Systems has developed a risk prevention process to minimise the **potential** risk of land contamination through spillage and leakage from existing
7	lated projects. This means sites can focus their resources on areas of greatest **potential** impact to environment, health and safety. Sites with the greatest pote
8	and applied more specific Ozone depleting substances (ODSs)/ ozone depletion **potential** (ODP) OZONE DEPLETION POTENTIAL FROM ANCILLARY USE OZONE DEPLETION
9	o and regulation for a minimum age is expected in 2003-04, which will restrict **potential** youth access to vending machines. Korea (packaging): "All cigarette p
10	ases are not new to the cement industry. 1.4.1.3 The equipment used to abate **potential** emissions from the bypass, gas conditioning system and electrostatic p
11	s of the trading efforts that have been initiated by us, and by others, and the **potential** which trading offers to remove the fear that the cost of dealing with
12	Carbon Management were updated in 2004 and estimated the carbon sequestration **potential** of the Group's sponsored and promoted forests at 3,816,000 metric tonn
13	its of business with strategic importance for the group that make, or have the **potential** to make, a significant contribution to BP's financial performance ▪
14	and operated by BP. We appreciate that the investments we are making have the **potential** to bring significant change to the lives of many of the people in the
15	hich fits with our core experience in other fuels. We have identified over 20 **potential** pathways by which hydrogen can be produced, using different sources
16	response. Lord Browne commissioned work on our assessment of the sensitivity of **potential** development areas at the earliest stages. He said: "We are determined
17	Safety 2.5.6 Safety Programmes We systematically assess risks to anticipate **potential** accidents, and put programmes in place to minimise them. We also learn
18	a strategy for dealing with the epidemic. Every company should understand the **potential** impact of HIV/AIDS on its operations and have taken action to minimise
19	ficant greenhouse gas emitted directly from the operations. The global warming **potential** of methane is 21 times higher than that of carbon dioxide. The total
20	brings together the knowledge and resources needed to spread the word about the **potential** economic benefits that environmentally responsible business methods ca

Figure H.2: 20 random lines from the 882-line contextualised concordance report of the usage of POTENTIAL in the green business corpus

H.2 Concordance reports on the semantic field of concern

The material in this part of appendix H supports section 6.7 of chapter six. Here, I present the twenty-line contextualised concordance reports of one-word 'keywords' in the semantic field of concern. The reports are always presented in pairs, reflecting the 'green business – radical NGOs' comparisons of usage, in which I am interested. The order, in which the concordance report pairs are presented, follows the order in which I discuss them in section 6.7. However, for ease of reference, the table of contents below provides an overview. Out of the eighteen one-word 'keywords' in the common semantic field, only twelve are presented here. The six words which have not been included are POLLUTION, EMISSIONS, POTENTIAL, HAZARDOUS, EXPOSURE and PROTECTED. There are two possible reasons for their exclusion. First, despite the promising indications from the comparative contextualisations shown in their Venn diagrams, some of the concordance reports did not reveal any striking differences in usage. This fact is a ground for my reflection over the reliability of the empirical procedure. Second, although the concordance reports did demonstrate differences in usage, these differences were not relevant to my interpretive line of reasoning in section 6.7. Although there are only twelve 'keywords' represented in the following sections, there are fifteen pairs of reports. The reason for this is that the reports on DAMAGE, IMPACTS and EFFECTS appear twice. The text in the reports is the same, but they are subject to different usage analyses, which reflect my interpretive moves in section 6.7.

Concordance report presentation in section H.2	
'Keyword' examined	**Table numbers**
CONCERNS	H.1 and H.2
PROTECT	H.3 and H.4
PROTECTION	H.5 and H.6
DAMAGE	H.7 and H.8
CONTAMINATION	H.9 and H.10
CONTAMINATED	H.11 and H.12
EFFECTS	H.13 and H.14
IMPACT	H.15 and H.16
IMPACTS	H.17 and H.18
DAMAGE	H.19 and H.20
EFFECTS	H.21 and H.22
IMPACTS	H.23 and H.24
RISK	H.25 and H.26
RISKS	H.27 and H.28
SAFETY	H.29 and H.30

Table H.1: The radical NGOs – random twenty-line contextualised concordance report for CONCERNS

N	Concordance	
1	ly. The then Minister, Clappison, wrote to the Authority's Members raising his concerns proposals with their constituent Borough Councils funding for extensi	
2	nds of the Earth is calling on retailers to phase out risky chemicals following concerns about the health effects of some of the chemicals used. Research has sh	X
3	ean up incinerators, are much superior to older plants, eliminating many health concerns. This is far from the truth. Modern incinerators still emit large quant	X
4	y approved the policy which was introduced because of ethical and environmental concerns. The policy towards GM food in the House of Commons contrasts sharply	X
5	on of the Directive's provisions. 36. We do not consider the argument that all concerns relating to human health and the environment are satisfied during the	X
6	ethods also have their place in providing for the distributional analysis of EJ concerns – in particular, Consumer Impact Assessment, Gender Impact Assessment,	
7	ed ready to manage mining affairs themselves. The proposal stems from Jakarta's concerns about the lack of investor confidence in regional autonomy, as well as	
8	ssue of the extent to which policies implemented to address domestic non-trade concerns can be legitimately allowed to affect the trading interests of other c	
9	ncement that it will take the Council of the European Union to court, following concerns about a key trade committee's lack of transparency and legal standing [	
10	ct,West Java, which also documented human rights violations and environmental concerns. The dam, which has been planned since the 1960s, will affect around	X
11	ng codes of conduct independently. Multiples have been addressing environmental concerns through the application of systems such as Integrated Crop Management,	X
12	is an essential element in any future trade reforms. Given the depth of these concerns, it is vital that host countries be given the necessary policy space to	
13	t planning should be more proactive and positive. However, CPRE has continuing concerns over the new system. In particular, the new documents: * see planning	
14	2.4 Our submission of evidence provides an overview of the general development concerns of the CAP and focuses on the questions under consideration by the Comm	
15	Declining levels of public transport were identified as one of the most serious concerns of WI members in The Changing Village, our report on services in rural	
16	diamond trade does not contribute to human rights abuses; * raise their concerns with the MIBA management and the Congolese state authorities	
17	.....20 4 Introduction Human rights organizations have addressed concerns to businesses for a number of years. Recognizing that economic globali	
18	suppliers has become weaker. The OFT conceded that that they cannot "allay the concerns which have been expressed" about the Code's effectiveness and are unab	
19	f the concession granted to a company called Sengamines have raised a number of concerns. Sengamines is partly owned by senior members of the Zimbabwean governm	
20	l environmental impact of GM crops on biodiversity might be. The RSPB's current concerns encompass several issues: Possible effects arising from the management	X

The Xs in the right-hand column indicate lines where the CONCERNS are directed to health or the natural landscape. The grey shading highlights what objects the radical NGOs are concerned about.

Table H.2: Green business – random twenty-line contextualised concordance report for CONCERNS

N	Concordance	
1	res all operating companies to communicate with stakeholders and address their concerns. The type of consultation depends on local regulations and public atti	
2	aboratories in the US has a formal programme in place to support small business concerns situated near to our laboratory sites. We also look to make our land a	
3	ublic concern regarding transgenic animals and is committed to addressing these concerns. 1. The Importance of Animal Research A major part of biomedical re	X
4	human resources department. There is an email facility for employees to report concerns anonymously to the Group Human Resources Director or Group Audit Direc	
5	e to combat global warming. Veolia Water has sought to respond to these real concerns with the parallel approach of developing new and improved supplies and	X
6	hat the new ways we have developed of listening and responding to stakeholder concerns are a very important guide. I am particularly encouraged by the stake	
7	ness, the issues are even trickier, if that's possible. People do have genuine concerns about sustainability issues and the world they will leave to their chil	X
8	te Responsibility Report 2004 93 advice, as well as a mechanism for reporting concerns. Data from 2004 suggest employees understand this and see it as a usefu	
9	nies have to respond. We can't put up the barricades and try to hide from the concerns of society. We're part of that society not least because our staff ha	
10	cial, societal and environmental performance; and the ‘team leader’ dimension concerns day-to-day people management, such as feedback, coaching, workload a	
11	ment, non-governmental organizations and the public in addressing biodiversity concerns. Our operations may affect biodiversity in a number of ways, through	X
12	is are our annual compliance and ethics certification process, and our employee concerns line, OpenTalk.Under the certification process, each business or functi	
13	controversial. We have made many efforts to understand the views of those with concerns and to minimize negative impacts. We have consulted national and local	
14	se social development projects that both reflect stakeholders’ priorities and concerns in the wider society and help us meet our business objectives. We ha	
15	. We aim to choose projects that take account of stakeholders’ priorities and concerns and which help us meet BG Group’s business objectives. We believe tha	
16	nity will need more energy, not less. And as demand for energy increases, so do concerns about security of energy supply. What is hydrogen? Hydrogen is a ch	
17	s develop policy, identify and tackle emerging issues and understand better the concerns of people outside our business. We engage with NGOs at a local and gl	
18	sites use feedback gathered from stakeholder consultation to address community concerns, and to help avoid the recurrence of complaint issues. Feedback from	
19	driven down through the whole supply chain. Engaged with NGOs and investors. Concerns around supply chain issues were highlighted in reports from several NG	
20	some years. The strategic drivers of GHG regulation, rising energy costs, and concerns about security of supply following major blackouts in the US and Europ	

The Xs in the right-hand column indicate lines where the CONCERNS are directed to health or the natural landscape. The grey shading highlights what objects the green corporations are concerned about. The yellow shading highlights the green corporations’ determination to deal with the concerns in a systematic and proper way.

Table H.3: The radical NGOs – random twenty-line contextualised concordance report for PROTECT

N	Concordance	
1	try waste, 200 kgs neem cake and only 100 kgs superphosphate fertiliser. *?To protect the crop he uses neem spray and cow dung spray, but also some chemical	
2	jectives of rural policy The principal objectives of rural policy should be to protect and enhance the rural environment and to maintain the viability of rural	
3	field trials in Thailand. With this decision Thailand takes the lead in Asia to protect its environment, biodiversity and farmers from genetic pollution. Th	
4	or in South London... Last edited: 20-03-2002 ...for nearly four days, to protect our children from cancer. The latest A crack squad of specialist ba	
5	articularly in poor countries, can choose the best solutions to end poverty and protect the environment. – End export dumping that damages the livelih	
6	and the commercialisation of biological diversity. We call upon WTO members to protect small farmers and their agrobiodiversity against the devastating impacts	
7	ed in weaker housing, on marginal land, and were illinformed of how they could protect themselves. They could not move to upper storeys as their houses were b	
8	informed the fleet that Greenpeace will be taking non-violent direct action to protect the whales of Antarctica. As the Greenpeace vessel approached the fl	
9	year by fishing nets. The UK Government and other EU states are obliged to protect dolphins and porpoises, known collectively as cetaceans. Under the Habit	
10	, Friends of the Earth argues that urgent precautionary action is needed now to protect the nation's sexual health[2]. Roger Lilley, Friends of the Earth's In	
11	reet to protest at the Government's failure to keep its pre-election promise to protect the Forest from the devastating effects of quarrying. The delegation, in	
12	allows measures to: ???protect public morals or maintain public order; ???protect human, animal or plant life or health; or ???enforce compliance with	
13	nal laws that might make trade run less freely. These might be laws designed to protect the environment or human health or tax benefits to support local busines	
14	ons and has signed various agreements committing it to respect human rights and protect the environment. The company claims green credentials by investing in so	
15	elf, BAT must also be held accountable by the UK government for its failure to protect the health and safety of its contract farmers and for the destruction o	
16	eement, claiming that this will provide flexibility for developing countries to protect national development policies in the face of non-discrimination discipli	
17	ation of Chemicals - provides a once-in-a-generation opportunity to effectively protect people and the environment from the effects of hazardous substances. How	
18	tability and, in two districts, drafted local regulations which acknowledge and protect indigenous land and natural resource rights. Work is in progress on an	
19	h and other species is a policy that needs to be rapidly abandoned if we are to protect the North Sea and the marine life it supports.' He continued, 'Fishin	
20	es for the victims. Bhopal Gas Peedith Nirashrith Pension Bhogi Manch works to protect the rights of those impoverished by the gas leak, especially widows. B	

The grey shading highlights aspects of human health or the natural landscape that the radical NGOs wish to protect. The red shading highlights the agent which poses a threat and from which protection is needed.

Table H.4: Green business – random twenty-line contextualised concordance report for PROTECT

N	Concordance	
1	ciency of use. This goal reflects Veolia Environnement's primary commitment to protect the environment, conserve resources and reduce pollution (see p.50) an	
2	to ensure that water and sewerage companies can carry out their functions, to protect customers, to promote Gauging energy performance To evaluate the energ	
3	harmonisation of technical regulations for motor vehicles will improve safety, protect the environment and reduce costs for consumers around the world" In the	
4	overnments and civil society organisations, must strive to spread prosperity, protect and preserve the environment and enhance long-term sustainability. We	
5	voking posters and leaflets are available to customers, encouraging people to protect themselves against contracting HIV. 36 The Shell Report YOU TOLD SHELL	
6	rangers who are selected from local communities for special training in how to protect and promote the biodiversity of the park. A reforestation programme is	
7	s and customers. We take the issue extremely seriously, and are taking steps to protect our employees from the disease, to care for those who are infected, and	
8	mented a programme that sets down the mandatory mitigation measures required to protect the whales during the construction and operation of oil and gas fields.	
9	turn of rehabilitated land. Building capacity in the indigenous community will protect the rich culture that has been successful in preserving the diverse nat	
10	4.1 5.2 Site Management 5.2.1 Based on the results of the ecological survey, protect important sites where broadleaved woodlands occur. LA, WT, EN ? ? ?	
11	he world to shut the sites down as quickly as possible. To help our customers protect themselves, we have posted PC security awareness advice on our web sit	
12	xcellence in Environment, Health and Safety, GSK requires all operations to: * Protect the health and safety of our fellow employees, contractors, visitors and	
13	ws will be detected as part of this survey, which will help Southern Water to protect this species from further decline at its sites. Furthermore, the survey	
14	als in order to guide the design and selection of chemical control systems to protect our employees' health and the environment. During 2003, our experts es	
15	r products and operations are systematically assessed and measures are taken to protect employees and others coming into contact with the hazards. We track th	
16	ent Equality Regulations 2003, which extended existing equality legislation to protect workers from discrimination on the basis of their sexual orientation,	
17	ried out to the same standards of GCP everywhere in the world. This is vital to protect patients and ensure that we can gain regulatory approval for new medicin	
18	oway continued to manage water levels in Loch Ken as agreed with the RSPB to protect nesting birds. 14 substations were bunded. Study completed. Study com	
19	rliamentary Group. Its objective is 'to promote transport safety legislation to protect human life'. The Council advises and informs members of the House of Com	
20	just our regulator, it is our partner on a number of biodiversity projects to protect rare species. Since 1999 Anglian Water has been the national biodiversi	

The grey shading highlights aspects of health or the natural landscape that the green corporations wish to protect. The red shading highlights the agent which poses a threat and from which protection is needed.

Table H.5: The radical NGOs – random twenty-line contextualised concordance report for PROTECTION

N	Concordance	
1	at: .The Government aims to halt these trends. It will review measures for the protection of this woodland and if necessary introduce new measures for giving t	
2	the disposal of pesticide washings and sheep dip waste should provide adequate protection of groundwater. However, the RSPB remains concerned that the fate an	
3	cy that addresses all issues surrounding access to medicines, including patent protection, pricing, and R&D. _ JPPIs involve ongoing commitments to resolving	
4	vulnerable the South Downs is and why they should be given National Park-style protection."	
5	night (3/10/97) when he told a Public Meeting why he wanted to remove wildlife protection from large areas of Thorne and Hatfield Moors, near Doncaster. A vote	
6	amentary session." The Government has now published a Green Paper on wildlife protection. But no Wildlife Bill is likely to be announced in the next Queen's S	
7	sponsorship is frequently sought for research. There is a danger that further protection of intellectual property rights may lead to a shift of innovation and	
8	s in the Americas to reject US efforts to strengthen intellectual property (IP) protection beyond global standards in the Free Trade Area of the Americas (FTAA)	
9	ed up to his green rhetoric and introduced a wildlife bill this year that gives protection to our precious wildlife once and for all." Journalists can visit t	
10	tion Paul Jefferiss Head of Environmental Policy Dept Royal Society for the Protection of Birds Stephen Joseph Executive Director Transport 2000 Graha	Not counted
11	re development is being allowed. Despite gradually improving legal and planning protection and stronger policy guidance in Wales and Scotland, it is still far t	
12	e to the local community are often under threat, and there is relatively little protection for non-SSSI designated sites under planning law. Paragraph 18 of PPG	
13	nt.17 The result is that the consortium has been given a higher level of legal protection for its investment than human rights standards would normally afford	
14	. A gurgling sound marks his laboured breathing. His body is emaciated his only protection against the cold is a old blanket draped across his shoulders. His cl	
15	workers would all be regarded as legitimate military targets. But the need for protection in a war zone does not justify what is a well-documented, systemati	
16	eet their development needs rather than undermining them. They also need some protection against 'bad' agreements. There is no guarantee, given the weakness	
17	onale pour la Protection des Obtentions Vegetale (International Union for the Protection of New Varieties of Plants) UNDP United Nations Development Program	
18	oping countries, options include 'extending the period of intellectual property protection' This is regrettable. The last thing developing countries need is eve	
19	men and ethnic minorities who lack formal legal rights to land and had explicit protection under the Bank's previous policy. However, World Bank executive dir	
20	, some 90,000 undocumented workers remained in South Korea, with minimal legal protection. In September 1998 the Minister of Justice told Amnesty Internationa	

The grey shading highlights what aspects of the natural landscape the radical NGOs think need protection.

Table H.6: Green business – random twenty-line contextualised concordance report for PROTECTION

N	Concordance	
1	d employability. • Promoting sustainable business practice and environmental protection. We want to help protect the natural environment, globally and in th	
2	for improvement. 3 Crop protection legacies Until 1993 we made and sold crop protection chemicals, including pesticides known as ‘drins’. These pesticides w	
3	spot spraying In October 2001, in partnership with the Royal Society for the Protection of Birds, we launched a Tree Sparrow Conservation Project with the p	
4	l’ – and are exploring the potential for taking part in the US Environmental Protection Agency’s ‘PerformanceTrack Program’. Our own operations We aim to	
5	as part of project relicensing. Results of this research will inform future protection and enhancement strategies concerning water quality, stream flows,	
6	sure we can obtain the maximum business opportunity whilst ensuring continued protection of the environment. In addition, we have made some key commitments g	
7	ity and, as part of our commitment to sustainable development and environmental protection, we are developing our role in biodiversity management and conservati	
8	rmers with registered and approved seeds, crop protection products and personal protection equipment; ?? Support in environmental preservation measures such as	
9	agronomy support to growers monitor and report on the use of manufactured crop protection agents. Active ingredient used per hectare, per annum, which varies f	
10	Sharm El Sheikh, is designed to provide education on environmental and health protection and wildlife conservation techniques for more than 1,000 students a	
11	ty standards in 2004, TNK-BP will establish standards in 2005 for environmental protection, health and plant integrity. The 2005 plan includes enhanced or incre	
12	formance, as are the security of the physical and intellectual assets and the protection of the natural environment. In recent years, the increased threats f	
13	cological functionality of the ecosystem in which it operates and supports the protection of species and the enhancement of species diversity at the Colliery.	
14	adsound and Belyando Shire Councils, Government Departments (the Environmental Protection Agency, the Department of Natural Resources and Mines and the Depar	
15	st for Ornithology – Yellow Wagtail /Reed Bunting Study Royal Society for the Protection of Birds – Tree Sparrow Project Environment Agency/EnCams – Riverca	
16	sulting in one fatality. under the Criminal Procedure (Scotland) Act Consumer protection Anglian Water Services April 2002: Back siphonage September 2002: AW	
17	r Railway. Working with various regulators including the Scottish Environment Protection Agency and Scottish Natural Heritage, construction method statement	
18	aff turnover rate through offering secure jobs, developing high quality social protection, and offering job mobility. As part of its balanced scorecard approa	
19	en to reduce environmental impact under each of the key components. Catchment Protection The water resources balance is not just threatened by rising demand	
20	ue to have the country’s lowest per capita water consumption rates. Catchment Protection The water resources balance is not just threatened by rising demand	

The grey shading highlights what aspects of the natural landscape the green corporations think need protection.

Table H.7: The radical NGOs – random twenty-line contextualised concordance report for DAMAGE

N	Concordance	
1	Osiguwa et al. (2003), describe effects on mammalian sperm function, while DNA damage in human lymphocytes has also recently been documented (Harreus et al. 2	
2	ecutive Director of Greenpeace, said: "GM crops risk irreversible environmental damage and may be hazardous to human health. The action we took was justified, a	
3	tions, because of their size and power, are able to cause harm to communities, damage the environment, violate workers' rights and avoid taxation with impunity	
4	ment. These will not always be free trade policies. End export subsidies that damage the livelihoods of poor people around the world. Make laws that stop bi	
5	S measures to block Vietnamese sales of shrimp and catfish despite the enormous damage to livelihoods in rural Viet Nam are worrying precedents. And it is not c	
6	hase is £144,456. Under the regime, an authority cannot incorporate costs like damage done through transport related emissions to the atmosphere, or the pote	
7	ations, because of their size and power, are able to cause harm to communities, damage the environment, violate workers' rights and avoid taxation with impunity	
8	ture of benefits by the elites, lack of benefits for the poor and environmental damage. DFID issue paper – Energy for the poor As the table extracted overleaf	
9	w road on land that is currently used for agriculture. It would also inevitably damage sites of value for nature conservation. The aggregate extraction require	
10	its weapons, and whether it has commissioned legal advice on its liability for damage caused to people's health as a result of: o the use of depleted uranium	
11	their supporting infrastructure) which themselves create local environmental damage. The paved area of a large airport such as Heathrow is the equivalent of	
12	r (27%) of these SACs (or the SSSIs that make them up) have experienced loss or damage since 1991 [2]. Agriculture and development are leading causes of damage.	
13	"may lead to farmers using more herbicides...potentially resulting in increased damage to biodiversity." Furthermore, GM crops could cross with wild plant speci	
14	fe rt i l i t y, as well as ex t e rn a l costs in terms of property and road damage. Wh at we h ave n't p a i d fo r Fa rming subsidies have not been used	
15	ce more will leave the land leading to a loss of diversity on our farmed land, damage to rural economies and an increase in the distance our food travels. The	
16	panies who claim to be developing sustainable policies, are still causing major damage to the planet. The report will be published on www.foei.org on Friday 16t	
17	al advice to minimise the risk of cross-pollination? In the event of any health damage from GM food,liability might be faced by the GM company, the food manufac	
18	Humane Care Foundation Curaçao, in order to hold Shell liable for the massive damage that it has inflicted on the community. The vital habitats and natural	
19	disrespect that Shell has shown local residents, and the severe environmental damage that SAPREF has caused. During this meeting, Lord Oxburgh admitted that	
20	o stop current EPA negotiations, which could lead to widespread job losses and damage the livelihoods of poor people. EPAs must be replaced with an alternativ	

The grey shading highlights what aspects of the natural landscape the radical NGOs think are suffering some damage.

Table H.8: Green business – random twenty-line contextualised concordance report for DAMAGE

N	Concordance	
1	port 2000/01 67 NOX Oxides of nitrogen, which contribute to acid rain causing damage to vulnerable freshwater systems, forestry and buildings; also leads to	
2	he Group will: • Compete vigorously and in a lawful manner. • Not seek to damage the reputation of competitors, either directly or by implication or innue	
3	groundwater from the leakage of oil. Our strategy Our strategy is to minimise damage to biodiversity when we develop new projects or as part of our maintena	
4	used can cause other problems, such as urban pollution, acid rain and health damage. As Gro Harlem Brundtland wrote in the foreword to her famous report 15	
5	gannet as ‘state of the art’ for emission control. Our strategy is to minimise damage to biodiversity when we develop new projects or as part of our maintenan	
6	-based trading system. And we've committed ourselves to a world wide goal of no damage to the environment. Taking preventive action: Many of these initiatives	
7	ect cause of such health problems as stunted growth, mental retardation, brain damage, damaged eyesight, anaemia, still births and child mortality. Children	
8	sponse Effort Continues Thunder Horse Platform - Status Update BP Assessing Damage to Thunder Horse Platform in Gulf of Mexico More ARCO Provides $100,0	
9	ive of improving the reliability of supply for customers most vulnerable to the damage to power lines caused by falling trees. Our people are committed to achi	
10	endanger life, result in potentially severe environmental effects, cause major damage to the company’s reputation and brand, and have large financial consequen	
11	afety Unit, as appropriate. ???Ensure all incidents, accidents, and property damage is reported to your Line Manager. ???Co-operate with their Managers in	
12	closed markets and artificial support for fuels which cause more environmental damage leading to outcomes which are sub-optimal. I'm convinced that if market	
13	this heavy dependency on coal, have been the cause of extensive environmental damage over the last two decades. Working in an innovative tri-sector partnersh	X
14	s worse. Sulphur dioxide is a major constituent of 'acid rain', associated with damage to the environment. Particulate matter The incomplete combustion of fo	
15	% reduction in minor accident consumption and a further 10% reduction in minor damage across all businesses 10% reduction in minor accident damage achieved in	
16	th this heavy dependency on coal have been the cause of extensive environmental damage and health problems over the last two decades. The speedy introduction of	X
17	from the retired community to keep watch over gas pipelines against third party damage. Stakeholders' expectations Shareholders and financial analysts are int	
18	visual impacts; • Prevent adverse surface and groundwater impacts; • Minimise damage to biodiversity and reduction in land capability; and • Progressively re	
19	transportation costs and the associated risks of accidents and environmental damage. Matuba Reclamation and Recycling Company (Pty) Limited, a scrap metal	
20	gised in a press statement and withdrew the trail the next day. The potential damage to the BBC’s reputation initiated a review of the internal systems that	

The grey shading highlights what aspects of the natural landscape the green corporations think are suffering some damage. The two Xs indicate lines in which damage to some specific aspect of the natural landscape is referred to in the text.

Table H.9: The radical NGOs – random twenty-line contextualised concordance report for CONTAMINATION

N	Concordance	
1	andals regarding the contamination of animal feed with dioxins in 1999 and the contamination of chicken feed with PCBs in 2002. Organochlorine pesticides pp	
2	O, Tung K-C, Staskal D, and Birnbaum L (2004). Polybrominated diphenyl ethers contamination of United States food. Environmental Science and Technology: ASAP	
3	s from the farms are rejecting one in 20 to one in 50 deliveries because of contamination. S E E D S OF D O 3 2 U B T StarLink Bt maize There has already	
4	nation of five samples – 12 per cent – of chicken muscle was found. Lasalocid contamination, at extremely low levels, of dogfood, causes paralysis in dogs T	
5	monstrated that both older and more modern incinerators can contribute to the contamination of local soil and vegetation with dioxins and heavy metals. Simil	
6	pot *??Sampling across allotment in Walkergate 3B to assess the extent of the contamination B = Byker pattern, C = Compost pattern, X = pattern found in seve	
7	need for remediation Table 1 shows the descriptive statistics of ash and soil contamination and the trigger levels for further investigation from the Dutch I	
8	wt. % of the oDS. This leads to its own problems since clearly the 'invisible' contamination suggests that in terms of specific qualities of environmental and	
9	total PBDE burden in her blood, which is in marked contrast to her OCP and PCB contamination profile. Her blood also has the highest concentration of perfluor	
10	hat is passed on to consumers. The VI's current approach to avoiding pesticide contamination peaks in water, mainly involves text messaging farmers once a wee	
11	to be ploughed into the soil, leaving potential GM pollution in the field. ??Contamination of honey - Honey may become contaminated as a result of bees fo	
12	ncerned with securing coexistence, that is, the prevention of (unintentional) "contamination" of products other than GM products. Recital 28 and Article 26a t	
13	enters the developing child. 3 CHILD EXPOSURE TO CHEMICALS Chemical Legacy. Contamination of the Child 19 When it comes to toxic chemicals that have conta	
14	, 2003 B Ts: butyltins; TBT: tributyltin; TPT: triphenyltin. Table 2.5 Human contamination of blood from adults by the phthalate DEHP. G ro u p R a n g e M	
15	contaminated oil seed rape, has completely failed to discover the source of the contamination. In May 2000 it was discovered that hundreds of British farmers	
16	at this might result in the non-GM rape suffering from significant levels of GM contamination. A statement from the Department for the Environment, Food and R	
17	Earlier this month the Government promised to consult on new rules to stop GM contamination, but failed to say whether or not GM crops would be planted before	
18	s ahead with their commercialisation. If this happens it will lead to extensive contamination and take away people's right to choose GM-free food. "There is w	
19	tion (rather than self-pollination) were examined ('Varietal Associations'), GM contamination rates of over 7% were found at 90 metres13. Cross pollination by i	
20	rm of environmental law and environmentalists hope that it will end the global contamination of humans, animals and the environment by hazardous chemicals. Bu	

The grey shading highlights what aspects of the natural landscape the radical NGOs think are experiencing contamination.

Table H.10: Green business – random twenty-line contextualised concordance report for CONTAMINATION

N	Concordance	
1	ith these stocks safely. Cleaning up contamination We are assessing the contamination at each site where we produced or handled these products and are r	
2	Case study 4.1 Contracting Services provides a polychlorinated biphenyl (PCB)-contamination testing service for transformer oil to its customers and in 1996	
3	on a dilute and attenuate basis, there has been limited localised groundwater contamination. The management of leachate (rainwater percolating through waste)	X
4	assessment methodology for all Generation Business sites and identifies their contamination risk. Sites of high risk are targeted for further investigation.	
5	e of the most important land management issues are concerned with the risk of contamination from oil leakage, visual intrusion from plant, transmission and	
6	r water, electricity and telecommunications. We have a potential risk of land contamination from oil leakage, our networks can cause visual intrusion and st	
7	ise and damage to habitats through excavations. We have the potential risk of contamination of land and groundwater from the leakage of oil. Our strategy O	
8	and chemical spill emergency procedures that will minimise any land or water contamination that could result from such spills or leaks. Biodiversity enhan	
9	and rotate more slowly, making them easier for birds to see and avoid. Land contamination ScottishPower businesses minimise the potential risk of land co	
10	re of Wyodak Residual Oil Clean-up Table 4.4 Land contamination targets Land contamination targets continued Targets 2001/02 Progress against targets Target	
11	idger Pond Expansion, closure of Wyodak Residual Oil Clean-up Table 4.4 Land contamination targets Land contamination targets continued Targets 2001/02 Pro	
12	tes in the UK, it was determined that the majority featured low probability of contamination, or low hazard and pollution potential if contamination were pre	
13	tial to cause moderate or serious harm to the environment, such as groundwater contamination, and chronic or acute discharge above compliance levels. The type	
14	cid generating waste in 2000 is: • At Kennecott Utah Copper (KUC), groundwater contamination with elevated sulphur and heavy metals has occurred below the was	X
15	mer and switchgear equipment is under way to eliminate the possibility of PCB contamination, ensure safety and reduce the risk of leakage. – Frost damage to	
16	red low probability of contamination, or low hazard and pollution potential if contamination were present. A group of seven sites remained for further study,	
17	are developed, operated, monitored and maintained to prevent seepage and water contamination both during and after mining operations. UNFCCC United Nations F	
18	are developed, operated, monitored and maintained to prevent seepage and water contamination both during and after mining operations. Tonnes milled Total tonn	
19	and approval of a design plan and the construction of a system that prevents contamination of groundwater and surface water. The site was commissioned in Ma	
20	llieries affect the Olifants, Vaal and Mkuze river catchment systems. The main contamination results from low pH and high dissolved salt levels in the effluen	

The grey shading highlights what aspects of the natural landscape the green corporations think are experiencing contamination. The two Xs indicate lines in which specific contamination of some specific aspect of the natural landscape is referred to in the text.

Table H.11: The radical NGOs – random twenty-line contextualised concordance report for CONTAMINATED

N	Concordance	
1	t al., 1999). UK government surveys show that up to 30 per cent of our food is contaminated by pesticides (DEFRA, 2000). Others show that the indoor and outdo	
2	ake responsibility for the disaster by funding the clean up of the still highly contaminated site and to aid the thousands of people still suffering the effects	
3	e mine staff to stop eating sago palm, the staple of their diet, because it was contaminated. The mine sits on the traditional lands of the Amungme people and	
4	ge of measures such as: * A immediate ban on rape seed imports, * Removal of contaminated crops. * Monitoring and testing existing stocks. * Testing in o	
5	1992 (as amended). Greenpeace understands that those farmers in receipt of the contaminated seed planted their crop this spring and will harvest their crop som	
6	of guideline values for heavy metals and arsenic to assist risk assessment of contaminated land Fly ash Fine and ultrafine material collected in incinerator	
7	sh and over 8,000 tonnes of fly ash are produced each year. Fly ash is heavily contaminated with toxic substances including high concentrations of lead, cadmi	
8	be contaminated by chemicals that were banned before they were born? Are they contaminated in the same way as our adult volunteers? How do different generati	
9	test that a local authority might apply in deciding whether a piece of land is contaminated land, the result of our study is that two of the sites (Little Moo	
10	t? Notification dated 15.03.99) 24.02.99 CO, Particulates Monitor fault due to contaminated air supply to the instrument 29.01.99 Use of fabric filter bypass	
11	001:26 • A variety of non-GM oilseed rape developed by GM company Advanta was contaminated with GM seed, although “by the time that the GM presence had been	
12	edures; (c) instituting means for the safe collection, storage and disposal of contaminated waste, including the use of secure and identifiable containers, af	
13	n Byker. The levels found were clearly a health concern. A 100g portion of the contaminated pheasant would contain 587 times the maximum tolerable daily dioxi	
14	tion plant (July). Worker contaminated in reprocessing plant (August). Worker contaminated in plutonium purification plant (September). Worker contaminated i	
15	unity members; 7. HLL should pay for full restoration of health of the people contaminated because of mercury pollution from the thermometer factory; 8. HLL	
16	y' cards will be handed to shoppers, warning them that Batchelors Beanfeast is "contaminated with genetically engineered soya" and will alert them to the fact t	
17	into the Aghawagon River every day. Satellite analysis shows that tailings have contaminated the Lorentz National park, a World Heritage Site, and marine pollut	
18	– soya and maize gluten (see Table 2) – which are likely to be either GM or GM-contaminated, unless cargoes are explicitly certified as being GM-free. This i	
19	e once pristine Arctic to seals and dolphins, wildlife throughout the world is contaminated. But chemical contamination is not restricted to wildlife – people	
20	ears on from the gas leak a large amount of poisonous material remains on the contaminated site, affecting the health of people in the area. This sack bears	

The grey shading highlights what aspects of the natural landscape the radical NGOs think are contaminated.

Table H.12: Green business – random twenty-line contextualised concordance report for CONTAMINATED

N	Concordance	
1	rter, Liverpool £120,000 5) Substation Bunding (132 kV and above) £400,000 6) Contaminated Land Surveys £10,000 7) Dismantling the 'L' Route, Fife (Dunfermli	
2	mes resulted in significant environmental and associated health risks such as contaminated land and pollution of underground water resources. Thus, waste di	
3	r Contaminated Land Risk Matrix developed to respond to the UK legislation on contaminated land expected in July 1999 and the related requirements to be int	
4	only a small percentage of the operational equipment was found to be heavily contaminated with PCBs. PCB testing continues at a reduced level during routin	
5	umber of samples tested 4,061 Number of samples above 50 ppm 63 Volume of PCB contaminated oils disposed (litres) 43,148 % equipment now tested for PCB level	
6	han 500 ppm. Our current management strategy is to remove all registered PCB-contaminated equipment off the public registers within the shortest applicabl	
7	t thought that any of our sites are "contaminated", as defined within the UK Contaminated Land Regulations. The prevention of new contamination is controll	
8	Number of samples tested 1,826 Number of samples above 50ppm 14 Volume of PCB contaminated oils disposed (litres) 1,258 % equipment now tested for PCB levels	
9	cultural value, environmental issues facing the company and issues concerning contaminated land. Minimising drilling impact Land and biodiversity ScottishPo	
10	/a n/a 7,333 Number of samples above 50ppm (PERCo)* n/a n/a 305 Volume of PCB contaminated oil disposed (Power Delivery) (Gallons)* n/a n/a 31,393 Infrastruc	
11	and Policy Sub- Groups that focus on specific issues such as biodiversity and contaminated land. We integrate environmental sustainability issues into our b	
12	47 ScottishPower Environmental Performance Report 2003/04 PacifiCorp Complete contaminated land risk analysis in April 2003 Evaluate and, if feasible, purcha	
13	applicable government laws, policies and regulations) addressing the issue of contaminated land. To comply with the legislation, ScottishPower's businesses	
14	Contaminated Land Land may become contaminated as a result of past practices in the management of materials, for e	
15	ers into agreements with relevant authorities to assist in the remediation of contaminated land when required. GSK then directs the remediation of contaminat	
16	tion of contaminated land, when required, and then directs the remediation of contaminated areas to levels that are consistent with the expected future use o	
17	andards that require, among other things, the identification and management of contaminated land. GlaxoSmithKline enters into agreements with relevant author	
18	ing information on the following EHS programmes: acquisitions and divestitures, contaminated land, climate change and ozone depleting potential, auditing of sup	
19	acts are important at a local level. These include, for example, water quality, contaminated land, noise, visual impact and waste management. These are predomin	
20	6 5 NOX 2< 2< 14,000 24 total costs carried forward 13,825 IMPACTS TO LAND contaminated land (restoration of 600 acres of sacrificial and dedicated land) 1	X

The grey shading highlights what aspects of the natural landscape the green corporations think are contaminated. The X indicates a line in which there is a representation of some specific aspect of the natural landscape which has been contaminated.

Table H.13: The radical NGOs – random twenty-line contextualised concordance report for EFFECTS

N	Concordance	
1	erable to exposure to polluting chemicals. But we don't know what the long-term effects of these substances are, simply because there is hardly any information	
2	e followed up including the cocktail effect, long-term implications, cumulative effects and the impact on vulnerable groups, particularly babies and the elderly	
3	ng long-term, complex, indirect, low frequency and low magnitude effects. These effects are especially significant in agriculture - an industry which is of grea	
4	afety Directorates Wildlife Incident Investigation Scheme. But as direct toxic effects on birds decrease, evidence of impacts of pesticides on food chains grow	
5	d housing to leave France for Belgium, The Netherlands and Germany. "Knock-on effects were experienced in the immigrants home countries. Malians and Senegales	
6	of pollutants as implied by the results of the new studies, could produce any effects, let alone death, and felt that the epidemiological studies must be fla	
7	undant, undisputed, and world-wide population-level effects in wildlife". These effects have been widely documented in molluscs and include penis-bearing female	
8	and production of the ES. Ornithological assessment In the assessment of the effects of the proposed wind farm on birds, both aerial and boat-based survey me	
9	d more frequently in populations exposed repeatedly. Chronic neuropsychological effects have been seen in 4-9% of patients exposed in occupation-related use.	
10	rent British Energy decommissioning fund can cover long term costs through the effects of interest rate gains on the fund. ??The British Energy debacle is the	
11	t for injustices over larger areas and across the social spectrum - such as the effects of the Chernobyl accident,or from the unpredictable impacts of chemical	
12	of chemicals inadequately regulated, exposing consumers to potentially harmful effects. Greenpeace Executive Director Stephen Tindale said: "This is a sc	
13	effects of developments often have social outcomes, but the assessment of these effects remain rare in practice, and the social distribution of environmental ef	
14	mental impacts, including pollution and `disamenity' to the local area, such as effects on house prices. Recycling in contrast saves considerable quantities o	
15	instrument for incineration following a review of the environmental and health effects of all waste management and disposal options. This report is expected to	
16	"xenobiotic" compounds. Although present in low concentrations, the long term effects of continuing to The study found water pollution by both dilute and lan	
17	the grain's effects on subsequent generations, cumulative toxic effects and the effects on the health of sensitive consumers as required under EU food law [4]	
18	irnbaum & Staskal, 2004. 52 Birnbaum & Staskal, 2004. 53 Darnerud, P.O. Toxic effects of brominated flame retardants in man and in wildlife. Environ Int 2003	
19	tes, for example, that when preliminary risk assessments indicate unacceptable effects on health or the environment, companies shall not use the lack of full	
20	International Context 17 Association between lifestyle and exposure 20 Health effects 20 References 22 Appendix 1: Median and Maximum Chemical Concentration	Not counted

The grey shading highlights what aspects of the natural landscape the radical NGOs think are suffering negative effects.

Table H.14: Green business – random twenty-line contextualised concordance report for EFFECTS

N	Concordance	
1	water to comply with consents, as a minimum; and • Monitor and minimise our effects on fish populations and the aquatic environment. Performance Review W	
2	b-standard ship could endanger life, result in potentially severe environmental effects, cause major damage to the company's reputation and brand, and have larg	
3	TED PARAMETERS Context Our businesses have social, environmental and economic effects on the regions and communities in which they operate. To ensure we con	
4	stic, cars, oil rigs, radioactive waste. Until the industrial revolution, these effects of human activities were local. Now, they are global. In the past two hu	
5	agement Policy Commitment Targets Objectives Reassessment Protocols Audits Effects Severn Trent Water Biffa Severn Trent Services Group Services Direct	Not counted
6	re partners (see page 28). We acknowledge the need for more disclosure of the effects of our policies, such as lending, and seek the right balance between t	
7	d scientific consensus that global climate change is occurring, the resulting effects on climate and ecosystems are difficult to predict. Other greenhouse g	
8	ly look for opportunities to enhance biodiversity as a result of restoring the effects of surface mining operations. PacifiCorp produces approximately 11 mill	
9	energy use? • Air quality and global climate change: How can we minimise the effects of the use of fossil fuels in our generation portfolio, as well as emis	
10	radiation to reach the earth's surface and this can cause adverse environmental effects and adverse health effects such as skin cancer, ageing of the skin, eye	
11	share responsibility with governments and citizens for minimising the damaging effects of human activity — pollution of land, water and air and the depletion o	
12	as well as other human systems. Historically, achieving an understanding of the effects of chemicals in the workplace has involved use of laboratory animals as	
13	testing approaches, support the development of improved environmental fate and effects models used for early assessment and improve the quality of our environm	
14	, surface water (rivers and streams) and drinking water. In addition, low level effects on aquatic organisms have been observed for specific APIs such as synthe	
15	Europe and the US. This concern often arises from lack of understanding of the effects that pharmaceutical residues in the environment may have, especially a	
16	matter (solid material suspended in the air) are the most visible atmospheric effects of mining activities. The building of roads and facilities, exploratory	
17	une 2000 report. This stated that if the UK is to avoid the potentially severe effects of global warming, reductions of greenhouse gas emissions need to be th	
18	rn for a 90 per cent tax credit. The scheme was designed to help mitigate the effects of landfill upon local communities and support moves to more sustainab	
19	cant rise in level 1 incidents, which have only minor impacts with short-term effects from a base of about 1,500 in 2001. This is the effect of better repor	
20	rained to prevent spills and have contingency plans in place to mitigate the effects of any spillage. Some drills use water to cool the drill bit and tran	

The grey shading highlights what aspects of the natural landscape the green corporations think are suffering negative effects.

Table H.15: The radical NGOs – random twenty-line contextualised concordance report for IMPACT

N	Concordance	
1	angkinang, Riau for illegal burning in 1999 was dismissed. 6 The Environmental Impact Management Agency (Bapedal) in Riau named 3 of the 14 plantation companie	
2	erials, in differing proportions. Each of these materials has the potential to impact differently on the environment. Environmental impact can also be influen	
3	governments and creditor institutions to account for the financing, design and impact of development projects and programmes. There is already a precedent for	
4	ic investment) occurred in Latin America. In other parts of Asia and Africa the impact was neutral. The paper concluded that crowding out occurs where the inves	
5	onment and Social Justice held last year, is the availability and use of policy impact assessment tools. Environmental justice brings an additional set of conce	
6	ion of top-down targets on local areas{7} without regard to their environmental impact; 2. radical improvements in the use we make of land and other natural re	
7	ing to CAFOD partners and field visits in the affected countries, the immediate impact on the lives of the poor has been undeniable and profound. Progress on hu	
8	t HIV/AIDS, Tuberculosis, and Malaria Act of 2002" (H.R. 2069) [21] Financial Impact od the HIPC Initiative First 26 country cases – World Bank July 2002 [2	
9	hat developing countries in particular should therefore assess the human rights impact of obligations they are likely to take on, if they are privatising activi	
10	.M. (1992) (Warren Spring Laboratory). reports). A review of the environmental impact of recycling. Department of Trade and Industry; citing work by Clark, H	
11	nd is not unfeasible'. In Power UK, issue 109. 53 Ecotec et al., undated. The Impact of Renewables on Employment and Economic Growth. ALTENER contract 4.10	
12	Commission, Brussels Commission of the European Communities (2003) 'Extended Impact Assessment: sugar regime', European Commission (http://europa.eu.int/comm	
13	gainst management criteria have constrained LITMUS from having any significant impact on regeneration programmes. The impacts generated by the LITMUS process,	
14	them, and they are more successful at finding meaningful jobs. • The ultimate impact is hopefully that they will experience a better quality of life as a resu	
15	agriculture. Following this, two case studies from RSPB reserves highlight the impact of the problem on the ground. Finally this Annex describes drivers for a	
16	iew that the levels of Landfill Tax haven't been high enough yet to make a real impact on industry. Perhaps the anecdotal evidence of increased fly-tipping shou	
17	e Trade Justice Movement believes that, while efforts to encourage the positive impact of companies should continue, new laws are now needed to hold increasing	
18	l EPI; iii. A review of trends that have impacted and will continue to have an impact on the future ethical marketplace. It is hoped that the development of	
19	the exploration programme in Pakistan.In March, they submitted an Environmental Impact Statement to Pakistani authorities, as a prelude to undertaking explorati	
20	aid: "We welcome Eastern Electricity's recognition that its activities have an impact on the environment and the steps it is taking to tackle the problem. Frie	

The grey shading highlights what aspects of the natural landscape the radical NGOs think are suffering some negative impact.

Table H.16: Green business – random twenty-line contextualised concordance report for IMPACT

N	Concordance	
1	e are working to improve communications plans for our environmental and social impact reports that help us reach our diverse audiences more effectively in the	
2	'cell' and siting considerations with respect to land use and potential visual impact. Important issues that will determine whether the installation is in kee	
3	ply chain section of our CR report. * Comment from Forum for the Future on the impact of reused mobile phones. * Environment Council analysis of Vodafone's st	
4	tainable development. We set tough targets to promote improvement . Reducing impact through eco-efficiency Principle 6 Health, safety and environment We gr	
5	erall performance. Several participants wanted to see more information on the impact of our access to medicine programmes, with clearer information on the sca	
6	tors, such as technology, social preferences, and deregulation, are likely to impact the global energy system. Two scenarios emerged from this study: we call	
7	h this we can work together more effectively, ultimately having a more positive impact on the environment. Our commitment to ISO 14001 and rigorous safety pr	
8	de equivalent terms. The results are shown in the table and they identify the impact of our greenhouse gas emissions. (We have been reporting our greenhouse	
9	rds. In 2002/2003, Biffa published its Biodiversity Action Plan to manage its impact on wildlife and habitats. The framework will guide nature conservation	
10	progress towards achieving sustainable development goals. Environmental Low impact – lowers scarce resource use Economic Affordable – promotes employmen	
11	other utilities in the regions served. ScottishPower Environmental and Social Impact Report 27 28 ScottishPower Environmental and Social Impact Report Marke	
12	e Energy Hierarchy Diagram 2.2 Application of Sustainable Energy Hierarchy Low impact – lowers scarce resource use Affordable – promotes employment and ec	
13	lso supports community initiatives to tackle the complex social issues that can impact on successful prevention of HIV transmission from mother to child. Prev	
14	es provide. EHS technical experts prepare tools covering technical areas that impact EHS, including technical information guides, training packets, business	
15	as been in the forefront of energy efficiency, and its consequent environmental impact, for many years. The Emissions Trading Group (ETG) is formed of members	
16	shore platform will be unmanned and operated by solar power. The environmental impact assessment for the project, performed jointly by respected Egyptian and	
17	is not as sensitive yet as the impact on indigenous peoples, the socio-economic impact on all communities is increasingly – and rightly – gaining in importance.	
18	ribute to the continuing economic progress of Russia, and over time reduce the impact of our operations on the environment. We attach great importance to the	
19	protect the environment. We have focused on the areas where we can have most impact – in our own plantations and wherever we use contract farming. Working cl	
20	problems. Care in operational activities Monitor and review the environmental impact of our activities. Minimise the environmental impact of our constructio	

The grey shading highlights what aspects of the natural landscape the green corporations think are suffering some negative impact.

Table H.17: The radical NGOs – random twenty-line contextualised concordance report for IMPACTS

N	Concordance	
1	d more heavily to local and regional planning authorities. 15. Climate change impacts and adaptation The reality that climate change is already with us was a	
2	e way. It was beautiful. It is not now. (River of Life, Malawi) 1 Nyong, 2005. Impacts of climate change in the tropics: the African Experience. Mali Drought	
3	vantage of new opportunities, thus reducing their vulnerability to the harmful impacts of disturbance and change. See: http://www.shef.ac.uk/adaptive 52 IIED	
4	ecently multi-national corporations such as Shell have been reporting on social impacts. The social audit also has a track record in the voluntary sector - a	
5	dley Centre for Climate Prediction and Research (1999) Climate Change and its impacts: Stabilisation of CO2 in the atmosphere, published by The Department o	
6	t is to look at all the economic impacts of expenditure, not solely the direct impacts. 19 Here are two practical examples. A study of tourism in Tayside sho	
7	r, or government official – to measure how much your organisation or initiative impacts on the local economy. And more importantly, lm3 helps you work out wher	
8	the Treasury. There are a number of large negative financial and competitive impacts that nuclear exemption from the CCL would have: ?? It would impact on	
9	rocess. These checklists (on economic, environmental, social and distributional impacts) provide the same coverage as the Integrated Policy Appraisal tool previ	
10	ull Public Inquiry will allow a fuller examination of the adverse environmental impacts and claimed benefits of this controversial 6-lane road bridge between Th	
11	tifying ownership more difficult. This change will also have direct employment impacts. In order to examine the employment impacts of the sustainable transpor	
12	and mayonnaise, it is hard for customers to avoid even where they object to its impacts. The briefing also highlights the damaging impacts of shrimp productio	
13	the impending humanitarian disaster is not simply a result of the weather. The impacts of food shortages will be exacerbated by the situation on the ground. I	
14	tonnes of carbon dioxide into the atmosphere each year. . The terrifying impacts of climate change could be felt within the next 20 years. . In the	
15	s on trans-national corporations with respect to their social and environmental impacts in the text. Instead the document suggests that “voluntary agreements" w	
16	oss all developing countries, to help African countries adapt to the risks and impacts of climate change. The wider focus of the Commission’s report was welc	
17	ir country where it cannot meet their needs due to the scale of climate change impacts. Numerous poor countries already cannot afford to meet the basic needs	
18	g incidences of a number of non-infectious health problems, including adverse impacts on the immune system, the reproductive system, the nervous system as we	
19	resettlement". Yet the Bank refuses to accept responsibility for the continuing impacts of the projects it has backed and is actively considering investments in	
20	e, producing floods, droughts, sea level rises, storms and all their attendant impacts on human 180 Some Common Concerns 181 Imagining the AGT pipelines sy	Not counted

The grey shading highlights what aspects of the natural landscape the radical NGOs think are suffering some negative impacts.

Table H.18: Green business – random twenty-line contextualised concordance report for IMPACTS

N	Concordance	
1	e social, health and environmental impact assessments, including biodiversity impacts, in line with Shell guidance. They must also have plans to protect the	
2	to help find answers. Meanwhile, there are clear indicators of the potential impacts of mobile phones on society. Their popularity and success is based firm	
3	sult of this review improved the accuracy and consistency of the data and the impacts reported. For this reason, the 2001 baseline has been modified for cert	
4	al hazard evaluation and use of animals (cont.) Reporting our performance and impacts drives continuous improvement and communicates GSK's global EHS impact	
5	proving social performance Social performance is how well we manage disruptive impacts and generate benefits for communities where we operate. We have places	
6	ow we address issues such as raw materials sustainability and the environmental impacts of our manufacturing operations, as well as health and hygiene, through	
7	artnership with Shell Gabon and the Shell Foundation to reduce our operational impacts and protect biodiversity in the region All our operations must follow t	
8	m and aims at reducing the Severn Trent group's most significant environmental impacts. We have already exceeded Government targets for reducing leakage from	
9	ers and run the business; and our retail outlets. Review of our environmental impacts confirms that our most significant impacts are associated with our netw	
10	vices. (Describe and quantify where relevant). Our products have environmental impacts through litter resulting from improper disposal by consumers after consu	
11	, which can lead to impacts on fish populations. We seek to establish our true impacts in order to minimise harm and to positively enhance fish populations, w	
12	il sands (see www.shell.ca) • Working with others to better manage the social impacts of its global operations, for example in China (page 42), Nigeria (page	
13	gy companies therefore have an obligation to recognise and manage the potential impacts of our industry on national/local economies, communities and the environ	
14	d requires all areas of the business to manage environmental, health & safety impacts. 3 Environmental management 70 Each stage in the production, distrib	
15	. (See also Economic Indicators: EC10.) SO1 Description of policies to manage impacts on communities in areas affected by activities, as well as description	
16	ciency amongst tobacco farmers who require wood, while minimising biodiversity impacts. In this year's social reporting cycle, we have clarified and enhanced	
17	l management objectives and commitments in managing identified environmental impacts; • The National Water Act (No.36 of 1998) and Water Services Act (No.	
18	ns strategies at operations. • Improve management of our social and economic impacts on local communities. • Accelerate economic opportunities for those	
19	* water consumption * raw material consumption * transport * land use * impacts on biodiversity. Performance against indicative standard This ye	
20	ple We will ensure that environmental, social, economic, health and safety impacts associated with assets, products, processes and services are assessed an	

The grey shading highlights what aspects of the natural landscape the green corporations think are suffering some negative impacts.

Table H.19: The radical NGOs – random twenty-line contextualised concordance report for DAMAGE

N	Concordance	
1	Osiguwa et al. (2003), describe effects on mammalian sperm function, while DNA damage in human lymphocytes has also recently been documented (Harreus et al. 2	Alkyl Phenol[1]
2	ecutive Director of Greenpeace, said: "GM crops risk irreversible environmental damage and may be hazardous to human health. The action we took was justified, a	
3	tions, because of their size and power, are able to cause harm to communities, damage the environment, violate workers' rights and avoid taxation with impunity	corporations
4	ment. These will not always be free trade policies. End export subsidies that damage the livelihoods of poor people around the world. Make laws that stop bi	
5	S measures to block Vietnamese sales of shrimp and catfish despite the enormous damage to livelihoods in rural Viet Nam are worrying precedents. And it is not c	
6	hase is £144,456. Under the regime, an authority cannot incorporate costs like damage done through transport related emissions to the atmosphere, or the pote	
7	ations, because of their size and power, are able to cause harm to communities, damage the environment, violate workers' rights and avoid taxation with impunity	Not counted
8	ture of benefits by the elites, lack of benefits for the poor and environmental damage. DFID issue paper – Energy for the poor As the table extracted overleaf	
9	w road on land that is currently used for agriculture. It would also inevitably damage sites of value for nature conservation. The aggregate extraction require	
10	its weapons, and whether it has commissioned legal advice on its liability for damage caused to people's health as a result of: o the use of depleted uranium	
11	their supporting infrastructure) which themselves create local environmental damage. The paved area of a large airport such as Heathrow is the equivalent of	
12	r (27%) of these SACs (or the SSSIs that make them up) have experienced loss or damage since 1991 [2]. Agriculture and development are leading causes of damage.	
13	"may lead to farmers using more herbicides...potentially resulting in increased damage to biodiversity." Furthermore, GM crops could cross with wild plant speci	
14	fe rt i l i t y, as well as ex t e rn a l costs in terms of property and road damage. Wh at we h ave n't p a i d fo r Fa rming subsidies have not been used	
15	ce more will leave the land leading to a loss of diversity on our farmed land, damage to rural economies and an increase in the distance our food travels. The	
16	panies who claim to be developing sustainable policies, are still causing major damage to the planet. The report will be published on www.foei.org on Friday 16t	
17	al advice to minimise the risk of cross-pollination? In the event of any health damage from GM food,liability might be faced by the GM company, the food manufac	
18	Humane Care Foundation Curaçao, in order to hold Shell liable for the massive damage that it has inflicted on the community. The vital habitats and natural	
19	disrespect that Shell has shown local residents, and the severe environmental damage that SAPREF has caused. During this meeting, Lord Oxburgh admitted that	
20	o stop current EPA negotiations, which could lead to widespread job losses and damage the livelihoods of poor people. EPAs must be replaced with an alternativ	

The grey shading highlights what aspects of the natural landscape the radical NGOs think are suffering some damage. The red shading highlights what the radical NGOs think is causing damage to some aspect of the natural landscape.

[1] Alkyphenols (APs), are non-halogenated chemicals manufactured almost exclusively to produce alkylphenol ethoxylates (APEs), a group of non-ionic surfactants. The most widely used APEs are ethoxylates of nonylphenol (NPEs) and, to a lesser extent, octylphenol (OPEs). Once released to the environment, APEs can degrade back to APs, which are persistent, bioaccumulative and toxic to aquatic life. GreenPeace UK, *Consuming Chemicals: Hazardous chemicals in house dust as an indicator of chemical exposure in the home*, http://www.greenpeace.org.uk/files/pdfs/migrated/MultimediaFiles/Live/FullReport/5679.pdf, (accessed 15th February 2008).

Table H.20: Green business – random twenty-line contextualised concordance report for DAMAGE

N	Concordance	
1	port 2000/01 67 NOX Oxides of nitrogen, which contribute to acid rain causing damage to vulnerable freshwater systems, forestry and buildings; also leads to	
2	he Group will: • Compete vigorously and in a lawful manner. • Not seek to damage the reputation of competitors, either directly or by implication or innue	
3	groundwater from the leakage of oil. Our strategy Our strategy is to minimise damage to biodiversity when we develop new projects or as part of our maintena	
4	used can cause other problems, such as urban pollution, acid rain and health damage. As Gro Harlem Brundtland wrote in the foreword to her famous report 15	
5	gannet as 'state of the art' for emission control. Our strategy is to minimise damage to biodiversity when we develop new projects or as part of our maintenan	
6	-based trading system. And we've committed ourselves to a world wide goal of no damage to the environment. Taking preventive action: Many of these initiatives	
7	ect cause of such health problems as stunted growth, mental retardation, brain damage, damaged eyesight, anaemia, still births and child mortality. Children	
8	sponse Effort Continues Thunder Horse Platform - Status Update BP Assessing Damage to Thunder Horse Platform in Gulf of Mexico More ARCO Provides $100,0	
9	ive of improving the reliability of supply for customers most vulnerable to the damage to power lines caused by falling trees. Our people are committed to achi	
10	endanger life, result in potentially severe environmental effects, cause major damage to the company's reputation and brand, and have large financial consequen	
11	afety Unit, as appropriate. ???Ensure all incidents, accidents, and property damage is reported to your Line Manager. ???Co-operate with their Managers in	
12	closed markets and artificial support for fuels which cause more environmental damage leading to outcomes which are sub-optimal. I'm convinced that if market	
13	this heavy dependency on coal, have been the cause of extensive environmental damage over the last two decades. Working in an innovative tri-sector partnersh	X
14	s worse. Sulphur dioxide is a major constituent of 'acid rain', associated with damage to the environment. Particulate matter The incomplete combustion of fo	
15	% reduction in minor accident consumption and a further 10% reduction in minor damage across all businesses 10% reduction in minor accident damage achieved in	
16	th this heavy dependency on coal have been the cause of extensive environmental damage and health problems over the last two decades. The speedy introduction of	X
17	from the retired community to keep watch over gas pipelines against third party damage. Stakeholders' expectations Shareholders and financial analysts are int	
18	visual impacts; • Prevent adverse surface and groundwater impacts; • Minimise damage to biodiversity and reduction in land capability; and • Progressively re	
19	transportation costs and the associated risks of accidents and environmental damage. Matuba Reclamation and Recycling Company (Pty) Limited, a scrap metal	
20	gised in a press statement and withdrew the trail the next day. The potential damage to the BBC's reputation initiated a review of the internal systems that	

The grey shading highlights what aspects of the natural landscape the green corporations think are suffering some damage. The two Xs indicate lines in which damage to some specific aspect of the natural landscape is referred to in the text. The red shading highlights what the green corporations think is causing damage to some aspect of the natural landscape.

Table H.21: The radical NGOs – random twenty-line contextualised concordance report for EFFECTS

N	Concordance	
1	erable to exposure to polluting chemicals. But we don't know what the long-term effects of these substances are, simply because there is hardly any information	
2	e followed up including the cocktail effect, long-term implications, cumulative effects and the impact on vulnerable groups, particularly babies and the elderly	
3	ng long-term, complex, indirect, low frequency and low magnitude effects. These effects are especially significant in agriculture - an industry which is of grea	
4	afety Directorates Wildlife Incident Investigation Scheme. But as direct toxic effects on birds decrease, evidence of impacts of pesticides on food chains grow	
5	d housing to leave France for Belgium, The Netherlands and Germany. "Knock-on effects were experienced in the immigrants home countries. Malians and Senegales	
6	of pollutants as implied by the results of the new studies, could produce any effects, let alone death, and felt that the epidemiological studies must be fla	
7	undant, undisputed, and world-wide population-level effects in wildlife". These effects have been widely documented in molluscs and include penis-bearing female	
8	and production of the ES. Ornithological assessment In the assessment of the effects of the proposed wind farm on birds, both aerial and boat-based survey me	
9	d more frequently in populations exposed repeatedly. Chronic neuropsychological effects have been seen in 4-9% of patients exposed in occupation-related use.	
10	rent British Energy decommissioning fund can cover long term costs through the effects of interest rate gains on the fund. ??The British Energy debacle is the	
11	t for injustices over larger areas and across the social spectrum - such as the effects of the Chernobyl accident,or from the unpredictable impacts of chemical	
12	of chemicals inadequately regulated, exposing consumers to potentially harmful effects. Greenpeace Executive Director Stephen Tindale said: "This is a sc	
13	effects of developments often have social outcomes, but the assessment of these effects remain rare in practice, and the social distribution of environmental ef	
14	mental impacts, including pollution and `disamenity' to the local area, such as effects on house prices. Recycling in contrast saves considerable quantities o	
15	instrument for incineration following a review of the environmental and health effects of all waste management and disposal options. This report is expected to	
16	"xenobiotic" compounds. Although present in low concentrations, the long term effects of continuing to The study found water pollution by both dilute and lan	
17	the grain's effects on subsequent generations, cumulative toxic effects and the effects on the health of sensitive consumers as required under EU food law [4]	
18	irnbaum & Staskal, 2004. 52 Birnbaum & Staskal, 2004. 53 Darnerud, P.O. Toxic effects of brominated flame retardants in man and in wildlife. Environ Int 2003	
19	tes, for example, that when preliminary risk assessments indicate unacceptable effects on health or the environment, companies shall not use the lack of full	
20	International Context 17 Association between lifestyle and exposure 20 Health effects 20 References 22 Appendix 1: Median and Maximum Chemical Concentration	Not counted

The grey shading highlights what aspects of the natural landscape the radical NGOs think are suffering negative effects. The red shading highlights what the radical NGOs think is causing the negative effects to some aspect of the natural landscape.

Table H.22: Green business – random twenty-line contextualised concordance report for EFFECTS

N	Concordance	
1	water to comply with consents, as a minimum; and • Monitor and minimise our effects on fish populations and the aquatic environment. Performance Review W	
2	b-standard ship could endanger life, result in potentially severe environmental effects, cause major damage to the company's reputation and brand, and have larg	
3	TED PARAMETERS Context Our businesses have social, environmental and economic effects on the regions and communities in which they operate. To ensure we con	
4	stic, cars, oil rigs, radioactive waste. Until the industrial revolution, these effects of human activities were local. Now, they are global. In the past two hu	
5	agement Policy Commitment Targets Objectives Reassessment Protocols Audits Effects Severn Trent Water Biffa Severn Trent Services Group Services Direct	Not counted
6	re partners (see page 28). We acknowledge the need for more disclosure of the effects of our policies, such as lending, and seek the right balance between t	
7	d scientific consensus that global climate change is occurring, the resulting effects on climate and ecosystems are difficult to predict. Other greenhouse g	
8	ly look for opportunities to enhance biodiversity as a result of restoring the effects of surface mining operations. PacifiCorp produces approximately 11 mill	
9	energy use? • Air quality and global climate change: How can we minimise the effects of the use of fossil fuels in our generation portfolio, as well as emis	
10	radiation to reach the earth's surface and this can cause adverse environmental effects and adverse health effects such as skin cancer, ageing of the skin, eye	
11	share responsibility with governments and citizens for minimising the damaging effects of human activity — pollution of land, water and air and the depletion o	
12	as well as other human systems. Historically, achieving an understanding of the effects of chemicals in the workplace has involved use of laboratory animals as	
13	testing approaches, support the development of improved environmental fate and effects models used for early assessment and improve the quality of our environm	
14	, surface water (rivers and streams) and drinking water. In addition, low level effects on aquatic organisms have been observed for specific APIs such as synthe	
15	Europe and the US. This concern often arises from lack of understanding of the effects that pharmaceutical residues in the environment may have, especially a	
16	matter (solid material suspended in the air) are the most visible atmospheric effects of mining activities. The building of roads and facilities, exploratory	
17	une 2000 report. This stated that if the UK is to avoid the potentially severe effects of global warming, reductions of greenhouse gas emissions need to be th	
18	rn for a 90 per cent tax credit. The scheme was designed to help mitigate the effects of landfill upon local communities and support moves to more sustainab	
19	cant rise in level 1 incidents, which have only minor impacts with short-term effects from a base of about 1,500 in 2001. This is the effect of better repor	
20	rained to prevent spills and have contingency plans in place to mitigate the effects of any spillage. Some drills use water to cool the drill bit and tran	

The grey shading highlights what aspects of the natural landscape the green corporations think are suffering negative effects. The red shading highlights what the green corporations think is causing the negative effects to some aspect of the natural landscape.

Table H.23: The radical NGOs – random twenty-line contextualised concordance report for IMPACTS

N	Concordance	
1	d more heavily to local and regional planning authorities. 15. Climate change impacts and adaptation The reality that climate change is already with us was a	
2	e way. It was beautiful. It is not now. (River of Life, Malawi) 1 Nyong, 2005. Impacts of climate change in the tropics: the African Experience. Mali Drought	
3	vantage of new opportunities, thus reducing their vulnerability to the harmful impacts of disturbance and change. See: http://www.shef.ac.uk/adaptive 52 IIED	
4	ecently multi-national corporations such as Shell have been reporting on social impacts. The social audit also has a track record in the voluntary sector - a	
5	dley Centre for Climate Prediction and Research (1999) Climate Change and its impacts: Stabilisation of CO2 in the atmosphere, published by The Department o	
6	t is to look at all the economic impacts of expenditure, not solely the direct impacts. 19 Here are two practical examples. A study of tourism in Tayside sho	
7	r, or government official – to measure how much your organisation or initiative impacts on the local economy. And more importantly, lm3 helps you work out wher	
8	the Treasury. There are a number of large negative financial and competitive impacts that nuclear exemption from the CCL would have: ?? It would impact on	
9	rocess. These checklists (on economic, environmental, social and distributional impacts) provide the same coverage as the Integrated Policy Appraisal tool previ	
10	ull Public Inquiry will allow a fuller examination of the adverse environmental impacts and claimed benefits of this controversial 6-lane road bridge between Th	
11	tifying ownership more difficult. This change will also have direct employment impacts. In order to examine the employment impacts of the sustainable transpor	
12	and mayonnaise, it is hard for customers to avoid even where they object to its impacts. The briefing also highlights the damaging impacts of shrimp productio	
13	the impending humanitarian disaster is not simply a result of the weather. The impacts of food shortages will be exacerbated by the situation on the ground. I	
14	tonnes of carbon dioxide into the atmosphere each year. . The terrifying impacts of climate change could be felt within the next 20 years. . In the	
15	s on trans-national corporations with respect to their social and environmental impacts in the text. Instead the document suggests that “voluntary agreements" w	
16	oss all developing countries, to help African countries adapt to the risks and impacts of climate change. The wider focus of the Commission’s report was welc	
17	ir country where it cannot meet their needs due to the scale of climate change impacts. Numerous poor countries already cannot afford to meet the basic needs	
18	g incidences of a number of non-infectious health problems, including adverse impacts on the immune system, the reproductive system, the nervous system as we	
19	resettlement". Yet the Bank refuses to accept responsibility for the continuing impacts of the projects it has backed and is actively considering investments in	
20	e, producing floods, droughts, sea level rises, storms and all their attendant impacts on human 180 Some Common Concerns 181 Imagining the AGT pipelines sy	Not counted

The grey shading highlights what aspects of the natural landscape the radical NGOs think are suffering some negative impacts. The red shading highlights what the radical NGOs think is causing the negative impacts to some aspect of the natural landscape.

Table H.24: Green business – random twenty-line contextualised concordance report for IMPACTS

N	Concordance	
1	e social, health and environmental impact assessments, including biodiversity impacts, in line with Shell guidance. They must also have plans to protect the	
2	to help find answers. Meanwhile, there are clear indicators of the potential impacts of mobile phones on society. Their popularity and success is based firm	
3	sult of this review improved the accuracy and consistency of the data and the impacts reported. For this reason, the 2001 baseline has been modified for cert	
4	al hazard evaluation and use of animals (cont.) Reporting our performance and impacts drives continuous improvement and communicates GSK's global EHS impact	
5	proving social performance Social performance is how well we manage disruptive impacts and generate benefits for communities where we operate. We have places	
6	ow we address issues such as raw materials sustainability and the environmental impacts of our manufacturing operations, as well as health and hygiene, through	
7	artnership with Shell Gabon and the Shell Foundation to reduce our operational impacts and protect biodiversity in the region All our operations must follow t	
8	m and aims at reducing the Severn Trent group's most significant environmental impacts. We have already exceeded Government targets for reducing leakage from	
9	ers and run the business; and our retail outlets. Review of our environmental impacts confirms that our most significant impacts are associated with our netw	
10	vices. (Describe and quantify where relevant). Our products have environmental impacts through litter resulting from improper disposal by consumers after consu	
11	, which can lead to impacts on fish populations. We seek to establish our true impacts in order to minimise harm and to positively enhance fish populations, w	
12	il sands (see www.shell.ca) • Working with others to better manage the social impacts of its global operations, for example in China (page 42), Nigeria (page	
13	gy companies therefore have an obligation to recognise and manage the potential impacts of our industry on national/local economies, communities and the environ	
14	d requires all areas of the business to manage environmental, health & safety impacts. 3 Environmental management 70 Each stage in the production, distrib	
15	. (See also Economic Indicators: EC10.) SO1 Description of policies to manage impacts on communities in areas affected by activities, as well as description	
16	ciency amongst tobacco farmers who require wood, while minimising biodiversity impacts. In this year's social reporting cycle, we have clarified and enhanced	
17	l management objectives and commitments in managing identified environmental impacts; • The National Water Act (No.36 of 1998) and Water Services Act (No.	
18	ns strategies at operations. • Improve management of our social and economic impacts on local communities. • Accelerate economic opportunities for those	
19	* water consumption * raw material consumption * transport * land use * impacts on biodiversity. Performance against indicative standard This ye	
20	ple We will ensure that environmental, social, economic, health and safety impacts associated with assets, products, processes and services are assessed an	

The grey shading highlights what aspects of the natural landscape the green corporations think are suffering some negative impacts. The red shading highlights what the green corporations think is causing the negative impacts to some aspect of the natural landscape.

Table H.25: The radical NGOs – random twenty-line contextualised concordance report for RISK

N	Concordance	
1	the need for tighter controls of such chemicals to ensure that we minimise our risk of exposure. However, the statistical analysis does identify the following	
2	5 times greater than for non-smokers. "Radon poses an easily reducible health risk to populations all over the world, but has not up to now received widesprea	
3	ed rape crops alone next spring in the name of science. These farm-scale trials risk irreversible genetic pollution of the environment and the contamination of	
4	erroneous assumption that pro-poor development automatically reduces disaster risk, so the development community already owns the problem. Competition • Tea	
5	ry, all companies except British Energy are ranked with respect to their carbon risk profile and performance. Rankings were based on: ??CO2 emissions per unit	Not counted
6	birds in relatively small groups – never more than 200 – this helps reduce the risk of feather pecking. “And if we do see feather peaking we’ll hang up some ca	
7	tner. By coming together they have combined their expertise and mitigated the risk of being over exposed. Figure 4: ACF Partnership/Structure SEnU NRU ACU*	
8	ost and least stable atmospheric conditions is:- The number of individuals at risk of exposure relates to the distance from the incidence and population densi	
9	ryngeal or lung cancer was found, nor was there evidence of increasing cancer risk with closer proximity to the incinerators. More recently, Elliott et al.13	
10	up most of these pollution episodes - disguising the health threat to those at risk from this kind of pollution. It is only when levels get really bad, as they	
11	at risk? The health of up to one in five people in the UK is particularly at risk from air pollution. These include young children, pregnant women, the elde	
12	associated with emissions to expensive option overall (Table 14). air and the risk of damage to human health”, omitting water and amenity impacts “because of	
13	ries, and is incre a s i n g . Men born with this defect are also at a higher risk for testicular and bre a s t cancer (Paulozzi, 1999). • Testicular cancer	
14	llow leachate to threaten groundwater and surface water; where gas may pose a risk to nearby buildings; where habitats may be destroyed; or where pests and t	
15	ntracts which make it difficult to increase their recycling rates, they run the risk of not meeting their statutory recycling targets. This could occur them a p	
16	that they have refused loans or used their financial influence to minimise the risk of serious environmental, social or ethical impacts from a potential or exi	
17	e value of IFI finance is much greater, as their involvement reduces political risk and encourages the flow of further private finance. In spite of overwhelm	
18	vironment and put the livelihoods of 1500 local fishermen and their families at risk. (Sawit Watch email posting 26/Jan/2000) The human cost The impact of	Port[2]
19	s not 'what comes out at the other end' but what goes on inside the gut. So the risk of a health problem arising from the transfer of GM genes, such as antibiot	
20	ter efficiency targets and be designed to avoid or cope with the rising flood risk from climate change. Further reading www.environmentagency. gov.uk/ sav	

The red shading highlights what the radical NGOs think is causing a risk. The grey shading highlights the consequences of that risk. The yellow shading highlights possible ways of managing the risk in order to reduce it.

[2] The Indonesian NGO network on oil palm, Sawit Watch, has published news of a *palm oil container port project* off the coast of West Kalimantan on Temajuk island. The project, which has already been sanctioned by the local governor, Aswin, will assist the massive development of oil palm plantations in Kalimantan. Sawit Watch says the development will destroy the island's unique environment and put the livelihoods of 1500 local fishermen and their families at risk. (Sawit Watch email posting 26/Jan/2000). Down to Earth, *Newsletter No. 44, February 2000*, http://dte.gn.apc.org/44PO.htm, (accessed 15th February 2008).

Table H.26: Green business – random twenty-line contextualised concordance report for RISK

N	Concordance	
1	cupiers, Land Securities continues to be heavily engaged in the conducting of risk assessments and audits across our investment and development portfolios as	
2	be involved in customer business to receive induction training. Staff in high-risk areas receive additional training, as well as annual reminders, to help th	
3	05/06. For example, at operating company level, we will use the results of this risk analysis to identify higher risk suppliers with which to conduct a more det	
4	tone of our risk management approach has been the update of the environmental risk review conducted by consultants, SustainAbility. This document helps to s	
5	xample thousands of our employees cannot start work without first conducting a risk assessment of the work area and receiving a safety document. Our safe syst	
6	s to protect the health and safety of our employees in a number of areas that risk assessment had identified as key. The progress made is reflected in our i	
7	risis management and business continuity. Increased management involvement in risk identification and control will be a key theme in 2004. • Scottish Courag	
8	dous substances introduced for use should be those that represent the lowest risk possible. MATERIALS CONTINUED Performance Indicator 2001 Performance (glo	
9	g and Supply have launched several tools to provide assistance with assessing risk and designing controls. These tools include guidelines, technical informat	
10	mers who want to continue smoking while also potentially reducing their health risk. There was no evidence that PREPs were more appealing to consumers wanting	
11	advisers who carry out independent checks on our management of environmental risk and our corporate governance of environmental issues. We have also estab	
12	for pursuing natural attenuation UK Division Maintain the Contaminated Land Risk Matrix and conduct further survey work at a minimum of two higher risk sit	
13	blic support the necessary funding for scientific research will be limited. The risk that without adequate funding there will be a migration of talent to places	
14	t for removal to the top of the footings there is less safety and environmental risk. The fishing obstruction remains, but that is the same for both the option	
15	as sector and other business unit risk management and compliance boards. The Risk Oversight and Compliance Council and boards assist in the identification a	Not counted
16	oduct if there is insufficient data or if we consider the risk to be high. Our risk assessments take into account both the inherent properties of chemicals (ha	
17	ypt – developed an innovative road safety campaign, with two aims: minimise the risk that IGH companies experience RTAs and reduce the number of RTAs in the Idk	
18	ncrease plant recoveries by approximately 3%. Ferrous Metals An environmental risk was identified at the phenol dam at the Highveld Steelworks in 1998. Both	
19	all high risk grid and primary transformer substation sites identified in our risk assessment. Chart 9.1 shows the oil loss figure from underground cables w	
20	e Environmental Performance 2000" study, managed by the Safety & Environmental Risk Management Rating Agency (SERM). Each company taking part was provided w	Not counted

The red shading highlights what the green corporations think is causing a risk. The grey shading highlights the consequences of that risk. The yellow shading highlights possible ways of managing the risk in order to reduce it.

Table H.27: The radical NGOs – random twenty-line contextualised concordance report for RISKS

N	Concordance	
1	s known about the long term effects on human health and the environment. The risks are enormous and the consequences potentially catastrophic, and yet t	
2	on, that right extends to protection against hazards as well as well as actual risks/harm, particularly at the ECHR/HRA level. 8 The Preamble to the CRC recog	
3	ections in the workplace already seek to avoid and minimise hazards as well as risks/harm including by requiring substitution of hazardous substances by nonhaz	
4	e We have the opportunity to meet the challenge of climate change without the risks of nuclear power or the unsolved and costly problems of radioactive waste	
5	, costs can be minimised; on the other hand, sharing of facilities creates new risks: The hazard of common Nuclear Reactor Hazards 51 cause failures is incre	
6	rnments placed more emphasis on helping vulnerable communities reduce disaster risks. 1 DFID (2004), Climate Change and Poverty: Making development resilient	
7	ion is granted, producers/users must take precautions in order to minimise the risks….Products containing particularly hazardous substances should not be auth	
8	ir government that it should do more to protect farmers and consumers from the risks of genetically modified crops. Now their efforts have borne fruit. GM agr	
9	ting that their products have gone through“extensive safety trials.”[2] Higher risks in developing countries Many GM foods show changes in composition to thei	
10	face a key objective. At the very least, trade policies should not increase the risks poor communities face. 2. The links between national and international f	
11	palm plantations will be introduced to Southeast Asia, with all the associated risks. This has already taken place in Costa Rica and Kenya where oil palm has	
12	king rotenone with Parkinson's symptoms and the possible (though extremely low) risks for farmers who apply rotenone. It has introduced further restrictions on	
13	of GM raise novel safety concerns. This chapter fails to establish the relative risks between GM, traditional plant breeding and more recent techniques and it f	
14	search by Oxfam in South Africa revealed how "Tesco loads many of the costs and risks of its fresh-produce business onto farmers, who are passing them on to wor	
15	These standards are augmented by detailed standards relating to each area where risks are perceived to exist. GM on trial 24 Preventing the contamination o	
16	was charged with espionage and revealing state secrets for his writings on the risks of radioactive pollution from Russia’s Northern Fleet. He was charged in	
17	cure for service inefficiencies. Private insurers tend to select the “best risks”, mainly young and healthy people and reject those with chronic illnes	Not counted
18	roy institutional memory. Villagers often have as good an understanding of the risks and challenges as scientists and officials, yet they are not listened to.	Not counted
19	advantage. Therefore, Syngenta and the US regulators are wrong to dismiss the risks of the use of ampicillin resistance genes in plants. The assumptions they	
20	er European nations and the US, we invest millions of pounds into reducing the risks associated with floods, earthquakes and droughts. Yet we spend very little	

The red shading highlights what the radical NGOs think is causing risks. The grey shading highlights the consequences of the risks. The yellow shading highlights possible ways of managing the risks in order to reduce them.

Table H.28: Green business – random twenty-line contextualised concordance report for RISKS

N	Concordance	
1	e strategic direction of the organisation, and manage environmental and social risks and opportunities 3.3 Major Board committees responsible for setting str	
2	ater business), hearing loss, occupational disease and stress. Although these risks are present, we have systems in place to ensure that they are well contr	
3	cross the site in 2003, with more to follow. Results include reduced ergonomic risks over the long term, cost savings, improved ways of working and waste reduc	
4	l risk assessment models. These models can then be used to identify potential risks of GSK pharmaceutical products entering the environment through patient u	
5	uirements. • Use treatment and disposal options that minimise the overall EHS risks and impacts on air, water and land. Read about our waste management, pa	
6	vides technical information and guidance and mitigate, control, and manage EHS risks. The team provides technical information and guidance and recommends to	
7	collection. The expected requirement that material, social and environmental risks must be reported publicly is an efficient way of ensuring that CR issues a	
8	oking 26 WHAT ARE THE ISSUES? Along with the pleasures of smoking come real risks of serious diseases and smoking can be difficult to quit. Governments th	
9	has adopted a holistic approach by clearly identifying all work-related health risks and taking proactive steps to manage and reduce them. The business has int	
10	levant authorities. We report on this topic in Product responsibility: Can the risks be reduced? www.bat.com/socialreport British American Tobacco p.l.c.'s F	
11	d Team Resilience Toolkit provides managers with tools to assess organisational risks to well being and develop action plans to address them. There is a group-w	
12	d safety in Egypt BG Egypt road safety Road traffic accidents pose a high risks to our operations and the local community in Idku on the Mediterranean coa	
13	if its products can harm people. But it's precisely because our products pose risks to health that we believe it's all the more important that they are manag	
14	keholders would like consumers to be better informed about the increased health risks associated with counterfeit products, and the links between counterfeit a	
15	are and maintenance for Natal Anthracite Colliery. The potential environmental risks associated with the closure of the Ingagane Colliery in KwaZulu-Natal wer	
16	approach to identifying tasks and associated hazards • Determination of the risks associated with the identified hazards • Defined risk/impact assessmen	
17	identification of hazards, quantification and elimination of the associated risks, followed by measurement and control. Ideally, hazards are engineered o	
18	representatives to an accidents prevention committee (CIPAmin) which discusses risks and makes recommendations for improvements. Some departments have their	
19	discussed and approved. * A project to further build our capability to assess risks, vulnerabilities and opportunities from an environmental perspective in ou	
20	on and relationships with Governments. It also requires the management of other risks, including the possibility of, and consequences of, disagreements with tax	

The red shading highlights what the green corporations think is causing risks. The grey shading highlights the consequences of the risks. The yellow shading highlights possible ways of managing the risks in order to reduce them.

Table H.29: The radical NGOs – random twenty-line contextualised concordance report for SAFETY

N	Concordance	
1	ontribute funds to independently-led research programmes aimed at ensuring the safety of synthetic chemicals for human health and the environment; ??establis	
2	were required… were not taken… Reviews of compliance with nuclear criticality safety limits at the Y-12 plant revealed that a wide spread level of non-compli	
3	nce with the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, where it states (page 7): “B-14 The	
4	peaceful use of nuclear technology/materials/energy; • encourage uniformity in safety across a range of nuclear activities – from reactor operation to waste t	
5	d vindicates the concerns that Friends of the Earth has expressed about nuclear safety for many years. It is clear that procedures to prevent a possible nuclear	
6	e sample. One lettuce sample contained inorganic bromide at levels 22 times the safety level [2] for young children. The Pesticides Safety Directorate stated th	
7	e people don't want to eat it. The Government must listen to the public and put safety first by refusing to allow GM crops to be commercially grown in the UK."	
8	. 1998. “Development and application of an in vitro intestinal tract model for safety evaluation of genetically modified foods” in Food Safety Evaluation of G	
9	ould be environmentally safe.Yet still there exists an ongoing lax attitude to safety standards and a serious hostility to whistleblowers.With the lessons of T	
10	. In defiance of more precautionary approaches, the corporate defence of the safety of transgenic crops is directly reminiscent of the tobacco and nuclear in	
11	es are living and working among their tobacco. With high levels of training and safety, the pesticides recommended and sold by Souza Cruz may not present a high	
12	change?" said Friends of the Earth campaigner, Hannah Griffiths. Health and safety, record profits BP's international health and safety record leaves a l	
13	The chemical industry suffers from a lack of public trust due to the absence of safety information about chemicals in everyday use – which also frustrates manu	
14	riorities are simulated only in crude terms. Some concerns such as health and safety, or the long term survival of the biosphere are hardly represented at	
15	nt more invested in sustainable transport measures, including public transport, safety schemes and improvements for walking and cycling. Paul Hamblin conclude	
16	; that governments were not expected to fulfil the function of providing social safety nets and social insurance, the very things that we take for granted, at l	
17	it will be business as usual with a greater focus on social sectors and better safety-nets to address the poverty element. Some NGOs are arguing that to allo	
18	It now makes some effort to consider the social impacts of its programmes, and safety net measures are incorporated into ESAF programmes. But still, too little	
19	recommends that “a more precautionary approach is taken, so as to safeguard the safety of the public.” “Government policy on exposure of bystanders and local	
20	Social development issues 15 3.4 Local employment 15 3.5 Compensation 16 3.6 Safety concerns 16 4. Project-affected Area West Of T’bilisi As Far As The Turk	

The red shading highlights what the radical NGOs think is the cause of the safety concern. The yellow shading highlights possible ways of managing the risks in order to reduce them.

Table H.30: Green business – random twenty-line contextualised concordance report for SAFETY

N	Concordance	
1	global policies on Accident Investigation and on the Management of Health and Safety Risks of Radio Frequency Fields for employees and the general public. In	
2	industry agreements. Unilever's worldwide standards of occupational health and safety are applied to our 62,000 employees and seasonal workers. The standards	
3	Shell companies have been committed to continuous improvement in their health, safety and environmental (HSE) performance for many years, and have policies, pr	
4	s. Biffa operational managers attend specialist in-house courses, hold regular safety meetings with workers and are issued with performance criteria against	
5	owed by those in the North West. We started off by carrying out a 'Health and Safety Climate Survey' to assess attitudes and provide us with a benchmark agai	
6	for the health and safety culture we wish to create and maintain. Health and safety management within S&N is built on a set of Group Standards which detail a	
7	nce. We place considerable emphasis on employee involvement in the health and safety decision-making process, as this is the best way of ensuring that system	
8	ty Standards that set out what we expect to achieve in each area of health and safety. These standards are used to provide regular assurance to the Board, th	
9	e Audit Committee so that they can review measures of environment, health and safety performance and track our progress toward meeting EHS targets. They als	
10	curately assess the safety and effectiveness of new medicines and monitor their safety after approval. Safety and efficacy information is provided to doctors th	
11	e issues * Workplace issues o Employee consultation o Employee health and safety o Equality and diversity o Rewarding employees o Training and devel	Not Counted
12	s been working with environmental management systems since 1997 and health and safety systems since 2001. Its distribution division achieved certification to	
13	North Slope and in Anchorage. These team discussions focus on how to heighten safety awareness and improve performance to prevent such tragic incidents in t	
14	ur industry and society because of the potentially serious impacts on health, safety and the environment. Oil released into the environment can contaminate	
15	." he explains. "And BP is very keen to promote issues like the environment and safety, so this is great way to combine the two." The information on this page	
16	s to the local contractor including purpose built training centre. Health and Safety Performance Improvement Karachaganak, Kazakhstan – Industry top quartile	
17	ough selection, retention, education, training and awareness in all aspects of safety, health and the environment. 3. Risk assessment: Identify, assess and pr	
18	e foundations for greater discipline in the way that we go about achieving our safety, health, environment and community goals, setting a framework for conti	
19	and training courses, the use of computer touch screens for access to critical safety and health information and enhanced risk management practices at the emp	
20	gement support for safety programmes • structured training regimes • regular safety audits • screening and training of contractors • clearly understood sa	

The red shading highlights what the green corporations think is the cause of the safety concern. The yellow shading highlights possible ways of managing the risks in order to reduce them.

Appendix I – The incorporation claim – the semantic field of the natural landscape

The material in this appendix supports section 7.2 of chapter seven. There, I seek to identify the semantic field of the natural landscape, within the keywords of green business and the radical NGOs. The object of study on which I base my interpretation, are the lists of the top 500 one-word 'keywords' (see section I.2), the top 100 two-word keywords (see section I.3) and the top 50 three-word keywords (see section I.4). In section I.1, I discuss the procedures by which I drew the boundaries for the semantic field of the natural landscape, and thereby selected or excluded words in the lists.

I.1 The semantic field of the natural landscape

The most important selection decision I have made, in this interpretation, is in deciding to make a distinction between two different natural landscapes. This interpretive move is a consequence of the very striking distinction I identified, in chapter six, between the radical NGOs' presentation of a 'fleshy' and 'fibrous' natural landscape, and the green business preference for a more abstract natural landscape of *environment, society, communities, land, air* and *water*. Following the suggestion made by this empirical observation, I have elected to shade those words which have a 'fleshy' or 'fibrous' reference in a bright shade of green. I also include within this category, references to the inorganic aspects of the natural landscape. Examples of this are AIR, LAND and WATER, and possibly other terms used to refer to them. They are neither 'fleshy' nor 'fibrous', but are nonetheless 'real' (I refrain from using the adjective *concrete*) aspects of the natural landscape. In contrast to this vocabulary, there is another group of words which do not refer to the natural landscape *per se* but, rather, to socially-constructed concepts of the natural landscape.[1] They are, in effect, labels for the way in which mankind understands some aspect of the natural landscape. Perhaps the best-known example of this semantic field is RESOURCE, which is a keyword in both the green business and the NGO corpus. Here, some aspect of the natural landscape is conceptualised as being a useful input to mankind's productive processes. Given that this word is used in the traditional liberal-productivist view of the natural landscape, it will have a long history of use within the discourse of business. Of more modern origin, will be other examples such as

[1] From my usage of the term *socially-constructed* it will be clear that the primary source of inspiration for this distinction is John Searle. Following his taxonomy of facts, I might instead have referred to the "brute" semantic field of the natural landscape and the "institutional" semantic field of the natural landscape, but the first label, in particular, carries the wrong connotations! See John Searle, *The Social Construction of Reality*, (London: Penguin Books, 1995).

BIODIVERSITY and HABITAT. Here, the 'fleshy/fibrous' natural landscape is conceptualised by social institutions in new ways, which often have the advantage of enabling mankind to understand it as a model, with some form of systematic arrangement. This is a feature of their usage which I discuss in greater depth in chapter seven. Although these words have their origin in the natural landscape, they are a stage removed from 'tooth and claw'. I think there is interpretive value in distinguishing them from the former group, so I have therefore shaded them with pale green.

I have further considered the three adjectives of the natural landscape: HUMAN, INDIGENOUS and NATURAL. In their grammatical role in texts they function as descriptors of a head noun and it has, therefore, been necessary to study the concordance lines in which they appear, in order to ascertain whether their usage is in units of meaning, which refer to the 'fleshy' and 'fibrous', or to the socially-constructed, natural landscape. My findings show, not surprisingly, that there is a mix of usages in all three cases but, also, very clear leanings towards one or the other landscape. In the 2,346-line green business concordance report on HUMAN, the most common head nouns which it describes are RIGHTS (1,421 lines), RESOURCES (229 lines), HEALTH (53 lines) and DEVELOPMENT (42 lines). These all point to the overwhelming use of HUMAN as part of a reference to a socially-constructed natural landscape. In the 10,651-line radical NGO concordance report on HUMAN, the three most common clusters, in which HUMAN describes a head noun, are HUMAN RIGHTS (5,645 lines), HUMAN HEALTH (1,058 lines) and HUMAN DEVELOPMENT (710 lines). Lower down the ranking, the radical NGOs make references to the 'fleshy' natural landscape, with such clusters as HUMAN BEINGS (109 lines), HUMAN BODY (76 lines), HUMAN NEEDS (65 lines), HUMAN LIFE (54 lines) and HUMAN BLOOD (53 lines). However, although there is clearly more focus on the 'fleshy' natural landscape among the concordance lines of the radical NGOs, than there is in the report for green business, the great majority of usages of HUMAN also refer to the socially-constructed natural landscape. HUMAN has, therefore, been classed in this latter semantic field.

In the 310-line green business concordance report on INDIGENOUS, the usage is very definitely to make reference to the 'fleshy' natural landscape. The most common relevant clusters are INDIGENOUS PEOPLES (47 lines) and INDIGENOUS PEOPLE (44 lines). There are also significant usages of INDIGENOUS TREES, INDIGENOUS DISEASE and INDIGENOUS SPECIES. The significant usages which refer to the socially-constructed landscape, are INDIGENOUS COMMUNITIES (27 lines), INDIGENOUS RIGHTS (8 lines)

and INDIGENOUS COMMUNITY (8 lines). But, overall, the ratio of 'fleshy' and 'fibrous' to socially-constructed references, is over three to one. In the 3,000-line radical NGO concordance report on INDIGENOUS, the ratio of references is about four to one, also in favour of the 'fleshy' and 'fibrous' natural landscape. The radical NGOs use the same references to the socially-constructed landscape: INDIGENOUS COMMUNITIES (313 lines), INDIGENOUS RIGHTS (76 lines) and INDIGENOUS COMMUNITY (52 lines). But these are very much outweighed by such clusters as INDIGENOUS PEOPLES (1,218 lines) and INDIGENOUS PEOPLE (350 lines). Other head nouns are GROUPS, WOMEN, LANDS, POPULATION, PEOPLE'S, LAND, KNOWLEDGE, FOREST and RESERVES. I have, therefore, placed INDIGENOUS in the former, bright green, semantic field.

In the 1,793-line concordance report for green business on NATURAL, the overwhelming usage is to represent the socially-constructed landscape. The major usages are NATURAL GAS (840 lines), NATURAL RESOURCES (237 lines) and NATURAL ENVIRONMENT (110 lines). There are two clusters which refer to the 'fleshy' and 'fibrous' natural landscape: NATURAL WORLD (42 lines) and NATURAL HERITAGE (32 lines). But the overall weighting is about seventeen to one, in favour of the socially-constructed landscape. The picture is not as one-sided in the concordance report of the radical NGOs; about four to one, in favour of references to the socially-constructed natural landscape, but still a very clear majority. The first five usages: NATURAL RESOURCES (1,258 lines), NATURAL RESOURCE (300 lines), NATURAL GAS (262 lines), NATURAL HABITATS (212 lines) and NATURAL ENVIRONMENT (157 lines), are all references to the socially-constructed natural landscape. It is only lower down the list of clusters, that we find references to the 'fleshy' and 'fibrous' natural landscape, with NATURAL DISASTERS (147 lines), NATURAL FORESTS (138 lines), NATURAL BEAUTY (100 lines), NATURAL FOREST (88 lines), NATURAL WORLD (63 lines) and NATURAL HERITAGE (58 lines). I have, therefore, decided that NATURAL ought to be categorised as belonging to the semantic field of the socially-constructed natural landscape.

People are a part of the 'fleshy' and 'fibrous' natural landscape. I have chosen to include words such as FARMERS and WOMEN'S in this semantic field, because they refer to a role that certain human beings have. Following my comment above on adjectives, I have also shaded POOR and POOREST in bright green in the list of the radical NGOs, and I have included LAND as part of the semantic field of the 'fleshy' and 'fibrous' natural landscape. Randomised concordance line reports show that it is used almost always with reference to

physical land. The concordance lines also indicate, not surprisingly, that LAND is very often the object of human activity, but that does not disqualify it from inclusion. However, human activity in the natural landscape, and the physical evidence of that activity, is where I have chosen to draw the line around the semantic field. It is tempting to shade borderline words in different colours, because they do provide extra contextual information. But the extra shading also functions as a distraction from the main focus of my enquiry, so I limit myself to mentioning them here, and leave them unshaded in the tables which follow. In the green business list, there is little representation of business activity. Those that I have found are MINING (66th), MINE (86th), MINES (460th), and FORESTRY (480th). The first three clearly belong to the representation of how mining activity interacts with the natural landscape, and a check through the concordances confirms that most of the occurrences come from the websites of Anglo American or Rio Tinto. FORESTRY has 296 concordance lines which are derived from several different corporations, among them Scottish Power and Severn Trent Water. In the list of one-word 'keywords' for the radical NGOs, there are more words which represent human activity in the landscape. COMPOSTING (165th) is the only example about which I feel safe in suggesting that it is probably used with a commendatory intention. AGRICULTURE (60th), AGRICULTURAL (83rd), FARMING (94th), FORESTRY (95th), FARMS (225th) and FARM (306th) might all be used either to represent a 'natural' human activity in the landscape or an unwelcome intrusion. Then there is a smaller group of LOGGING (49th), MINE (351st), EXTRACTION (411th) and DEFORESTATION (412th), whose words clearly represent activities which cause damage to nature.

The words I have mentioned in the previous paragraph represent *activity in* the natural landscape. In the 'keywords' of the radical NGOs, there is also a small group of words which represent *changes to* that landscape. It is reasonably safe to claim that GMOS (Genetically Modified OrganismS - 251st), GENETIC (307th) and GMO (458th) are used, by the radical NGOs, in order to represent undesirable changes in the natural landscape.

Finally, there are some words which are ambiguous, such as the example of PLANT, which I take up in the introduction to chapter seven (see footnote 1). Here, my technique has been to run a concordance report for all the usages of the word within the appropriate corpus, and then to select twenty lines at random to study these for usage and meaning. Two other examples of ambiguous words, which I have examined in this way and rejected, are EARTH and EARTH'S, 18th and 127th in the one-word 'keyword' list of the radical NGOs. The evidence from the concordance report is that the overwhelming usage of the terms is to refer

to the radical NGO, Friends of the *Earth* (FoE). In the usage of the singular form, eighteen out of twenty concordance lines were references to FoE and, in the possessive form, the random selection generated twenty of twenty references, normally used as the reference to a spokesperson, e.g. "Friends of the *Earth's* Tony Juniper said…" Like PLANT, therefore, both EARTH and EARTH'S have been excluded from the semantic field.

At 422nd position in the green business ranking is SANDS, with 275 concordance lines. In these 275 lines, the two-word cluster of OIL SANDS occurs 191 times, and it refers to different projects to extract heavy tar oil from naturally occurring oil sands. In a further 75 lines, the cluster NAMAKWA SANDS occurs, a reference to Anglo American's mineral-extraction operation, on the Atlantic coast of South Africa. These two contexts, both treatments of the natural landscape as a resource for business activity, account for 266 of the 275 lines. So I decided that SANDS should not be included in the semantic field of the natural landscape. In 431st position in the green business ranking is COD, which has 233 concordance lines. About ten of these lines make reference to the fish species, all of them as part of Unilever's discourse on the importance of sustainable harvesting of fish. In the remaining 220+ lines, COD is used as an acronym for Chemical Oxygen Demand. This is a measure that is often made of liquid effluent, which is discharged to rivers and seas. The chemical oxygen demand, of the effluent, provides an indication of the extent to which it will remove oxygen, from the water which is being used as a sink. The greater the COD of the effluent, the greater will be the reduction of oxygen in the water around the discharge point, and the greater the consequent threat to either the freshwater or marine life, which is dependent on the dissolved oxygen for its survival. COD has, therefore, not been included in the semantic field of the natural landscape.

Another word whose meaning is ambiguous is GROWTH, which appears in 459th place in the list for green business and 132nd place for the radical NGOs. Concordance reports reveal that this word is mostly used with the meaning of an increase, often in an abstract phenomenon, such as rates or emissions. It was, therefore, excluded from the field and any subsequent analysis. GROWING appears in 476th position in the 'keywords' of green business. However, a randomised sample from its concordance report reveals that, in sixteen of twenty lines, its usage is metaphoric. It is used, for example, to describe a "growing consensus, energy demand, jobs and incomes." In only four of the lines, is it used to refer to organic growth and in all four lines the context is clearly British American Tobacco's texts on "tobacco growing." I have, therefore, decided that its usage in an organic sense is too limited

to qualify for inclusion. Finally, WIND appears in 478th position in the green business list and 296th in the radical NGOs' list. Concordance reports show that the vast majority of usages are in the context of wind power, as an example of renewable energy supplies, so this keyword has not been included in the semantic field of the natural.

I.2 Review of the top 500 one-word 'keywords'

Table I.1: Semantic field of the natural landscape - top 500 one-word 'keywords' of green business

1	ENVIRONMENTAL	26	TARGETS	51	COMPLIANCE	76	RISKS
2	BUSINESS	27	COMMUNITY	52	CARBON	77	INDICATORS
3	ENERGY	28	SITES	53	PROJECT	78	INDUSTRY
4	SUSTAINABLE	29	COMMUNITIES	54	CLIMATE	79	CONTRACTORS
5	EMISSIONS	30	IMPACTS	55	EFFICIENCY	80	HIV
6	EMPLOYEES	31	RESPONSIBILITY	56	ENSURE	81	CONSUMPTION
7	SAFETY	32	PRODUCTS	57	SOCIAL	82	CONSUMERS
8	MANAGEMENT	33	IMPACT	58	GREENHOUSE	83	INITIATIVE
9	WASTE	34	EHS	59	PROGRESS	84	ASSURANCE
10	PERFORMANCE	35	PRINCIPLES	60	DATA	85	ENGAGEMENT
11	ENVIRONMENT	36	BUSINESSES	61	INITIATIVES	86	MINE
12	BIODIVERSITY	37	CSR	62	REDUCE	87	STRATEGY
13	COMPANIES	38	RECYCLING	63	DEVELOPING	88	STEWARDSHIP
14	DEVELOPMENT	39	COMPANY	64	RENEWABLE	89	REDUCTION
15	GLOBAL	40	SUPPLIERS	65	LANDFILL	90	COUNTRIES
16	REPORT	41	PROGRAMMES	66	MINING	91	GOVERNMENTS
17	STAKEHOLDERS	42	CUSTOMERS	67	TOTAL	92	INVESTMENT
18	GROUP	43	PROGRAMME	68	REVIEW	93	CONSERVATION
19	CORPORATE	44	PROJECTS	69	DIALOGUE	94	INTERNATIONAL
20	OPERATIONS	45	KEY	70	GOVERNANCE	95	IMPROVEMENT
21	HEALTH	46	STAKEHOLDER	71	PARTNERSHIP	96	SUPPLY
22	REPORTING	47	EMPLOYEE	72	TARGET	97	RECYCLED
23	SUSTAINABILITY	48	SITE	73	DEVELOP	98	NGOS
24	ISSUES	49	ACTIVITIES	74	COMMITMENT	99	SYSTEMS
25	STANDARDS	50	LOCAL	75	IMPROVE	100	GENERATION
101	OPERATING	126	NOX	151	INCIDENTS	176	WORKING
102	SOCIALREPORT	127	OPERATIONAL	152	REGULATORY	177	ASSESSMENT
103	PROCESS	128	AIDS	153	DEVELOPED	178	AUDITS
104	CHALLENGES	129	INFORMATION	154	CONDUCT	179	ACCORDANCE
105	AREAS	130	MINIMISE	155	IMPLEMENTATION	180	TRANSPARENCY
106	INCLUDING	131	MANAGING	156	PRODUCT	181	IMPROVING
107	OPPORTUNITIES	132	SIGNIFICANT	157	CONTRIBUTE	182	BENEFITS
108	SUPPORT	133	PARTNERS	158	POLICIES	183	CONSULTATION
109	OCCUPATIONAL	134	PACKAGING	159	IMPLEMENT	184	FRAMEWORK
110	OPERATE	135	EXPLORATION	160	HYDROGEN	185	FEEDBACK
111	GUIDELINES	136	AUDIT	161	POLICY	186	METHANE
112	RENEWABLES	137	WORKPLACE	162	TRAINING	187	ANNUAL
113	QUALITY	138	POTENTIAL	163	VERIFICATION	188	COMMITMENTS
114	DIOXIDE	139	APPROACH	164	HABITAT	189	CR
115	HAZARDOUS	140	CONTINUE	165	PROVIDE	190	CONTRIBUTION
116	PROCESSES	141	EXAMPLE	166	PLANT	191	SERVICES
117	CERTIFICATION	142	ETHICAL	167	INFRASTRUCTURE	192	HABITATS
118	AWARENESS	143	REDUCING	168	MOBILE	193	ACHIEVE
119	RESOURCES	144	MONITORING	169	IMPROVEMENTS	194	EXECUTIVE
120	HSE	145	SOLAR	170	PRACTICES	195	MATERIALS
121	DIVERSITY	146	PARTNERSHIPS	171	ONGOING	196	RESOURCE
122	ADDITION	147	EXTERNAL	172	ACTION	197	AIM
123	RISK	148	PRODUCTION	173	OBJECTIVES	198	SMOKING
124	WASTEWATER	149	ORGANISATIONS	174	MARKETING	199	PROMOTE
125	RESPONSIBLE	150	FOCUS	175	COMMITTED	200	HUMAN

201	DELIVER	226	WORLDWIDE	251	DISPOSAL	276	INTEGRATED
202	EMISSION	227	PLANS	252	PROVIDING	277	SEWAGE
203	BELIEVE	228	ENCOURAGE	253	BASELINE	278	FORUM
204	WORLD'S	229	ORGANISATION	254	LEADERSHIP	279	EMPOWERMENT
205	ECONOMIC	230	CERTIFIED	255	MANAGERS	280	HELPING
206	MANAGE	231	TECHNOLOGY	256	ACHIEVED	281	ENHANCE
207	PROCEDURES	232	GENERATED	257	STATIONS	282	REGULATORS
208	SULPHUR	233	APPROPRIATE	258	IDENTIFY	283	RESPONSIBILITIES
209	SOLUTIONS	234	NATURAL	259	EMS	284	ADDRESS
210	RIGHTS	235	NGO	260	ENVIRONMENTALLY	285	RETAIL
211	REFINERY	236	ENSURING	261	IMPLEMENTED	286	HEALTHCARE
212	INCLUDE	237	REQUIREMENTS	262	WILDLIFE	287	WORK
213	INTERNAL	238	WORLD	263	DIESEL	288	POWER
214	REVIEWED	239	ASSESSMENTS	264	PHONES	289	AWARDS
215	MANUFACTURING	240	DONATIONS	265	MEDICINES	290	GLOBALISATION
216	CUSTOMER	241	PREVENTION	266	INNOVATIVE	291	COMMERCIAL
217	YEAR	242	CHALLENGE	267	ACCIDENTS	292	CLEANER
218	CONCERNS	243	GLOBALLY	268	ENGAGE	293	LEVELS
219	FOSSIL	244	IMPROVED	269	CHEMICALS	294	RECOGNISE
220	MARKETS	245	ETHICS	270	WINDFARM	295	IMPLEMENTING
221	TECHNOLOGIES	246	EFFLUENT	271	MEET	296	EXCELLENCE
222	FUTURE	247	TRANSPORT	272	SLUDGE	297	RESEARCH
223	METALS	248	HYDRO	273	RESPONSIBLY	298	SUPPORTING
224	BRANDS	249	PLAN	274	WORKFORCE	299	BASED
225	FOUNDATION	250	GASES	275	TREATMENT	300	DELIVERING
301	BENCHMARKING	326	UNDERTAKEN	351	INDICATOR	376	SKILLS
302	ACCESS	327	SURVEY	352	FOCUSED	377	DISPOSED
303	FATALITIES	328	CONTRIBUTING	353	GROUP'S	378	MEASURES
304	PROCUREMENT	329	DECOMMISSIONING	354	APPROXIMATELY	379	ILLICIT
305	OVERALL	330	ECO	355	CONDUCTED	380	SMOKERS
306	CORE	331	RELATED	356	ASSESS	381	REPORTABLE
307	WASTES	332	PROVIDES	357	VEHICLES	382	RECYCLE
308	COMPANY'S	333	RELEVANT	358	TRADING	383	EXPECTATIONS
309	INCLUDES	334	INJURIES	359	CURRENTLY	384	STRIVE
310	SPILLS	335	STAFF	360	DISCHARGES	385	MALARIA
311	SOURCES	336	ADDRESSING	361	KILN	386	CREEK
312	INCREASE	337	PORTFOLIO	362	STRATEGIC	387	EMPLOYMENT
313	SEEK	338	MINIMISING	363	DISTRIBUTION	388	OBJECTIVE
314	ACHIEVING	339	FLARING	364	CONTRIBUTIONS	389	REPORTED
315	TERM	340	VALUES	365	ACTIONS	390	POSITIVE
316	LAND	341	TRUST	366	CONSISTENT	391	UNDERSTANDING
317	REUSE	342	SOCIETY	367	CONTINUOUS	392	OXIDES
318	CONSUMER	343	INVESTING	368	EFFICIENT	393	REHABILITATION
319	PIPELINE	344	MINIMISATION	369	VERIFIED	394	INNOVATION
320	EFFORTS	345	CHANGE	370	CEO	395	COMPLY
321	PART	346	MANAGED	371	MINERALS	396	MONITOR
322	INTEGRITY	347	EFFECTIVE	372	LEAKAGE	397	CONSTRUCTION
323	SUPPLIER	348	NEEDS	373	ASH	398	HELP
324	PRACTICE	349	ACTIVELY	374	JOINT	399	PARTICULATE
325	FACILITIES	350	SHAREHOLDERS	375	CHAIN	400	ENGAGING

401	SUPPORTS	426	CHARITABLE	451	VOLUNTEERING	476	GROWING
402	HANDSETS	427	UNDERAGE	452	BUILD	477	CYCLE
403	TESTING	428	INVESTMENTS	453	OZONE	478	WIND
404	POLLUTION	429	REFINERIES	454	COMPETITIVE	479	SUPPLIES
405	REDUCTIONS	430	CAPACITY	455	EXISTING	480	FORESTRY
406	REDUCED	431	COD	456	BENCHMARK	481	RELATIONSHIPS
407	IDENTIFIED	432	LEVEL	457	TAILINGS	482	PROTOCOL
408	SPECIES	433	FUND	458	INDIGENOUS	483	LIQUEFIED
409	MAJOR	434	BIOMASS	459	GROWTH	484	BRIBERY
410	CODE	435	VENTURES	460	MINES	485	SCOPE
411	CLEAN	436	REMEDIATION	461	CONTRACTOR	486	FURTHER
412	HSSE	437	REGULATIONS	462	SOX	487	TOOL
413	VOLUNTARY	438	COLLIERY	463	ROLE	488	DEMONSTRATE
414	SCENARIOS	439	PROMOTING	464	MAINTAIN	489	CREATE
415	LOCATIONS	440	LAUNCHED	465	BRAND	490	PROACTIVE
416	COMPLETED	441	MARKETPLACE	466	GENERATING	491	EXTRACTIVE
417	SECTOR	442	EQUIPMENT	467	ESTABLISH	492	HYDROCARBON
418	STANDARD	443	USAGE	468	NEW	493	SUPPORTED
419	CONJUNCTION	444	INVOLVEMENT	469	REVIEWS	494	CANS
420	AIMS	445	LARGEST	470	EQUIVALENT	495	SCHEME
421	DEPLETING	446	VALUE	471	VENTURE	496	SENIOR
422	SANDS	447	COMBUSTION	472	PRIORITY	497	PROTECTION
423	OPERATES	448	INDEPENDENT	473	DONATED	498	REUSED
424	AUDITING	449	SURVEYS	474	NETWORK	499	RESPECT
425	GUIDANCE	450	SHAREHOLDER	475	ENVIRONNEMENT	500	WETLANDS

Table I.2: The semantic field of the natural landscape in the top 500 one-word 'keywords' of the radical NGOs

1	COUNTRIES	26	RIGHTS	51	CHANGE	76	GATS
2	GM	27	FOOD	52	EXPORT	77	ORGANIC
3	ENVIRONMENTAL	28	IMPACT	53	LANDFILL	78	MEASURES
4	CLIMATE	29	REPORT	54	ECONOMIC	79	CORPORATE
5	WASTE	30	RECYCLING	55	TRANSPORT	80	ISSUES
6	GLOBAL	31	DEBT	56	INVESTMENT	81	LEVELS
7	TRADE	32	GOVERNMENTS	57	COMMUNITY	82	TARGETS
8	DEVELOPMENT	33	WORLD	58	NUCLEAR	83	AGRICULTURAL
9	INTERNATIONAL	34	CARBON	59	GOVERNMENT'S	84	WORLD'S
10	GOVERNMENT	35	INDUSTRY	60	AGRICULTURE	85	TRANSPARENCY
11	ENVIRONMENT	36	NGOS	61	REDUCTION	86	ORGANISATIONS
12	SUSTAINABLE	37	PIPELINE	62	INDIGENOUS	87	REGULATION
13	IMPACTS	38	POLICY	63	POOR	88	WILDLIFE
14	COMPANIES	39	MINING	64	RESOURCES	89	ILLEGAL
15	EMISSIONS	40	HUMAN	65	EXAMPLE	90	BRIEFING
16	DEVELOPING	41	FUEL	66	FORESTS	91	CONCERNS
17	LOCAL	42	POLLUTION	67	CAMPAIGNER	92	ENSURE
18	EARTH	43	SECTOR	68	SUBSIDIES	93	CONTAMINATION
19	CROPS	44	RENEWABLE	69	INCINERATION	94	FARMING
20	ENERGY	45	FOREST	70	PRODUCTS	95	FORESTRY
21	POVERTY	46	PROJECT	71	AID	96	LEAST
22	COMMUNITIES	47	LIBERALISATION	72	POLICIES	97	PESTICIDES
23	BANK	48	HEALTH	73	PROJECTS	98	BIODIVERSITY
24	FARMERS	49	LOGGING	74	SUSTAINABILITY	99	INDICATORS
25	CHEMICALS	50	PUBLIC	75	PRODUCTION	100	GLOBALISATION
101	INCINERATOR	126	HAZARDOUS	151	NATIONAL	176	SAFETY
102	CONSULTATION	127	EARTH'S	152	PROTECTION	177	POTENTIAL
103	LIVELIHOODS	128	STANDARDS	153	REVIEW	178	ADDITION
104	CORPORATIONS	129	ACTION	154	CAMPAIGN	179	SOCIAL
105	LAND	130	COSTS	155	PEOPLE	180	PESTICIDE
106	STRATEGY	131	SUPERMARKETS	156	PLANT	181	AFFECTED
107	REDUCE	132	GROWTH	157	PEOPLES	182	BUSINESSES
108	AREAS	133	COMMISSION	158	SECTORS	183	PLANNING
109	AGENCY	134	TOXIC	159	RESOURCE	184	EFFECTS
110	GOVERNANCE	135	GREENHOUSE	160	PROCESS	185	PIPELINES
111	POOREST	136	CAPACITY	161	CURRENTLY	186	ETHICAL
112	BENEFITS	137	PAPER	162	COMPANY	187	EXPORTS
113	NGO	138	ASSESSMENT	163	PARTICIPATION	188	INCREASE
114	FUELS	139	MARKETS	164	HERBICIDE	189	COMMITMENTS
115	PROTOCOL	140	DIOXIDE	165	COMPOSTING	190	AGENDA
116	SUPPORT	141	CONSUMERS	166	ECONOMY	191	COUNTRY
117	BANK'S	142	ACCESS	167	NATIONS	192	PULP
118	NEGOTIATIONS	143	AGREEMENTS	168	COMPLIANCE	193	PRODUCERS
119	STAKEHOLDERS	144	INFRASTRUCTURE	169	KEY	194	OFFSHORE
120	INCINERATORS	145	FUND	170	RURAL	195	EXTRACTIVE
121	GENETICALLY	146	PROTECT	171	MONITORING	196	SCALE
122	FOSSIL	147	INCLUDING	172	REGIONAL	197	IMPLEMENTATION
123	CROP	148	RENEWABLES	173	CURRENT	198	DIOXINS
124	WARMING	149	SITES	174	FUNDING	199	SUPPLIERS
125	FINANCIAL	150	PLANTATIONS	175	IMPORTS	200	CHEMICAL

201	DOMESTIC	226	WHALING	251	GMOS	276	RESEARCH
202	LOANS	227	MANAGEMENT	252	ORGANISATION	277	DAMAGE
203	AVIATION	228	WATER	253	INITIATIVE	278	BASED
204	PLUTONIUM	229	BIOTECH	254	STATES	279	TOTAL
205	PRIVATISATION	230	REGULATORY	255	TARIFF	280	CAMPAIGNS
206	MARKET	231	SERVICES	256	RECOMMENDATIONS	281	RADIOACTIVE
207	REFORM	232	ECONOMIES	257	REPROCESSING	282	ABUSES
208	RISKS	233	ALTERNATIVES	258	DONORS	283	DIOXIN
209	FRAMEWORK	234	CONTAMINATED	259	MORATORIUM	284	REDUCTIONS
210	FISHERIES	235	OPERATIONS	260	STAKEHOLDER	285	PRECAUTIONARY
211	TRAFFIC	236	ENTERPRISES	261	VIOLATIONS	286	TARGET
212	EXPOSURE	237	RECYCLED	262	CORRUPTION	287	DAM
213	AGREEMENT	238	CONFLICT	263	CONSERVATION	288	SOURCES
214	HABITATS	239	ECOLOGICAL	264	FUNDS	289	CREDIT
215	CAMPAIGNERS	240	PEOPLE'S	265	SECURITY	290	PROPOSED
216	MULTILATERAL	241	REGENERATION	266	INDUSTRIALISED	291	DISPOSAL
217	SEED	242	PHTHALATES	267	RETAILERS	292	GASES
218	RISK	243	IMPORT	268	SUBSTANCES	293	REVENUES
219	BUSINESS	244	PROCUREMENT	269	DIRECTIVE	294	CONSUMER
220	ENVIRONMENTALLY	245	COMPANY'S	270	UNSUSTAINABLE	295	FUTURE
221	PROMOTE	246	TARIFFS	271	INSTITUTIONS	296	WIND
222	PLANTATION	247	ACCOUNTABILITY	272	DUMPING	297	DISASTERS
223	MULTINATIONAL	248	REDUCING	273	FINANCING	298	SOIL
224	GROUPS	249	ECONOMICS	274	TECHNOLOGIES	299	REACTOR
225	FARMS	250	SIGNIFICANT	275	TRADING	300	INCREASED
301	CAMPAIGNING	326	ESTIMATED	351	MINE	376	LENDING
302	MAHOGANY	327	TODAY'S	352	CO	377	NEW
303	INITIATIVES	328	SOURCE	353	CONSUMPTION	378	ACCORDING
304	INDUSTRIES	329	VULNERABLE	354	SCHEMES	379	CANCELLATION
305	MILLENNIUM	330	TACKLE	355	THREAT	380	ROADS
306	FARM	331	UNDP	356	RICH	381	PLANS
307	GENETIC	332	EXISTING	357	COMMITMENT	382	CONDITIONALITY
308	FINANCE	333	PAYMENTS	358	AGENCIES	383	COMPOUNDS
309	INCLUDE	334	SUMMIT	359	DIVERSITY	384	LOAN
310	DEVELOPED	335	RULES	360	PROMOTING	385	COST
311	CIVIL	336	FOODS	361	RETARDANTS	386	WASTES
312	LOBBYING	337	NATURAL	362	AUTHORITIES	387	BEET
313	WHALES	338	FEED	363	PCBS	388	WITNESS
314	COMMERCIAL	339	PROPOSALS	364	PRICES	389	STRATEGIES
315	COUNTRY'S	340	LEGAL	365	DAMAGING	390	FOUNDATION
316	IMPLEMENT	341	INCOME	366	SUPPLY	391	REACTORS
317	POLLUTING	342	DESTRUCTION	367	NEEDS	392	PROTECTED
318	POWER	343	WHALE	368	INVESTORS	393	VOLUNTARY
319	PROPOSAL	344	CERTIFICATION	369	RESETTLEMENT	394	PARTICIPATORY
320	CSR	345	DISASTER	370	MODIFIED	395	ADJUSTMENT
321	COUNTRYSIDE	346	RAINFOREST	371	PROVIDE	396	LARGEST
322	BROMINATED	347	ACTIVITIES	372	SCENARIOS	397	ANNUAL
323	TRANSNATIONAL	348	ECOSYSTEMS	373	TRIALS	398	GREEN
324	SITE	349	DELIVER	374	JUBILEE	399	CONGESTION
325	REGULATIONS	350	INCREASING	375	RAPE	400	FLOODS

401	EFFICIENCY	426	NETWORK	451	GLOBALLY	476	SOUTH
402	RESIDUES	427	ADDRESS	452	TERM	477	LIBERIA
403	PHTHALATE	428	APPROACH	453	ENGINEERED	478	G
404	GROWING	429	TRANSPARENT	454	WOMEN'S	479	ACTIONAID
405	INFO	430	POLLUTANTS	455	RESPONSIBILITY	480	JUNIPER
406	MARINE	431	FORUM	456	CONSORTIUM	481	GEORGIA
407	DROUGHT	432	IMPROVE	457	INTERNATIONALLY	482	CASPIAN
408	INVESTMENTS	433	BIOTECHNOLOGY	458	GMO	483	WON'T
409	FLOWS	434	SCENARIO	459	MITIGATION	484	SULAWESI
410	VILLAGERS	435	BYPASS	460	SUPERMARKET	485	HOMEPAGE
411	EXTRACTION	436	PRACTICES	461	NEED	486	AVENTIS
412	DEFORESTATION	437	PRIVATE	462	CONSTRUCTION	487	IBAMA
413	PROGRAMMES	438	BELIEVES	463	ENSURING	488	BANGLADESH
414	CREDITS	439	CONCESSIONS	464	ACCORDANCE	489	GENEVA
415	CAPITAL	440	TOXICITY	465	MULTINATIONALS	490	ANNUM
416	EVALUATION	441	REGION	466	POULTRY	491	CPRE'S
417	VILLAS	442	ESTIMATES	467	FUNDED	492	EITI
418	REINDEER	443	TRIPS	468	UNDERMINE	493	DTI
419	MECHANISMS	444	RESERVES	469	RECYCLE	494	CANADA
420	BIOMASS	445	LABELLING	470	AFFORDABLE	495	KG
421	AVERAGE	446	LEAKS	471	GUIDELINES	496	FALCONE
422	LEGISLATION	447	LEVEL	472	MUNICIPAL	497	UNEP
423	ACCOUNTABLE	448	CALLING	473	MINISTERIAL	498	HSBC
424	COMPENSATION	449	TACKLING	474	FOEI|	499	MALAYSIA
425	SPECIES	450	PLANTS	475	URUGUAY	500	BP'S

I.3 Review of the top 100 two-word keywords

In my review of the top 100 two-word keywords, I have applied the same green shading protocol that I used for the top 500 one-word 'keywords'. Thus the words which received bright green shading, in the previous section, receive the same shading in these two lists and the words with pale green shading likewise.

In the top 100 two-word keywords for green business, the only new keyword, from a semantic point of view, is TOBACCO PRODUCTS, ranked 55th in the list. However, this is a consequence of inconsistency, on my part, in the process of editing the keyword lists. I described, in section 4.8.3 on page 162, how it was necessary to remove different categories of keywords from the 'raw' lists that Wordsmith generates, in order to produce edited lists that could be reasonably compared with each other. One of the categories of words that I decided it was necessary to remove, was the different products of the green corporations, e.g. MOBILE PHONES (Vodafone), PHARMACEUTICALS (GlaxoSmithKline) and TOBACCO (British American Tobacco). Clearly, in the editing process for the two-word keywords, I have either not been so clear on my guidelines for deletion, or I have not been rigorous enough in my work. A concordance check on TOBACCO PRODUCTS reveals that every single one, of its 296 occurrences, is from the web pages of British American Tobacco (BAT). This entry ought, therefore, to be ignored and we may observe that the two-word keyword list has not produced any semantically new keywords of the natural landscape.

In the two-word list for the radical NGOs, there are two new entrants which do not appear in the one-word list. However, they are closely related, semantically, to one-word 'keywords' and their appearance does not, therefore, suggest that there is a new, undiscovered subfield of the natural landscape. CHILD appears in the keyword CHILD LABOUR in 69th place, but this is clearly part of the radical NGOs' representation of the condition of the poor, which has already been represented by words such as INDIGENOUS, POOR, LIVELIHOODS, PEOPLES and WOMEN'S in the one-word list. Similarly, MAIZE makes its first appearance, in 36th place, in the keyword GM MAIZE. But this is, clearly, part of the discussion of genetic modification of crops which has been identified in the one-word list with words such as CROPS, FOOD, ORGANIC, CROP and RAPE.

Table I.3: The semantic field of the natural landscape in the top 100 two-word keywords of green business

1	SUSTAINABLE DEVELOPMENT	26	ENERGY USE
2	CLIMATE CHANGE	27	ENVIRONMENT REPORT
3	ENVIRONMENTAL PERFORMANCE	28	RENEWABLE ENERGY
4	CORPORATE RESPONSIBILITY	29	WASTE MANAGEMENT
5	ENVIRONMENTAL MANAGEMENT	30	ENVIRONMENTAL IMPACT
6	BUSINESS PRINCIPLES	31	HAZARDOUS WASTE
7	GREENHOUSE GAS	32	MANAGEMENT SYSTEM
8	ENERGY EFFICIENCY	33	CARBON DIOXIDE
9	SOCIAL RESPONSIBILITY	34	LONG TERM
10	GROUP COMPANIES	35	AIR QUALITY
11	HIV AIDS	36	ENVIRONMENT HEALTH
12	CORPORATE SOCIAL	37	ENVIRONMENTAL IMPACTS
13	BEST PRACTICE	38	SAFETY HEALTH
14	MANAGEMENT SYSTEMS	39	PERFORMANCE INDICATORS
15	NATURAL GAS	40	POWER SYSTEMS
16	RESPONSIBILITY REPORT	41	ACTION PLANS
17	HUMAN RIGHTS	42	BIODIVERSITY ACTION
18	GAS EMISSIONS	43	ENERGY CONSUMPTION
19	LOST TIME	44	SAFETY PERFORMANCE
20	HEALTH SAFETY	45	SOCIAL INVESTMENT
21	SUPPLY CHAIN	46	SOCIAL REPORT
22	OCCUPATIONAL HEALTH	47	WATER USE
23	ACTION PLAN	48	CHILD LABOUR
24	LOCAL COMMUNITIES	49	COMMUNITY INVESTMENT
25	OPERATING COMPANIES	50	SOCIAL PERFORMANCE
51	EMISSIONS TRADING	76	DEVELOPING WORLD
52	FOSSIL FUELS	77	WATER QUALITY
53	WATER CONSUMPTION	78	ENVIRONMENTAL SUSTAINABILITY
54	SOCIAL REPORTING	79	BUSINESS UNITS
55	TOBACCO PRODUCTS	80	PRODUCT STEWARDSHIP
56	GROUP WIDE	81	SUSTAINABILITY REPORT
57	TIME INJURY	82	WASTE WATER
58	GREENHOUSE GASES	83	INJURY FREQUENCY
59	CONTINUOUS IMPROVEMENT	84	PERFORMANCE DATA
60	NON HAZARDOUS	85	GLOBAL REPORTING
61	KEY PERFORMANCE	86	BUSINESS PARTNERS
62	GLOBAL COMPACT	87	DEVELOPING COUNTRIES
63	CORPORATE GOVERNANCE	88	FREQUENCY RATE
64	ENVIRONMENTAL REPORT	89	ANNUAL REPORT
65	SUSTAINABILITY REPORTING	90	WASTE SERVICES
66	BUSINESS CONDUCT	91	ILLICIT TRADE
67	SAFETY MANAGEMENT	92	GRI INDICATORS
68	CASE STUDY	93	TIME INJURIES
69	RISK MANAGEMENT	94	GREEN ENERGY
70	STAKEHOLDER ENGAGEMENT	95	REPORTING INITIATIVE
71	RISK ASSESSMENT	96	JOINT VENTURE
72	LOCAL COMMUNITY	97	POWER STATIONS
73	SOCIALLY RESPONSIBLE	98	ECONOMIC ENVIRONMENTAL
74	SOCIAL IMPACT	99	TREATMENT WORKS
75	ENERGY SUPPLIED	100	HIGH STANDARDS

Table I.4: The semantic field of the natural landscape in the top 100 two-word keywords of the radical NGOs

1	CLIMATE CHANGE	26	DEVELOPING COUNTRY
2	DEVELOPING COUNTRIES	27	ENVIRONMENTAL IMPACTS
3	HUMAN RIGHTS	28	FOSSIL FUEL
4	GM CROPS	29	ENVIRONMENTAL IMPACT
5	CIVIL SOCIETY	30	MARKET ACCESS
6	GLOBAL WARMING	31	BRIEFING PAPER
7	DEBT RELIEF	32	ENERGY EFFICIENCY
8	INDIGENOUS PEOPLES	33	INTERNATIONAL DEVELOPMENT
9	FOOD SECURITY	34	HUMAN DEVELOPMENT
10	LOCAL COMMUNITIES	35	KIMBERLEY PROCESS
11	LOCAL PEOPLE	36	GM MAIZE
12	GENETICALLY MODIFIED	37	INTELLECTUAL PROPERTY
13	CARBON DIOXIDE	38	DEBT CANCELLATION
14	GM FOOD	39	LONG TERM
15	HUMAN HEALTH	40	LOCAL ECONOMY
16	GREENHOUSE GAS	41	FARM SCALE
17	KYOTO PROTOCOL	42	CONFLICT DIAMONDS
18	NATURAL RESOURCES	43	INTERNATIONAL TRADE
19	DEVELOPED COUNTRIES	44	HIV AIDS
20	IMPACT ASSESSMENT	45	GM FOODS
21	INNER CITY	46	LEAST DEVELOPED
22	GM FREE	47	CREDIT UNIONS
23	FOSSIL FUELS	48	EXPORT SUBSIDIES
24	GAS EMISSIONS	49	EXTRACTIVE INDUSTRIES
25	ILLEGAL LOGGING	50	DEVELOPMENT GOALS
51	INDUSTRIALISED COUNTRIES	76	CARBON EMISSIONS
52	GLOBAL CLIMATE	77	EXPORT CREDIT
53	GREENHOUSE GASES	78	CAPACITY BUILDING
54	MUNICIPAL WASTE	79	CORPORATE RESPONSIBILITY
55	HAZARDOUS CHEMICALS	80	COMMUNITY BASED
56	FLAME RETARDANTS	81	ANIMAL FEED
57	GLOBAL ECONOMY	82	ENVIRONMENTAL DAMAGE
58	COMMUNITY DEVELOPMENT	83	FINANCIAL INSTITUTIONS
59	MILLENNIUM DEVELOPMENT	84	LANDFILL TAX
60	DIAMOND INDUSTRY	85	EMISSIONS TRADING
61	HEALTH IMPACTS	86	BROMINATED FLAME
62	DIOXIDE EMISSIONS	87	ACTION PLAN
63	GM CONTAMINATION	88	GM CROP
64	BRITISH ENERGY	89	CORPORATE ACCOUNTABILITY
65	LOCAL AUTHORITIES	90	ENVIRONMENTAL JUSTICE
66	FOREST SCHOOL	91	INTERNATIONAL FINANCIAL
67	DEVELOPING WORLD	92	AIR POLLUTION
68	HIPC INITIATIVE	93	ANCIENT FORESTS
69	CHILD LABOUR	94	EARTH SUMMIT
70	FREE TRADE	95	LANDFILL SITES
71	FOREST MANAGEMENT	96	GENETIC ENGINEERING
72	CORPORATE SOCIAL	97	AFFECTED COMMUNITIES
73	ENVIRONMENTAL PROTECTION	98	INTERNATIONAL COMMUNITY
74	GENETICALLY ENGINEERED	99	HEALTH EFFECTS
75	HOUSEHOLD WASTE	100	DEVELOPMENT REPORT

I.4 Review of the top 50 three-word keywords

Just as I have done in the lists of the top 100 two-word keywords, the pale green and bright green shadings have been applied to the words in the semantic fields of the socially-constructed natural landscape and the 'fleshy' and 'fibrous' natural landscape. In neither of the two lists is there evidence of a new subset of the semantic fields, which has not already been identified. However, these three-word keyword lists reveal the emergence of a new semantic field, which it is important to describe. The semantic field is most evident in the top 50 keywords of green business, shown below in table I.5, and I shall, therefore, make most reference to this list. However, there are also three examples in the list of the radical NGOs, shown in table I.6.

I have background shaded, in pink, nine terms which make a reference to some systematic way, of describing the effect which the productive landscapes of green business have on the natural landscape. The colour pink has been chosen with an intended logic. I use bright green to indicate the 'fleshy' and 'fibrous' natural landscape, and the pale green for its socially-constructed relation. In chapter six, I have used bright red shading in order to illustrate the specific 'concrete' cultural agents which inflict damage on the natural landscape. The evidence, from concordance reports, showed that the radical NGOs were particular about mentioning who or what these agents were, whereas green business usually omitted specific references, preferring generalisations such as "our impacts." I now introduce pink, a pale version of red, to make a colour parallel with the 'bright green – pale green' pairing, and suggest that these keywords are *socially-constructed* agents of damage to the natural landscape, just as BIODIVERSITY, HABITATS and HEALTH, are *socially-constructed* aspects of the natural landscape.

The empirical evidence, from the discourse of green business and the radical NGOs, is suggesting the emergence of two new linguistic landscapes. Out of the soil of the natural landscape, is growing our social-construction of its 'flesh' and its 'fibres'. Rising from the concrete foundations of the green corporations' productive landscapes, we can now see the social construction of the burdens of damage and exploitation, which they impose on the natural landscape.

Table I.5: The semantic field of the natural landscape in the top 50 three-word keywords of green business

1	HEALTH AND SAFETY	26	EMISSIONS TO AIR
2	ENVIRONMENTAL AND SOCIAL	27	GLOBAL WARMING POTENTIAL
3	CORPORATE SOCIAL RESPONSIBILITY	28	DOW JONES SUSTAINABILITY
4	GREENHOUSE GAS EMISSIONS	29	INJURY AND ILLNESS
5	CORPORATE RESPONSIBILITY REPORT	30	ENVIRONMENTAL SUSTAINABILITY REPORT
6	OIL AND GAS	31	ENVIRONMENTAL REPORT APPENDICES
7	ENVIRONMENTAL MANAGEMENT SYSTEMS	32	HABITAT ACTION PLAN
8	LOST TIME INJURY	33	LOCAL AIR QUALITY
9	BIODIVERSITY ACTION PLAN	34	CODE OF CONDUCT
10	ENVIRONMENTAL MANAGEMENT SYSTEM	35	EMISSIONS PER GWH
11	NON HAZARDOUS WASTE	36	BLACK ECONOMIC EMPOWERMENT
12	EXPLORATION AND PRODUCTION	37	INTERNATIONAL MARKETING STANDARDS
13	GLOBAL REPORTING INITIATIVE	38	CLIMATE CHANGE LEVY
14	GROUP OF COMPANIES	39	LAWS AND REGULATIONS
15	LOST TIME INJURIES	40	GOOD CORPORATE CONDUCT
16	EMPLOYEES AND CONTRACTORS	41	LIQUEFIED NATURAL GAS
17	ENVIRONMENTAL PERFORMANCE REPORT	42	ACROSS THE BUSINESS
18	KEY PERFORMANCE INDICATORS	43	CONTRACTORS AND SUPPLIERS
19	COUNCIL FOR SUSTAINABLE	44	EMISSIONS TRADING SCHEME
20	HEALTH AND ENVIRONMENT	45	OBJECTIVES AND TARGETS
21	INJURY FREQUENCY RATE	46	FIRED POWER STATIONS
22	CARBON DIOXIDE EMISSIONS	47	DISCHARGES TO WATER
23	CODE OF BUSINESS	48	LAND AND BIODIVERSITY
24	NON GOVERNMENTAL ORGANISATIONS	49	LONDON BENCHMARKING GROUP
25	BIODIVERSITY ACTION PLANS	50	ALL GROUP COMPANIES

Table I.6: The semantic field of the natural landscape in the top 50 three-word keywords of the radical NGOs

1	ENVIRONMENTAL AND SOCIAL	26	CLIMATE CHANGE LEVY
2	AROUND THE WORLD	27	EFFECTS OF CLIMATE
3	CARBON DIOXIDE EMISSIONS	28	COMMUNITY DEVELOPMENT CREDIT
4	AGREEMENT ON AGRICULTURE	29	AGREEMENT ON TRADE
5	CIVIL SOCIETY GROUPS	30	ENVIRONMENT AND HUMAN
6	CIVIL SOCIETY ORGANISATIONS	31	COMMISSION ON ENVIRONMENTAL
7	CORPORATE SOCIAL RESPONSIBILITY	32	ETHICAL TRADING INITIATIVE
8	DEPARTMENT FOR INTERNATIONAL	33	ENVIRONMENTAL AND HUMAN
9	BROMINATED FLAME RETARDANTS	34	ENERGY WHITE PAPER
10	ENVIRONMENTAL IMPACT ASSESSMENT	35	CLONE TOWN BRITAIN
11	CAPITAL ACCOUNT LIBERALISATION	36	CONVENTION ON CLIMATE
12	CONTRACTION AND CONVERGENCE	37	CODE OF PRACTICE
13	DANGEROUS CLIMATE CHANGE	38	AMOUNT OF WASTE
14	BRETTON WOODS PROJECT	39	EMISSIONS OF CARBON
15	EXTRACTIVE INDUSTRIES REVIEW	40	COMBAT CLIMATE CHANGE
16	COMMUNITY BASED ORGANISATIONS	41	EVALUATION OF COMPLIANCE
17	ACTION ON CLIMATE	42	DEVELOPMENT AND POVERTY
18	DEVELOPING COUNTRY GOVERNMENTS	43	DEVELOPMENT CREDIT UNIONS
19	EU MEMBER STATES	44	ENVIRONMENTAL CAMPAIGN GROUP
20	EXTENT OF COMPLIANCE	45	ENVIRONMENTAL JUSTICE IMPACT
21	EXPORT CREDIT AGENCIES	46	ENVIRONMENT AND DEVELOPMENT
22	COMMUNITY DEVELOPMENT FINANCE	47	ENVIRONMENTAL AND HEALTH
23	EMISSIONS TRADING SCHEME	48	EMISSIONS OF GREENHOUSE
24	CODE OF CONDUCT	49	CLIMATE CHANGE PROGRAMME
25	EXTREME WEATHER EVENTS	50	CONTROL ARMS CAMPAIGN

Appendix J – The incorporation claim – concern for the natural landscape

The material in this appendix supports section 7.4 of chapter seven.

J.1 The pronoun WE in two 'keyword' lists

In this section I have included two unedited 'keyword' lists, intended to show that the pronoun WE is used with very different levels of priority, by different green corporations. The possible reasons for this are suggested in section 7.4.1 on page 279. Whereas WE appears in 6th position in the Shell keyword list (see table J.1), it appears in 203rd position in the keyword list for Veolia Water UK (see table J.2).

Table J.1: The unedited 'keyword' list for Shell

N	Key word	Freq.
1	SHELL	4 910
2	ENERGY	2 151
3	SUSTAINABLE	1 217
4	OUR	3 708
5	GAS	1 647
6	**WE**	**4 530**
7	BUSINESS	1 798
8	COMPANIES	1 409
9	OIL	1 204
10	#	14 631
11	WWW	446
12	DEVELOPMENT	1 614

Table J.2: The unedited 'keyword' list for Veolia Water

N	Key word	Freq.
1	WATER	1 331
2	VEOLIA	462
3	VALLEYS	256
4	#	2 885
5	FOLKESTONE	157
6	DOVER	152
7	TENDRING	113
8	ENVIRONNEMENT	104
9	ENVIRONMENTAL	234
10	UK	283
11	SUSTAINABLE	108
12	COMPANIES	228
	(…)	
200	PROVIDE	54
201	GLOSSARY	10
202	ENHANCE	17
203	**WE**	**259**
204	SLUDGES	6
205	WORKFORCE	17
206	AND	1 778
207	COMPANY'S	5
208	SYSTEMS	47

J.2 Evidence of concern for the 'fleshy' and 'fibrous' natural landscape in the linguistic discourse of green business

In this section of the appendix, I present several twenty-line randomised concordance line reports. They are based on the small number of one-word 'keywords' which I have identified, within the linguistic discourse of green business, as referring to the 'fleshy' and 'fibrous' natural landscape. This material provides the first point of reference for section 7.4 on page 279. Before I move to these seven words, I present two concordance reports based on CARE and CONCERN, in an effort to sift out of the linguistic discourse of green business, whatever representations of care it may contain. Then, there are seven twenty-line randomised concordance reports, all of them based on the complete linguistic discourse of green business. Four of the reports are built around the single keywords: LAND, SPECIES, WILDLIFE and WETLANDS, which I identified as part of its very small semantic field of the 'fleshy' and 'fibrous' natural landscape. In the case of INDIGENOUS, the 5th and final word identified as referring predominantly to the 'fleshy' and 'fibrous' natural landscape, I have used a more refined procedure. I have examined the two-word clusters of its concordance report, looking for the appearance of INDIGENOUS, with a noun of the 'fleshy' and 'fibrous' natural landscape to its right. I have then run concordance reports on these two-word units of meaning, merged the files, and extracted a twenty-line randomised report from the overall merged file. As explained in section 7.4.1 on page 279, I have also included the results of a similar procedure for both HUMAN and NATURAL. The details of these procedures are provided in each of the sections, where I present the concordance reports.

The purpose of this object of study is to uncover a concern, on the part of green business for the natural landscape. In order to make the interpretation more accurate, and to reduce the number of occasions on which it is necessary to refer back to the original document for more contextual information, I have increased the amount of text, which Wordsmith saves in each concordance line, to 360 characters. The occurrence of the node word is in the middle of this longer line and has been highlighted in bold typeface.

J.2.1 Green business – all 23 lines on CARE ABOUT*

There are just 23 concordance lines from the linguistic discourse of green business, in which the character strings CARE ABOUT or CARES ABOUT appear. Wordsmith is capable of searching for all possible endings of CARE, by using the suffix '*' in the search instructions. This procedure also included four occurrences of CAREFUL ABOUT in the report – 27 lines in total. Since this carries a different meaning from the other two strings, I excluded them from the report and, as this left just 23 lines, I examined them all, rather than picking out a random twenty.

The 23 lines are dominated by two categories of usage. The first category contains references to organisations, other than the green corporations, who care about something. They account for eleven lines (1, 2, 5, 6, 10, 11, 12, 13, 14, 18 and 21) and, of this group of other agents, six are the general agent of *anyone* as in "anyone who **cares about**" (see, for example, line 10). The other category is the green corporations, with ten of the 23 lines (3, 7, 8, 15, 16, 17, 19, 20, 22 and 23). As this is the group in which we are particularly interested, I shall discuss the lines in rather more detail. Concordance lines 15, 16 and 17 are all based on the same text, a speech in which the rhetorical technique of saying things in threes has been utilised by the speaker, in order to provide emphasis: "If you live for the long term, you **care about** the relationships you are building, you **care about** the impact of your activity, and you **care about** the health of the society in which you operate." In this text the agent is the universal *you*, but the speaker is trying to make a parallel, between the organisation which he represents, and every decent human being – the implication is that the organisation must also **care about** these three things, all of which belong to the socially-constructed landscapes which I have identified. For this reason, I have categorised the agent as being a green corporation. In another four of the lines (7, 8, 20 and 23), the corporation cares about its own employees either directly, or expressed in terms of their human rights. Here, then, are the first 'fleshy' recipients of care by the green corporations. The recipients of corporate caring, in the final three lines in this category, are biodiversity (line 3 – following Shell's intended interpretation of its own rhetorical question), Mozambique (line 19) and rural communities (line 22), all three social-constructions.

Table J.3: Green business – concordance report for CARE* ABOUT

N	Concordance

1	it encompasses our brands, our culture and our commitments to society and the environment, uniting what we do as a business with the people who use our products and what they **care about**. We have updated our longstanding Corporate Purpose to include this new Vitality mission. Extract from our Corporate Purpose Welcome to the Unilever Environmental R
2	it encompasses our brands, our culture and our commitments to society and the environment, uniting what we do as a business with the people who use our products and what they **care about**. We have updated our longstanding Corporate Purpose to include this new Vitality mission. Extract from our Corporate Purpose “Unilever’s mission is to add Vitality
3	Why should Shell **care about** biodiversity? printable version Protecting biodiversity is crucial to the future of our operations. In addition to legal and regulatory requirements, there are st
4	esults are posted on BiffaNet and covered in BiffaBuzz. n Actions are taken and communicated. Impressions – Strengths The work itself Responses suggested that Biffa employees **care about** what they do, and feel that they and the company fulfil an important role. Management empathy Feedback on management quality was good, albeit tempered by concerns o
5	record a commitment to biodiversity conservation and the integration of biodiversity considerations into our business activities. I commend it to all of our staff and those who **care about** safeguarding our environment. Martin Bettington Managing Director – Biffa Waste Services Ltd The next step introduction We have outlined our commitment to the Biodi
6	ly record a commitment to biodiversity conservation and the integration of biodiversity considerations into our business activities. I commend it to all of our staff and those who **care about** safeguarding our environment. Chief Executive – Biffa Waste Services Middlemarch Environmental Ltd. Page 5 Biffa Waste Services Biodiversity Action Plan RT-MME-117
7	e, or job applicant, regardless of age, gender, disability, marital status, sexual orientation, religion, race, colour, creed, ethnic origin or national origin. HUMAN RIGHTSWe care **about** human rights in our workplaces, and we will strive to meet the designated requirements. Company profile and business principles We have been at the forefront of the
8	, marital status, sexual orientation, religion, race, colour, creed, ethnic origin or national origin. Equal Opportunities Policy 22 November 2004 0.08Mb Human rights We **care about** human rights in our workplaces, and we will strive to meet the designated requirements. irements.
9	tory Animal Care. Ultimately the welfare of our animals depends on the individuals who handle them on a day-to-day basis. These people - veterinarians, scientists, technicians - **care about** the well-being of animals just as other people do. Many of them have chosen their work precisely because they love animals. Our policy on animal care and use states that
10	s that government and business share essentially similar goals when it comes to development. A World Bank study of global poverty earlier this year put it like this: "Anyone who **cares about** the poor should favour the growth-enhancing policies of good rule of law, fiscal discipline and openness to international trade." It was this report which showed that
11	ome circles globalisation is much abused and regarded as the source of every problem we face. Globalisation is a complex and incomplete process but I don't think that anyone who **cares about** the environment could seriously regard its impact as negative. Quite the reverse. Most of the advances I've talked about flow from the spread of knowledge which is
12	ome circles globalisation is much abused and regarded as the source of every problem we face. Globalisation is a complex and incomplete process but I don't think that anyone who **cares about** the environment could seriously regard its impact as negative. Quite the reverse. Most of the advances I've talk about flow from the spread of knowledge which is th
13	able institutions. That is why institutions like this are so important. Now I know that it is fashionable in some places to say US doesn't care about these issues, and doesn't **care about** the environment. I've never found that to be the case. Of course, there are many different views but I think there is a very widespread and powerful belief in this cou
14	and at a very small number of comparable institutions. That is why institutions like this are so important. Now I know that it is fashionable in some places to say US doesn't **care about** these issues, and doesn't care about the environment. I've never found that to be the case. Of course, there are many different views but I think there is a very wides
15	an individual, for a school, for a company. If you live for the long term, you care about the relationships you are building, you care about the impact of your activity, and you **care about** the health of the society in which you operate. Because in all those cases if you didn't care, and didn't act on the basis of that care, the world in which you were work
16	ng term, you think differently. That is true for an individual, for a school, for a company. If you live for the long term, you care about the relationships you are building, you **care about** the impact of your activity, and you care about the health of the society in which you operate. Because in all those cases if you didn't care, and didn't act on the basi
17	a long-term relationship. If you live for the long term, you think differently. That is true for an individual, for a school, for a company. If you live for the long term, you **care about** the relationships you are building, you care about the impact of your activity, and you care about the health of the society in which you operate. Because in all those c
18	r the entire solution. An effective system, gradually extended, is the equitable answer. All in all then, I believe there is a case for cautious optimism. I know many people who **care about** this issue are dismayed by the fact that the Kyoto agreement has never been ratified. I understand that disappointment but I still believe that the whole process is a v
19	d, "We are very pleased to be working with USAID on this important effort to help the people of Mozambique in this time of great need. We believe it is important for all of us who **care about** Mozambique, including the private sector, to lend their assistance." The USAID Director in Mozambique, Cynthia Rozell added, "It is important to focus resources towards
20	ture of awareness backed up by regular training, risk assessment and reporting. Moreover managers at all levels are held accountable for ensuring goals are met. For a company that

	cares about its employees, no job is so important that it cannot be done safely, Al Mazmi maintains. BP insists that all its contractors comply the same rigorous safety standards
21	itted to provide this lower-sulfur gasoline year-round in its Clean Cities. Q: Why doesn't BP offer cleaner fuels in all three grades of gasoline, aren't you forcing people who **care about** clean air to pay more (ie, buy premium)? A: Currently this lower-sulfur feature is available in our premium gasoline, Amoco Ultimate. Premium gasoline undergoes more re
22	municipality raised an average of R8000 towards the purchase of science equipment and other school materials. BP in South Africa is now acquiring a reputation as a company that **cares about** rural communities and tries to make a difference. To date, BP employees have raised around R15,000 and BP matched this with R14,725, for schools in rural areas and furt
23	ith others in our industry keen to roll out similar initiatives. It has also sent out a powerful and positive message about our commitment to be a responsible business that really **cares about** its employees and its customers. The information on this page forms part of the information reviewed and reported on by Ernst & Young as part of BP's 2004 sustainabil

J.2.2 Green business – randomly-generated twenty-line concordance report for CARE FOR*

There are 89 concordance lines based on CARE FOR, CARES FOR or CARED FOR, in the linguistic discourse of green business. Below, I present a randomly-selected extract of twenty lines. From a first reading, it quickly became clear that there were very few lines, in which the green corporation was represented as caring for something. Rather, the general tendency is that the green corporation provides financial support to an agent who administers the care. I have, therefore, grouped these primary and secondary representations of caring for something, together. They comprise fifteen lines (2, 4, 6, 7, 8, 9, 12, 13, 14, 15, 16, 17, 18, 19 and 20) and I shall now break the group down into different sub-groups, according to the recipient of the caring. In nine of these lines, the recipient of care is people in difficulties: AIDS victims, both terminally ill and orphaned children, handicapped people and the elderly. From the context, my impression is that the majority of these cases come from Africa, and concern the communities serving the productive landscapes of green corporations such as Anglo American, Shell, BP and Rio Tinto. In most of the representations there is an agent, such as a home or hospice, acting with the support of a green corporation. There are two lines (7 and 19), in which a corporation represents *itself* as caring for "the environment." Finally, there is one single representation (line 2), in which the recipient of care is non-human and very much a part of the 'fleshy' and 'fibrous' natural landscape. Here, we can read an extract from a Unilever report, in which a Rotterdam zoo cares for some threatened seahorses, which are looked after in an aquarium, in the entrance of Unilever's Dutch headquarters.

Table J.4: Green business – concordance report for CARE* FOR

N	Concordance
1	rom increased gut infections arising in the home environment. Such infection risks are heightened by the trend for more people, particularly the elderly and very young, to be **cared for** in the home. Across the world, Unilever markets a wide range of products that play a role in improving personal and home hygiene – primary barriers against infection
2	hem. Seahorses can have as many as 1,500 babies at a time – and uniquely, it's the males that get pregnant and deliver the young. They're on display to employees and visitors, and **cared for** by the zoo. The project aims to help conserve the Cape seahorse, a species found only in three estuaries along the coast of South Africa, and the most endangered sea hor
3	we want and not worry about the rest. It may have been true with ten thousand people around. But with 8 billion the argument is less persuasive. For me personally, I do not **care for** the economic arguments. They are useful to persuade cynics. But I align myself with the philosophers, biologists, poets: with sheer wonder at the miracle of life.
4	on. The HIV/AIDS pandemic also affects our employees and customers. We take the issue extremely seriously, and are taking steps to protect our employees from the disease, to **care for** those who are infected, and to work with others to fight the spread of AIDS. Please visit HIV/AIDS for more information. We continue to support efforts to help
5	in India In drought-stricken India, villagers are tempted to cut down trees in a desperate search for wood for their stoves. As a result of Land Securities' involvement with **Care for** the Wild, and its first environment day, it has donated £1,200 to villages for them to construct bio-gas tanks. Bio-gas consists mostly of methane and is formed when

6	We work with medical organisations to develop and sponsor continuing medical education for doctors and other healthcare professionals such as accredited training courses in asthma **care for** nurses. We partner with healthcare professionals to design and conduct clinical trials and research projects. Research results, including those from our clinical tri
7	oyment. South Wales, UK - Llanwern & Port Talbot Corus Strip Products UK is an integral part of its local communities. We are involved in them, support them, and help **care for** their environments. Our involvement ranges from discussion with people about local issues to working closely with Local Authorities to improve the quality of life in th
8	um and the Channel Tunnel Rail Link. Case study Recycling in action Corporate responsibility report 5 Everyone in Corus is responsible for sharing good practice. How do we **care for** our people? We are proud of our international workforce and their well-being is a high priority. We are continuing to improve our health and safety performance and, d
9	reports confirm mounting evidence of a human effect on the climate. But even if this were not so, I'm sure that our customers and shareholders would expect us to take increasing **care for** this whole area, and to adopt at the very least 'precautionary action'. We are expected to demonstrate that companies like my own are capable of finding 'innovative poli
10	BP and employees also donated $360,000 towards relief after the hurricanes that hit Florida and Trinidad and Tobago. BP donated $30,000 via the British Red Cross to provide **care for** those affected by the terrorist attack at Beslan, Russia, in September 2004. We subsequently donated $250,000 to the Charities Aid Foundation in Russia to create a fund to
11	s employees also donated $360,000 towards hurricane relief after the hurricanes that hit Florida and Trinidad and Tobago. BP donated $30,000 via the British Red Cross to provide **care for** those affected by the terrorist attack at Beslan, North Ossetia, in September 2004. BP later created a fund of $250,000 to support organizations providing psychological he
12	voluntary HIV/AIDS counselling and testing programmes, wellness and treatment programmes for HIV-positive people, home-based care programmes, care of HIV/AIDS orphans and hospice **care for** the terminally ill Peer education projects, Southern Africa Several sex worker peer education programmes supported by Anglo American represent outstanding examples of wh
13	Training of community care workers ??Healthcare awareness, training, support and projects ??Organisations catering for the social and economic integration, training, support and **care for** the physically and mentally challenged The Anglo Chairman's Fund supports organisations with a record of successful accomplishments in community care and organisations
14	an excellent service to the community in areas surrounding the city such as Motherwell, Gelvandale, New Brighton, Kwanobuhle, Uitenhage and Humansdorp. In addition to providing **care for** terminally ill patients, the Hospice has been in the forefront of developing the Integrated Community Home Care Service programme – a model for the care of AIDS suffere
15	was formed by the community in 1990, and caters for 384 residents between 3 and 50 years old. It comprises a section for the profoundly handicapped, which provides residential **care for** one hundred children and sixty five adults, the Takalani Special School that caters for 288 learners, and a workshop that employs 200 workers. The Anglo Chairman's Fun
16	Anglo Chairman's Fund Review 2003 8 WELFARE SECTOR 9 The Anglo Chairman's Fund Review 2003 Initiatives in the welfare sector include: ??Organisations and projects providing **care for** the elderly, disabled and abandoned children ??Feeding schemes for the homeless ??Institutions providing care and skills training to street children and youth at risk
17	lying areas. In this 'win-win' situation a school gains perimeter fencing at an affordable price which in turn creates four profitable jobs in the community. Siyabonga Shelter **cares for** abandoned street-children Experiments displayed in the Science and Technology Centre's Hall of Industries Members of the Ukhanyiso Forum sewing project roject
18	tinues to support local charities and welfare organisations by means of small donations and fund raising events. The emphasis for support in this regard is mainly directed at **care for** the aged, disabled and the poor. Company spend and budgets The following contributions were made during 2002: Direct Monetary Contributions Education and Youth Deve
19	. Values – Our Guiding Principles • Excellence in all we do. • We live the Anglo American principles of good citizenship. • We expect and recognise superior performance. • We **care for** the environment. • We utilise our resources in a responsible and sustainable manner. • Diversity is a strength and we embrace transformation. • We will not compromise h
20	arger grants were care and hospice facilities at the Tapologo Project in Rustenburg, the National Association of Child Care Workers for an innovative project piloting community **care for** AIDS orphans in Limpopo Province and the Cape Town-based Caring Network that trains and supports care-givers for people with AIDS. In the coming year, the Fund will revi

J.2.3 Green business – randomly-generated twenty-line concordance report for CONCERN ABOUT*

In the linguistic discourse of green business, there are 278 concordance lines based on CONCERN ABOUT, CONCERNS ABOUT and CONCERNED ABOUT. The evidence, from this twenty-line random report, is that green business very, very rarely expresses *its own* concern about something happening, or the threat of something happening, to the natural landscape. In nineteen of the twenty concordance lines, in table J.5 below, the concern originates in the minds of other agents – customers, stakeholders etc. It is represented by the green corporation in order first, to show that it takes the concern seriously and, second, to show how it is responding to the concern. Line thirteen is the exception to this rule. It comes from E-On's *2002 Environmental Report: How we're doing*, and here we can read that E-On are "**concerned about** the effects of work on health and the effects of health on work."[1] From my reading, I have the impression that this issue is a very common example of green business concern about its effects on the natural landscape. Occupational health responsibilities are often bundled in with environmental issues, for management purposes, hence the ubiquity of the acronym EHS (Environment, Health & Safety) or some variant thereof.

Table J.5: Green business – randomly-generated twenty-line concordance report for CONCERN* ABOUT

N	Concordance
1	o explore how mobiles can help facilitate micro-finance in the developing world (see page 8). Meeting the challenges There are, however, some social, health and environmental **concerns about** mobile telephones. These range from worries about radiation from handsets and masts and waste created by frequent model changes, to limiting access to adult mate
2	es including picture messaging, downloadable pictures and video clips, games and internet access. These new technologies have brought benefits to society but they also raise new **concerns about** spam, mobile phone etiquette, driver safety, privacy and protecting children from inappropriate content and services. Vodafone Ireland has launched a 'Safe Driving
3	ols to measure visual impact must consider local concerns to allow for cultural differences on what is acceptable. For example, community stakeholders in some countries express **concerns about** camouflage solutions. Best practice example – In December 2004, Vodafone New Zealand received an award from the Department of Conservation for its sensitive treatm
4	rming practices. But in recent years it became clear that increasing environmental and social pressures on agriculture – which threaten our supply chains – and growing consumer **concerns about** the food chain, which threaten our markets, demanded a more radical attitude. This led to the company's Sustainable Agriculture Initiative. In a highly ambitious
5	ports such as this. Our report records another year of progress against targets. For example, we continue to lower our CO2 load in manufacturing, which is important in light of **concern about** climate change. We urge you to look closely at our initiatives as well as our commitments to improve the eco-efficiency of our supply chain while protecting natur
6	sustainability initiatives. Our commercial success and future growth is built on understanding people, not simply as consumers who buy our products, but as citizens with shared **concerns about** society's issues. By engaging with these concerns we learn how we can best help communities in ways that are practical and sustainable, for example by sharing our
7	to farming practices. In recent years it has become clear that increasing environmental and social pressures on agriculture (which threaten our supply chains) and growing consumer **concerns about** the food chain (which threaten our markets) demand a more radical attitude. This led to the company's Sustainable Agriculture Programme, which began in the 1990s.

[1] E-ON UK, *Corporate Responsibility Report 2002 Health and Safety*, http://www.eon-uk.com/about/1097.aspx, (accessed 25th February 2008).

8	ong a road to a sustainable future a road to which Group companies are illustrating their commitment. The need to focus on commercial viability In the run-up to Kyoto, **concerns about** climate change will be much in the news. In the course of the coming century, the development of additional energies will help to meet these concerns, but this will
9	The external challenges we faced had diverse roots - economic and political grievances of Niger Delta communities, outrage at the symbolic desecration of the ocean by Brent Spar, **concerns about** the sustainability of modern society, worries about climate change. The common characteristic was a change in the way society views companies - indeed all inst
10	sue? printable version Globally, understanding of the required response to the world's water crisis is improving, and the private sector has its role to play. Locally, while **concerns about** water are not new, water scarcity is increasingly visible and realistic measures are required to maintain levels of water availability in the developed as well as th
11	lio, investing where feasible in cleaner and more efficient forms of generation • Investing in higher levels of environmental protection for our coal-fired plant, responding to **concerns about** acidification, haze and local air quality • Achieving lower levels of CO2/kWh across our portfolio to help combat climate change 2Key Issues The main environmen
12	the trend towards greater environmental regulation, we will evaluate the issues and consider GlaxoSmithKline's position on some key topics. In particular, we will consider: • **Concerns about** the possible effects of pharmaceuticals in the environment; • Developments in chemicals policy which could affect the use of some materials in the long term; •
13	the end of 2002. Back to top Occupational health We have in place a comprehensive occupational health programme which supports the needs of our people and business. We are **concerned about** the effects of work on health and the effects of health on work. We were honoured to be awarded the 2002 Astor Trophy for Occupational Health by The Royal
14	med from the blackouts that had happened in the United States and Europe. While their causes weren't directly related to supply margin, they did focus attention in the market, and **concerns about** supply margins for the next winter were echoed by National Grid Transco. Mothballed capacity returned In the light of all this we brought back into action one Grai
15	ss reliance on mass media communications channels. This should help us further in continuing to ensure that our marketing is directed only to adult smokers, and in addressing **concerns about** potential 'spill over' to non-smokers or the under age. WHAT DID STAKEHOLDERS SAY? • Engagement with stakeholders has highlighted the fact that there is low
16	een beneficial in reducing health risks. However, we believe the programme was sensible and that it would be unwise to abandon low tar cigarettes. • We believe that all those **concerned about** smoking and health should support the objective of being able to offer adult smokers an acceptable tobacco product that is recognised by independent scientists
17	labour in tobacco growing was run by the company in 2002 and regular seminars for farmers include initiatives on preventing child labour. While we understand and greatly respect **concerns about** human rights, we do not believe that businesses can direct countries on how they should be governed, or take on the role of international diplomacy. Companies do no
18	The Arctic National Wildlife Refuge (ANWR), east of the oil fields, is considered the most likely area for a major oil discovery in the USA. But anti-development groups express **concerns about** the cumulative impacts of further North Slope development. Many concerns pertain to wildlife and habitat. Numerous independent scientific studies indicate little
19	OpenTalk We encourage all our employees to report **concerns about** possible breaches of our code of conduct or violations of law. It is our policy that anyone who reports a concern will be treated fairly and protected from retaliati
20	O2, at a cost of $1 billion, or 7% of operating costs. The energy mix was 28% electrical power, 23% coke and coal, 20% gas, 19% biomass and 10% liquid fuel. With growing global **concerns about** accelerated climate change resulting from human activities, Anglo American has been working on energy effi ciency measures for some years. The strategic drivers of

J.2.4 Green business – randomly-generated twenty-line concordance report for CONCERN FOR*

This report of twenty occurrences is extracted from the total report of 89 lines. Whereas concern *about* something is usually used with the intention of communicating anxiety, concern *for* can be used to communicate that one takes a matter seriously. However, Wordsmith's limitation of having to search for linguistic signs rather than meanings is, again, revealed in the report below. In only six of the twenty lines (1, 4, 8, 14, 15 and 17), is the meaning of "concern for" that of taking a matter seriously, as in "ScottishPower takes active steps to translate its **concern for** environmental protection into practical action" (line 14). In most of the other cases, the usage is to identify something as being a source of anxiety for a particular group. For example, the sentence "Modern day pirates are a safety **concern for** commercial ships" (line 3), could be rephrased as "Commercial ships are **concerned about** modern day pirates." In terms of the communication of meaning, then, there is not such a significant difference between the two sequences *concern about* and *concern for*. Both are representations of attitudes of mind, rather than action taken. The evidence suggests that green business very rarely represents itself, as being anxious or fearful, but recognises the legitimacy of such worries, on the part of other groups with whom it has dealings – employees, the public and other stakeholders. In a minority of cases, it uses CONCERN FOR in order to underline how seriously it takes a particular issue.

Table J.6: Green business – randomly-generated twenty-line concordance report for CONCERN* FOR

N	Concordance
1	e phone service operators in terms of their commitment to managing social and environmental issues. Managing CSR 'The World Around Us Value has been vital in helping to embed **concern for** society and the environment into our business processes and decision making.' Charlotte Grezo – Director, Corporate Responsibility Vodafone Group Plc Corporate Soci
2	urney illustrates the way in which water is constantly recycled. The project supports and promotes Unilever's interest in clean water stewardship, while stimulating young people's **concern for** water conservation issues. The accompanying display boards illustrate our use and abuse of water and provide examples of best practice, including some of Unilever's cl
3	f them already operate in accordance with the Group security guidelines on the use of force; plans are in place in 3 more to ensure consistency. Modern day pirates are a safety **concern** for commercial ships in the South China Sea, Malacca Straits and some South American and African waters. Heavily-armed bands board ships to steal valuables and equipment
4	.sapref.com 2 www.portarthurrefinery.com WHAT OTHERS SAY External performance assessment SAPREF "Based on my experience with the recent community survey, I believe SAPREF is **concerned for** the environment as this report suggests. However, when SAPREF says 'two steps forward and one back', the community sees one step forward and the spills as GIANT s
5	WHAT OTHERS SAY External performance assessment Norco "Dwayne LaGrange's air monitoring report gives a clear picture of how the company was once viewed. Residents have been **concerned for** a long time about what was in our air. The project has been a big success because we now have an idea of what the air is like in Norco." Alfred Holmes, member of

6	ith carbon emissions 90% lower than for conventional fuels. Road safety Every year a million people die on the roads, 85% in the developing world. Road accidents are a serious **concern** for Shell, causing nearly half of our fatalities in 2003. In 2003, our road safety programme for staff and contractors continued to reduce road fatalities – 19 deaths in
7	en by an expanding, interconnected global professional elite. The impact of globalisation is widely accepted for the benefits it brings. In our Prism scenario people are more **concerned for** their values and heritage. They look to governments to maintain social cohesion. Countries find their own distinctive development paths. In neither do people turn
8	bility, and reliable infrastructure help to attract investment. But companies may be put off by political and legal uncertainty, excessive taxation, corruption, insecurity and **concerns for** human rights. In Shell we believe that our investments – selected and undertaken in accordance with our business principles – can help countries pursue sustainabl
9	in many countries has been on establishing market frameworks that promote competition and efficiency, as well as on raising environmental standards. Now, there is increasing **concern** for security of supply. Let me focus on the European gas market, of which Norway is a major supplier. We are proud to be involved in two major long-term sources – Trol
10	on and restricting investment in new productive capacity. Hybrid vehicles as well as renewable and unconventional energy sources are encouraged through tax credits or R&D support. **Concerns** for energy security may create indirect support for carbon taxation and for cap-and-trade schemes for carbon emissions such as Kyoto. In Open Doors, energy security
11	o supported by Advantage West Midlands and DEFRA's Environmental Action Fund. The Foundation's starting point is recognition that sustainable development is not yet a mainstream **concern** for most people working in the land-based sector. Skilled advocates are needed to encourage the engagement of decision-makers and provide advice on the sustainable developm
12	, Alken-Maes will extend this project in the future and is investing in using the new cups for all its events. Saving water through improved process management Water is a huge **concern** for a brewery. The more we use, the more we need to process in terms of heating, pumping, cooling and finally disposing of any not utilised in the final product. All this e
13	Record of Incidents and Complaints No. of incidents Description of incidents No. of complaints Environmental Regulations Generation Wholesale 13 Minor exceedance of limits 69 **concerning for** pH, suspended solids, noise, dust, odour, and SO2, oil and acid spills traffic Power Systems (Scotland 3 Oil spills 7 concerning noise and and Manweb) visual imp
14	eholders and prepare our Environment Report annually to account for our environmental performance to all interested parties. ScottishPower takes active steps to translate its **concern for** environmental protection into practical action. We develop environmental policies and encourage our businesses to implement these in a systematic manner. We take a
15	a conference for all our safety representatives in conjunction with our Trade Union colleagues. Issues briefing Safety is paramount in all of ScottishPower's activities. Our **concern for** safety is reflected in the controls and resources we devote to minimising Health and Safety (H&S) risks to our workforce, contractors and the public. ScottishPower
16	regime in April 2001. There is, therefore, a comprehensive range of instruments in place which will drive reductions in CO2 in the UK electricity sector. In the US, there is **concern** for the issue of global climate change but there is strong doubt about the measures proposed in the Kyoto Protocol. The approach to carbon reduction has included the
17	ibute successfully to sustainable development. Anyone familiar with our industry knows that responsible minerals companies have long had environmental programmes. They have been **concerned for** the well being of their employees and for the impact their operations have on neighbouring communities. So companies like Rio Tinto were not starting from scratch w
18	duates in all areas of the business. Occupational health and safety For the dedicated page on this topic, click on the drop down bar. Employee benefits 2002 has been a year of **concern** for employees of many organisations about the adequacy of their pension arrangements. In 2002, the British American Tobacco UK Pension Fund again emerged as one of the to
19	received communication of BP's new code of conduct. To support this, we plan to enhance our OpenTalk programme, allowing staff to request guidance on the code of conduct or raise **concerns** for investigation. Community investment Trends in 2004 followed our intent to focus in other areas such as Asia Pacific, Africa, Caspian and Russia. During 2004, we made
20	ent fell by 1% compared with 2003. The PAS is analysed by senior management. Feedback sessions are held at a local level and action plans are formulated to respond to employees' **concerns.** For example, the First Level Leaders programme (see above) was set up after managers at this level expressed concerns over their prospects in the company. The survey wi

J.2.5 Green business – randomly-generated twenty-line concordance report for NATURAL ENVIRONMENT and WORLD

The single word *natural* generates a concordance report of 1,793 lines, from the linguistic discourse of green business. However, as I described in section I.1 of appendix I, it mostly combines with nouns to create multi-word units of meaning, which represent the socially-constructed natural landscape. Two combinations: *natural environment* and *natural world*, are usually used in order to make representations of a more 'fleshy' and 'fibrous' natural landscape and, together, they account for 150 concordance lines. However, their usage, not surprisingly, is overwhelmingly in order to represent a generic natural landscape. In line sixteen, the green corporation, clearly referring to some specific activity in the natural landscape, comments that this "is a prime example of industry working alongside conservation bodies to enhance the **natural environment"**. Also, in line eleven, the green corporation wishes to increase "the number of Aboriginal employees, who live in harmony with the **natural environment** in this remote region." In both of these cases, the green corporation is represented as working to enhance the natural landscape, for purely intrinsic reasons. Otherwise, I find an overwhelming majority of usages (lines 1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 17, 18, 19 and 20), in which the natural landscape is represented in generic terms. And in these generic representations, the green corporations often include the trade-off, between the natural landscape's incorporated usage within a productive landscape, and the need to conserve, preserve or enhance it. In line one, the green corporation points out that "you cannot simply use the **natural environment** without taking care of it."

Table J.7: Green business – randomly-generated twenty-line concordance report for NATURAL ENVIRONMENT and NATURAL WORLD

N	Concordance
1	hy the natural environment matters. Because if you want to create a sustainable business – a business which can continue to grow and to thrive – you cannot simply use the **natural environment** without taking care of it. That challenge is sharpened for us because the business we're in is growing. The demand for energy is driven by demography
2	nd. But I think they fail to take account of the human capacity to adapt and progress - to develop new technologies and methods which transform the way they interact with the **natural world**. I also suspect that, for some, these beliefs are influenced by a personal distaste for today's consumer society and the competitive, free-market economic
3	how some parts of the natural system work, but others elude us. Even now, we still do not really know how biodiversity works. But if we do hold to that belief, that the **natural world** is composed of inter- connected elements, then there is a compelling argument for protecting biodiversity: self-interest. As Edward 0 Wilson, the Harvard biologi
4	have drawn up in co-operation with environmental groups. Sustainable agriculture is productive, competitive and efficient while at the same time protecting and improving the **natural environment** and conditions of the local communities. We have defined 10 key indicators – from soil fertility and health to pest management, water, energy to social an
5	't act on the basis of that care, the world in which you were working would turn against you. And that is why we share your commitment to the responsible stewardship of the **natural environment**. As we look ahead, leaving aside the day to day events and focusing on the underlying trends, we see a growing demand for at least the next twenty to thi

6	that I believe the mass consumption of resources deriving from the Industrial Revolution, and the prevailing culture of analysing life in solely economic terms, undermine the **natural world**. This does not mean I am antipathetic to business. Far from it. It seems to me that the global economy is now so dominated by multinational companies, that
7	ore's President, Koh Kim Wah, said: "BP is taking up the challenge to develop inexpensive transport energy solutions to enable economic and social growth without damaging the **natural environment**. BP believes that hydrogen could become the ultimate clean transport fuel of the future and aims to have one of the world's first retail stations selling h
8	dia Shell Solar's rural operations old portfolio new portfolio (including new acquisitions, assurance not provided) 24 The Shell Report Protecting the environment The **natural environment** supports all human activity. We continually look for new ways to reduce the environmental impact of our operations, products and services throughout the
9	mitment. Shell recognises natural World Heritage Sites are places of outstanding universal value. The commitment not to explore for or develop hydrocarbon resources within **natural World** Heritage Sites is one of four new commitments that enhance the Group Biodiversity Standard, first published in 2001. The Standard covers all of Shell's businesse
10	What does sustainable development mean at AWG? At AWG sustainable development quite simply means working in a way that improves the quality of peoples' lives, respects the **natural environment** and contributes to prosperity. Sustainable development and corporate social responsibility Some companies use the expression corporate social responsibil
11	ets is to increase the proportion of its workforce drawn from the East Kimberley region and, in particular, the number of Aboriginal employees, who live in harmony with the **natural environment** in this remote region. A strategy to achieve this has seen the number of indigenous employees increase steadily from less than 5 percent in 1999 to 20 pe
12	end what appears to be a harsh and unacceptable trade off between the goal of improving living standards – and on the other hand the equally imperative goal of protecting the **natural environment** which sustains human life? Energy is at the heart of that trade off. Over the last century global living standards have risen by a factor of five on a pe
13	mount of land used by your operations as equipment becomes smaller and more efficient. * And applying global standards so that the standard of care – for people and for the **natural environment** - which is taken for granted in Europe and in the United States, becomes the standard in Russia, in Asia, in the Middle East and everywhere else. And ther
14	young people * Built Environment - Addressing social exclusion issues such as homelessness deprivation and disability * Natural Environment - Preserving and enhancing the **natural environment** We aim to invest financially, in kind and in time in our local communities in a way that makes a lasting impact to the lives of those whom we help. We do
15	sustainable development (Sustainable development means carrying out developments and activities that try to improve the quality of life without destroying the quality of our **natural environment**.) The procurement process plays an important role in allowing us to achieve our business aims and meet our environmental goals. An essential part of man
16	k has been ongoing over the past few years and the benefits are there for all to see. This is a prime example of industry working alongside conservation bodies to enhance the **natural environment** "
17	two months away from a new century. As has happened many times in the past, a certain trepidation about the future exists - particularly concerning the challenges facing the natural **environment**. There are all kinds of reasons for this trepidation. But much of it seems to stem from the view that business, and especially the energy industry, is th
18	in natural World Heritage Sites 27 Aug 2003 The Royal Dutch/Shell Group of Companies (Shell) today undertook not to explore for, or develop, oil and gas resources within any **natural World** Heritage Sites. Shell is the first energy group publicly to make this commitment. Shell recognises natural World Heritage Sites are places of outstanding uni
19	h when taken together, will enable us to progress. We present our performance data under these headings. Social 34– Environmental 26–33 45 Protecting the environment The **natural environment** supports all human activity. We continually look for new ways to reduce the environmental impact of our operations, products and services throughout thei
20	on assets will be performed where such activity is desirable for: 1. the preservation and protection of the health and safety of its employees; 2. the preservation of the **natural environment** in which its activities take place; and 3. the preservation of the health and safety of the communities in which its activities take place, and is cond

J.2.6 Green business – randomly-generated twenty-line concordance report for WETLANDS

WETLANDS only just manages to get into the 'keyword' list for green business, with a ranking of 500. It is also a relatively unusual word in general English, so the total number of occurrences, of 175 concordance lines, is no great surprise. I have also had to reject a total of eight lines (4, 7, 8, 9, 10, 13, 14 and 16), either because they do not provide sufficient context to determine the usage, or because the word has been used as part of the proper noun name of an organisation. Line eleven is a rather special case; it refers to a fine imposed upon PacifiCorp, a subsidiary of ScottishPower, for failing to submit a revision to a wetlands permit! In six of the eleven remaining concordance lines (5, 15, 17, 18, 19 and 20), WETLANDS represents some generic area of wet land. WETLANDS, whether generic or specific, can only be appreciated for their intrinsic value.[1] So, even though the usages are generic, there is no representation of their usage for instrumental purposes – they receive management attention and conservation or, as is the case in line 17, they are *created*: "or compensatory **wetlands** will be developed." In the remaining five lines (1, 2, 3, 6 and 12), reference is made to some specific area of the natural landscape, which is being cared for by green business: the Columbia River Wetlands (line 1), the Pantanel Wetlands in Brazil (line 2), Louisiana's wetlands (line 3), Howden Clough in West Yorkshire (line 6) and Flambeau, Wisconsin (line 12). This last example is the site of an exhausted mine, once run by Rio Tinto, now being returned to its former natural glory. Here, again, WETLANDS is contextualised as a part of the natural landscape e which has intrinsic, rather than instrumental, value.

Table J.8: Green business – randomly-generated twenty-line concordance report for WETLANDS

N	Concordance
1	ent conservation. Or it may mean using our marketing skills in partnership with a local NGO to raise awareness in Canada about the pressures of tourism on the Columbia River **Wetlands**. In developing markets, we have had most success through getting more involved in raising awareness at a local level on sanitation, hygiene and helping to build m
2	proposed pipeline should go around the forest. But that would have made the entire project uneconomic; in fact, an alternative scheme which would have traversed the Pantanal **Wetlands** in Brazil was rejected by the two governments. Then there were those locally who argued just as strongly that the development of the region was paramount and th
3	siana. The three-year campaign is raising awareness of the impact of Louisiana's wetland loss and increasing support for efforts to save coastal Louisiana. Louisiana's **wetlands** are the seventh largest delta on earth and are at the heart of an intricate ecosystem that is in decline. They provide habitats for millions of waterfowl and migrato

[1] I should qualify this statement, by pointing out that it applies for the green businesses in my corpus. It is, of course, entirely possible that some human organisation can view wetlands instrumentally.

4	g Conservation International, Earthwatch Europe, Flora & Fauna International, Friends of Conservation, IUCN, Living Earth, Royal Botanic Gardens Kew, Smithsonian Institution, **Wetlands** International, WWF, UNEP-WCMC, The Nature Conservancy. See Key external relationships. Integrating biodiversity into the impact assessment process Some activitie
5	Wetlands of International Importance - opens in new window which provides a framework for national action and international co-operation for the conservation and wise use of **wetlands**; * the Convention on Migratory Species - opens in new window which provides a framework for agreements between countries with habitats important to the migration of
6	ist species; reed bunting, grey partridge, skylark and linnet. 6 Howden Clough Leeds Hazel (Corylus avellana) Wild Cherry (Prunus avium) Crab Apple (Malus sylvestris) **Wetlands**: Two ponds have been constructed at the southern boundary of the site and as part of land purchase there is another established large body of water (approximately 0
7	BAP Group Peak Park Moorlands for the Future Steering Group Pen Llyn a'r Sarnau (SAC) Relevant Authorities Steering Group River Anker Water Vole Forum Severn & Avon Vales **Wetlands** Partnership (Executive Committee) Severn Water for Wildlife Steering Group Stoke City Council Greensteps Campaign STW Leicestershire SSSIs Steering Group Trent Ri
8	BAP PhD Steering Group Aston University Wet Woodland Steering Group Birmingham & Black Country BAP Group Carsington Bird Club Carsington Liaison and User Group Coleshill **Wetlands** Project Steering Group Cotswolds Gateway Country Park (Dowdeswell) Steering Group (Chair) Countryside Recreation Forum for Warwickshire Creswell Crags Heritage Tru
9	conservation groups and farmers. Aston Hall Farm was awarded a National Green Apple Award in 2003 and a Chartered Institute of Water and Environmental Management Living **Wetlands** Award in 2004. Biodiversity Action Plan drive the choice of floral species and habitat creation initiatives for such schemes. We are one of the first water compani
10	Heritage • British Trust for Ornithology • British Trust for Conservation Volunteers • Business in the Community • Butterfly Society • Forestry Commission • Wildfowl & **Wetlands** Trust • Centre for Environment, Fisheries and Aquaculture Sciences (CEFAS) • British Waterways Board • Friends of the Earth • Sustainable Energy Scotland • Asso
11	the Oneida project (FERC No. 472) licence Notices of Violation – Mining 3 $800 – Improper soil segregation at the Des-Bee-Dove Mine valley coal removal project – Submitted **wetlands** permit revision after regulatory deadline – Insufficient quantity of contemporaneous reclamation Formal warnings None PacifiCorp Power Marketing Prosecutions None
12	1997. The open pit was backfilled and the site has been returned to its approximate original contours. At the end of 2000, reclamation was complete. Over four hectares of **wetlands** have been created or restored, approximately 53 hectares of prairie ecosystem have been developed and four hectares of woodlands established. Working with local gov
13	direct control of any of our companies. EN32 Water sources and related ecosystems/habitats significantly affected by discharges of water and runoff. (Include Ramsar-listed **wetlands** and overall contribution to resulting environmental trends.) While some facilities within the Group discharge water and runoff within Ramsar-listed wetlands, these f
14	the transportation of hazardous waste. EN32 Water sources and related ecosystems/habitats significantly affected by discharges of water and runoff. (Include Ramsar-listed **wetlands** and overall contribution to resulting environmental trends). While some facilities within the Group discharge water and runoff within Ramsar-listed wetlands, these f
15	comprehensive land use plan is first compiled. This identifies and sets aside all indigenous forests, wetlands, riparian areas and archaeological and historical sites. Where **wetlands** are recognised as providing significant habitat or functional roles, these are left undisturbed as far as possible. Should wetlands be affected by forestry or other o
16	Waste water discharged COD in waste water TSS in waste water AOX in waste water Productionc Total land area managed Total land area planted Total grasslands and **wetland**s area ENVIRONMENTAL DATA FOR MANAGED COMPANIES For the year ended 31 December 2000 P A G E 52 A N G L O A M E R I C A N P L C S A F E T Y , H E A L T
17	urbed as far as possible. Should wetlands be affected by forestry or other operations, these will be rehabilitated once operations have ceased in that area or compensatory **wetlands** will be developed. 28 Stewardship of land and biodiversity Stewardship of land and biodiversity The excavation and clearing of a silt-filled pond, thus providing
18	ational co-operation for the conservation and wise use of wetlands and their resources. The convention covers all aspects of wetland conservation and wise use, recognising **wetlands** as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. Rutile Natural titanium dioxide mi
19	an intolerance of unsafe acts or conditions. PCP Primary Concentration Plant Pig Iron A by-product of the illmenite smelting process Ramsar (Iran, 1971) The Convention on **Wetlands** (known popularly as the Ramsar Convention) provides the framework for national action and international co-operation for the conservation and wise use of wetlands a
20	wns or manages. A comprehensive land-use plan is compiled before any new land is afforested by Mondi in South Africa. This identifies and sets aside all indigenous forests, **wetlands**, riparian areas and archaeological and historical sites. Where wetlands are recognised as providing significant habitat or functional roles, these are left undistu

J.2.7 Green business – randomly-generated twenty-line concordance report for LAND

LAND is ranked in 316th place in the list of the edited 'keywords' of green business, and the concordance report for all occurrences contains 1,982 lines. It is a word which is used regularly in the linguistic discourse of green business. The bare statistics hide some of the reality; two of the twenty lines below (9 and 10), are the result of the name of one of the green corporations: Land Securities plc. But, after discounting a projected ten percent of the lines, there is still a lot of usage. In the examples below I have also discounted a further six lines (2, 3, 5, 6, 12 and 19). This is not because the usages do not refer to land as part of the natural landscape, but because they appear as a title or column heading in a table of a document, and it is not possible to obtain a sense of how the word is used. In the remaining twelve lines, I have made two broad distinctions. In the first category of four lines (7, 8, 11 and 16), LAND is used in a generic sense but, in contrast to WETLANDS, it represents a resource that is to be used and managed with care. Some of these examples of usage represent land, which is used instrumentally as an input to the liberal-productivist business process, as in "The use of **land** for mining" (line 8). In another of the examples of instrumental use, it is a sink for toxic waste: "**Land** may become contaminated as a result of past practices in the management of materials" (line 11). The second category, of seven usages (lines 1, 4, 13, 14, 15, 17, 18 and 20), makes representations of specific areas of the natural landscape, which are being 'enhanced' by green corporations. What is most interesting is that, whereas the usage of LAND for generic purposes also makes representations of the *instrumental* treatment of land, these specific usages all represent an *intrinsic* attitude towards land on the part of the green corporation and, often, a process of enhancement. Line fourteen illustrates this: "Of particular interest was a large pond created and landscaped on Castle **land** between the River Ribble and the Ribblesdale quarry."

Table J.9: Green business – randomly-generated twenty-line concordance report for LAND

N	Concordance
1	ese current initiatives on biodiversity and recognises that there is a major opportunity to contribute to this process by conserving and enhancing the significant quantities of **land** in our ownership. Biffa's Biodiversity Commitment Where we own or manage land, we will determine its biodiversity significance by undertaking an ecological survey. We are
2	port 'Resource productivity: making more with less'. November 2001 Crude sludge Municipal waste Industrial waste Special waste • treated water to sustain rivers • sludge to **land** • energy from sludge • energy from landfill • energy from incineration • recyclable materials • wastewater treatment • sludge digestion • incineration • landfill opera
3	nearby. Once filled, these lagoons are landscaped and managed to provide important habitats for birds and other wildlife. For more details on this, please see the chapter on **Land** and Biodiversity. Whilst lagoons are active, steps are taken to encourage rare wading birds to visit the habitat. ScottishPower has been in talks with a leading supplier o

4	cilities provided. A valuable bird roost area has been developed at Preston island, part of the Valleyfield ash lagoons, because successful ash sales have reduced the need for **land** to dispose of ash from power station operations. Low-lying wet grassland areas like this are ideal for the important populations of wildfowl and waders that overwinter on
5	and environmental benefits of hydro generation. To establish this balance, we need to find out more about the ecological status of the rivers on which our assets are based. **Land** and biodiversity Left: Ruth Bess, supervisor of mine projects for Bridger Coal Company, inspects a wildlife habitat that PacifiCorp is helping establish at a reclaimed mi
6	on at a number of sites and has been, or will be, ordered to participate in their remediation. In 1997, we turned responsibility of oversight for the remediation of these sites **Land** and Biodiversity 4Land Reclamation We recognise our responsibility to restore land impacted by surface mining operations. Interwest Mining Co., a PacifiCorp mining subsidi
7	the necessary change. To maximise our industry's contribution to the transition to sustainable development, this will mean, as a minimum, maintaining unpolluted water supplies, **land** suitable for alternative use, a clean environment, and a legacy of economic and social development to sustain communities after mines are depleted. Yet one industry sector
8	land we have disturbed in consultation with our neighbours and in accordance with best environmental practice, relevant laws and regulations. Land access programmes The use of **land** for mining may compete with other uses. In many regions of the world, indigenous people have owned and occupied lands for many generations. Under these circumstances it is a
9	rbal approach to HM Treasury to clarify the rules of Enhanced Capital Allowances but this was subsequently superceded by an announcement of the new interpretation of the rules **Land** Securities Corporate Responsibility Report 2004 29 of2003 targets met * With respect to the objectives and targets adopted in 2001 TARGETS TO 31 MARCH 2005 • Develop and
10	held our third Group-wide annual employee survey and obtained an excellent response rate of just under 92%. The feedback received showed that our employees feel positive about **Land** Securities as an organisation. In particular, we exceeded the ETSM benchmark in: fair reward for work done; information flow from senior management; being a good employer a
11	ies with enhanced properties to develop more effective pain management medicines. The Australian government strictly controls these trials. Genetically modified organisms 48 **Land** may become contaminated as a result of past practices in the management of materials, for example, through inadequate containment, accidental release or poor disposal pract
12	red capacity (GRC) 10,960MW Total electricity generation 46.0TWh * Includes data from joint ventures. Resource use Fuel used 16.06Mtce Net water use 40.36Mm3 **Land** use Total land area (not inc. Rheidol) 1,007ha Managed as nature reserves 220ha Greenhouse gases GHG emissions 29.55Mt 642.18t/GWh – carbon dioxide (CO2) 99.17% – nitrous oxide (N20)
13	r coal and oil-fired power station sites. The new gas-fired stations built in the last 10 years are much smaller than the older, coal-fired stations and do not need nearly as much **land**. At Rheidol hydroelectric power station in mid Wales, we have 15,200 hectares under our care, which we manage sensitively for conservation. Our electricity distribution busi
14	cts and examples of wildlife encountered and the company arranged a range of fun events and activities. Of particular interest was a large pond created and landscaped on Castle **land** between the River Ribble and the Ribblesdale quarry; a circular tour of the Ketton site, taking in quarrying, Castle Cement continues to work with representatives of the loc
15	tion as a primary energy resource for the road transport fuel pool and that, although extensive planting would be needed, the land requirements could be accommodated without using **land** needed to meet projected food production. 39 40 Making the right choices 2.2 Sustainable transport continued Hydrogen The most radical transport options currently be
16	otection of Birds, Tarmac's Langford quarry in Nottinghamshire is an example of best practice on how quarrying can make a positive contribution to biodiversity. The pressure on **land** in the United Kingdom for agriculture, housing, industrial and commercial development has led to many changes in the landscape over the last 100 years with significant loss
17	actices are entrenched. The Zamokuhle Residents Association Trust, the Vrede Community Trust, and the Mthethwa Tribal Authority Trust have acquired more than 2 000 hectares of **land** on three farms. ACSA will work closely with the communities to build their capacity and make sure they understand VCC's responsibilities and how these responsibilities can
18	in coal recovery of 1.5% 32 Anglo American plc Report to Society 2002 SOCIETY COMMUNITY REPRESENTATIVES AT THE OFFICIAL HANDING OVER BY MONDI SOUTH AFRICA OF OWNERSHIP OF **LAND** TO THE RUSTPLAATS COMMUNITY IN PIET RETIEF FOR DEVELOPMENT AS PART OF THE ONGOING RESTORATION PROGRAMME AT TARMAC'S LANGFORD QUARRY IN ENGLAND, MEMBERS OF THE LOCAL COMM
19	tion ISO International Standards Organisation km kilometre Kyoto Protocol An international protocol, adopted in Japan in 1997, to control global emissions of greenhouse gases **Land** utilised by Area altered by mineral extraction activities operations including industrial and ancillary activities LTIL ost-time Injury (where an injury results in the inju
20	all at Rutland Water and we expect the recent increased demand for watersports training to continue. While the mountains, moorlands and heath likely to be designated as 'access **land**' under Section 2 of the CROW Act are rare within the land owned by Anglian Water there could be conflicts. For example, where designated lowland common land fringes our oper

J.2.8 Green business – randomly-generated twenty-line concordance report for SPECIES

The concordance report for SPECIES, based on the entire linguistic discourse of green business, contains 1,098 lines, from which this twenty-line report has been extracted. I have ignored six of the lines (1, 5, 8, 9, 12 and 16), on the grounds that the usage is either in a table heading or title, or because it is a generic usage which is so abstract there is no connection with the 'fleshy' and 'fibrous' natural landscape whatever. In the remaining fourteen lines, SPECIES appears either within the context of a particular geographic reference within the natural landscape, e.g. "Warwickshire Knobb's Farm" (line 10), or is used to refer to a particular plant or animal, e.g. "the brown hare" (line 7). I will first draw attention to lines three and four, because in these two cases the species that are represented are considered as an input to the productive landscape. This is an instrumental representation of the natural landscape, similar to some of the example lines for LAND. However, in contrast to the examples with LAND, all of which were generic representations, Unilever's linguistic discourse is very specific. The productive landscape is its fish-processing businesses, and the species about which Unilever is concerned are, not surprisingly, particular fish that are the ingredients in their fish cakes, fish pies and fish fingers. The remaining twelve usages all represent SPECIES intrinsically, but I have made a further sub-division into two categories. First, there are five representations of knowledge about the natural landscape (lines 6, 13, 15, 18 and 20). For example, the E-On *2002 Environment Report – How we're doing* informs the reader that its Ladywalk nature reserve provides a "habitat for over 200 **species** of birds. These include a resident bittern and all three species of British woodpeckers" (line 15).[1] In the second category, there are seven representations of green corporations taking action in the natural landscape in which *species* are involved. In line eleven, for example, we can read that where "the **species** is present we will strive to maintain and further develop suitable habitats to promote population growth." This commitment comes from Severn Trent Water's *Biodiversity Progress Report 1999 – 2004*.[2]

Table J.10: Green business – randomly-generated twenty-line concordance report for SPECIES

[1] E-ON UK, *Corporate Responsibility Report 2002 Resource Use*, http://www.eon-uk.com/about/1110.aspx, (accessed 26th February 2008).
[2] I am now (February 2008) unable to find this document again on the STW website. This is the only occasion on which I have been unable to recreate the audit trail from concordance line to original text.

N	Concordance
1	e. This goal reflects Veolia Environnement's primary commitment to protect the environment. Our policy is to give particular priority to projects and activities that foster **species** and habitats which are the subject of Biodiversity Action Plans and are found on our own and adjacent land. The tables show a selection of species and habitants that
2	foster species and habitats which are the subject of Biodiversity Action Plans (see glossary) and are found on our own and adjacent land G. The tables show a selection of **species** and habitats that we are helping in this way. Management of our landholdings The companies have for the second year recorded the amount of land owned which has a st
3	culture Initiative Platform (www.saiplatform.org). See page 6 for our progress in 2002. Fish The world's major fisheries are under threat. Catches of the most important **species** for human consumption are at their lowest levels in recent years. According to the UN's Food and Agriculture Organisation, 48% of all fisheries are fully exploited
4	supporting communities near the South African Hake fishery, published in 2005. Declining fish stocks Worldwide catches of the commercially important whitefish (groundfish) **species** (e.g. Alaskan pollock, cod, haddock and hake) have been in decline since the mid-1980s. The collapse of the cod fishery off Newfoundland, Canada in the early 1990s ref
5	publish a biodiversity action plan for the business. December 2002 Identify opportunities to support English Nature's Species Recovery Programme and develop selected **Species** action plans as appropriate. April 2003 Define templates for nature conservation in urban areas and incorporate into existing and new business developments. Ju
6	clumps of spawn in February and March, with the months up until winter spent foraging in wetlands and grasslands for invertebrates that make up their diet. In the winter the **species** hibernates in areas such as banks, grass heaps and log piles. 2. Current Status 2.1 Nationally there are indications of declines for the common frog. Current facto
7	uring the main breeding season. A new Government White Paper on hunting could outlaw hunting the brown hare with dogs. 2.5 The UK Biodiversity Steering Group has prepared a **Species** Action Plan for the brown hare. UK BAP priority is to maintain and expand existing populations, doubling spring numbers in Britain by 2010. 3. Key Site 3.1 Brown h
8	ands, pools and riffles indicate the naturalness of the watercourse and contribute greatly to its biodiversity. 1.2 Running waters provide a wildlife corridor link for many **species** allowing dispersal and movement between other habitats and their natural flooding regime maintains wetlands (such as swamps and marshes), which are habitats of great e
9	which leads to a decrease in the structural diversity and reduction in natural regeneration. • Replacement of native trees by non-native trees. • Invasion by non-native **species** such as rhododendron Rhododendron spp and Sycamore Acer pseudoplatanus. 2.3 The international importance of broadleaved woodland is recognised through the EC Habit
10	Deepmore Farm, Old Hatton Farm, Rushmoor Farm, Sutton Maddock Farm and Tittesworth – all with meadows and scrub woodland areas under 18 conservation management for this **species** Warwickshire Knobb's Farm – grassland and scrub management to benefit Turtle Doves Worcestershire Malvern STW – woodland management to benefit this spe
11	argets: We will ensure that awareness is raised amongst operational staff as to the importance of this species which can respond quickly to favourable management Where the **species** is present we will strive to maintain and further develop suitable habitats to promote population growth Adopt, where appropriate, land management practices to encou
12	iversity action plan to maximise the efficiency in provision of the associated biodiversity benefits, to be delivered at a reasonable cost. The C-BAP, with individual key **species** and habitats plans, will be complete by autumn 2001. This will include the following principal elements: • Management Plans; and • Implementation/asset management
13	and wintering waders and wildfowl and immense numbers of roosting gulls. The lagoons also support a small but significant element of breeding birds - including at least four **species** which, due to increasing concerns over their long-term population trends, have been given "Red Data" status by the BTO. These four breeding species are - Grey Partridg
14	7 hectares oak woodland in West Dunbartonshire, involving a clean-up, upgrading of footpaths, installation of a footbridge and fences and the stripping out of non-native tree **species**. The project also includes the erection of a deer fence around an adjoining 72 hectares near-native woodland site which is currently being replanted. Similar projects
15	largest nature reserves. The Hams Hall Ladywalk Nature Reserve and environmental studies centre has 125 acres of floodland and woodland, providing a habitat for over 200 **species** of birds. These include a resident bittern and all three species of British woodpeckers. The West Midland Bird Club maintains a web page on the birds of the area and g
16	organisation 6.33 Habitat changes due to operations + amount of habitat protected or restored 6.34 Programmes for protection and restoration of native ecosystems and **species** 6.35 Impacts on protected areas 11,449 hectares 3,571 hectares Not collected and reported globally; addressed via Biodiversity Partnership (see Environmental m
17	ronmental activities 2003 Africa and Middle East Cameroon: The factory in Yaoundé is developing a passive waste water treatment facility with local botanists, using various **species** of water plants to improve the purity of water discharges. Eritrea: The company makes an annual grant for the environmental management of a section of land in the Na
18	ies some 3.7 million acres, roughly the size of the US State of Massachusetts. The forest is home to more than 150 mammal species, 650 bird species, 105 reptile and amphibian **species**, and more than 4,000 plant species, with over 100 different orchid varieties alone. Five villages with about 1200 inhabitants also lie in and around the Park. The CA
19	the support of the local authorities and the community, Loma de Níquel has an agreement with the farming co-operatives in the area to reforest 80 hectares with various tree **species**. The local community is assisting in cultivating and planting 16,000 trees, over a period of three years, around the dam and main access to the mine where the soils
20	ificant population of regionally rare Greater Gliders on the mine lease. All reasonable care will be given to protecting this colony of gliders and their habitat. The only **species** of fauna classified as "of conservation significance" or "of concern" known on the lease are the Squatter Pigeon, Little Pied Bat and the Ornamental Snake. Several

J.2.9 Green business – randomly-generated twenty-line concordance report for WILDLIFE

The concordance report for WILDLIFE, generated from the entire linguistic discourse of green business, contains 650 lines. However, roughly half of these usages occur within a multi-word proper noun, either the name of an organisation or an award. Eleven of the lines (1, 3, 4, 5, 8, 9, 12, 13, 15, 19 and 20), fall into this category or appear as titles which give insufficient context to identify the usage of the word. In the remaining concordance lines, there is one example – line two, in which the usage is generic, referring to hedgerows as "wildlife corridors." Otherwise, the clear majority of the contextualised usages of WILDLIFE place it within specific projects and plans, in which the green corporations are engaged and which have the objective of enhancing the 'fleshy' and 'fibrous' natural landscape (lines 7, 10, 11, 14, 16, 17 and 18). The semantic representation is often towards a socially-constructed natural landscape, e.g. "Drayton continued plans to incorporate **wildlife** corridors as a key component of final rehabilitation by sowing 10 hectares with native tree seed" (line 18). This activity is clearly anchored in a very specific geographic location of the natural landscape, but note how the "10 hectares of native tree seed" are also represented as being a "wildlife corridor." This is an illustration of the point I made, in section 7.2.4 on page 270, that green business is able to manifest very great changes in landscapes – traditional productive ones but also, more recently, natural ones, through the manipulation of a socially-constructed language.

Table J.11: Green business – randomly-generated twenty-line concordance report for WILDLIFE

N	Concordance
1	t . . . . . £25,510 Trust for Oxfordshire's Environment, Didcot Millennium Wood . . . . . £5,893 Nottinghamshire Wildlife Trust, **Wildlife** in the City . . . . . £11,709 Bradford Environmental Action Trust, Keighley & Worth Valley Railway . . . . . £41,073 Hampshire and Isle of Wi
2	ficant wildlife habitat over large stretches of the UK and are important for many plants and animals including butterflies, bats, birds and mammals. Hedgerows may also act as **wildlife** corridors for many species allowing dispersal and movement between other habitats. 2. Current Status 2.1 The UK Biodiversity Steering Group reported that since 19
3	king that commitment, Biffa. I wish you every success in implementing it, and I hope many other companies follow your excellent example. Simon Lyster, Director General, The **Wildlife** Trusts Middlemarch Environmental Ltd. Page 6 Biffa Waste Services Biodiversity Action Plan RT-MME-1175C 3. INTRODUCTION 3.1 What Is Biodiversity? Biodiversi
4	_ £21,000 to the Greenwood Trust to support the innovative water management features at their Coalbrook Station Project in Shropshire _ £3,000 to Birmingham & Black Country **Wildlife** Trust for the construction of a reedbed at Birmingham Eco-Park 2000/01 _ £70,000 to the National Forest _ £30,000 to Worcestershire Wildlife Trust for the Severn
5	tical support for the Severn and Trent Otters & Rivers Projects _ Establish five Otter Project Officers in the Severn Trent region by April 1999 _ Update the 1993/4 Vincent **Wildlife** Trust National Otter Survey in the Severn Trent region by June 2001 _ Identify suitable locations on our sites for artificial Otter holts and habitats and facilitat
6	ardship Agreement commencing in autumn 2004, the following will be implemented; 8,590 m of 2 m Grass Margins, 8,377 m of 6 m Grass Margins, 1,205 m of Beetle Banks, 0.26 ha **Wildlife** Seed Mixtures and 1.48 ha of Pollen and Nectar Mixtures _ Stoke Bardolph (800 ha) – 24 km (14.4 ha) of margins established Coastal and Floodplain Grazing Marsh Al
7	hunting ground than they currently enjoy, ensuring their long term success. The project has been cited as a prime example of integrated land management for the benefit of **wildlife**. Southern Water environment/economic decision making tool Approximately 800,000 households in England and Wales are not connected to the public sewer system. Sou

8	oundation in Land and Biodiversity Bridger Coal Company honoured for mining reclamation and wildlife stewardship Bridger Coal Company received the Mining Reclamation and **Wildlife** Stewardship Award in 2003 from the Wyoming Game and Fish Department. The honour was presented at the Hunting and Fishing Heritage Expo Awards Banquet in Casper,
9	, National Hydro Association and the CBI. We also participate with non-governmental organisations and stakeholder groups such as the UK Joint Environment Programme, World **Wildlife** Fund, Friends of the Earth, RSPB and the Nature Conservancy, and in sectorspecialist groups such as American Wind Energy Association, HawkWatch International, NEA
10	greater public access through provision of footpaths and cycle-ways. A new area of moorland will be created and remaining forest restructured to create a greater diversity of **wildlife** and habitats. The changes will also allow timber operations to continue in parallel with the windfarm project. ScottishPower executive director Ken Vowles said: "We
11	nmental and community sensitivities and at Whitelee we have sought not just to minimise the effects of the windfarm but also to enhance the local environment through improved **wildlife** habitats and access for public recreation", said Mr Mortimer. "We have also widely advertised our plans over the past six months and have been pleased with the over
12	disappeared, rare tundra plants have survived. Purple Saxifrage blooms in April, just as it did 10,000 years ago, clinging to the sides of the gorges. In 1980 the Scottish **Wildlife** Trust began a 20 year programme to restore the area's original woodland. Conifers, which affect the food chain, have been thinned and indigenous broadleaved trees hav
13	e Trust in the creation of new native woodland at Hunter's Wood near Kingsley. The land was purchased by the Trust to develop woodland as an extension to an existing Cheshire **Wildlife** Trust Nature Reserve. Together the woodlands are part of a larger wildlife corridor extending along the River Weaver. Support for Borders Forest Trust to plant 50,00
14	s and trails. These typically include areas of woodland, meadowland, parkland, scrub, cultivated fields, ponds, lagoons and salt marshes, all of which attract a wide range of **wildlife**, from bats and badgers to water beetles and butterflies. Nature trails are used by local schools and groups and have been expanded to include hides and study huts. Bi
15	of the quarry, a long worked-out area consisting of hills and holes that have been colonised by limestone grassland plants and scrub, is leased to Leicestershire and Rutland **Wildlife** Trust and managed as a nature reserve. It is a Site of Special Scientific Interest and part is a Regionally Important Geological Site. Some of the rock faces are kept
16	from wood pulp. In 2003, we surveyed a sample of our suppliers of these materials to gauge potential impacts that the sourcing of these materials may have on ecosystems and **wildlife**. The primary finding was that although some suppliers are working towards wood pulp sustainability, wood pulp is seen as a commodity material and its sourcing is oft
17	yton's reforestation plan is to incorporate wildlife corridors as a key component of final rehabilitation. This will enhance conservation areas on the leases proclaimed as **wildlife** refuges. During 2003, ten hectares were sown with native tree seed as we continued to pursue this strategy. We also continued our support of local community actions
18	A number of fauna surveys were undertaken at the Capcoal Operations, one studying the rare Chalinolobus picatus (Little Pied Bat); ?? Drayton continued plans to incorporate **wildlife** corridors as a key component of final rehabilitation by sowing 10 hectares with native tree seed; and ?? Significant stands of intact remnant vegetation were identi
19	condition. We have a programme of conservation management plans for our SSSIs and will report in future on their condition and how it contributes to the national target. **Wildlife** trusts Newbourne Springs, a SSSI near Ipswich in Suffolk, is managed in partnership with the Suffolk Wildlife Trust. The site is nationally important for its wet w
20	the give me five scheme include: Providing translation services for refugees in custody Business mentoring for young entrepreneurs Hedge-laying with the Cambridgeshire **Wildlife** Trust Taking part in Age Concern's 'handy-person' service AWG Plc Sustainable Development Report 2003 13 key player in a project to develop local tourism in Bran

J.2.10 Green business – randomly-generated twenty-line concordance report for HUMAN HEALTH, BEINGS, LIFE, NEEDS, DIGNITY and CONSUMPTION

From the linguistic discourse of green business, the concordance report based on the single adjective, HUMAN has 2,346 lines. With the help of the list of two-word clusters, I then generated a shorter concordance report, which was limited to just those lines in which one of the six units of meaning: HUMAN HEALTH, HUMAN BEINGS, HUMAN LIFE, HUMAN NEEDS, HUMAN DIGNITY and HUMAN CONSUMPTION was found. These six head nouns are the closest references I could find to the 'fleshy' and 'fibrous' natural landscape, although the latter three, particularly, do have a more abstract sense than the first thee. The procedure resulted in a concordance report of 147 lines. From this report, Wordsmith randomly generated a twenty-line extract which I present below. I have rejected five lines (4, 5, 12, 13 and 16), because they are either part of a title or use the HUMAN BEINGS in rather special and, for my purposes, uninteresting ways. There is also one unusual usage (line 11), in which the speaker calls for "an appreciation of our place as **human beings** in a wider nature," a sentiment with which most people would agree. In the remaining fourteen lines the usages are overwhelmingly generic. I can find only the example of line two's usage, in which HUMAN HEALTH refers to the specific physiological condition of a particular group of human beings: "The agreement states that the companies will meet key environmental indicators on migration of contaminated groundwater and unacceptable **human health** exposures at their Resource Conservation and Recovery Act Cleanup program facilities by next year." Ten of the remaining thirteen lines contextualise *human health* generically. Of these ten, six (lines 1, 7, 8, 9, 10 and 15) make representations of threats to human health, as in "there is no evidence of an impact on **human health"** (line 7), while four (lines 14, 17, 18 and 19) make representations of the ability of the green corporation to enhance human health: "GSK is a world-leading, research-based pharmaceutical company with a mission to improve the quality of **human life** by enabling people to do more, feel better and live longer" (line 18). The remaining three lines (3, 6 and 20), represent the importance of respecting human dignity.

Table J.12: Green business – randomly-generated twenty-line concordance report for HUMAN HEALTH, BEINGS, LIFE, NEEDS, DIGNITY and CONSUMPTION

N	Concordance
1	olluters of the environment. As BP Amoco, through the implementation of this project which we pioneer in the sector, we plan to minimise the fuel emissions which can be harmful to **human health**. This significant project incorporates some targets beyond the mere introduction of environment-sensitive products. To cite a few; * To adopt a sensitive attitud
2	rotection Agency and a group of companies. The agreement states that the companies will meet key environmental indicators on migration of contaminated groundwater and unacceptable **human health** exposures at their Resource Conservation and Recovery Act Cleanup program facilities by next year. For BP, these include major refineries at Toledo
3	ing benefits to all those with whom we have relationships • fulfilling our obligations as a responsible member of the societies in which we operate • demonstrating respect for **human dignity** and the rights of individuals We will work to build long-term relationships founded upon: • high performance standards • delivering on our promises • openness an
4	e have to take them seriously. That sense of purpose isn't just an expression of opinion at the Boardroom level. It's important to remember that companies consist of citizens, **human beings**, people with families and children. Many of them are members of NGOs, in some cases very active members. They have hopes and fears and they don't come to w
5	ty where those who shouted loudest would be in power. That isn't a society in which I want to live. Perhaps the lesson is that conflicting perspectives are an inherent part of **human life**. Everyone has a single, narrow perspective -and that of course includes BP. But single-issue groups can't create a community of interests. Society as a whole has to h
6	This will be based on our existing Safety, Health and Environment report and be structured around the key provisions of Good Citizenship: Our Business Principles. 'We respect **human dignity** and the rights of individuals and of the communities associated with our operations. We seek to make a contribution to the economic, social and educational well-be
7	lls. Corporate Social Responsibility Report 2004 Vodafone Group Plc 9 Mobile phones, masts and health Based on current scientific review, there is no evidence of an impact on **human health** when electromagnetic fields (EMF) exposure levels are below internationally recognised guidelines. Mobile phones and base stations are operated so that people a
8	Road safety printable version Road safety is vital, as the loss of **human life** is unacceptable. Within Shell, we focus on improving road safety throughout our businesses. Every year a million people die and over 20 million are injured in road
9	as it is a biomass fuel from a renewable source. As long as there is a demand for meat, there will be waste arising from the production of food, which is considered unsuitable for **human consumption**. C2.3 Activities and Abatement 2.3.1 Kiln 8 Bypass 2.3.1.1 The bypass system is being designed to ensure no significant change in emissions to air from
10	on Works IPPC Permit This material is the higher risk parts of ruminant animals such as the brain, spinal cord and intestines. This material comes from animals that are fit for **human consumption**, the rest of which enters the human food chain. This is the only material that will be present in AWDF, thus there is no risk of BSE infected material entering
11	ll form the basis for future strategies. The idea of sustainable development must surely always include an emotional or spiritual dimension - an appreciation of our place as **human beings** in a wider nature. But we will achieve little without careful, rational thought. The 'short 20th century' demonstrated the human capacity for progress in so many ways
12	lombia and many other places around the world. • We continued to develop our understanding of the impact of our projects in sensitive areas. Of course the story is not perfect. **Human beings** make mistakes and progress is sometimes slower than we would wish. Though there are many successes of which we can be justifiably proud, this document also
13	ste management* Waste re-use* Stakeholder concern Stakeholder concern Stakeholder concern Populations of wild birds* Human health* **Human health*** Environmental investment* Human health* River water quality* Environmental investment* Resource conservation Environmental investment* River water quality* Performance 2000-01 Scotland
14	GSK Spirit and Culture The GSK mission is to improve the quality of **human life** by enabling people to do more, feel better and live longer. We place great emphasis not only on what we achieve, but also on how we deliver our achievements. Integrity
15	tion; employee engagement; and providing incentives for individual and team performance. Context Finding, mining and processing mineral resources involves work that may affect **human health**. This may include dusty or noisy workplaces, exposure to chemicals or radiation, heavy lifting and repetitive tasks. Policy We strive to protect our physical hea
16	-171. Schwab, B.W., Hayes, E.P., Fiori, J.M., Mastrocco, F.J., Roden, N.M., Cragin, D., Meyerhoff, R., D'Aco, V.J., Anderson, P.D., Human pharmaceuticals in U.S. surface water: A **human health** risk assessment, submitted (12/04) to Regulatory Toxicology and Pharmacology, Cunningham, V.L., Buzby, M., Hutchinson, T., Mastrocco, F., Parke, N., Roden,
17	usiness culture. It is based on the principles of the GSK Spirit: • Passion: GSK works to protect people and the environment in a company dedicated to improving the quality of **human life**. • Sense of Urgency: The absence of EHS programmes could endanger the lives and health of our employees and the quality of the environment. • Entrepreneurial: We
18	about GSK can be found in the Annual Report and Accounts and on gsk.com. GSK is a world-leading, research-based pharmaceutical company with a mission to improve the quality of **human life** by enabling people to do more, feel better and live longer. Headquartered in the UK and with operations based in the US, the company is one of the industry l
19	than 150 countries. 20 We are committed to providing the opportunity for our employees to do meaningful and challenging work in pursuit of our goal to improve the quality of **human life** by enabling people to do more, feel better and live longer. Last year we reported on the principles that underpin our approach to people management, and a range of p
20	fortunate communities to enhance their well-being. Well-being in this sense is not limited to material needs. It must be interpreted as an overall well-being for the attainment of **human dignity**. These two facts - the capacity of our funds and the comparative poverty in some of the regions in which most mining companies operate in developing countries -

J.2.11 Green business – randomly-generated twenty-line concordance report for INDIGENOUS GROUPS, COMMUNITIES, PEOPLE and PEOPLES

From the linguistic discourse of green business, the concordance report based on the single adjective, INDIGENOUS has 310 lines. With the help of the two-word clusters, I then generated a shorter concordance report, which was limited to just those lines in which one of the four units of meaning: INDIGENOUS GROUPS, INDIGENOUS COMMUNITIES, INDIGENOUS PEOPLE and INDIGENOUS PEOPLES, was found. These four head nouns are the closest references I could find to the 'fleshy' and 'fibrous' natural landscape. Of the four, I can only defend PEOPLE with 100% confidence, and have to concede that I have earlier assigned COMMUNITIES to the semantic field of the socially-constructed natural landscape. However, I defend my selection on the grounds that the general paucity of evidence required me to cast my net wide. The procedure resulted in a concordance report of 123 lines. From this, Wordsmith randomly generated a twenty-line extract report which I present below. I have rejected three lines (2, 15 and 16), because the usages are within tables and provide insufficient context. In the remaining seventeen lines, I have identified eleven generic usages (lines 1, 3, 4, 5, 7, 8, 9, 12, 13, 14 and 17) and six specific usages (lines 6, 10, 11, 18, 19 and 20). In the eleven generic usages, half of the representations are simply of the existence of indigenous peoples within a natural landscape, about which the green corporation has some knowledge. Three lines make a representation of threats to these peoples by productive landscapes, as in "the impact on **indigenous peoples**" (line 1), and the final two make a representation of the corporation's commitment to treat them with respect. Rio Tinto makes agreements which "recognise the rights and interests of indigenous landowners and seek an equitable distribution of benefits between Rio Tinto, **indigenous peoples** and government" (line 8). In the usages, in which representation of a more specific group of indigenous people is being made, the green corporations are represented as active in caring, in some way. Sometimes they provide benefits and in other examples, such as this one, they work to help the communities: "Comgas, has been in the market for several years. It was introduced to remote I**ndigenous Communities** in the 1990s as an initiative of the Federal Government because its lower aromatic content was found to be a deterrent to sniffing" (line 11).

Table J.13: Green business – randomly-generated twenty-line concordance report for INDIGENOUS GROUPS, COMMUNITIES, PEOPLE and PEOPLES

N	Concordance
1	where socio-economic issues are increasingly being included in the environmental discussion of oil and gas developments. Although it is not as sensitive yet as the impact on **indigenous peoples**, the socio-economic impact on all communities is increasingly – and rightly – gaining in importance. Nobody wants his or her community to become a Spindle
2	July 2003 Key Point Summary | Context | Who are Indigenous Peoples? | Labour Organization (ILO) Convention No. 169 on Indigenous and Tribal Peoples | BG's Approach to **Indigenous Peoples** | Impact of Existing BG Operations | Conclusion | Further Information Key Point Summary * BG respects the human rights of individuals affected by our
3	exploration and in established operations, we seek to ensure that employment opportunities are created for local people, including those from historically disadvantaged or **indigenous groups**. We recognise the sensitivities involved in addressing issues that relate to the cultural heritage of indigenous communities. We will seek to ensure that
4	n archaeological interpretative centre. 2000 Rio Tinto Social and environment review 21 PERFORMANCE Several of our operations are located in remote areas among rural and **indigenous communities**. The objectives of community programmes are to focus on: improving the capacity of people working at the operations and in the communities; developing
5	2 emissions of 70% and 60% respectively. We are also learning how best to mitigate any adverse impacts which mining may have on fragile or disadvantaged communities such as **indigenous groups** and to move forward on the basis of respect and dialogue. The sustainable development agenda is fundamental to our industry's acceptability and to our lic
6	he Department of Employment and Workplace Relations Corporate Leaders Programme since 1999. Under this programme, Rio Tinto's Australian operations have placed 180 additional **Indigenous people** in full time employment. This partnership with the Federal Government has provided greater opportunities for Indigenous employees to become highly skilled th
7	bal civilisation. Along with more opportunities for dialogue, we need more voices around the table. The Durban Conference emphasized the importance of voices from the margins- **indigenous peoples**, migrants, those of African descent, minorities such as the Roma and Kurds, refugees and asylum seekers. The many challenges to human rights will not be ful
8	ith the indigenous landowners. These agreements recognise the rights and interests of indigenous landowners and seek an equitable distribution of benefits between Rio Tinto, **indigenous peoples** and government. Because the extraction of minerals involves access to land and disturbance of the environment, it contributes to changes to habitats that af
9	e cycle of the Group's activities by coordinating economic, technical, environmental and social factors in an integrated process. Programmes In many regions of the world, **Indigenous people** have owned and occupied lands for many generations. It is appropriate, and frequently required under statute, that Rio Tinto negotiates a mining access ag
10	those directly affected by our operations.We participate in a forum to understand and address their concerns with representatives from local government, business and the **indigenous people**. In addition, some residents of the town of Korsakov, 13km from Sakhalin Energy's LNG plant, maintain that the negative impacts on the community outweigh
11	petrol sniffing across all of Australia. The current fuel supplied to Indigenous communities – Comgas, has been in the market for several years. It was introduced to remote I**ndigenous Communities** in the 1990s as an initiative of the Federal Government because its lower aromatic content was found to be a deterrent to sniffing. As an improvement to
12	lief in countries where the Group is active. Serving our communities 22 Rio Tinto 2004 Sustainable development review Sharing culture is an important part of working with **indigenous people**. A new cross cultural training programme developed by Argyle Diamonds in Australia in 2004 will help employees apply this knowledge to the business envir
13	t (MMSD) project. This is an independently conducted, stakeholder-engaged analysis of the issues facing the industry – such as wealth creation and distribution, impacts on **indigenous people**, land management, metal market and consumption patterns, access to information for stakeholders and large volume waste disposal. Rio Tinto is actively invo
14	a number of global questions. As a contribution to the debate, we will make clear our views on such international issues as conservation of biodiversity, protected areas, **indigenous people's** rights and full engagement with third parties. We endorse the view that sustainable development requires the enhancement of economic and social opportu
15	though disappointed, our exploration team feel that consultation with the Inuit prior to staking was correct, even though it left the company open to competitor staking. **Indigenous groups** sign cultural heritage agreements Anglo Coal Australia's Dawson North, Dawson Central and Dawson South developments have established a co-operative frame
16	of local communities. This BG Brief provides more information on how BG addresses human rights issues where indigenous peoples may be affected by our operations. Who are **Indigenous Peoples**? back to top The term "indigenous" refers to those who occupied a particular area before other population groups arrived and who retain totally or partia
17	tural resources, infrastructure may be lacking, and the formal economy is overshadowed by the informal. While living an often precarious and basic lifestyle, many of these **indigenous communities** have achieved a degree of sustainability in terms of their day to day existence, and have developed strong and vibrant customs and traditions. Explo
18	h Government, local traditional owners and communities to support increased employment of Indigenous people. "By providing employment and training opportunities for local **Indigenous people**, Rio Tinto operations are contributing to sustainable regional development, ensuring that Aboriginal people are able to share in the economic benefits genera
19	etrol sniffing on Aboriginal communities? In March 2003 BP Australia – lead by Mark Glazebrook and Bob Welsh – embarked on the development of a new initiative, working with **Indigenous communities** in the Western Desert region of the Northern Territory. They hoped that BP Australia's resources, skills, and tenacity could help reduce the incidence o
20	illion paid to Russian contractors to date, expected to rise to well over $10 billion over the project's life • Population of Sakhalin Island is 550,000 including 3,300 **indigenous people** What others say Location reports 19 Sakhalin Energy also reconfirmed the location of the new production platform, which is 7km from the whales' feeding

Appendix K – The incorporation claim – contextualisation of the socially-constructed natural landscape

K.1 Introduction

The material in this appendix supports section 7.5.2 of chapter seven. I present the results of the empirical work, in which I examine the contextualisation of selected words, within the semantic field of the socially-constructed natural landscape. An extract from these results is presented in section 7.5.2 of chapter seven, together with my interpretive discussion.

The procedure by which I have produced the list of contextualising collocates is identical to that used in chapter six, and a full account is contained in section G.1.3 of appendix G. In keeping with my practice in chapter six, only those collocates whose MI coefficient was ≥ 3.0 have been retained for inclusion in the presentation. From the overall list of collocates, I have then conducted an editing process removing different types of words. They were edited out because their exclusion would, in my opinion, not remove any useful information from the presentation, whereas their presence would confuse it. The words were broadly of two main categories. First, there were proper nouns, typically the names of the green corporations themselves. Second, there were grammar words – pronouns, conjunctions, prepositions and very common verbs such as IS, ARE and HAVE. The node word itself is also, usually, the statistically most significant collocate of itself, but I have also removed this from the list, on the grounds that it confuses the presentation. I have returned it to the centre of the bull's eye in the target diagrams, and written it in a bold type face to indicate that this is the node word which is at the centre of attention. In the edited listings that follow, I have retained a column with the heading "N." This indicates the original ranking of the collocate in the overall unedited list, so that it is possible to see approximately how many words I have edited out of the original list. For example, in the first pair of lists for BIODIVERSITY, the lowest ranking word in the column for green business is SITES. It has an MI of 3.094 so there is a strong likelihood that SITES was also at the bottom of the unedited list as well. A quick count of the words in the list comes to 21 and, since SITES has a ranking of 33, we can conclude that I have edited out twelve words from the original list.

In this section, I present the results for just five linguistic signs: BIODIVERSITY, HEALTH, COMMUNITIES, HABITAT-S and AREAS. However, I conducted the same procedure on all of the signs which I have proposed as possible candidates for inclusion in the semantic field of the socially-constructed natural landscape. The reason for the inclusion of

these five, in preference to any others, is that their target diagrams provide the 'best' material that I have. These five pairings do provide some support, (i) for the empirical procedure's ability to identify patterns in wording around the node, and (ii) for my own hypothesis that this field is contextualised by a language of management. But having picked the best five examples out of roughly a dozen, I cannot be satisfied that I have developed a procedure which is reliable enough to recommend.[1] The problem, as I have discussed before, lies in the distinction between sign and meaning. Wordsmith operates by registering the occurrence and location of signs whereas, ideally, I would like it to register the occurrence and location of meanings. When a linguistic sign is used by its language community with different meanings, a practice which is endemic in language, the difference in these contextualisation patterns will cloud the overall pattern for which I am looking.

In addition to the semantic field of the socially-constructed natural landscape, which is the focus of analysis, I have selected three other semantic fields for the analysis of the contextualising collocates. These correspond to my speculation, in the introduction to section 7.5 on page 286, as to how we might expect the protagonists to contextualise the semantic field of the socially-constructed natural landscape. First, there is the semantic field of management, which I have described, first, in chapter five and then used again in chapter seven. I have used yellow background shading for these words, and have suggested that this semantic field ought to be very important in the green business contextualisation. Second, with the contextualisation of the radical NGOs primarily in mind, I have chosen to use the semantic field of concern which I introduced in chapter six. Here, I have also permitted myself a very minor deviation from the path of empirical rigour which I have trodden. On a few occasions within the listings for the radical NGOs, I have come across collocates which describe either the activities or the products of corporations. In some cases, such as TRANSPORT and TRADE, where the threat to the natural world was not so obvious, I have resisted the temptation to shade the word with the semantic field of concern. However, in others, where the radical NGO's representation is clear, such as MINING, LOGGING and OIL, I have applied a red background. Third, since the node words are all in the semantic field of the socially-constructed natural landscape, it would be interesting to see the extent to which the 'fleshy' and 'fibrous' natural landscape is represented, among the contextualising collocates. There is a minority of words which, not surprisingly, do not fall into any one of the

[1] I say *roughly* because there are singular and plurals in my semantic field, and sometimes I have worked on combinations of these words.

four semantic fields in which I am interested. This is entirely consistent with our own common sense knowledge of language, and I have simply left them without shading.

The target diagrams are all organised in exactly the same way. There are four concentric circles which delineate the same MI values. In the central section are the most significantly unusual contextualising collocates of the node word. In order to qualify for the bull's eye, they have an MI greater than or equal to 10.0. From the perspective of the BNC benchmark, it is the frequency of occurrence of these words in the vicinity of the node word, which is most remarkable. Moving out from the centre, the next circle contains collocates with an MI between 7.0 and 10.0, the third is between 5.0 and 7.0, and the fourth is between 3.0 and 5.0. The selection of these band widths was entirely my choice. It was made on the basis of a review of all the potential diagrams, the objective being to divide up the lists so that the collocates were spread out over the whole target. In order to assist with the reading of the lists and their corresponding target diagrams, I have placed empty, grey-shaded rows in the lists, at the places which correspond to a boundary in the target diagrams. The placing of the collocates within each of the three circles outside of the bull's eye, follows a consistent pattern; the collocates with the highest MI coefficient, within that band, are placed at twelve o'clock in the target diagram, and the rest of the words follow in a clockwise direction. Apart from the fact that the one immediately before will have a greater MI coefficient, and the one immediately after a smaller MI coefficient, their respective placing around the 'clock face' is not any more significant.

In section K.2, I present the five tables of results, with the shading into different semantic fields. Although the twinned target diagrams provide more information than the Venn diagrams which I used in chapter six, they do not communicate the extent of overlap between the two lists of collocates. This is useful information and I have included a short note to this effect with each of the tables. In section K.3, I have translated each table into a twinned pair of target diagrams.

K.2 Edited tables of the significant collocates

K.2.1 BIODIVERSITY

The green business listing has a total of 21 collocates, of which sixteen are 'unique'. The five collocates which are shared with the list for the radical NGOs are ISSUES, IMPACTS, HABITATS, CHANGE and PLAN. The list for the radical NGOs has a total of 35 collocates, of which 30 are 'unique'.

Table K.1: The significant collocates of BIODIVERSITY shaded according to their semantic fields of coherence

Green Business				Radical NGOs		
N	Word	Relation		N	Word	Relation
2	BAP	15,30757618		2	HABITATS	14,11521626
3	ENVIRONMENT	14,92028046		3	DEGRADATION	13,50597286
4	DEVELOPMENT	14,9096384		4	AGRICULTURAL	12,14879799
5	CLIMATE	13,15964031		5	PROTECTION	10,2074461
7	STEWARDSHIP	12,03908825				
8	ISSUES	11,18616772		6	IMPACTS	9,463075638
10	IMPACTS	10,62144279		7	SUSTAINABILITY	8,970582962
				8	CONSERVE	8,897190094
11	WASTE	9,565260887		11	CROPS	8,270571709
13	HABITATS	8,281863213		14	FORESTS	7,630772591
14	STRATEGY	7,850293636		15	PLAN	7,344134808
				16	DAMAGE	7,19396925
15	WORK	6,809244156				
16	PLANS	6,156654358		19	MARINE	6,912277699
17	ENVIRONMENTAL	6,107756138		20	FARMLAND	6,828155041
18	OPERATIONS	5,868453503		21	ACTION	6,710205078
19	CHANGE	5,728885174		22	POLLUTION	6,443762779
20	AREAS	5,571102619		23	GM	6,33778429
21	LAND	5,372513294		24	PROTECT	6,054425716
				25	SUSTAINABLE	5,763281345
25	PLAN	4,456140041		26	BENEFITS	5,724665165
27	CONSERVATION	3,967797279		27	INDICATORS	5,711970329
31	ENHANCE	3,529017925		28	IMPACT	5,504555702
33	SITES	3,09424758		29	RESOURCES	5,501719952
				30	WILDLIFE	5,201159477
				31	CONVENTION	5,152137756
				32	HEALTH	5,102686882
				33	SOIL	5,086075306
				36	FOREST	4,878708363
				37	WOODLAND	4,809211731
				38	THREAT	4,131224632
				39	ISSUES	4,005295753
				40	FOOD	3,961545706
				41	MANAGEMENT	3,932393551
				44	DESTRUCTION	3,268536091
				45	NATURAL	3,247260332
				46	CHANGE	3,186592579

K.2.2 HEALTH

The green business listing has a total of fifteen collocates, of which eight are 'unique'. The seven collocates which are shared with the list for the radical NGOs are RISKS, REPORT,

ISSUES, ENVIRONMENTAL, RISK, PUBLIC and SAFETY. The list for the radical NGOs has a total of 32 collocates, of which 25 are 'unique'.

Table K.2: The significant collocates of HEALTH shaded according to their semantic fields of coherence

Green Business				Radical NGOs		
N	Word	Relation		N	Word	Relation
				1	EFFECTS	14,14351368
				2	POLLUTION	10,96173763
3	RISKS	9,642359734				
4	CORPORATE	8,794176102		7	TRADE	9,857903481
5	REPORT	8,642931938		8	PESTICIDES	9,744728088
7	ISSUES	8,384967804		9	ENVIRONMENTAL	9,62938118
8	ENVIRONMENTAL	8,050239563		10	INCINERATION	8,722862244
9	EMPLOYEE	7,889277458		11	IMPACTS	8,671038628
10	EDUCATION	7,767930984		12	DAMAGE	8,631742477
				13	STANDARDS	8,462375641
12	RISK	5,683860779		14	RISK	8,461468697
14	WORK	5,278560162		15	SAFETY	8,257605553
				16	SPENDING	8,071809769
15	PUBLIC	4,774963379		17	POTENTIAL	7,788842201
16	OCCUPATIONAL	4,383271694		18	ENVIRONMENT	7,609989166
18	POLICY	4,282676697		19	CHEMICALS	7,599936485
19	SYSTEMS	4,005396843		20	SERVICES	7,597774029
20	SAFETY	3,92928648		21	ILL	7,252737522
22	HUMAN	3,381161213				
				22	PUBLIC	6,995556831
				23	ISSUES	6,960599422
				24	IMPACT	6,943182945
				25	ANIMAL	6,591705799
				26	SERIOUS	5,339407921
				27	RISKS	5,10986948
				28	COMMUNITY	4,725724697
				29	CONCERNS	4,693925858
				30	REPORT	4,289904594
				34	MENTAL	3,921612978
				35	PROTECT	3,837801695
				39	PEOPLE	3,415025473
				45	SERVICE	3,053376675
				46	PROTECTION	3,007937193
				47	ORGANISATION	3,000903606

K.2.3 COMMUNITIES

The green business listing has a total of 35 collocates, of which 21 are 'unique'. The fourteen collocates which are shared with the list for the radical NGOs are IMPACTS, PROJECTS, SUSTAINABLE, ENVIRONMENTAL, NEEDS, ORGANISATIONS, IMPACT, REPORT,

AREAS, AFFECTED, INDIGENOUS, ENVIRONMENT, SUPPORT and BENEFIT. The list for the radical NGOs has a total of 56 collocates, of which 42 are 'unique'.

Table K.3: The significant collocates of COMMUNITIES shaded according to their semantic fields of coherence

Green Business				Radical NGOs		
N	Word	Relation		N	Word	Relation
1	SHAREHOLDERS	14,70004368		2	LIVELIHOODS	12,82064533
2	NGOS	14,13441944		3	DISADVANTAGED	12,6172781
4	IMPACTS	13,52315235		5	PEOPLES	11,19496346
5	PROJECTS	11,29035664				
6	STAKEHOLDERS	10,99504471		7	SUPPORT	9,935069084
7	OPERATES	10,96335888		8	POOREST	9,389578819
8	ENGAGEMENT	10,88164902		10	AREAS	9,186468124
				11	ORGANISATIONS	9,162208557
9	SUSTAINABLE	9,816295624		12	MINING	8,674715996
10	FEEDBACK	9,645536423		13	COASTAL	8,410998344
11	ENGAGE	9,230607986		14	SEEK	8,325740814
12	RELATIONSHIPS	8,03950119		15	FORESTS	7,891121387
14	ENVIRONMENTAL	7,266423225		16	COUNT	7,812165737
15	NEEDS	7,192457676		17	FARMERS	7,71655035
16	CONTRIBUTION	7,086475849		18	WORKERS	7,598961353
17	ORGANISATIONS	7,057695389		19	DEPRIVED	7,4552598
				21	ENVIRONMENT	7,230812073
18	SAFETY	6,575217724		24	PLAN	7,020067692
19	IMPACT	6,531789303				
21	HEALTH	5,651617527		26	POVERTY	6,834074974
22	REPORT	5,613377571		27	VULNERABLE	6,780298233
25	AREAS	5,155854702		28	CONSULTATION	6,757592678
26	AFFECTED	5,126102924		29	SUSTAINABLE	6,701001644
27	COMMUNITY	5,11225605		30	INDIGENOUS	6,692885399
				31	IMPACTS	6,39905405
29	SERVE	4,79396677		33	FISHING	6,236141205
30	WORK	4,789600849		35	AREA	6,133728981
32	SUPPLIERS	4,572642803		36	PROTECT	6,011592865
35	HIV	4,4424119		39	REPRESENTATIVES	5,81737709
36	EXPLORATION	4,122330666		40	COUNTRY	5,767640591
37	OPERATE	4,018049717		41	ENVIRONMENTAL	5,763923168
38	ECONOMIC	3,948401928		42	SERVICES	5,730600834
40	INDIGENOUS	3,763217688		43	POLICY	5,71540308
41	PEOPLE	3,710916758		47	PROVIDE	5,370429993
42	SOCIAL	3,667695045		48	CONFLICT	5,352975368
44	ENVIRONMENT	3,646013021		49	PROJECTS	5,319315434
45	SUPPORT	3,426316261		50	ENABLE	5,269711971
46	BENEFIT	3,005069017		53	PROBLEMS	5,187532425
				55	POORER	5,01868391
				56	FARMING	5,008046627
				59	DEVELOPING	4,843643188
				62	OIL	4,573550224

				63	NATIONAL	4,567117214
				64	COMPANIES	4,557257175
				65	HELP	4,534555912
				66	BENEFIT	4,382885933
				68	AFFECTED	4,341784477
				69	FAMILIES	4,319692135
				70	DEAL	4,179942131
				74	TRADE	3,920983076
				75	TRADITIONAL	3,82790184
				76	DEVELOPMENT	3,827350378
				77	LIFE	3,814711571
				78	FOREST	3,718564034
				80	REPORT	3,589830637
				81	INDIVIDUALS	3,580946922
				85	NEEDS	3,409974813
				92	IMPACT	3,073008776

K.2.4 HABITAT-S

This analysis is based upon a concordance report for a combination of the singular HABITAT and its plural, HABITATS, hence my notation HABITAT-S. The reason for my combining the two words into one report, was that both the singular form and the plural produced results which were useful for one of the protagonists, but had virtually no significant collocates for the other. Only by combining the reports, could I produce a result which contained a reasonable number of collocates for both. I have been unable to satisfactorily explain this phenomenon! The green business listing has a total of six collocates, of which four are 'unique'. The two collocates which are shared with the list for the radical NGOs are BIODIVERSITY and WILDLIFE. The list for the radical NGOs has a total of nineteen collocates, of which seventeen are 'unique'.

Table K.4: The significant collocates of HABITAT-S shaded according to their semantic fields of coherence

Green Business				Radical NGOs		
N	**Word**	**Relation**		**N**	**Word**	**Relation**
2	MANAGEMENT	11,59121609		2	BIODIVERSITY	13,98421574
				3	WOODLAND	13,56888771
3	BIODIVERSITY	7,30534935		4	IMPACTS	11,31625557
				5	FORESTS	10,01754379
4	CREATION	6,833615303				
5	WILDLIFE	6,664609909		6	SPECIES	9,767336845
6	ACTION	6,247288704		7	CONSERVATION	9,360607147
				8	LOSS	8,984600067
9	PLANS	4,690532684		9	PROTECTED	8,66587925
				10	DAMAGE	7,531860352
				11	VALUABLE	7,298285484

				13	ANCIENT	6,591480732
				14	COASTAL	6,504159451
				16	MARINE	6,279602051
				18	THREATENED	5,850989819
				19	PROVIDE	5,483575344
				20	BIRDS	5,339388847
				21	PROTECTION	4,819669247
				23	DESTRUCTION	4,338750362
				27	WILDLIFE	3,3896873

K.2.5 AREAS

The green business listing has a total of 43 collocates, of which 35 are 'unique'. The eight collocates which are shared with the list for the radical NGOs are PRIORITY, DESIGNATED, PRODUCTION, ENVIRONMENTAL, MINING, IDENTIFIED, AFFECTED, and COMMUNITIES. The list for the radical NGOs has a total of 29 collocates, of which 21 are 'unique'.

Table K.5: The significant collocates of AREAS shaded according to their semantic fields of coherence

Green Business				Radical NGOs		
N	**Word**	**Relation**		**N**	**Word**	**Relation**
1	IUCN	14,76063633		1	PROTECTED	11,29874229
2	POTENTIAL	12,95617962		3	MARINE	10,94840717
3	DEVELOPMENT	11,04536533		5	FORESTS	10,02066803
4	BIODIVERSITY	10,61101055				
5	PRIORITY	10,58600426		6	LOGGING	9,686933517
6	HABITAT	10,37292671		7	PRIORITY	9,06251049
				8	DEPRIVED	9,010085106
7	DESIGNATED	9,732930183		9	KEY	9,001226425
9	OPERATIONAL	8,656646729		11	TRANSPORT	8,683642387
10	IMPACTS	8,619252205		12	DESIGNATED	7,749977589
11	REPORT	8,510890961		14	RICH	7,114368916
12	PROGRESS	8,188512802				
13	IMPROVEMENT	8,051210403		15	SITES	6,878093719
15	FOCUS	7,612756729		17	OIL	6,414975166
16	EXPLORATION	7,55241394		18	PROTECTION	6,273929119
				23	ENVIRONMENTAL	5,873727322
18	ENVIRONMENTALLY	6,900019646		24	SENSITIVE	5,866275787
19	LAND	6,743898869		26	COASTAL	5,489909649
20	PRODUCTION	6,539933681		27	DISADVANTAGED	5,428092957
21	ENVIRONMENTAL	6,368053436		30	POOR	5,351020813
22	SPECIFIC	6,260973454		31	IDENTIFIED	5,342490196
24	ENERGY	6,154437542				
25	OPERATE	6,11950779		38	GROWTH	4,786315918
26	IMPROVE	6,091814041		39	AFFECTED	4,706591606
27	MINING	5,906310081		43	COMMUNITIES	4,472868919
30	EMPLOYEES	5,790128231		46	PRODUCTION	4,005097389
31	HIGHLIGHTED	5,61098671		47	MINING	3,953705788

36	IDENTIFIED	5,02586031		48	SERVICES	3,82654953
				49	NATURAL	3,663713694
38	CONCERN	4,8005023		50	WATER	3,570779085
40	GARDENS	4,626451492		56	CONTROL	3,182888269
41	PEOPLE	4,590051174		57	FOREST	3,153698921
43	SAFETY	4,450788498				
44	GROUP	4,281431198				
46	POLICIES	4,164674282				
47	STANDARDS	3,978446245				
49	RIGHTS	3,819115639				
50	AFFECTED	3,794763088				
51	OPERATIONS	3,730092049				
52	RESPONSIBILITY	3,703079939				
53	PRACTICE	3,625360727				
56	ACTIVITIES	3,32951045				
58	COMMUNITIES	3,228229284				
60	ACTIVITY	3,193736792				
62	ACCESS	3,13837719				
64	HUMAN	3,096400976				

K.2.6 Edited tables of the significant collocates – summary

The most immediate impression created by these five tables of results is that, with the exception of AREAS, it is the corpus of the radical NGOs which produces the greatest number of unusually significant collocates around the node word. From the perspective of the BNC benchmark, it is the radical NGOs which contextualise these words in the most unusual way. One possible explanation for this finding, is that the BNC includes one sub-section containing texts that have been selected from the business world. But, as I pointed out in chapter four, this is a relatively modest part of the BNC, and its inclusion ought not to have 'weighted' the BNC unduly in the direction of having a commercial bias. An alternative explanation is simply that this contextualisation confirms the role which the NGOs play in being *radical* – they make representations in language which are different from the mainstream.

Scanning down the tables with an eye for the colours, the impression one gets is that the radical NGOs' lists are more colourful than those for green business, and that the weighting of colour, for the latter, is more yellow than anything else. The information contained in these tables, is now reorganised into my target diagrams. Nothing new is added in the next section. The difference is purely a matter of presentation, and the objective is to evaluate whether the presentation helps to see patterns any better.

K.3 Comparison of target diagrams

K.3.1 BIODIVERSITY

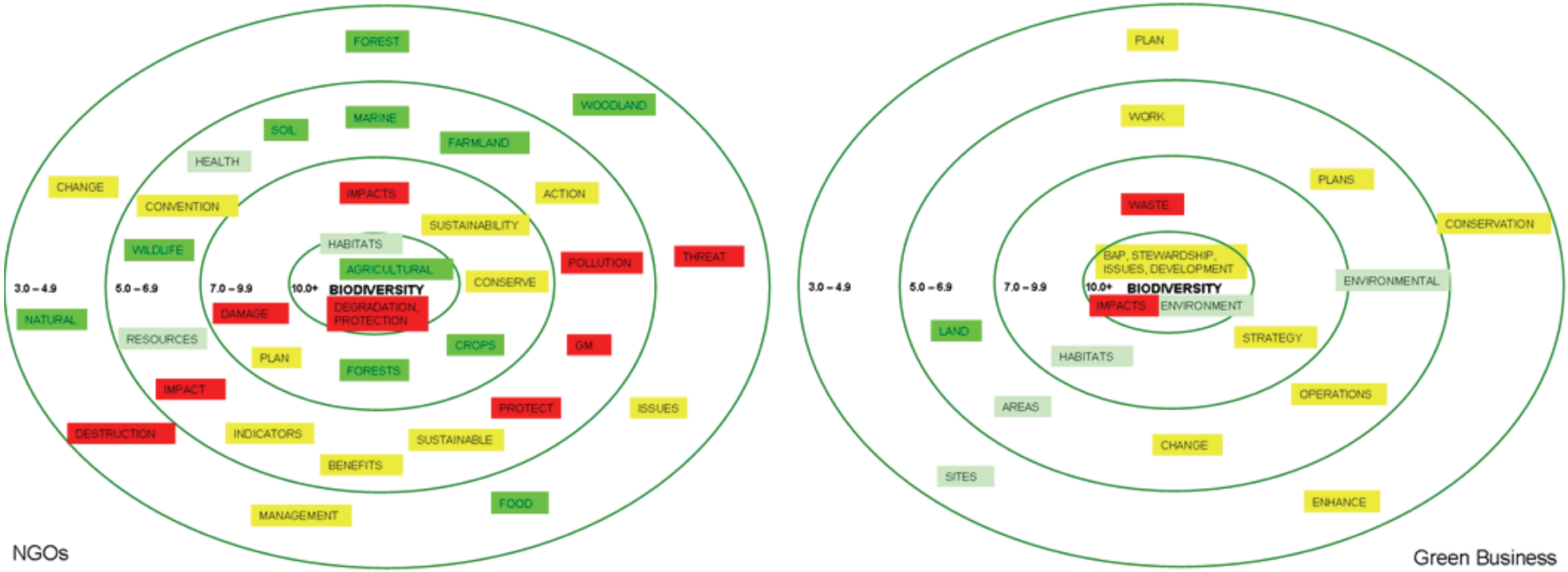

Figure K.1: The significant collocates of BIODIVERSITY presented on target diagrams

The respective length of the lists, in the previous section, is reflected in the density of occurrence of words on the two target diagrams above. The radical NGOs' contextualisation is also more colourful. The strong primary colours of red, representing the semantic field of concern, and bright green, representing the 'fleshy' and 'fibrous' natural landscape, stand out very clearly and draw attention to the paucity of this representation in the target diagram for green business. Note, too, how the only two red-shaded words on the right are the bland WASTE and IMPACTS, whereas the radical NGOs' target diagram contains DEGRADATION and PROTECTION in the bull's eye, and other words are DAMAGE,

POLLUTION, THREAT and DESTRUCTION. The leading colour among the collocates of BIODIVERSITY, in the green business diagram, is the yellow, representing the semantic field of management. In the bulls eye, I have given four of the six words a yellow shading, and the first of these is BAP, an acronym for Biodiversity Action Plan.

K.3.2 HEALTH

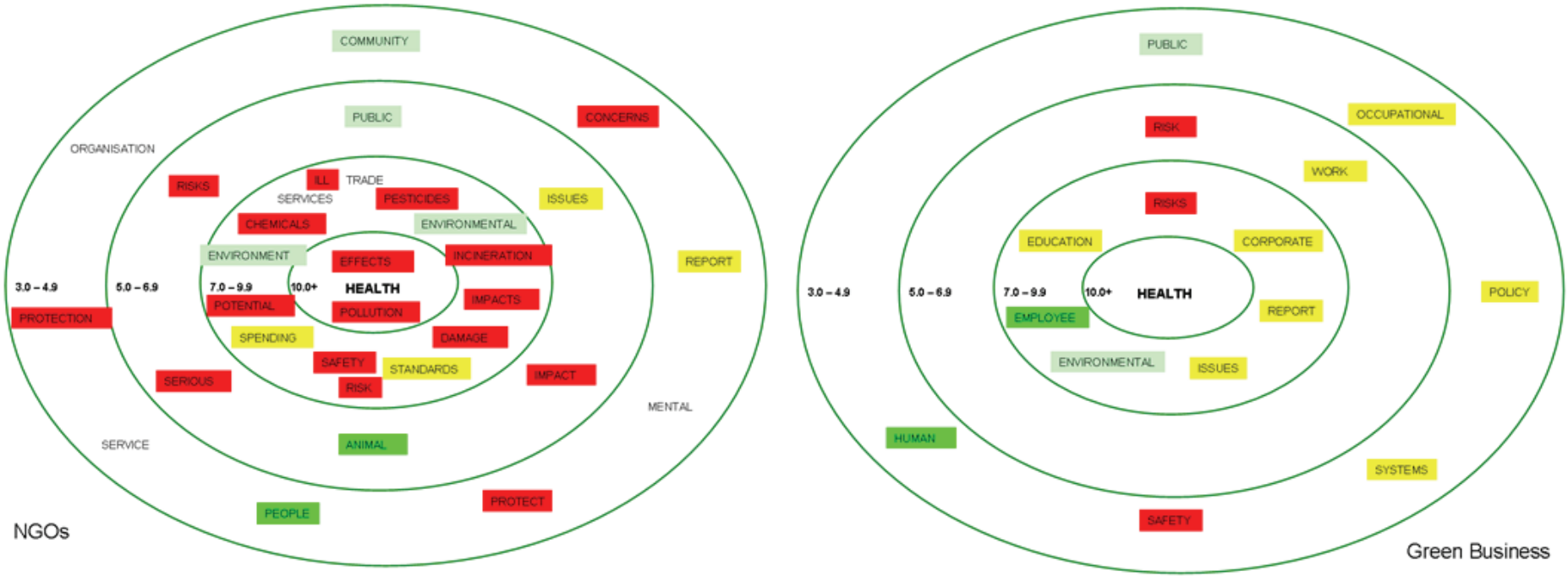

Figure K.2: The significant collocates of HEALTH presented on target diagrams

The red shading, in the left hand target diagram, communicates the radical NGOs' perception of a threat to HEALTH very strongly. In contrast, I note that I am tempted to interpret the relative sparseness of the target diagram for green business, as a sign of less concern. Such an interpretation of the results would, in my opinion, be entirely wrong. These diagrams illustrate the unusualness of the contextualisation of a word

with respect to the BNC benchmark, and the number of significant collocates is no indication of how seriously an issue is treated by the language community. However, again we see that the semantic field of management is best represented, in the green business corpus, among the significant collocates of HEALTH

K.3.3 COMMUNITIES

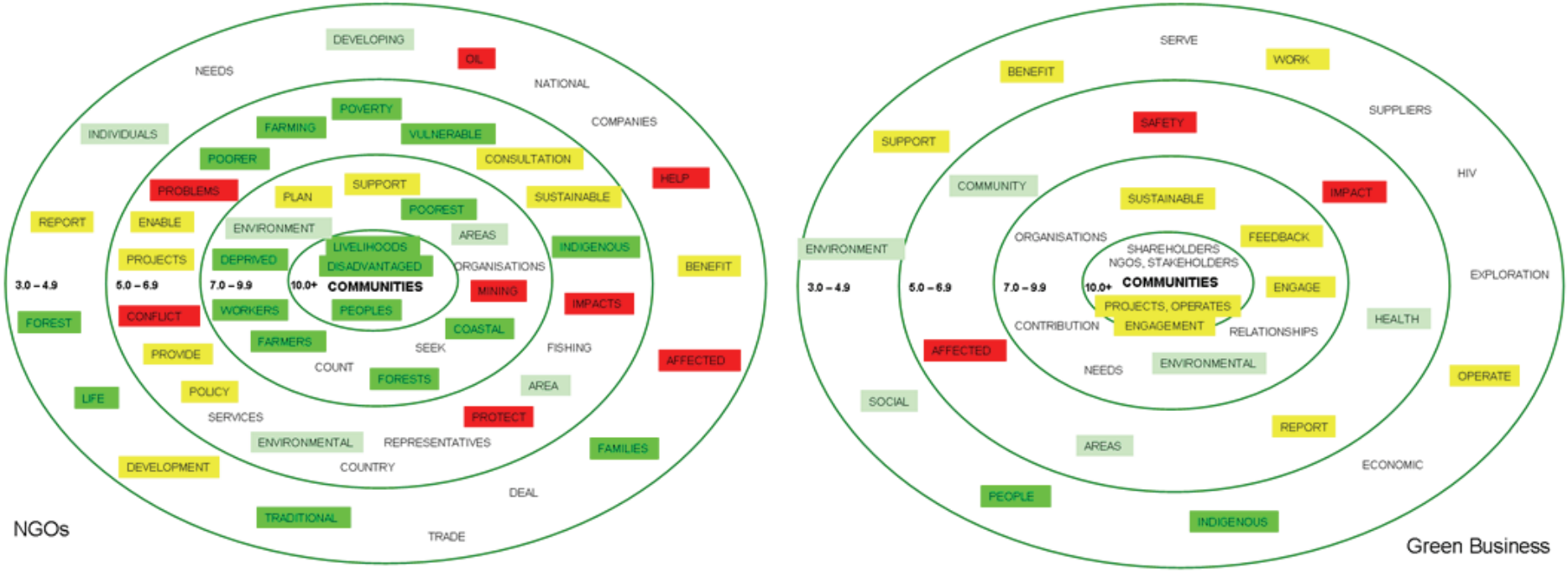

Figure K.3: The significant collocates of COMMUNITIES presented on target diagrams

In the target diagram for the radical NGOs, we can see that their primary usage of COMMUNITIES is to refer to the sorts of third world villages, which are often on the receiving end of the negative effects of globalisation. The green shading in the centre of the diagram draws attention to LIVELIHOODS, DISADVANTAGED, PEOPLES, POOREST, DEPRIVED, WORKERS, FARMERS and many other references. In the target

diagram for green business, there is a larger number of words with no shading. From these, we can deduce that one of their usages of COMMUNITIES is to refer to different groups of social actors, with whom green business recognises that it must deal. Reading out from the centre, the list includes SHAREHOLDERS, NGOS, STAKEHOLDERS, ORGANISATIONS and RELATIONSHIPS. This is not the only usage by green business of COMMUNITIES. There are references to both the green-shaded INDIGENOUS and PEOPLES and the red-shaded semantic field recognising concern: SAFETY, IMPACT and AFFECTED. Again, however, the yellow shading of management is still predominant in the pattern.

K.3.4 HABITAT-S

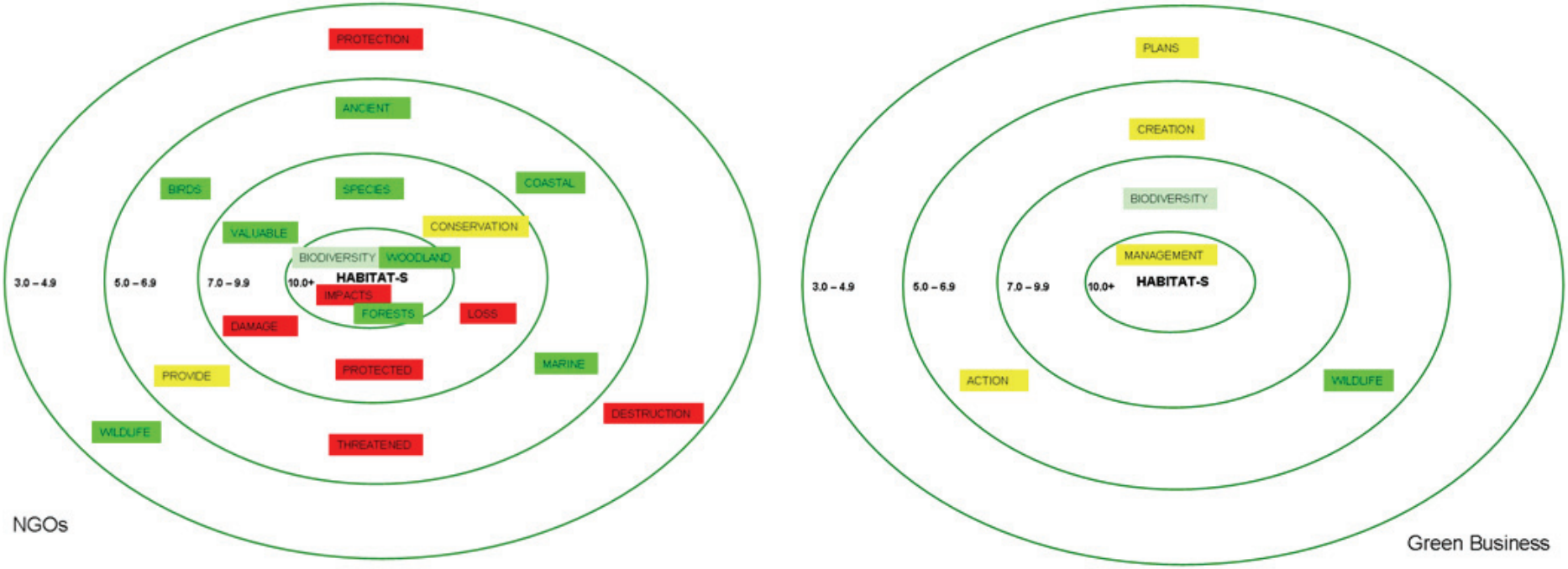

Figure K.4: The significant collocates of HABITAT-S presented on target diagrams

Based on the work I presented in chapter six, the target diagram for the radical NGOs is exactly what we would expect. In the bright green shading, we see that references to HABITAT-S are firmly anchored in the detailed representation of the 'fleshy' and 'fibrous' natural landscape. Further, the red shading, with words such as LOSS, PROTECTED, DAMAGE and several others, confirms the radical NGOs' perspective. In the target diagram for green business, there is a paucity of collocates which deters me from making any conclusive interpretation. But the semantic field of management is best represented among the few that are there.

K.3.5 AREAS

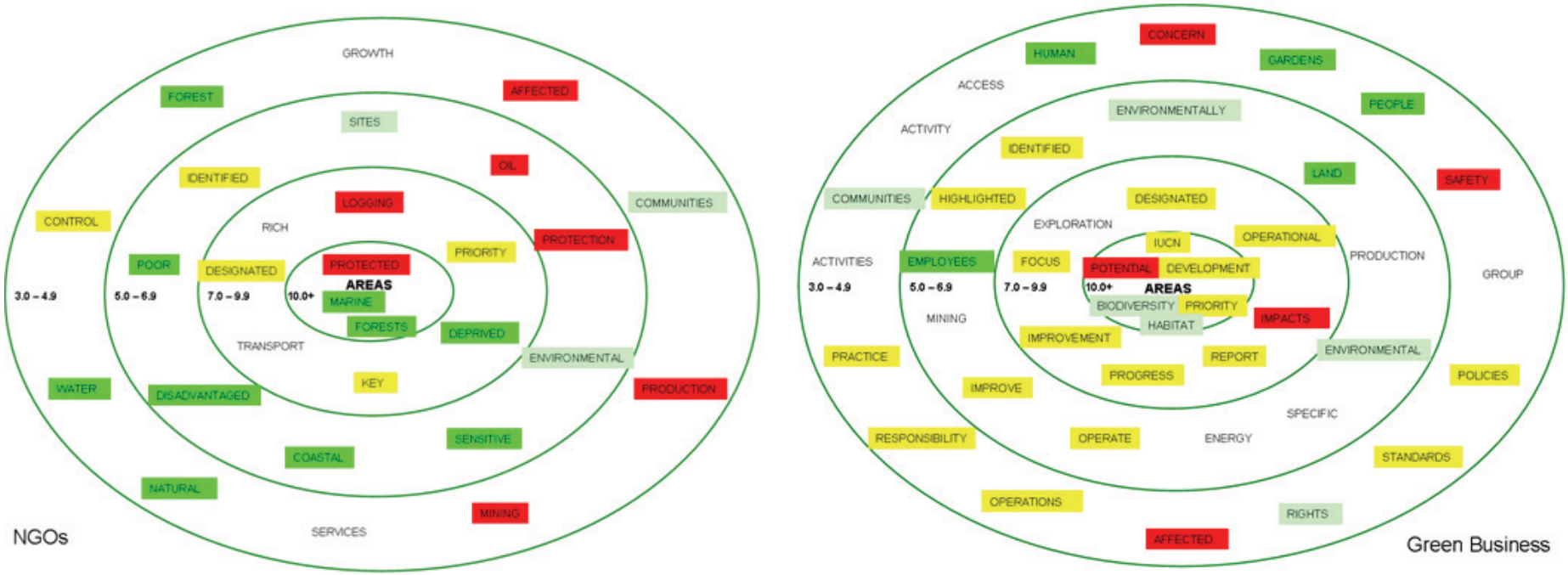

Figure K.5: The significant collocates of AREAS presented on target diagrams

AREAS is one of those linguistic signs which most people would immediately identify as being prone to different usages. The red shading of concern and the bright green shading of the ‘fleshy’ and ‘fibrous’ natural landscape are certainly present, and point to the usage of AREAS to represent geographic space. But we know intuitively that it is also used regularly to refer to issues which need management attention. We should not, therefore, make too much out of the heavy presence of the yellow shading of management in the green business target diagram. This will need closer attention in the concordance report.

Appendix L – The incorporation claim – contextualised concordance reports of the socially-constructed natural landscape

L.1 Introduction

The material in this appendix supports section 7.5.3 of chapter seven. I present a series of randomly-generated twenty-line concordance reports, for the linguistic signs which I identified as belonging to green business's semantic field of the socially-constructed natural landscape. The reports are not randomly-generated from all the occurrences of a particular linguistic sign in the discourse. They are an extract of a *contextualised* concordance report for the particular linguistic sign. I did this in order to accentuate a pattern of usage, which I am interested in studying. In chapter six and appendix H, I presented pairs of contextualised concordance reports for particular linguistic signs, which had been generated from the two corpora of green business and the radical NGOs. The focus of attention was the possible differences in contextualisation, of the same sign, by the two different language communities. Hence, for the generation of the concordance reports, I used the 'unique' collocates of the sign to limit the concordance report, as illustrated on the left of figure L.1 below.

Whereas chapter six and the appropriation claim required that I make comparisons between the two protagonists, in this section I examine the linguistic evidence of just one: green business. In order, therefore, to accentuate the patterns of usage in the linguistic discourse of just one language community, I elected to restrict the concordance reports by using the statistically *most significant* collocates of the linguistic signs, as illustrated on the right of figure L.1 below. The procedure I used was to take the edited list of collocates for each linguistic sign, and reject all the collocates which had an MI value below 7.0. The reason why I chose MI $\geq$ 7.0, as the criterion for selection of the contextual collocates, is that, from a review of all the eighteen linguistic signs, this figure was a good trade-off. On the one hand, I needed to find a cut-off point which was low enough to ensure, that as many of the linguistic signs as possible could be included in this contextualising procedure, i.e. they had at least one collocate with an MI $\geq$ 7.0. On the other hand, I wanted to keep the number of contextualising collocates, around a particular linguistic sign, down to a reasonably small number, so that the concordance reports were limited to the statistically most significant collocates.

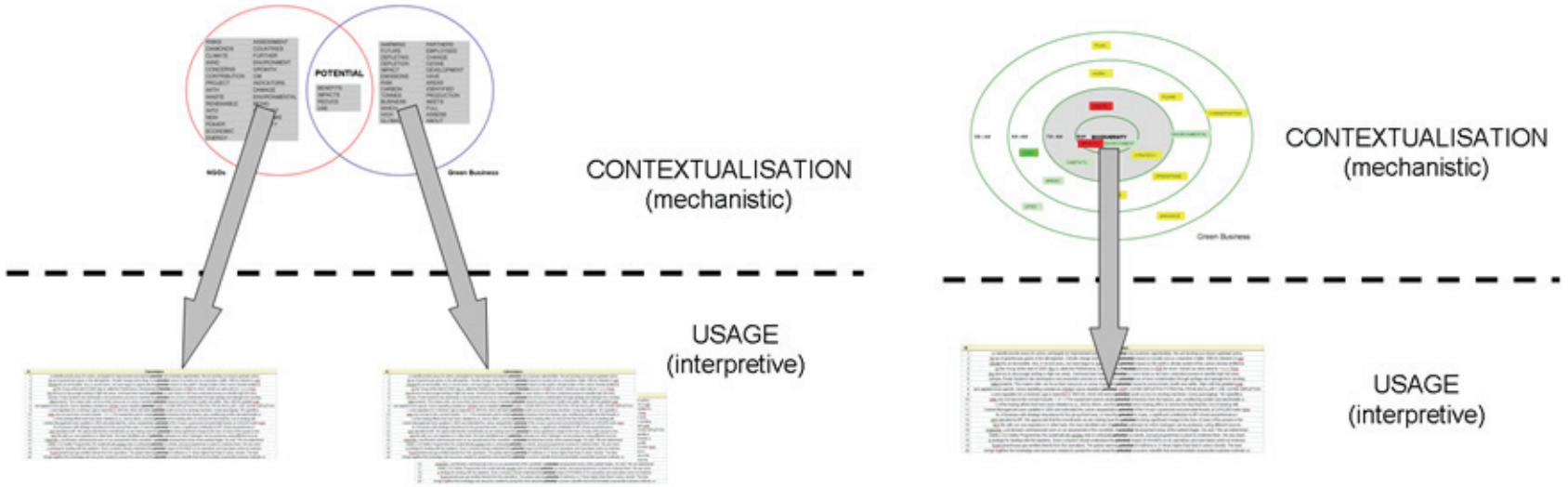

Figure L.1: Illustration of the procedures used to generate contextualised concordance reports. On the left is the procedure used for chapter six and presented in appendix H. On the right is the procedure used for chapter seven and presented in this appendix.

The object of study was the eighteen linguistic signs that I proposed as belonging to the semantic field of the socially-constructed natural landscape, in the linguistic discourse of green business, as shown by the shaded circle in figure L.2 below.

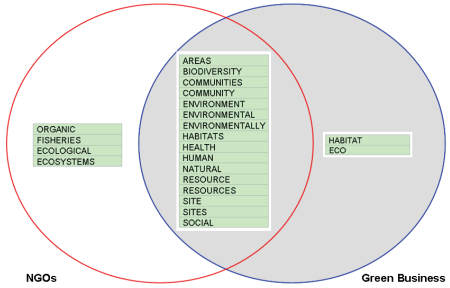

Figure L.2: Copy of figure 7.8 in chapter seven with the linguistic discourse of green business accentuated by the grey shading.

In table L.1 below, I present the collocates of each linguistic sign which qualifies for selection because it has an MI ≥ 7.0. Two of the signs: HABITAT and SITE, are not included, because they had no collocates which were significant to qualify.

Table L.1: The collocates with an MI ≥ 7.0 of the green business one-word 'keywords' in the semantic field of the socially-constructed landscape

	AREAS			**HEALTH**			**HUMAN**			**ENVIRONMENTALLY**	
1	IUCN	14,7606	3	RISKS	9,64236	1	DECLARATION	9,6705	2	ACCORDANCE	13,827
2	POTENTIAL	12,9562	4	CORPORATE	8,79418	2	FUNDAMENTAL	9,351	3	EFFICIENT	12,913
3	DEVELOPMENT	11,0454	5	REPORT	8,64293	4	RIGHTS	9,051	5	APPROACH	11,928
4	BIODIVERSITY	10,611	7	ISSUES	8,38497	5	GUIDANCE	8,6157	6	SOCIALLY	9,7715
5	PRIORITY	10,586	8	ENVIRONMENTAL	8,05024	6	CLIMATE	7,3568	7	ENSURING	9,4321
6	HABITAT	10,3729	9	EMPLOYEE	7,88928	7	ISSUES	7,3174	8	ECONOMIES	9,3912
7	DESIGNATED	9,73293	10	EDUCATION	7,76793	8	LABOUR	7,119	9	MANNER	9,2481
9	OPERATIONAL	8,65665				9	STANDARDS	7,1179	10	COALITION	8,5263
10	IMPACTS	8,61925				10	UNIVERSALLY	7,1002	11	DISPOSAL	8,2144
11	REPORT	8,51089		**COMMUNITIES**					12	CERES	7,9523
12	PROGRESS	8,18851	1	SHAREHOLDERS	14,7		**NATURAL**		13	SENSITIVE	7,6362
13	IMPROVEMENT	8,05121	2	NGOS	14,134	1	LNG	15,46	14	COMMERCIALLY	7,3903
15	FOCUS	7,61276	4	IMPACTS	13,523	3	GAS	9,6738	15	AFFORDABLE	7,3615
16	EXPLORATION	7,55241	5	PROJECTS	11,29	5	LIQUEFIED	8,5312	16	PRACTICABLE	7,3506
			6	STAKEHOLDERS	10,995				17	HARMFUL	7,3344
			7	OPERATES	10,963						
	BIODIVERSITY		8	ENGAGEMENT	10,882		**RESOURCE**				
2	BAP	15,3076	9	SUSTAINABLE	9,8163	2	VALUABLE	12,816		**RESOURCES**	
3	ENVIRONMENT	14,9203	10	FEEDBACK	9,6455	3	INTEGRATED	10,777	2	MINERAL	9,8866
4	DEVELOPMENT	14,9096	11	ENGAGE	9,2306	4	MINING	10,341	3	WASTE	9,7623
5	CLIMATE	13,1596	12	RELATIONSHIPS	8,0395	5	SUSTAINABLE	9,9976	4	HEALTH	8,3437
7	STEWARDSHIP	12,0391	14	ENVIRONMENTAL	7,2664	6	BIODIVERSITY	9,8956	5	MINIMISE	7,9118
8	ISSUES	11,1862	15	NEEDS	7,1925	7	PRODUCTIVITY	7,5563			
10	IMPACTS	10,6214	16	CONTRIBUTION	7,0865	8	WASTE	7,3846		**SITES**	
11	WASTE	9,56526	17	ORGANISATIONS	7,0577				3	ENVIRONMENTAL	13,14
13	HABITATS	8,28186					**ENVIRONMENT**		5	CERTIFIED	11,75

14	STRATEGY	7,85029			**COMMUNITY**			1	ENVIRONMENTAL	16,627		6	BIODIVERSITY	9,1577
				1	MEMBERS	12,678		4	CORPORATE	9,8086		7	HERITAGE	7,3962
				2	CHARITABLE	11,842		5	REPORT	8,5045				
	HABITATS			3	DONATIONS	11,66		6	IMPACT	8,5039			**SOCIAL**	
3	WETLAND	14,13		4	ORGANISATIONS	11,3						1	INVESTMENT	10,34
4	ENHANCE	13,094		6	STAKEHOLDERS	9,5936			**ENVIRONMENTAL**			2	CORPORATE	9,3125
6	GRASSLAND	9,7443		7	ACTIVITIES	9,4463		1	SYSTEMS	16,252		3	REPORT	9,0816
7	MANAGEMENT	8,4002		8	INVOLVEMENT	9,3466		4	IMPACTS	9,0532		5	ISSUES	8,0737
8	PROVIDE	7,7809		9	BASED	9,0735		5	MANAGEMENT	8,874		6	REVIEW	7,9599
9	WOODLAND	7,6727		10	ENVIRONMENTAL	7,7759		6	PERFORMANCE	8,0709		7	DEVELOPMENT	7,0797
10	BIRDS	7,644		11	REPORT	7,6721		7	ECONOMIC	8,002				
				12	CORPORATE	7,6696		9	STANDARDS	7,7769			**ECO**	
				15	RELATIONS	7,3938		10	REPORT	7,6212		2	EFFICIENCY	13,357

I used the collocates in table L.1 above, to limit the selection of concordance lines around the sixteen linguistic signs, in exactly the same way as I have already described in section H.1 of appendix H. On the basis of each report, I then instructed Wordsmith to randomly select twenty lines and the resulting sixteen reports are now presented. However, the order in which they are presented follows an organisation which I have selected, on the basis of my interpretive analysis of their usage. I have organised the sixteen reports into five subsets, each of which I characterise in the five subsections (L.2 to L.6), which follow. The colour coding scheme I have used in order to help with the interpretation of usage is as follows. First, there is always a proportion of the twenty lines in which the usage is not interpretable. Typical problems are that the word is used as a title, heading, an entry in a table or as part of a proper noun such as the name of an organisation. Occasionally, there has clearly been an error in my downloading process and the text is simply unintelligible. I have marked the lines which are excluded from analysis, by shading in the line number on the left with a light grey. The linguistic sign which is the focus of the concordance line is shaded with the pale green that I have used consistently, to indicate the socially-constructed natural landscape. I have used yellow shading to highlight representations of the process of management, which, I claim, is the semantic field that dominates the contextualisation of this landscape. In chapter six, I used red shading in order to highlight the semantic field of concern for the natural environment. In the case of green business, I have now shown how its preferred language within this semantic field, is a more abstract and quantifiable vocabulary with *impacts* as a particular favourite because, I have argued,

they can be measured and monitored. I have, therefore, adjusted the highlighting for this semantic field from red to pink, with which I have shaded the semantic field of the socially-constructed agents of damage.[1] In cases where references are made to the 'fleshy' and 'fibrous' natural landscape, I have used bright green shading. Any other highlighting I use is specific to a particular report, and is explained in the discussion that accompanies it.

[1] See my discussion of the socially-constructed agents of damage in section 7.3.1 of chapter seven and section I.4 of appendix I.

L.2 Green business – management of the productive landscape

The evidence, from the concordance reports in this section, suggests that when green business uses these three linguistic signs, in their statistically most striking manner, they do not really make any reference to a socially-constructed natural landscape. Rather than describing the natural landscape in more abstract ways, the evidence shows that they are used to describe the management processes of the productive landscapes of green business. The three forms describe the purpose of the various management procedures that green business implements, in order to be green.

L.2.1 Randomly-generated twenty-line contextualised concordance report for ENVIRONMENT

There are six lines (1, 8, 9, 10, 11 and 15), in which I am not able to interpret the usage of the sign. In eight of the remaining fourteen lines (4, 5, 6, 14, 16, 17, 18 and 19), ENVIRONMENT is used adjectivally in order to describe the contents of a report, i.e. it is a label which describes the purpose of the process of management. In two lines (7 and 20), ENVIRONMENT appears within the management process. In the remaining four lines (2, 3, 12 and 13), the particular green business has identified the possibility of impacts on the environment. This is the necessary first step of identification in the process of management.

Table L.2: Green business – randomly-generated twenty-line contextualised concordance report for ENVIRONMENT

N	Concordance
1	FERENCES Biffa Waste Services Ltd, (2001). 'Biffa and Biodiversity - An Introduction', Biffa Waste Services Ltd. Business in the Environment (2001). 'Business in the Environment 5th Index of Corporate Environmental Engagement', BiE. DEFRA (2002). 'The Weeds Act 1959', from Http://defra.gov.uk/environ/weedsact/weedsprevent.htm. DET
2	is important that we are aware of our impacts on the communities in which we operate. A brewery is often a major local employer and may also have an impact on the local environment, for example through water abstraction. We aim to maintain a positive relationship with our communities, communicating and consulting on major issues. One o
3	Sustainability issues for a multi-utility As a multi-utility business, we have identified a large number of individual ways in which our operations can impact on the environment, which are described in this report. In addition to environmental issues, consideration of sustainable development is also increasing our awareness of the
4	11 Health and Safety 43 Appendix 1 46 Appendix 2 47 Appendix 3 48 Appendix 4 50 Appendix 5 51 Appendix 6 57 Validation Statement 58 Glossary 59 2 ScottishPower Environment Report 1998-99 ScottishPower, throughout its businesses, will meet or improve upon legislative and regulatory environmental requirements and codes of pract
5	sit 45 schools. Six water butt sales planned. Free metering for sprinkler users offer to be extended to Hampshire and Isle of Wight. Partnership with stakeholders 21 Environment Report 1999-00 Case studies Making homes warmer and saving energy ScottishPower and EAGA joined forces during 1999-00 to deliver a trial initiative design
6	ndicator Performance improved on the 1999-00 baseline Performance less than the 1999-00 baseline No change in performance from the 1999 -00 baseline ScottishPower Environment Report 2000/01 15 Table 2.1 ScottishPower's Key Performance Indicators (KPIs) continued KPI Infrastructure Division Power Systems System efficiency EMF

7	operated, refined and finally decommissioned. During 2002 several major projects were initiated to improve the Process Safety Management Programme at GSK. Corporate Environment, Health and Safety developed technical guides specific to process safety that provide details of the risk assessment process as well as recommended best p
8	eaning we are on track to meet our 2005 target of a 30% reduction per unit sales since 2001. www.gsk.com - GlaxoSmithKline Corporate Responsibility Report 2004 140 Environment 11.3.1 Water Use In 2004, we used 20.5 million cubic metres of water – equivalent to the water used in one year by approximately 80,000 UK households. Thi
9	arketplace data * Workplace data o Staff profile o Health and safety o Pay and turnover o Staff satisfaction o Training and development * Community data * Environment data Add page Print report [0 pages] Submit feedback Staff satisfaction Employee opinion survey 2003 Direction 73 Job clarity 81 Customer focus
10	2003 initiatives * Focus on Distribution o Equality and diversity o Rewarding employees o Training and development * Community issues * A-Z of key issues * Environment issues Add page Print report [0 pages] Submit feedback Focus on Distribution Our Distribution business is committed to improving health and safety
11	s. This is something we're proud of and we aim to maintain and outperform minimum legal requirements wherever we can. In the UK our main environmental regulator is the Environment Agency, which we keep in close touch with, aiming to be open, honest and transparent. By working together we can have a more positive impact on the environmen
12	The process has the potential to make a significant contribution to BP's commitment to providing its customers with cleaner fuels to help them reduce their impact on the environment. BP presented the process in a paper at the European Refining Technology Conference in Rome, Italy, yesterday. The process, developed at a cost of some $10 m
13	ne-tenth of the emissions from the oil and gas we extract, which we use within our operations. It is the consumption of our products that has the greater impact on the environment and so offers the most significant opportunity for progress. The world's energy demand will need to be supplied from fossil fuel sources for some time. Unt
14	tary businesses, teamwork and common cause pervade all our activities, including relations with our partners. corporate values Welcome to BG Group's first Social and Environment Report. This report covers the policies and practices that govern our social and environmental performance and builds on the foundations laid down in our E
15	ss with the audience and its success in raising appreciation of the BBC as a whole (Flamingo International, 2004) INTRODUCTION IN BUSINESS COMMUNITIES THE OFFICE THE ENVIRONMENT FEEDBACK For us, corporate social responsibility is most directly achieved through the impact our programmes have on enriching the quality of society as
16	private-sector coal producers, and has significant interests in base and ferrous metals, industrial minerals and forest products. This is our first Safety, Health and Environment (SHE) report, and it covers the great majority of the businesses over which we exercise management control. Our independently managed subsidiary, AngloGold
17	able N R Parameter not reported in 2000 Environmental data for managed companies for the year ended 31 December 2001 (continued) Anglo American plc Safety, Health and Environment report 2001 47 Environmental data Rounding of figures may cause computational discrepancies. a Products are as follows: Richards Bay – pulp and packaging p
18	n with our local communities, constitutes the foundation for a successful contribution to sustainable development. Environment Anglo American plc Safety, Health and Environment report 2001 Our activities and related environmental challenges 19 Environment Exploration Opencast mining and quarrying Underground mining Mineral proc
19	CE Above: Core drilling near the Lisheen zinc/lead mine in Ireland, where a new orebody was identified 9 Anglo American plc Base Metals Exploration Safety, Health, Environment and Communities Report 2003 ???? ???? ???? ???? ???? ???? ???? ???? ???? ???? ???? ???? ???? ?????? ????? ????? ???? ???? ???? ???? ?????? ??? ???
20	ce review process has been revised and improvements made to the inclusion of sustainable developmentrelated targets. External benchmarks In the 2002 Business in the Environment Index of Environmental Engagement AWG scored 96 per cent and in 2001 the score was 99 per cent. Maintaining our track record in what is now a more diverse

L.2.2 Randomly-generated twenty-line contextualised concordance report for ENVIRONMENTAL

There is one line (18), in which I am not able to interpret the usage of the sign. In three lines (2, 3 and 17), ENVIRONMENTAL is used to describe an impact, issue and challenge which green business, presumably, intends to address. In the remaining sixteen lines, it describes some aspect of the management process. The head nouns are "performance, reporting, indicators, management system, criteria" and "programme."

Table L.3: Green business – randomly-generated twenty-line contextualised concordance report for ENVIRONMENTAL

N	Concordance
1	Accuracy Our assessment of data accuracy is based on a sample of environmental data related only to eco-efficiency within Unilever's manufacturing operations. The environmental performance reporting (EPR) process remains an effective data collection and reporting tool which is embedded in business processes. URSVL notes that th
2	here practical, shifting goods from road, to rail and water. For example: * Our Home & Personal Care business in Europe (HPCE) selects hauliers on cost, performance and environmental impact. This has helped it move a greater share of goods to more environmentally-sound transport. * Some of our plants in Europe are now making their own
3	iness leaders, academia, non-government organizations, and senior policy advisors to move constructively from conflict to consensus on a variety of social, economic, and environmental issues facing the world. The specific objectives of the Shell Center aim to: Create new technologies, processes, products, and market mechanisms
4	partnerships. Available at www.stwater.co.uk/library Biffa Corporate Responsibility Report A bi-annual report on environmental performance using the Green Alliance environmental indicators for the waste industry. Available at www.biffa.co.uk/publications Future Perfect Biffa Book V – an analysis of Britain's waste production and
5	ygen Demand) on a site by site improvement, but across the basis Group COD discharge per unit has risen slightly Develop Group-wide ??All operating companies audited environmental standards and against standards incorporate them into the corporate governance process Strengthen and formalise the ??Full guidance and protocol Group e
6	ooklet being produced on water efficient gardening tips for distribution with each butt. Table 4.1 Environmental management structure ScottishPower has developed an environmental management structure to provide direction and control of environmental issues. This incorporates a framework which specifies responsibility and accounta
7	key statistics reported monthly Completed Scoping exercise carried out Certification granted February 2002 Best Practice Guidance/Part 1 Detailed Guidance issued Environmental KPI reporting systems in situ for Operations, Maintenance, Asset Management, Business Systems and Risk Completed Governance and risk reviews are to be c
8	each of our divisions and locations can be found in Appendix A.3. Environmental Governance 16 ScottishPower Environmental Performance Report 2003/04 17 ScottishPower Environmental Performance Report 2003/04 PacifiCorp Thermal Integrate the major environmental compliance systems into each facility's EMS framework, in response to th
9	s to develop programmes to ensure full implementation of the policies in The way we work across all operations, in particular communities and sustainable development. Environmental Resources Management February 2005 Committed to global sustainability 1 38 39 38 40 41 42 43 46 47 15 2 3 4 3 5 13 10 12 11 10 12 1
10	n with a population of 12,000. The site has a very high profile in the area as a major employer and in terms of the site environmental footprint. It produces a local environmental performance report that is delivered to all houses in Ulverston. In addition it has a site liaison committee which includes local residents, town counci
11	elated to the environment undertaken in 2000 include: – continuing assistance to locations throughout the company, to enable the development and maintenance of their environmental management systems – environmental awareness training courses for staff throughout the company – audits of Powergen sites on behalf of group audiitors to
12	organisation's licence to operate in society comes not just from satisfying stakeholders through improved profits (the economic bottom line), but also from improving its environmental and social performance. These three elements encompass: * Economic – Profitability, wages and benefits, resource use, labour productivity, job creation
13	apacity with local biodiversity research and conservation groups; ?? Researching biodiversity in key areas identified by local partners; ?? Developing conservation and environmental management initiatives; ?? Strengthening institutional capacity in countries where the partners operate. Programme 2 The Partnership is building the capa
14	partnership with UNEP, the United Nations Environment Programme, to produce guidelines applicable globally for voluntary use by organisations reporting on the economic, environmental and social dimensions of their activities. There is more information at these websites: GRI Guidelines: www.globalreporting.org CERES, the Coalition for
15	tments Last year's and this year's commitments Environmental performance and Biodiversity Partnership Our 2004 environmental data is reported in Other key topics:

	environmental performance. Reporting on the British American Tobacco Biodiversity Partnership is in Other key topics: Biodiversity Partnership. Bunyoro farmers in Ug
16	overy from the Schrader Bluff reservoir on the North Slope of Alaska. The study is looking at the process which would be required, based upon the technical, economic and environmental criteria. If the decision is taken to proceed, then it could be operational early in the next century. Statoil, which began its carbon dioxide programme I
17	cupation. Diversity and inclusion 19 Respecting and supporting human rights 32-33 7 Businesses should support a precautionary approach to 3.13 Operating responsibly – environmental challenges. managing impacts 14-15 BP and the environment 22-29 8 Businesses should undertake initiatives to promote greater EN1, EN2, EN3, BP and the env
18	Russian and Spanish. Has the Report been prepared in accordance with the GRI? Based on our review we consider that BP's reporting (which includes both the Report and the environmental and social web content) has been prepared in accordance with the GRI Sustainability Reporting Guidelines 2002 (www.bp.com/gri). Areas of progress since 20
19	korpion Zinc mine in 2000. Activities include various types of geological and geophysical surveys as well as extensive drilling operations, all conducted under strict environmental management programme obligations and bi-annual external audits. Ambase has employed and trained a rehabilitation team that is fully dedicated to rehabilit
20	01 Safety, Health and Environment (SHE) reports, our 'Roadmap towards Sustainable Development' stated our intention to progress the integration of economic, social and environmental reporting. In this report, we have broadened the scope of our reporting to include reporting against our business principles. In the process, we have tak

L.2.3 Randomly-generated twenty-line contextualised concordance report for SOCIAL

There is one line (9), in which I am not able to interpret the usage of the sign. In six of the remaining nineteen lines (2, 3, 10, 11, 13 and 18), SOCIAL is used to describe issues or challenges which the green business may address. In fourteen of the concordance lines (1, 4, 5, 6, 7, 8, 10, 12, 13, 14, 15, 17, 18 and 20), SOCIAL is used to describe some part of the process of management; taking "responsibility," "reporting" or, most often, a "report." If we combine these fourteen usages as an adjective describing the management process with some of the six, in the previous category where green business intends to address a challenge, then well over three quarters of the usages are to describe the objective of the management process, i.e. improved *social* conditions.

Table L.4: Green business – randomly-generated twenty-line contextualised concordance report for SOCIAL

N	Concordance
1	rm value creation for our shareholders and employees. 3.1 Social Review 2000 Setting the scene For more information see Environment & Society at www.unilever.com 3.2 Social Review 2000 Setting the scene Unilever's Code of Business Principles Standard of Conduct Unilever conducts its business with honesty and integrity and with re
2	s learning across the industry and action on the ground amongst growers. As a member of the UK's Ethical Trading Initiative, the Partnership engages in dialogue about social and related environmental issues with governments, NGOs and other stakeholders. The Tea Sourcing Partnership also communicates to consumers a clear, factual un
3	development continues to count in performance appraisals and pay. Bonuses are based both on individual achievement and on how well the Group performs. Environmental and social aspects of sustainable development make up 20% of how Group performance is measured, with the focus in 2005 on safety, reflecting the priority being put on reducin
4	with suppliers and customers to deliver shared goals, especially environmental leadership. _ Extending the business case for sustainable development and corporate social responsibility. For several years, our corporate values have been embedded in the businesses but have tended to be implicit rather than explicit. This year we
5	for 2002 have been amended from those published last year to include retrospective data from recently acquired operating companies. 25 Scottish & Newcastle Corporate Social Responsibility Report 2003 Sustaining Resources Reportable injury rates (per 1,000 employees) 2002 2003 100 80 60 40 20 0 24·6 34·5 74·6 66·5 Produc
6	e and technical advice Performance reporting Group-wide audit including Corporate Governance Audit and review Objects and targets 23 Scottish & Newcastle Corporate Social Responsibility Report 2003 Sustaining Resources Sustaining our resources does not only mean environmental resources, but also our employee resource. Ensuring th
7	tions and operations safety to enhance their understanding of our business. ScottishPower Environmental and Social Impact Report 07 08 ScottishPower Environmental and Social Impact Report Environmental and Social Responsibility these audiences on our performance, our communications and on the major issues affecting the energy sector
8	rk. This was designed to flush out candid views on programmes and performance and was structured around a consistent framework. Finally, we reviewed Rio Tinto's 2002 Social and environment review to assess how well it represents progress and performance. All operations and interviewees were selected by ERM and we retained editoria
9	Page 1 of 6 CORPORATE SOCIAL ACTIVISM: Business Support for Civil Society Noke Kiroyan President/Chief Representative, Rio Tinto in Indonesia CIVICUS Asia Pacific Regional Assembly Partic
10	nvironment, with its buildings, air travel, and so on. This complements the actions the bank is already taking to address the indirect impact it has on environmental and social issues arising when financing projects for customers. In 2003, HSBC adopted the Equator Principles. These are voluntary guidelines that direct the bank not to len
11	nalysts) and then stock picking from this SRI universe based on financial data. Our SRI team has a programme of ongoing meetings with a large number of companies on social and environmental issues. At these meetings, our fund managers and analysts may also raise concerns about companies' corporate governance. At the end of 2004, w
12	partnership as an important way forward for tackling the challenges of sustainable development, which encouraged us in our partnership approach to addressing corporate

	social responsibility challenges including biodiversity. www.bat.com/socialreport ENVIRONMENTAL MANAGEMENT 107 t www.bat.com/socialreport ENVIRONMENTAL MANAGEMENT
13	and English. Hong Kong: Social Report for Hong Kong 2001-2002. Mandarin and English. Second Social Report due later in 2004. Hungary: Társadalmi beszámoló 2001-2002 (Social Report 2001-2002). Hungarian and English. Second Report due later in 2004. Japan: Social Report 2002-2003. Japanese and English. Kenya: Report due later in 2004
14	ealand: Social Report 2002-2003. English. Nigeria: Social Report 2003. English. Social Report 2004. English. Pakistan: Social Report 2004. English. Poland: Corporate Social Responsibility, Social Report 2003/2004. Polish and English. Russia: British American Tobacco Russia Social Report 2001-2002. Russian and English. British Americ
15	t 2002 offers comprehensive information on its operating practices, community involvement, environmental practices and commitments to best practice. To download RPMM's Social Status Report 2002, click on the pdf. To read the news release on the sale of our share in RPMM, click on the pdf. Click here to read the Foreign & C
16	hat this room is as full as it can possibly be; And, of course, Paula Banks who we are so proud to have a member of our team in BP Amoco as our Vice President for Global Social Investment. She and her team have made this evening possible, but I before I ask you to acknowledge them let me give you some numbers. Last year this event raise
17	1999 1 I am pleased to announce a major step forward in the evolution of company reporting from BP Amoco. Last year, we published our first combined Environmental and Social Report alongside our Annual Report and Accounts. Now we have moved on again, to produce our first combined financial, environmental and social report – conceived
18	have been held to evolve a Regional Land Use Plan. The exploration companies are working with all the affected communities to develop a master plan that will address social and environmental issues, foster proactive communications, and lay a solid foundation for continuing good relationships. Europe Engaging with the Sami People in
19	ips are essential to the effective running of the Amangwe Village centre, it will be a community-owned and community-based model. Another beneficiary of Mondi Kraft's social investment programme is the Siyabonga shelter in Richards Bay, which has worked tirelessly in the area for many years, taking on the responsibility of caring for
20	le Development Report 2004 Namakwa Footprint 2004 – Sustainability Report Scaw Metals Group Sustainable Development Report 2004 Tarmac Safety, Health, Environment and Social Report 2004 If you wish to receive copies of Anglo American's publications, please write to: Investor and Corporate Affairs Department Anglo American plc 20 C

L.3 Green business – operation of the productive landscape

In the previous section, I presented three linguistic signs which are used to describe the management processes for the operation of green business's productive landscapes. In this section, I present two linguistic signs which refer to the operations themselves. The adverb ENVIRONMENTALLY is used to describe one of green business's intended objectives for its productive landscape, namely *environmentally-responsible* operations.

L.3.1 Randomly-generated twenty-line contextualised concordance report for ENVIRONMENTALLY

ENVIRONMENTALLY is an adverb and, in all twenty of the concordance lines, its usage is as a modifier of an adjective which I have highlighted with bold typeface. In ten lines (3, 5, 7, 8, 9, 12, 13, 15, 17 and 18), the adjective is "responsible," and in a further eight lines "friendly, sustainable, efficient, acceptable" and "sound" are used. In all of these eighteen lines, the usage of ENVIRONMENTALLY is, therefore, as a label on the responsible or other positive, way, in which green business aims to operate its business. As opposed to the three linguistic signs in section L.2, all of which are predominantly used to describe the processes of management, ENVIRONMENTALLY is used as a label to describe an objective of the operations of the productive landscapes themselves. In order to achieve this objective, green business needs the aforementioned management processes.

Table L.5: Green business –randomly-generated twenty-line contextualised concordance report for ENVIRONMENTALLY

N	Concordance
1	gerants and Employ good practice in managing environmentally Draw up and implement a time-scaled action plan to replace March 2003 Fire Suppressants harmful substances. environmentally **harmful** refrigerants and fire suppressants where effective and affordable alternatives exist. Handsets and Employ best practice in managing the reuse Ta
2	s our plans include: • trialing the use of dust control curtains on waste collection lorries. • considering a reward system to benefit truck operators who drive in an environmentally-**friendly** (i.e. fuel efficient) manner. Oneday... By 2010, sulphur dioxide emissions will have to reduce by 80%fromthe 1980 baseline level.1 John Bail, Tr
3	ment issues in line with both the UK Government's Strategy for Sustainable Development and the Global Reporting Initiative proposals put forward by the Coalition for Environmentally **Responsible** Economies. It also includes appropriate social and economic aspects of our business. About Biffa Founded in 1919, Biffa Waste Services o
4	re is often little choice in what fuels and services can be purchased locally. The challenge is to get more energy to more people in ways that are both affordable and environmentally **sustainable**. If the world is to meet the Millennium Development Goals and make the term "sustainable development" a reality rather than an aspiration, i
5	d fuel throughout their operations. 7 Promote waste minimisation, encouraging beneficial re-use or recycling and where these are not practicable, ensure disposal in an environmentally **responsible** manner in accordance with our duty of care obligations. 8 Advise customers on the efficient use of energy and of essential resources such a

6	went to Bass in July 1999 they had 52 contracts dealing with waste management. Now they only deal with Biffa. We are constantly on the look out for cheaper and more environmentally **friendly** methods of disposal. To achieve this we focus upon our group strengths and environmental leadership values. We believe that recycling pays. I
7	in line with high ethical, medical and scientific standards and will comply with all applicable laws and regulations. Caring for the Environment We will operate in an environmentally **responsible** manner through systematic management of our environmental impacts, measurement of our performance and setting challenging performance targets.
8	promoting nature conservation. We also recognise that our stakeholders – educate and train our staff to conduct their have a role to play and aim to: activities in an environmentally **responsible** manner – inform our suppliers and contractors of our high environmental standards – encourage high standards throughout the supply chain
9	ystems – to implement effective environmental management systems and to ensure the environmental awareness of our workforce, encouraging every employee to act in an environmentally **responsible** manner. Continuous improvement – to improve the environmental performance of our processes and products through research and development
10	i and salmonella. Recyclable pre-finished products Pre-finished steels such as those supplied by Corus for the consumer products market are both recyclable and more environmentally **efficient** compared to post-finished steel coating. Compliance with the RoHS Directive Our products comply with the requirements of the Restriction on
11	sponsibility report 30 Automotive We are helping the automotive industry to build cars that are both safer for passengers and pedestrians and more fuel efficient and environmentally **friendly.** Stronger, safer, lighter and more efficient vehicles By combining engineering and materials science know-how, Corus is helping the automoti
12	nvironmental and social dimensions of their activities. There is more information at these websites: GRI Guidelines: www.globalreporting.org CERES, the Coalition for Environmentally **Responsible** Economies: www.ceres.org UNEP, the United Nations Environment Programme: www.unep.org www.bat.com/socialreport OUR APPROACH 10 Descriptio
13	environmental and social dimensions of their activities. There is more information at these websites: GRI Guidelines: www.globalreporting.org CERES, the Coalition for Environmentally **Responsible** Economies: www.ceres.org UNEP, the United Nations Environment Programme: www.unep.org Commitments: AA1000 Assurance Standard Last year we s
14	e of the major activities for BP and Statoil co-operation will be in developing technology to separate carbon dioxide from gas turbine exhausts and disposing of it in an environmentally-**acceptable** and economic manner. BP has already set up its own internal carbon dioxide management project to examine and develop a range of technical opti
15	mmunity-based organisations The core business activities in meeting society's needs for cost-effective goods and services in a manner which is ethically, socially and environmentally **responsible** FIGURE 17: LBG MODEL COMMUNITY INVESTMENT COMMERCIAL INITIATIVES BUSINESS BASICS CHARITABLE GIFTS some direct competitive advantage to t
16	l refinery. A major employer in South West Wales – employing over 2600 people at one time – it played a key role in the local economy. Llandarcy is adjacent to several environmentally **sensitive** areas, such as Crymlyn Bog, a RAMSAR site and Crymlyn Burrows a SSSI (designated Site of Special Scientific Interest). Llandarcy Garden Village
17	other leading companies will seek to address the corporate social responsibility and accountability agendas. Sustainable business performance goes hand in hand with environmentally and socially **responsible** behaviour. By implementing a risk-based approach to management of our business we are planning to deliver sustainable value to
18	th the non-governmental organisation, Fauna and Flora International (FFI), to explore the possibility of creating a viable market for tantalum mined under socially and environmentally **responsible** conditions, which will support the Congolese peace process and economic regeneration. During 2002, FFI, on behalf of Vodafone, presented th
19	ness enterprise is in the economic sphere - meeting people's needs and creating the wealth which raises living standards. However, they must do so in a way which is both environmentally and socially **acceptable.** As well as the tax revenues which fund state infrastructure and welfare programmes, multinationals play an important role in spre
20	rs. Environment Our environmental policy applies to all Unilever companies worldwide. It sets out our commitment to meet the needs of customers and consumers in an environmentally **sound and more sustainable** manner, through continuous improvements in environmental performance in all our activities. We use a life cycle approach t

L.3.2 Randomly-generated twenty-line contextualised concordance report for ECO

In nineteen of the twenty concordance lines, ECO is combined with EFFICIENCY. Only in line 13 does it combine with another word: INNOVATION.

Table L.6: Green business – randomly-generated twenty-line contextualised concordance report for ECO

N	Concordance
1	is coordinated by Forum For the Future (FFF), a nongovernmental organisation which focuses on sustainable development. Digital Europe has three main research areas: eco-efficiency and dematerialisation; social inclusion and sustainable regional development; e-business and corporate social responsibility. Vodafone has chosen the th
2	ves that go beyond our own operations. 10 Unilever Environmental Performance 2000 For more information see the environment section at www.unilever.com Our aims are: • Eco-efficiency **in the supply chain** To continually reduce our environmental impact in manufacturing as shown on page 5 and on the detailed data pages at Unilever.com and
3	several ways that we could improve. We responded with a number of commitments – our progress in 2000 is shown below. Our commitments Our progress Review the scope of eco-efficiency Introduced new measures (e.g. ozone depleting parameters (within Unilever operations substances) which we will report in 2002. and its supply chain). Re
4	es reporting in the year 2000 were not yet audited by the end of 2000. 96% of our manufacturing sites have a trained environmental manager. Target Performance Comment Eco-efficiency **in manufacturing** Target Reduction Actual for 2000 Reduction % % COD Target met 9.0 11.0 Hazardous waste Target met 8.2 18.7 Non-hazardous waste Not
5	sound and sustainable manner, through continuous improvements in environmental performance in all our activities. Our strategy focuses on achieving its goals through eco-efficiency, eco-innovation and our three sustainability initiatives on agriculture, fish and water. To implement our policy and strategy we have a clear line of res
6	to consider environmental issues and opportunities early in the innovation process, is being piloted across the Home & Personal Care Europe business. To incorporate eco-efficiency **in product On track design** by extending the application of life cycle assessment and developing new tools for use by product designers New factories ar
7	.2 Non-hazardous waste Not met 9.3 6.2 Water Not met 7.3 7.2 Energy Target met 3.0 3.7 CO2 from energy Not met 3.0 -0.3 Boiler / Utilities SOx Target met 13.7 18.0 Eco-efficiency **in innovation** Sustainable resource use We continue to develop water imprint data. Published the SWIM brochure on water catchment management using the S
8	sound and sustainable manner, through continuous improvements in environmental performance in all our activities. Our strategy focuses on achieving its goals through eco-efficiency, eco-innovation and our three sustainability initiatives in agriculture, fish and water. To implement our policy and strategy we have a clear line of res
9	occupational health and safety, environmental care and consumer safety, in a manner that recognises, and is consistent with, local legislation. We are committed to eco-efficiency – improving the environmental efficiency **of our supply-chain operations**, and to ecoinnovation – incorporating environmental factors into the design and
10	sh and water. We have gained considerable experience and understanding through our work in the sustainability initiatives and the advances we have made in improving eco-efficiency **in our factories**. So in 2003, we began to look more carefully at three additional areas: 1. Ways to connect better with our consumers on environmental
11	om our own site initiatives, and the remaining 6% is from the national electricity grids in the countries where we operate . Unilever Environmental Report 2004 17 7. Eco-efficiency **in manufacturing** AIMING FOR ZERO PROCESS EFFLUENT In 2004, 75 (approximately 20%) of Unilever sites worldwide achieved zero process effluent. Our Warrin
12	e loads reduced by 60% 47.9 63.6 39.6 46.2 70.3 75.1 33.3 This year we present a ten-year picture of Unilever's achievements in managing and delivering improved eco-efficiency **at our sites** around the world. We are conscious of our dependence on a healthy environment and the need to keep it that way with sound environmental p
13	takes time and makes target setting difficult, as our experience in fisheries testifies. To bring further impetus to our sustainability commitments, eco-efficiency, eco-innovation and environmental care are being incorporated into good practice guidelines for all of our business leaders. Environmental management is being included
14	the main environmental impact of refrigeration, which is essential to Unilever's foods operations. Action being taken We are working to tackle climate change through eco-efficiency, advanced refrigeration and renewables. We summarise our approach in the corporate responsibility mailer Chilled by the sun, published in November 2004.
15	Eco-efficiency We are committed to doing more with less - a concept known as eco-efficiency. Managing eco-efficiency We aim to improve the environmental efficiency of o
16	es as well as a number of indicators which reflect our environmental load or impact (such as global warming potential (GWP) 14, 17 and acidification potential 24) and eco-

	efficiency (energy consumption 23). The latter are normalised by the activity levels in our main businesses. Five year targets and projections (for 2003) were fixed
17	research and development for renewables be an incremental percentage of your primary exploration budget." Unknown Strategy Strategic direction Reducing costs through eco-efficiency – in the short-term, by doing more with less energy and materials; adopting cleaner technologies; reducing exposure to current and future costs of emis
18	he feeling that work on the financial and environmental aspects of sustainable development was already well advanced. You've just heard from Chad how the concept of 'eco-efficiency' was developed and the environmental and competitive advantages it can bring. But I still felt something was missing, business had not been looking har
19	t practice. For example, we have followed the progress of the Global Reporting Initiative (GRI) and the World Business Council for Sustainable Development (WBCSD) eco-efficiency programmes, which have influenced our approach and actions. ScottishPower understands that sustainable development is a dynamic process, involving pr
20	improved audit scores against EHS Standards in all operations. 2006 - Investing in the Future Add business value by launching second generation goals that drive for eco-efficiency and enhanced safety performance. 2007 - Building Sustainable EHS Practices Achieve global certification of our EHS management systems and integrate beh

L.4 Green business – managing resources carefully

The three examples I present here, exemplify the classic business approach to the natural landscape. Here, the natural landscape is valued as a provider of raw material input for business's productive landscapes. To this has been added the enlightened green business strategy of resource conservation: making sure that Mother Nature's gifts are managed carefully.

L.4.1 Randomly-generated twenty-line contextualised concordance report for RESOURCE

There are four lines (14, 15, 19 and 20), in which I am not able to interpret the usage of the sign. In two lines (13 and 18), RESOURCE is used within the context of a general discussion about resource usage. Then there is one line (1), in which reference is made to the 'fleshy' and 'fibrous' natural landscape, and a "river" is described in aesthetic terms. In the remaining thirteen lines, RESOURCE is contextualised within a process of careful usage, with the possible exception of the usage in line 16, which refers to "extraction" without any reference to efficient utilisation of the resource. These thirteen (of sixteen) examples of usage, are exactly what we ought to expect in the linguistic discourse of green business. These are examples of good conservation attitudes.

Table L.7: Green business – randomly-generated twenty-line contextualised concordance report for RESOURCE

N	Concordance
1	ed. The result of these activities is a paradigm shift in people's attitude towards the river: instead of a dumping ground for rubbish, they now view it as a valuable resource. Conclusion I have given you a quick glimpse of some of the many actions we take – as a business – to bring vitality to communities and the environment. We
2	y workforce the necessity of using less water at home and at work. Before starting the water reduction programme, refinery staff were made aware that water is a valuable resource and not an inexhaustible supply. For example: sweeping concrete can often be just as effective as hosing down, taps should be turned off and leaks should be rep
3	landfill sites produce large quantities of methane. Recognised as a powerful greenhouse gas, methane is harmful to the environment if left uncontrolled, but a valuable resource if collected and utilised to produce electricity. How we in the UK deal with our waste, both as a nation and within the European Union, is a growing political
4	e remixing programme means that tyres are remoulded three times before they are scrapped. This saves around 400 tonnes of rubber every year. The Waste We Handle as a Resource However, this is only part of the picture. As a waste management company, we are in the unusual position of receiving what's left of other people's resources
5	32 Registered sites as a proportion of total number of sites (ISO14001; ISO9000; EMAS; IiP) % 70 43 Number of integrated contracts that include waste minimisation and/or resource management services No. 9 15 Number of partnerships with local authorities, businesses and the voluntary sector on resource recovery No. 22 19 Number of sites wi
6	materials to 'value recovery' As a company which handles more than 1,000 million tonnes of waste and wastewater materials per year, we are ideally placed to improve resource productivity by, for example, using these materials for power generation or recycling them. During 2001/2002 we: • Returned more than 99% of this material t
7	as a whole. • We have generated more renewable energy and recovered more value from so-called 'wastes' that we handle; this is an indication of our contribution to 'resource productivity'. • Our community affairs programme has been even more active than before with the benefits of our long-term partnerships beginning to show thro

8	(based on our 1999 asset baseline) from CHP by 2010. In the US, we expect to continue development of a balanced portfolio with PacifiCorp now engaged in an integrated resource planning exercise with its state regulators to determine near-term build strategy to meet growing customer demand. Additional gas generation construction is al
9	tion tax credits that catalyse 230 aMW of new renewable investments and acquisition in PacifiCorp's generation mix, adding new resources consistent with our Integrated Resource Plan; • Add all cost-effective demand-side management resources – at least 150 aMW – by 2010 as identified in the Integrated Resource Plan through an evaluati
10	rs with an acceptable level of comfort, linked to the use of less fuel. In the US, generation and demand-side resource decisions are driven by PacifiCorp's Integrated Resource Plan and programmes are developed in co-operation with regulators and stakeholders. Our participation in this Integrated Resource Planning process, by includi
11	and US Environment Forum members see Appendix A.1). During the course of 2003/04, topics of discussion included the climate strategy, clean air activities, integrated resource planning, wind resource development and transmission developments. To increase stakeholder engagement in Utah's Wasatch Front, we developed and hosted a serie
12	K operations worldwide in 2003 is equivalent to the energy consumed in one year by approximately 220,000 UK households. 63 Water Usage Water is a valuable natural resource that we can help to conserve through efficient use and recycling. GSK operates in several regions of the world that are classified as "water stressed" - Afric
13	energy or resource recovery and includes a small amount of composting. Incineration without energy recovery includes processes that do not result in beneficial energy or resource recovery. Non-hazardous waste disposed does NOT include recycling on-site or off-site or non-routine waste. Biological waste rendered non-hazardous after treat
14	ency o Environmental incidents * Environmental complaints * Environmental auditing o Environmental research o Renewable energy o Land use and biodiversity o Resource use o Waste management o Working with suppliers Add page Print report [0 pages] Submit feedback Environmental complaints Because of what we do an
15	ons * Our actions o Climate change o Energy efficiency o Environmental incidents o Environmental research o Renewable energy o Land use and biodiversity o Resource use o Waste management o Working with suppliers Add page Print report [0 pages] Submit feedback Air emissions Power stations emit pollutants into
16	, it will work with diverse partners and local communities to attain sustainable development, cultural preservation and biodiversity conservation. Compared with other resource extraction projects, the direct physical impacts of developing the fields are relatively small. Environmental impact mitigation is being incorporated into alm
17	mers. In 2001, the company's environmental management system was certified to ISO 14001. Improvement objectives were established in the area of greenhouse gas emissions, resource conservation and waste management amongst others. Actions in 2002 have delivered significant gains against these objectives. These include a nine per cent redu
18	es, LNG ships and supply vessels. Resource use and waste management Waste is an unwanted by-product of our activities and represents the unnecessary use of a natural resource. Effective waste minimisation and management is key to protecting human health and the environment. Water quality and use The uncontrolled discharge of waste
19	rom Sister Eva Molefe at Anglo Coal's Highveld hospital Anglo American plc, which had its origins over 80 years ago, is one of the world's largest mining and natural resource groups. With its subsidiaries, joint ventures and associates, it is a world leader in gold, platinum group metals and diamonds, is one of the world's largest
20	tares) built land materials and waste transport energy annual operations construction 1,200 1,000 800 600 400 200 0 39 329 116 1,130 14 environment and resource use continued awg plc Sustainable Development Report 2002 spoil and aggregate management costs (£m) 100% landfill 5.86 2.48 1.50 target actual An indicat

L.4.2 Randomly-generated twenty-line contextualised concordance report for RESOURCES

There are two lines (7 and 19), in which I am not able to interpret the usage of the sign. RESOURCES is used with several different references, many of which have nothing to do with the natural landscape. There are three lines (3, 4 and 6), in which it refers to efforts or investments made by the green business, in order to achieve certain objectives. In four lines (10, 13, 18 and 20), it is paired with HUMAN. But in eight lines (1, 2, 5, 9, 11, 12, 16 and 17), it is used to refer to some aspect of the 'fleshy' and 'fibrous' natural landscape, and its context is one of careful usage by systematic management.

Table L.8: Green business – randomly-generated twenty-line contextualised concordance report for RESOURCES

N	Concordance
1	liver on our commitments we will develop a system which contains the key elements shown above. The system will focus on measures to reduce our overall use of natural resources, minimise the environmental impact of our business activities and develop our positive social contribution Managing our social impact We are building on the
2	cial and economic benefits. This is also the best environmental option because breaking up the phone to recycle its materials and components results in some waste of resources. Some components cannot be recycled and have to be disposed of. Our strategy is to establish mobile return programmes in all of our operating companies. Ph
3	vise on, efficient water use. For our employees we will: • Maintain the highest standards of health and safety in our operations • Provide all necessary training and resources in health and safety matters • Ensure that staff receive appropriate education and training to enhance their skills and develop their potential • Reward our
4	vise on, efficient water use. For our employees we will: • Maintain the highest standards of health and safety in our operations • Provide all necessary training and resources in health and safety matters • Ensure that staff receive appropriate education and training to enhance their skills and develop their potential • Reward our
5	rever practicable, minimise the negative impact of the company's activities on the environment and society • Ensure the efficient use of energy, water, fuel and other resources • Minimise waste, prevent pollution and re-use or re-cycle waste materials. In accordance with our duty-of-care we will dispose of residual waste responsibly
6	GROUP PUBLICATIONS We are constantly looking at how best to provide the information our stakeholders need quickly and cost effectively. We also seek to minimise the resources used wherever possible. If you are currently receiving this report because you are on our mailing list please let us know if you would prefer to receive an e-
7	reached £32 billion. At this rate annual losses will reach £90 billion within 10 years. 28 Scottish & Newcastle Corporate Social Responsibility Report 2003 Sustaining Resources Brewery waste has a number of potential uses that could ensure the environmental impact of the waste produced is limited. The generation and use of biogas,
8	r example, hydro impacts on fisheries and injuries to birds from collision with overhead lines and wind turbines. In common with most human activities, we consume resources and generate waste materials. We do, however, have positive social contributions to make in supplying energy, providing employment and increasing GDP (Gros
9	he controlled abstraction of water, the re-use of process water within power station cooling systems and, in our mining operations, minimising water take to safeguard resources and minimise discharges. We seek to ensure that all our aqueous effluents are treated to a high standard before release. This responsible use of water is part
10	clude audits, reviews and public reporting at both the Group and local business level. Assurance covers all areas of the Group's operations including financial, human resources, safety, health, and environmental matters, as well as legal issues. It also extends to activities that Group companies are associated with such as the employ
11	g global needs for minerals and metals 2004 Sustainable development review Introduction Rio Tinto is a leader in finding, mining and processing the earth's mineral resources to meet essential needs. The continued success of our business is underpinned by a strong commitment to all aspects of sustainable development with an integra
12	include the following: Green Chemistry Guide - offers guidance to GSK scientists and engineers on applying Green Chemistry concepts to enable more efficient use of resources, reduce environment, health and safety impacts and minimise costs. It includes: • A ranking and summary of the most used chemistries and 'best-in-class' exam
13	the formation of an insulating blanket around the earth by trapping heat from infra-red radiation Group The Company or any of its subsidiary undertakings HR Human

	Resources HSE Health, Safety and Environment, including security in relation to management systems ILO International Labour Organisation IPIECA International Petrole
14	sk assessments carried out each year. Assessment of the frequency of total reportable occupational illnesses is a key reactive indicator. • The development of health resources and expertise throughout the Group to drive the health improvement programme within the asset-based structure. We have produced detailed guidance documents
15	ect on local rivers. The rehabilitation of the tailings facility has been developed to ensure long-term protection of public health, no deterioration of environmental resources and beneficial, sustainable after-use. A wetland cover is proposed, as this is regarded as one of the best covers for long-term control of acid generation and
16	981-84 1985-88 1989-92 1993-96 1997-20000 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0 m3/tonne of ore Water – Case studies ENVIRONMENT we aim to conserve environmental resources and prevent or minimise adverse impacts arising from our operations P A G E 29 Increased atmospheric concentrations of greenhouse gases (GHGs) – mainly carb
17	elated injuries and health impairment of employees and contractors. • Contribute to addressing priority community health issues. Environment • Conserve environmental resources. • Prevent or minimise adverse impacts arising from our operations. • Demonstrate active stewardship of land and biodiversity. • Promote good relationships w
18	ty of workforce, especially in southern Africa. • Improve talent management. • Review employee communications systems. Safety Occupational health HIV/AIDS Human resources 8 OUR SUSTAINABLE DEVELOPMENT TARGETS Anglo American plc Report to Society 2002 ENVIRONMENT What we said How we did Targets for the future Energy and CO2
19	ople and white women. Lazarus Zim (left) is driving transformation in South Africa 18 Anglo American plc Report to Society 2004 Legislation The Mineral and Petroleum Resources Development Act became effective on 1 May 2004 and the South African State is now the custodian of the country's mineral resources. The Act requires, inter a
20	ess standards for aspects of work where regulation may not exist including: • environment (water, air, land and biodiversity) • planning • health and safety • human resources – business ethics, labour law, employment rights, bribery and corruption and governance. Measurement indicator target 2005 % compliance with regulation 100%

L.4.3 Randomly-generated twenty-line contextualised concordance report for NATURAL

This concordance report reveals the heavy weighting of energy corporations, within the linguistic discourse of green business, and how strikingly unusual is their usage of this linguistic sign, compared with the benchmark of the BNC. In nineteen of the twenty lines, NATURAL is used as a pre-modifier to GAS – a resource for green business's productive landscapes. In only one concordance line (8), does it combine with another word and, this time, "World Heritage Sites" provides a reference to a part of the natural landscape which *is* natural. In five of the lines (5, 6, 9, 16 and 17), the green business presents NATURAL GAS within a context of some environmental benefit.

Table L.9: Green business – randomly-generated twenty-line contextualised concordance report for NATURAL

N	Concordance
1	ro forma) € per share 1.87 2. 10 1.33 1.87 3.99 96 97 98 99 00 * Crude oil, natural gas liquids and natural gas. Includes oil sands. 5,800 million cubic feet of natural **gas** = 1 million barrels of oil equivalent. Shell Exxon Mobil Texaco Chevron TotalFinaElf * Shell ROACE figures are calculated as CCS earnings plus the Group
2	00 5 Royal Dutch Petroleum Company Adjusted CCS earnings* (pro forma) € per share 1.87 2. 10 1.33 1.87 3.99 96 97 98 99 00 * Crude oil, natural gas liquids and natural **gas.** Includes oil sands. 5,800 million cubic feet of natural gas = 1 million barrels of oil equivalent. Shell Exxon Mobil Texaco Chevron TotalFinaElf * Shel
3	na, we need to meet the sustainable development challenges head on. We are expanding in new and established markets, building on our leadership position in liquefied natural **gas** (LNG) and developing new, more efficient and cost effective technologies. Developing new and growing established markets We are helping develop gas market
4	ating in more than 145 countries and employing approximately 119,000 people. Most people know us for our retail stations and for exploring for and producing oil and natural **gas**. Our activities also include: – marketing, transporting and trading oil and gas; – providing oil products for industrial uses including fuel and lubrican
5	www.shell.com/qatar Transport fuel from natural gas Midwives and their patients are transported in Toyota Avensis cars as part of our GTL trials in London Converting natural **gas** into very low sulphur fuel helps cut local vehicle pollution and diversify the supply of transport fuels. Since 2002, we have been blending Shell's Natural
6	d and produce oil and gas, efficiently and responsibly, to fuel the next 20-30 years of economic growth, particularly in developing countries. We will provide more natural **gas**, and develop our businesses in gas-fired power generation, for the cleaner production of electricity. We are moving fast in the area of renewables, with
7	incorporated in 1998, has been awarded a 20 year concession to study, finance, design, build and operate a natural gas transportation and distribution network and market natural **gas** to residential, commercial and industrial customers, on behalf of the Egyptian General Petroleum Corporation (EGPC), in the Governorates of Cairo, Giza, Alexa
8	ty Standard. In August 2003 we announced the following four commitments to enhance the Standard. 1. Shell will not explore or drill for oil and gas resources in natural **World Heritage Sites**. This is the first time an energy company has publicly declared where it will not operate. We recognise the outstanding universal value tha
9	ansport section. Biffa has been discussing, with vehicle manufacturers, the possibility of using alternative, low emission fuels, like liquid propane gas or compressed natural **gas**. Plans to trial dual fuel vehicles have not succeeded because the enlarged fuel tanks substantially reduce the carrying capacity. In addition, networks for
10	ement since 2000. This is measured against a 22% growth in beer production volumes for the Group over the same period. S&N produces the majority of thermal energy from natural **gas**. During, 2004 our manufacturing sites obtained 85% of the thermal energy from natural gas, and 12% from heavy oil and light oil. The Group also obtained 3% of
11	trical insulation in switchgear, with a high global warming potential. SO2 Sulphur dioxide, which contributes to acid rain and can affect local air quality. Sour gas Natural **gas** which contains a small proportion of hydrogen sulphide. THERMIE EU funded programme for clean combustion technology. TPO Tree Preservation Order. Statutor
12	worldwide over the last fifty years, from coal to oil, and now there is a further shift going on in favour of natural gas. We are part of that process. Five years ago natural **gas** represented no more than 15% of our production. Now its 40% and still rising. Not just in the developed world - where we're the largest producer in the United
13	ll established. BP alone produces and uses 5000 tonnes of hydrogen every day. So a lot has been done to drive down the cost of this hydrogen, which is mostly coming from

	natural **gas**. Similar routes to hydrogen from coal are well established. But there are many new ideas on the horizon, including new ways of getting hydrogen purity up fr
14	e zero sulphur fuels. Again, this will involve many external partnerships. Medium term change: One way we'll be helped to our goal is through the growing importance of natural **gas** in our total hydrocarbons production - 15% of our production in 1991, 43% last year, and likely to rise above 50% by the end of the decade. Change of this m
15	ng the University of California at Berkeley and California Institute of Technology with $20 million to study catalytically converting methane, the principal component of natural **gas**, into useful fuels and chemicals. Just last week BP announced that it is donating equipment and funds equaling $10 million to the University of Colorado at Bo
16	al gas in Egypt are fuelling a major government initiative to convert the country's vehicles to compressed natural gas (CNG). BP Amoco, with a 40% stake in the first natural **gas** vehicles company, has helped to pioneer this effort. Converting to CNG reduces vehicle exhaust emissions of carbon monoxide and non-methane hydrocarbons b
17	e were among the first companies to install a double-lined underground tank with leak detection for hydrocarbons storage. • We were the first company to prove oil and natural **gas** reserves existed in exploration wells without the need to flow test the well, so minimizing the impact on the environment. • The Natural Gas Vehicle Compa
18	ccur as a direct result of the emissions from our operations, which include exploration and production activities, refining, chemicals manufacture and distribution of natural **gas**, crude oil and other products. Our operations continually strive to reduce emissions to meet and, where practicable, to go beyond, the requirements of emi
19	assessments are being carried out in the Caspian for the Baku-Tbilisi-Ceyhan oil and gas pipeline projects. Assessments completed in 2001 include the Tangguh liquefied natural **gas** project in Indonesia. Sited in an area of great biodiversity with distinctive indigenous cultures, Tangguh presents significant challenges that we are addre
20	a 138 291,907 50,590 110,426 19,868 375,200 3,515 a CO2 emissions are from processes and fossil fuels consumed (coal, petrol, diesel, light and heavy fuel oil, LPG and natural **gas)** calculated using IPCC guidelines where appropriate, and do not include emissions incurred from electricity purchased. b Total energy used is calculated from

L.5 Green business – managing for the health of people, community and human rights?

In this section, I present concordance reports for HEALTH, COMMUNITY, COMMUNITIES and HUMAN RIGHTS. With the exception of the last report, the evidence shows that, within the linguistic discourse of green business, their usage is most often within the contextual framework of the management processes of the green corporations. The pattern is most easily seen, by simply running one's eye over the whole report and gaining an impression of the extent of the yellow shading around the pale green shaded node word. The four words are presented in declining order of their manageability (!). Within the linguistic discourse of green business, HEALTH is most manageable, with eleven out of thirteen cases. COMMUNITY follows and then COMMUNITIES, both with relatively high proportions of manageable usages. The report for HUMAN RIGHTS comes last, and its evidence suggests that the green corporations have made only very modest progress, towards incorporating it within their management processes.

L.5.1 Randomly-generated twenty-line contextualised concordance report for HEALTH

There are seven lines (4, 7, 10, 16, 17, 18 and 20), in which I am not able to interpret the usage of the sign. I have divided the remaining thirteen lines into three categories of usage of HEALTH. First, there are seven lines (5, 6, 8, 9, 11, 12 and 15), in which HEALTH or risks to HEALTH are managed. Line thirteen is an additional borderline case where "principles of HEALTH education" are taught. In the second category of four lines (1, 3, 14 and 19), HEALTH is used in the context of risks and issues that the green business identifies. If we make the not unreasonable assumption that the identification of a problem is the first step in trying to resolve it, and the not unreasonable assumption that, in making this representation of identification, the green business also intends to resolve it, then eleven of the thirteen usages of HEALTH incorporate it within the process of management. The final example (line 2), has a rather unusual usage. In this line, HEALTH has been used to record the fact that the green corporation has paid out "$99 million" in "fines, compensation and settlements."

Table L.10: Green business – randomly-generated twenty-line contextualised concordance report for HEALTH

N	Concordance
1	reholders and customers. Vodafone does not tolerate child labour, forced or compulsory labour. Our employment policies also cover a range of related issues including health

	and safety, and equal opportunities and diversity. Suppliers Vodafone's Code of Ethical Purchasing aims to ensure that our suppliers share our values and uphold
2	Fines, compensation payments and settlements printable version In addition, **we paid $99 million** in health, safety and environmental (HSE) **fines, compensation and settlements**. In 2003, we paid $142 million, restated to exclude payments also reported as environmental li
3	In the UK, waste has traditionally been disposed of in landfill sites. However, landfill disposal has sometimes resulted in significant environmental and associated health risks such as contaminated land and pollution of underground water resources. Thus, waste disposal has caused great public concern and it is now recognised tha
4	nce. Partner Organisations GlaxoSmithKline has established functional and reporting relationships for Corporate Environment, Health and Safety (CEHS) and Employee Health Management (EHM) to encourage the integration of EHS throughout its business. R&D Chemical Development By using more focused and data-driven development, Gla
5	Operations group within EHM reports on a dotted line to the Vice President of CEHS. The two groups collaborate extensively in many areas including audits; management of health risks such as ergonomics and chemical agent exposures; product stewardship; injury and illness reporting; and EHS and employee health competency building. Employ
6	and HIV treatment and education. Another important part of having the best place to work is having a safe working environment. Compliance to GlaxoSmithKline Employee Health standards, which were developed in 2001, is assessed via a global audit programme. From this audit programme and additional global health data, three key healt
7	2003 health & safety initiatives * Marketplace issues * Workplace issues o Employee consultation o Employee health and safety * Occupational health * 2003 initiatives * Focus on Distribution o Equality and diversity o Rewarding employees o Training and development * Community issues * A-Z of key is
8	5 How we manage our responsibilities anticipating potential future issues, and advising on strategic options for improvements. Management systems To implement our health and safety and environmental policies, Corus business units have management systems that cover quality, health, safety and the environment. These systems focu
9	g to workplace human rights. Through our Social Responsibility in Tobacco Production programme we support tobacco farmers in integrated crop management; environmental, health and safety management and in meeting standards of social responsibility including eliminating exploitative child labour. We also deploy BEST, our Business Enabler
10	airman of the British American Tobacco p.l.c. CSR Commitee Independent standards and assurance Dialogue focus: material issues Marketing and youth smoking prevention Health risks and product information Harm reduction Public place smoking Primary supply chain Excise and tackling illicit trade Other key topics Environmental perfo
11	oactive stance, we intend to be among the leaders in the field of occupational health improvement. The control of health risks is an integral part of our Environmental, Health & Safety management programme. Safety hazards tend to be obvious and the harm they can cause is immediately seen. Health hazards on the other hand are usually diff
12	our review Our terms of reference agreed with BP were to: 1. Discuss, with a selection of BP executives and senior managers, each of the four non-financial policies (Health, Safety and Environmental Performance, Ethical Conduct, Employees, and Relationships) to understand objectives and priorities for embedding the policies, the me
13	, hygiene, nutrition, family planning and STD and HIV/AIDS symptoms and treatment. They were also taught skills such as how to organise community meetings, principles of health education and behaviour change, counselling and participatory methods such as plays, songs and debate, and covered more mundane things such as record keeping. They
14	ion in the management and performance of our businesses, and our approach to solving the challenges facing our enterprises. Support research and development into safety, health and environmental issues, and promote the implementation of international best practices and technologies where appropriate. This policy will be reviewed regular
15	approach to corporate governance, and in particular to implementation of the risk management guidelines from the Turnbull committee, we have identified good safety, health and environmental performance as being key to the achievement of our business objectives. Economic Social Increased emphasis on reporting by divisions and op
16	aims: Safety and Health • Prevent or minimise work-related injuries and health impairment of employees and contractors; • Contribute to addressing priority community health issues. Environment • Conserve environmental resources; • Prevent or minimise adverse impacts arising from our operations; • Demonstrate active stewardship o
17	trol The full authority for a member of the Anglo American Group of companies to introduce and implement the Group's SHE policy. 43 Glossary Anglo American plc Safety, Health and Environment report 2001 MMSD The Mining, Minerals and Sustainable Development project, an independent analytical study funded through the WBCSD, as part of
18	rofessional nurse, Beauty Mashego, attends to Kentsane Ndlovu and Potia Mnguni at the Siphosensimbi primary health care clinic in Witbank. Anglo American plc Safety, Health and Environment report 2001 18 Environment We believe that good environmental management at every site, coupled with sound business performance and transparent
19	uffer from this disease. DURING 2002 THE HEALTH SCREENING PROGRAMMES HAVE CONTINUED AND WE SHOULD BE ABLE TO COMPLETE THE BASELINE FOR OCCUPATIONAL HEALTH IN 2003. NEW HEALTH ISSUES HAVE EMERGED SUCH AS WHOLE BODY VIBRATION AND WORK HAS BEEN COMPLETED ON THE ANGLO AMERICAN OCCUPATIONAL HEALTH MANAGEMENT GUIDELINES. THE EXTENDED HEALTH
20	t in Namibia. The picture below right shows how the rehabilitated track now matches the natural surroundings. 15 Anglo American plc Base Metals Exploration Safety, Health, Environment and Communities Report 2003 AIRBORNE SURVEY IN THE CANADIAN ARCTIC Exploration crews have traditionally considered lowlevel flying with heli

L.5.2 Randomly-generated twenty-line contextualised concordance report for COMMUNITY

There are six lines (6, 7, 8, 9, 10 and 17), in which I am not able to interpret the usage of the sign. In addition, there is one special usage (line 16), in which reference is made to a specific COMMUNITY somewhere in the 'fleshy' and 'fibrous' natural landscape. Here, the green corporation is making representations of the community members' points of view, regarding the proposed introduction of a drilling platform. This one example is the exception that proves the rule. In all the remaining thirteen concordance lines, COMMUNITY is used in an abstract socially-constructed sense. I have divided these thirteen examples of usage into two categories, although the distinction is blurred and I think it is, perhaps, best to consider them as being on one continuum. First, there are eight lines (1, 3, 12, 14, 15, 18, 19 and 20), in which COMMUNITY is placed within a corporate programme of improvement, in which the yellow shading is evidence of the representation of the process. In the other five lines (2, 4, 5, 11 and 13), the representation by the green corporation looks more like a meeting of equals, in which the establishment of a one to one relationship with the COMMUNITY is the goal. Words such as "relations" and "involvement" appear here. The representations of COMMUNITY can be as a more active agent and, sometimes, the partnership's purpose is the enhancement of some third party, as in line five where "business and community can work together to provide effective conservation sites for Britain's declining bird population." But in others, COMMUNITY is more passive and the corporate involvement amounts to the yellow shaded enhancement of the first category, as in line thirteen, where the green corporation wonders if the "large amounts of money spent on community relations are taken for granted." Of the thirteen or fourteen interpretable usages of COMMUNITY, we can see that the usage is very similar to that of HEALTH. The green corporation can manage its way to improving the health of people, and it can manage its way to improving the condition of communities.

Table L.11: Green business – randomly-generated twenty-line contextualised concordance report for COMMUNITY

N	Concordance
1	ted on, related key performance indicators and other features of the CR report; – The collation, aggregation, validation and reporting processes of the environmental, community and employment performance data; and – Progress made against 2004/05 commitments. • Reviewing the content of the report against the findings of our work and,
2	f the community-benefiting element of our commercial initiatives is counted in our voluntary contributions, not the whole cost of the marketing effort. **Volunteering** Community **involvement** is one element of our corporate social responsibility. Around the world our brands and companies engage with a wide variety of social and environmen
3	heir employment package to best suit their needs. Lifestyle continues to be adopted across the group and is now offered to around 8,000 of our UK based employees. Our community work, investment and education programmes ensure that we have a positive impact on local communities. COMMUNITY Think to drink! Severn Trent Water has han

4	cesses that we already have in place, Severn Trent is well placed to meet the changes in reporting required for the March 2006 annual report. **Working with the broader** community **Severn Trent regularly engages** with local, regional and national governments and non-governmental organisations on matters relating to the environment and so
5	e Herts & Middlesex Wildlife Trust and the Friends of Stockers Lake. Three Valleys' long standing partnership with these two organisations demonstrates how **business and** community **can work together** to provide effective conservation sites for Britain's declining bird population. by company staff was reduced during the year. The company i
6	initiatives through Education Pack which we send out prior to people visiting the site, or just through general queries about electricity/energy/environment (e.g. CER, Community Newsletter, environmental posters, Generation Environmental Factsheet, etc.) • Community Newsletter includes Environmental Policy Statement – distributed to 1
7	ability Report Annual Report/20-F Annual Report/20-F Annual Report/20-F Environmental Sustainability Report Annual Report/20-F Environmental Sustainability Report Community Report Annual Report/20-F Environmental Sustainability Report Annual Report/20-F Environmental Sustainability Report Community Report All reports – Fiscal
8	an be achieved when schools and business work together to deliver improved learning and resources for pupils. 32 ScottishPower Environmental and Social Impact Report Community and wind turbines for schools. ScottishPower's commitment to engaging energy consumers on environmental issues is further illustrated by the ongoing Carbon N
9	tonne ore consumption processed) (kWh per tonne ore processed) Target not met in 2000 2000 Rio Tinto Social and environment review 43 Land Emission reduction Other Community relations 2000 2000 2001 2000 2000 2001 2000 2000 2001 2000 2000 2001 Description Target Actual Target Description Target Actual Target Description Target Act
10	n kind contributions. The total community expenditure for the Group was US$49.5 million in 2000. US$ million Cash Time In kind Total Charitable gifts 5.5 0.2 0.5 6.2 Community involvement 29.4 0.7 0.7 30.8 Management costs 6.8 0.6 0.0 7.4 Commercial initiative 4.2 0.6 0.3 5.1 45.9 2.1 1.5 49.5 Expenditure includes Rio Tinto's head
11	change and we have a responsibility to work with our neighbours to manage that change. The foundation for this is building lasting relationships. **Achieving harmonious** community **relations** is a core part of our managers' work. Accordingly, they carry out community programmes through direct and regular engagement with their communities.
12	alled quality and diversity of our assets but also on our record as good neighbours and partners around the world. Accordingly, we set ourselves high environmental and community standards. Our commitment to health, safety and the enhancement of the skills and capabilities of our employees is second to none in mining. We seek to make
13	g companies are not doing enough to spread the wealth accumulated from our operations, on the other, some mining executives feel that the **large amounts of money spent on** community **relations** are taken for granted. In addition, the mining industry is often attacked because of its perpetual negative image - that of an industry that strip
14	risks and maximise the benefits to our customers, local communities, employees and shareholders. We are delighted that our commitment to environmental initiatives and community **involvement** has been recognised by our inclusion within the FTSE 4Good and Dow Jones indices, which are intended as a guide for those committed to Socially Re
15	es, whether with customers, shareholders or local communities. Being recognised as a good corporate citizen helps sustain these relationships and we undertake a range of community activities that demonstrate our commitment to acting in a socially responsible manner. Our targeted programmes should be relevant to our stakeholders to ensure
16	'Our world is controlled by moving ice and all that it brings with it. Northstar is compatible with that. It looks offshore but behaves as near shore.' More critical community members thought that 'indigenous knowledge' could be more fully recognized and better incorporated into environmental impact statements. HSE In terms of th
17	essentially differentiated by a company's motive for the contribution and the desired mix of business and community benefits (see Figure 17): • charitable gifts; • community investment; • commercial initiatives in the community. The general principle underlying these three categories is that a charitable gift is given with only
18	. We aim to develop and maintain profitable and lasting relationships with customers, offering safety, service, quality and value supported by continuous innovation. COMMUNITY ACTIVITIES Wherever we operate, we will seek to make a positive and meaningful contribution to community **activities** and to behave in a socially responsible m
19	g provider with SAQA. ? Black Economic ? Aim for R375 million on procurement spend in 2003. ? Empowerment ? Meet company obligations in terms of the Mining Charter. ? Community Development ? Monitor and report implementation of Anglo American plc community engagement guidelines. ? ? Develop a better synergy with local government for
20	uring 2005, a more complete sustainable development assessment – including cleaner production opportunities, community challenges and cleaner production opportunities, community challenges and environmental issues – will be required. People People are the key to our achievements. As People are the key to our achievements. As a compa

L.5.3 Randomly-generated twenty-line contextualised concordance report for COMMUNITIES

There is one line (1), in which I am not able to interpret the usage of the sign. This concordance report shows that COMMUNITIES has a wider spread of usage, in the linguistic discourse of green business, than does COMMUNITY. There are six lines (9, 12, 13, 14, 19 and 20), in which COMMUNITIES is used as one of several social/political players with whom green corporations recognise that they have a mutual relationship, and with whom they need to have a dialogue. In line twelve, a senior executive of a green corporation responds to a question by saying, "The pressures you've mentioned have derived from regulators, government, stakeholders, shareholders, local communities and environmental impacts – all influencing the strategic decisions that you make." There are also two relatively unusual usages (lines 15 and 16), in which the reference is used to refer to "business communities." The remaining eleven concordance lines of COMMUNITIES, show it being used in a similar way to the thirteen lines for COMMUNITY above. In the first category, nine of the lines (2, 3, 5, 6, 7, 10, 11, 17 and 18), place COMMUNITIES in some business process or management process, where their welfare or enhancement may be assumed and, importantly for the green corporation, can be measured. An illustration of this is in line five, where the corporation has a commitment to develop "measurement tools that reflect the effectiveness of our contribution of resources to neighbouring communities and of our relationship with the communities." In the smaller group of two lines (4 and 8), COMMUNITIES are the object of a process of engagement in dialogue. As I suggested in the analysis of COMMUNITY above, these two categories may be better considered as one continuum of a relationship, in which the perceived passivity of COMMUNITIES varies.

Table L.12: Green business – randomly-generated twenty-line contextualised concordance report for COMMUNITIES

N	Concordance
1	civil society groups and government authorities and begin building partnerships that strengthen the long term sustainability of community projects." Social Benefiting communities Nigeria update Community agitation for greater and rapid development of the Niger Delta region remains high. The Nigerian government has taken steps toward
2	ustainable energy future. It has two core objectives: reducing environmental impact of fossil fuel use, and increasing access to sustainable energy, particularly in poor communities of developing countries. It's an innovative effort, which allies social investment with a business approach and develops projects that build on Shell's unique
3	upport the government's target of achieving a 20% reduction in CO2 emissions by 2010. The Trust is delivering investment in new renewable projects of benefit to local communities enabled by customers who pay a small premium through our Green Tariff. Further information about our Green Energy Fund or our other activities within the c
4	west Territories of Canada. No one was relocated for this development and detailed agreements have been established during the five year **consultation with neighbouring** communities and approval process. • Sustainable urban land development: Kennecott Utah Copper (KUC), holds land surrounding the mine in excess of its needs and there i

5	included in the performance section, page 22. Commitment: “Develop measurement tools that reflect the effectiveness of our contribution of resources to **neighbouring** communities and of our relationship with the communities.” Rio Tinto has signed a memorandum of understanding with Warwick University Corporate Citizenship Unit, UK, f
6	inues, with completion targeted for early 2005. Establishment of an effective process to address the compensation claims improved relationships between KEM and local communities and has enabled the implementation of a number of important community development and capacity building initiatives which seek to secure sustainable solut
7	S&E reports Does your company have any statistics on implementation of community involvement policies? * 2004 SD Review: results data is provided for contributions to communities, contribution to the economy and input/output measurements * See also all local S&E reports Do you have any information on your land agreements? * 2004 S
8	n, particularly for children from disadvantaged backgrounds, is the central aim of HSBC's education initiatives. Community **Encouraging our employees to engage with the** communities **in which we do business** is a vital part of CSR. FAQs Read the frequently asked questions about Corporate Social Responsibility. CSR report Download the la
9	sources in an efficient manner, we will move further down the track of sustainable and responsible manufacturing. This is good for patients, shareholders, employees, communities and the environment – and hence good for our business. This will continue to be a focus in the future.” 13 the assessment of the health, safety (excludin
10	ganization and the World Bank to local schools and community-based organisations. Where possible, we ensure that our programmes are sustainable and can be repeated in communities with similar needs. Our programmes comprise major initiatives in public health, support for education, product donations, and support for employee involvem
11	cal libraries and providing them with book vouchers Powergen Environment Fund The Powergen Environment Fund provides £50,000 a year to environmental projects in local communities. In 2001 / 2002, 16 projects received support, including hedge planting, nature trail improvements and composting schemes. The fund was launched in 1999 and i
12	ommunity, sensitive to all the impacts of our business. SC: The pressures you’ve mentioned have derived from regulators, government, stakeholders, shareholders, local communities and environmental impacts – all influencing the strategic decisions that you make. Do you think your stakeholders recognise just how many factors you are havi
13	s we are not unique. But China's social needs remain vast. No individual company is likely to make a huge difference by itself. But by working with government, partners, communities and other stakeholders, and by sustaining the commitment over time, foreign investors can have an impact within their areas of expertise. And it is for that r
14	ESPONSIBILITY REPORT 2004 2 Chief Executive’s statement continued BG Group seeks to identify and manage potential impacts. We believe that, where relationships with communities are built on openness and trust, projects can proceed with mutual benefit. BG Group respects the right of our host countries to decide their own developme
15	ternity pay, paternity leave and adoption leave, including for same-sex couples. BBC Corporate Social Responsibility 30 INTRODUCTION SERVING AUDIENCES IN BUSINESS COMMUNITIES THE ENVIRONMENT FEEDBACK The BBC won the 2004 Zayed International Prize for Environment, with BBC World series Earth Report – now reaching 260 million home
16	over the next year we will work with industry and government to find ways to protect young people from adults posing as children online. INTRODUCTION IN BUSINESS COMMUNITIES THE OFFICE THE ENVIRONMENT FEEDBACK Portrayal The BBC broke new ground this year by casting two disabled actors in lead roles for the first time in a
17	t, human rights and social investment. UNDERSTANDING OUR IMPACTS AND RESPONSIBILITIES We carry out Social Impact Assessments (SIA) to identify potential impacts on communities and to develop strategies to manage these. We also engage with local, national and international non-governmental organisations (NGOs). Understanding the p
18	ment and capacity building in Northern KwaZulu-Natal. The organisation’s ongoing training initiatives, allied to relationship building and a deep understanding of the communities in which it operates, forms the basis of the development of sound small businesses in these rural areas. These include small-scale farming projects and rur
19	reports to the Board of directors. 7. Stakeholder engagement: Promote and maintain open and constructive dialogue and good working relationships with employees, local communities, regulatory agencies, business organisations and other affected and interested parties, to increase knowledge and enhance mutual understanding in matters of
20	tening Stakeholder engagement We engage widely with a range of stakeholders to ensure our CSR programme addresses their key concerns. This includes investors, NGOs, communities, suppliers, customers and employees. Last year we made a commitment to complete an independent review of our Group-level stakeholder engagement programme

L.5.4 Randomly-generated twenty-line contextualised concordance report for HUMAN

There are four lines (2, 4, 8 and 17), in which I am not able to interpret the usage of the sign. The alert reader will also note that I have not just shaded HUMAN with the pale green background, but also RIGHTS, with which it combines in every one of the twenty concordance lines. This

gives us a very strong indication of the overwhelming statistical usage of HUMAN, within the linguistic discourse of green business. It is rarely used to make references to 'fleshy' human beings. Instead, it combines in the socially-constructed representation of HUMAN RIGHTS. But one of the great advantages, as I have previously suggested, is that these socially-constructed representations can be measured. In the specific case of HUMAN RIGHTS, there are internationally-acknowledged standards against which the green corporation can make its comparisons. However, the sixteen interpretable concordance lines suggest that the green corporations have not made as much progress, in their process of managing towards improved human rights, as they seem to have made with the health of people and communities. Twelve of the sixteen lines (1, 3, 6, 9, 10, 11, 12, 13, 14, 16, 18 and 19), place HUMAN RIGHTS within general statements of corporate policy in which, of course, business expresses its support for human rights, the importance of human rights and its intentions to avoid having anything to do with human rights abuses. Such statements, the cynics (or realists) will say, are only to be expected. In just four of the sixteen lines (5, 7, 15 and 20), have I been able to find representations from a green corporation, of its process of management around HUMAN RIGHTS. None of them are entirely convincing, as representations of a management system that can guarantee against human rights violations within the corporations' operations or spheres of influence. Indeed, the usage in line twenty merely serves to underline the brutal reality of life in the natural landscape, around some of these green business productive landscapes. Here, Anglo American reports that it has been working "to provide human rights training to the military personnel deployed in the vicinity of the mine."[1] With the need for such measures, one can hardly be confident that the human rights situation in this part of the natural landscape is secure.

Table L.13: Green business – randomly-generated twenty-line contextualised concordance report for HUMAN

N	Concordance

[1] "We have owned a one-third, non-managing stake in Cerrejón Coal since February 2002. […] The Guajira region, in which the operation is located, has seen significant levels of activity by armed groups, principally the FARC and para-military groups. In April 2004, a group of Wayuu Indians in Portete, close to Puerto Bolivar, was tragically massacred by paramilitary forces. Cerrejón immediately implemented a humanitarian aid programme. Hundreds of community members sought refuge at Puerto Bolivar, where they were given food aid. Cerrejón provided further logistical support to enable community members to return to Portete once the military had made the area safe. Cerrejón bases its security policies on **the Voluntary Principles on Security and Human Rights. It has also been working with the Inter American Centre on Human Rights in Costa Rica, inter alia, to provide human rights training to the military personnel deployed in the vicinity of the mine."** Anglo American, *REPORT TO SOCIETY 2004*, 42, http://www.angloamerican.co.uk/static/uploads/RTS%202004.pdf, (accessed 26th February 2008).

1	Human Rights Every man, woman and child is entitled to fundamental human rights, defined by international conventions such as the UN Universal Declaration of Human Rights. As a global company, we consider it fundamental to respect, prote
2	operate according to our security standard and plans are in place in a further two to ensure consistency. ISSUE Human rights impact assessment The Danish Centre for Human Rights is developing a management tool to help companies assess the way they deal with human rights issues. Shell South Africa (SSA) volunteered to test the Centr
3	Our approach to human rights printable version Shell supports human rights and believes that business, as an integral part of society, can make an important contribution to further
4	g policy offers support for individuals who wish to stop smoking. There are clear Company rules against smoking when working in bars and restaurants. Child labour and human rights issues The Company's principal operations are in Western Europe. The Company does not employ children below the school leaving age and has clear policies
5	rectly involved; such our employees and their families during the policy of apartheid in South Africa. Building on our experience, we have adopted a formal policy on human rights based on our support for the United Nations Universal Declaration of Human Rights and on our proper care for those involved directly with our operations and
6	undamental Principles and Rights to Work, please see our 2004 Global Compact Communication on Progress * We also support the US/UK Voluntary Principles on Security and Human Rights and the Global Sullivan Principles Does your company require its main contractors to apply core labour standards? * Human Rights Guidance p. 10: all cont
7	e change is essential. The company is guided by its own values and ethics in circumstances where there is uncertainty or conflicts of priority. There are some areas of human rights observance where GSK has direct responsibilities. As an employer GSK is: * committed to providing a fair salary and good conditions of employment; * comm
8	96 Our environmental performance 2002 103 Biodiversity Partnership LABOUR PRACTICES 110 Labour practices report 117 Occupational health and safety HUMAN RIGHTS 122 Human rights report SOCIETY 128 Business integrity 129 Community LOOKING AHEAD INDEPENDENT ASSURANCE REPORT APPENDIX III GRI Economic Performance Indicators V GRI
9	should support and respect the protection of internationally proclaimed human rights within their sphere of influence and should ?? Make sure they are not complicit in human rights abuses. We expect our companies to respect the universally recognised fundamental human rights of all their employees and we will encourage our suppliers a
10	e United Nations Global Compact's two guiding principles on human rights. These are: 'Businesses should support and respect the protection of internationally proclaimed human rights within their sphere of influence' (principle 1) and 'make sure they are not complicit in human rights abuses' (principle 2). We expect our companies to res
11	involving our business. British American Tobacco Uzbekistan employs over 1,100 people and has been present in the country for 11 years. It works to support and respect human rights within its operations and has taken steps to use its influence positively within its supply chain. We believe that the company makes a significant contribut
12	support and respect the protection of internationally proclaimed human rights within their sphere of influence' (principle 1) and 'make sure they are not complicit in human rights abuses' (principle 2). We expect our companies to respect the universally recognised fundamental human rights of all their employees. We will: ?? Encour
13	c vehicle to provide the fundamental human right to development, for nations and individuals. Business, in other words, is essential to the development and protection of human rights for the five billion people on this globe. Without development, and without business, I believe fundamental human rights cannot be secured. Far from being
14	tries alike increasingly understand that the balanced approach to human rights, embodied in the Universal Declaration of Human Rights, which places equal emphasis on all human rights - civil and political, economic, social and cultural and the right to development - makes sense. In the past, the example of civil and political rights being
15	K governments announced agreement with a number of human rights organizations and major multinationals, including BP, on a set of Voluntary Principles on Security and Human Rights. These provide a guide to companies in maintaining the safety and security of their people and operations, while ensuring respect for basic human rights a
16	vil society organizations in support of nine principles covering human rights, labour and the environment. The nine principles are based on the Universal Declaration of Human Rights; the International Labour Organisation's Declaration of the Fundamental Principles and Rights at Work; and the Rio Declaration on Environment and Developmen
17	ally appropriate p24, 54 d a p27-28 p16 a p16, 54 p50-51 p24 p9, 10, 24-26 p26-27, 54 _ 5d. Social performance indicators – human rights HR1 Description of policies, guidelines, corporate structure and procedures to deal with all aspects of human rights relevant to operations, including monito
18	genous peoples Context back to top We recognise that respect for human rights is an integral part of responsible business. BG's Human Rights Group Policy covers the human rights of individuals with direct involvement in our business, focusing on employees and members of local communities. This BG Brief provides more information on
19	ect human rights as part of our normal business activities. Due to the location of gas resources we can find ourselves working in, or considering working in, areas with human rights risks: e.g. countries with repressive governments, conflict zones, weak rule of law and poor labour standards. We examine the human rights records of countri
20	n the Voluntary Principles on Security and Human Rights. It has also been working with the Inter American Centre on Human Rights in Costa Rica, inter alia, to provide human rights training to the military personnel deployed in the vicinity of the mine. During 2004, 328 people were trained, with training for a further 500 security per

L.6 Green business – managing the natural landscape

In this final section, where I present the four concordance reports for SITES, AREAS, BIODIVERSITY and HABITATS, I move the green business focus from the human to the non-human elements of the natural landscape. In the previous section's reports for COMMUNITY and COMMUNITIES, we saw that the green business representations reflect a perception of activeness or passivity, in the people with whom they establish relationships. In this section, however, the elements of the natural landscape are passive with respect to green business initiatives, and we shall see, in the patterns of usage, that this makes them more uniformly amenable to incorporation, within green business management processes. The first of these reports, on the linguistic sign SITES, provides an illuminating side-by-side comparison of green business reporting systems, which are capable of managing the corporations' productive landscapes, and the natural landscapes in which they have taken an interest. The next report presents the usage of AREAS and here we see the same management processes contextualising those AREAS which refer to the 'fleshy' and 'fibrous' natural landscape. HABITATS and BIODIVERSITY repeat the pattern of management and reinforce the evidence, from the linguistic plane, that green business manages the natural landscape.

L.6.1 Randomly-generated twenty-line contextualised concordance report for SITES

I have chosen to present the concordance report for SITES first in this series, because it illustrates the similarity in the contextualisation of both the productive landscapes of green business and the natural landscapes around them. SITES is used to refer to both types of landscape, and the situation is further complicated because, sometimes, the green corporation owns land areas which are predominantly natural, but refers to them, quite logically, as "our sites." In order to try to make these distinctions clearer, I have used a bold typeface to indicate that the sites being represented belong to the green corporation, and a plain typeface to indicate that they do not and are external to the corporation's property. But because of the existence of natural landscape on company land, there are three examples (lines 8, 9 and 10), of the bright green shading of the 'fleshy' and 'fibrous' natural landscape combined with the bold typeface of company property. These are all examples from the linguistic discourse of Biffa services, a subsidiary of SevernTrent Water which specialises in waste management, and which, presumably, owns large areas of land for the primary purpose of waste disposal.

There is one line (19), in which I am not able to interpret the usage of the sign. In the remaining nineteen concordance lines, ten of the usages of SITES (lines 1, 2, 3, 4, 5, 11, 12, 13, 15 and 16), are to represent corporate productive landscapes. In the remaining nine lines (6, 7, 8, 9, 10, 14, 17, 18 and 20), the usage of SITES is combined with a reference to the 'fleshy' and 'fibrous' natural landscape. Note that lines eight, nine and ten are the Biffa examples mentioned in the previous paragraph, where, although the site is owned by the corporation, it is represented as being a natural landscape. What is most illustrative about this report, is that the usage of SITES in nineteen concordance lines is divided ten against nine, between the corporations' productive landscapes, and natural landscapes in which the corporations have taken an interest. But, in seventeen of them, there is evidence of a process of management, illustrated by the yellow shading. In all ten of the productive landscapes, the yellow shading is also present, but in seven of the nine natural landscape representations, SITES is also contextualised within a process of management. The example which I find most appealing, is from the previously mentioned waste management company Biffa. In line seven, there is a corporate instruction to "Ensure that common *frog management* prescriptions are included in Biodiversity Management Modules for sites where the species occurs" [emphasis added]. There are two exceptions (lines 6 and 20), and here the green corporation has decided that the best thing it can do for the natural landscape is to keep well away.

Table L.14: Green business – randomly-generated twenty-line contextualised concordance report for SITES

N	Concordance
1	ified to the International Standards Organisation's ISO 14001 environmental management systems standard by the end of 2003. At the end of 2001 over a quarter of **our sites** were certified. We have a team of experts who provide specialist environmental help and guidance to our manufacturing plants throughout the world on issues rang
2	l efficiency of our manufacturing operations, and to incorporating environmental factors in the design and re-design of our products – eco-innovation. We now have 103 **sites** certified to the international environmental management standard ISO 14001. Our goal is to have all our lead sites certified by 2003. For more information see th
3	ISO 14001 by the end of 2003. During 2002, a further 23 sites were certified, but 20 certified sites were closed or divested. At the end of 2002 we had 114 certified **sites.** We are continuing with the certification of individual sites but we are likely to fall short of 100% certification of our lead sites by end 2003. This is large
4	lection and reporting of environmental performance data via a global electronic system. Highlights for 2004: • 100% of sites reported environmental data • 98.6% of **sites** reported on all key environmental parameters, apart from COD • 93.4% of sites reported COD data • following feedback from the business, the pro-forma used for
5	ncy in manufacturing Environmental impact data In addition to reducing our impact per tonne of production, in 2004 the total environmental impact of **our manufacturing sites** decreased for most of our key performance indicators. Unilever manufacturing performance 2000–2004: trends in absolute load to the environment 00 01 02 03 04 23
6	in 2001 and made additional commitments with regard to protected areas in 2003, including a commitment not to explore or drill for oil and gas in natural World Heritage Sites (see Shell and protected areas) and in 2005 developed a Biodiversity strategy through to 2010 (see our Plans for 2005). The Shell Group Biodiversity Standard We
7	Year Meets Objective No. 2003 2004 2005 2006 2007 2013 5.2.4 Ensure that common frog management prescriptions are included in Biodiversity Management Modules for sites where the species occurs. WT ? ? ? 4.2 5.3 Monitoring & Audit 5.3.1 Develop a monitoring protocol for common frogs on Biffa sites. WT, LA, HCT ? 4.3 5.3.

8	s Year Meets Objective No. 2003 2004 2005 2006 2007 2013 5.2.4 Develop generic management prescriptions to improve scrub areas for biodiversity across all **Biffa sites**. WT ? 4.2 5.2.5 Ensure that scrub management prescriptions are included in Biodiversity Management Modules for sites where the habitat occurs. WT ? ? ? 4.2
9	Meets Objective No. 2003 2004 2005 2006 2007 2013 5.2.5 Develop generic management prescriptions to improve lowland meadow areas for biodiversity across all **Biffa sites** whilst retaining any amenity features. WT ? 4.2 5.2.6 Ensure that lowland meadow management prescriptions are included in Biodiversity Management Modules for si
10	ected sites. EN, WT, UNI ? ? ? ? ? 4.2 5.2.5 Develop generic management prescriptions to improve eutrophic standing water areas for biodiversity across all **Biffa sites**. WT ? 4.2 5.2.6 Ensure that eutrophic standing water management prescriptions are included in Biodiversity Management Modules for sites where it occurs. WT ?
11	treatment sites, almost doubling existing capacity. Case study: Minworth Sewage Treatment Works package, GasSim, for calculating methane gas emissions from **landfill sites**. Mitigation To mitigate our environmental impacts we are concentrating on our most significant emissions relating to energy use and transport. Energy managemen
12	s up. This reflects improvements in reporting quality. One incident required regulatory notification but the Company has had no prosecutions or fines. * EMS - **number of sites** certified to ISO 14001 has remained at 9 with all sites aiming to be certified by 2006. * External benchmarking- the business increased its score in the Business i
13	taken for project staff in order to increase environmental awareness and use of PEA checklist. Implement contaminated land risk ranking system, targeting **high risk sites** for investigation. Undertake environmental initiatives which support the UK Biodiversity Plan. Monitor agreed environmental mitigations for construction activ
14	cies, habitats and heritage. This involves the following concrete activities: • Ensure our actions do not cause significant adverse effects on the biodiversity of the sites within which we operate. • Where features of strategic biodiversity importance occur on our larger land holdings, to protect this biodiversity and contribute to
15	In 2004, four sites achieved certification to the international health and safety standard OHSAS 18001 for the first time. This brings the total number of **manufacturing sites** certified to 14 out of 84 pharmaceutical and consumer www.gsk.com - GlaxoSmithKline Corporate Responsibility Report 2004 18 manufacturing sites with one addit
16	, it is our intention to implement consistent guidelines for the preparation of these reports. Local site reports detailing our environmental performance at 60 **operating sites** are also published on our website (page 64). These are currently prepared in accordance with the ISO 14001 terminology. In 2005, we intend to review the format of t
17	Caspian and Mediterranean, one of the issues studied was how the region's cultural heritage should be managed. Surveys of the proposed route identified approximately 500 sites of potential heritage interest. More detailed investigations identified appropriate measures for each site, including surface investigations, trial pits, full excav
18	ween the two wetlands. Mondi is a dedicated supporter of the Natural Heritage Programme and is proud to be a part of this worthy programme. The Mondi Natural Heritage Sites are very valuable for the conservation of biodiversity but they also play a vital role in education and recreation. ion.
19	MONDI NATURAL HERITAGE SITES ? Mondi Forests, ? PO Box 37 Johannesburg 2000, ? Tel +27 11 647 0400 ? Fax +27 11 647 0568 ? a member of Anglo American plc group Mondi Ltd. Bookings or enqui
20	for community benefi t. BIODIVERSITY Biodiversity action plans in place Anglo American has set targets for the development of biodiversity action plans (BAPs) at all sites where biodiversity is a signifi cant factor. Good progress was made as highlighted on page 9. During 2005, the focus will be on ensuring that these are of appropr

L.6.2 Randomly-generated twenty-line contextualised concordance report for AREAS

There are no lines in this report in which the usage of AREAS is not interpretable. However, AREAS is a linguistic sign which can be used with several senses, and in eleven of the twenty lines (6, 7, 8, 9, 10, 11, 14, 16, 17, 19 and 20), AREAS is used to represent issues that need to be addressed that have nothing to do with the natural landscape. These are of no interest in my analysis and I have, therefore, taken the liberty of marking their irrelevance with grey shading of the line number. In the remaining nine concordance lines, there are a further two usages (lines 3 and 15) where the reference is to an urban landscape and an open cast mine. This leaves seven lines (1, 2, 4, 5, 12, 13 and 18), in which AREAS is used with reference to the 'fleshy' and 'fibrous' natural landscape, and in five of these seven examples the context is one of corporate management in order to "restore" (line 2), "improve" (lines 4 and 5) or "enhance" (line 18).

Table L.15: Green business – randomly-generated twenty-line contextualised concordance report for AREAS

N	Concordance
1	ojects that are employed to protect biodiversity and sensitive environments. 2. Have Biodiversity Action Plans (BAPs) in place at all sites where Shell operates in areas of high biodiversity value. Related target: * By end 2005 a clear understanding of what a High Biodiversity Value Areas (HBVA) means for Shell. * Per 1 January
2	to renovate flood plain habitats north of the landfill. Meanwhile, sheep graze on the restored sections of the landfill close to the site's boundaries. Non-operational areas are progressively restored to grassland. Rob Sanders Registration Number UK-S-0000019 Restored area on Redhill landfill site t w e n t y I SLE OF W I G H T Th
3	wider aims and will seek out opportunities to create local nature reserves and publicly accessible green space, joining together with others where practical. In urban areas we will assess the potential for planting and landscaping schemes that will enhance biodiversity, create green corridors, stepping stones and havens for wildlife.
4	nt techniques for standing open waters at selected sites. EN, WT, UNI ? ? ? ? ? 4.2 5.2.6 Develop generic management prescriptions to improve standing open water areas for biodiversity across all Biffa sites. WT ? 4.2 5.2.7 Ensure that standing open water management prescriptions are included in Biodiversity Management Modules
5	2 Action Potential Partners Year Meets Objective No. 2003 2004 2005 2006 2007 2013 5.2.5 Develop generic management prescriptions to improve running water areas for biodiversity across all Biffa sites. WT ? 4.2 5.2.6 Ensure that running water management prescriptions are included in Biodiversity Management Modules for s
6	t hours each year. An assessment of Sagit's ice cream factory in Caivano near Naples also identified areas where energy could be saved, and a system for targeting these areas and monitoring progress has been set up. This resulted in a reduction in total energy use at Caivano of 8.7% up to the end of 2003, compared with 2001. The amount o
7	rs, using the new Reputation Tracker survey (page 11). Respondents were asked to assess Shell's overall "environmental responsibility" and our performance in specific areas (e.g. minimising impacts from our operations, offering cleaner fuels and developing renewable energy). Environmental responsibility was found to be one of the top
8	h our European emissions reporting requirements and adds consistency across our reporting. We are pleased that ScottishPower continues to make progress in a range of areas. This is reinforced by the variety of awards and recognition we have accepted from our stakeholders and peers, many of which are mentioned in this report. We als
9	activities incorporate the principles outlined by the GRI. Where elements and indicators in the GRI are relevant to Rio Tinto, we aim to report against them. In other areas we have reported against indicators and elements that are more relevant to driving performance improvements within our business. In addition to this Group level
10	dership Survey in the website for more details. We monitor the questions employees put to senior managers through the Q&A pages on myGSK to ensure we pick up potential areas of concern. We also track readership of news stories on myGSK to help improve the relevance and interest of the content. www.gsk.com - GlaxoSmithKline Corporate
11	e Social Report. An assessment of alignment against these three stages and against the individual process steps of AA1000 is made. In addition VeriSEAAR© can highlight areas where improvement has been achieved, or areas for further improvement in the future. There is more information at the Bureau Veritas website www.bureauveritas.co.u

12	e areas. (e.g. IUCN protected area categories 1-4, world heritage sites, biosphere reserves). While a small number of companies operate facilities in or near protected areas, no impacts have been determined. www.bat.com/socialreport APPENDIX A A4 www.bat.com/socialreport APPENDIX A EN26 Changes to natural habitats resulting from a
13	place in environmentally sensitive areas. Some are officially protected, but many are not. BP believes it is for governments to decide whether sensitive or protected areas should be open to development and, if open, what measures should be taken to protect them. We will operate in sensitive areas only if we are convinced we can proper
14	ase; helping them to become more competitive at home and in global markets. In addition, we also invest in community investment programmes: focusing our support in three areas: enterprise development, education and energy access. More directly, our business benefits our employees and shareholders. In 2004 we paid wages and salaries, soc
15	l environmental management plans. This involves the wise use of natural resources and, where possible, the prevention of adverse environmental impacts. Opencast mining areas and discard dump sites are key areas of focus. ACSA's approach to implementing this policy includes: _ environmental baseline studies; _ environmental impact ass
16	fatalities are most likely to occur have been identified as falls of ground, moving machinery and transportation. Coal dust and possible methane explosions also remain areas of high focus. ACSA's Lost-Time Injury Frequency Rate (LTIFR), which reflects the number of shifts lost due to injuries for every 200 000 hours worked, includes i
17	er, one of the three operation areas N A M A K W A S A N D S F O O T P R I N T 2 0 0 2 18 Africa in October 2002; • The Company as a whole and all three operational areas attained NOSA Platinum 5 Star gradings on the NOSA Integrated SHE System in October 2002; • 47 workplace sections within the Company have worked 2909 days wit
18	om specialist environmental consultants and Anglo Coal Environmental Services, provide us with the practical means to retain or enhance the biodiversity of sensitive areas managed by our operations. Actions for biodiversity management that meet the requirements of the 'White Paper on Conservation and Sustainable Use of South Africa
19	cts which are critical to AWG's sustainability performance. At present, the systems for data collection are not sufficiently robust to allow complete reporting for all areas. AWG should focus on embedding its targets into all business units and on developing complementary management systems to enable reporting against these targets. T
20	roduce a strengthened health and safety policy, with particular emphasis on improvements to standards and responsibilities. Further updating of Group-wide standards in areas of potential risk identified at the conference is being carried out by seven working groups. This work will be completed by the end of 2003 and will ensure that b

L.6.3 Randomly-generated twenty-line contextualised concordance report for HABITATS

There is one line (12), in which I am not able to interpret the usage of the sign. In the remaining nineteen examples of usage, there are just two lines (3 and 8), in which HABITATS is used in a representation of some very detailed, but geographically non-specific aspect of the 'fleshy' and 'fibrous' natural landscape, but without any representation of a management process. In all of the remaining seventeen usages, there is a representation of a green corporation's "plans, projects or objectives" to manage the habitat, with the intention of enhancing nature. Typical of this is the action plan of line two, where we can learn from the green corporation that the spotted flycatcher "prefers habitats of open woodland, hedgerows with mature trees, parkland and large gardens." This introduction into the life of the spotted flycatcher will then be followed by an assessment of how its existing habitats can be enhanced, in order to provide it with better conditions for catching flies.

Table L.16: Green business – randomly-generated twenty-line contextualised concordance report for HABITATS

N	Concordance
1	ss raising, action plan monitoring and audit. Brown Hare The brown hare is found throughout Britain. It is mainly nocturnal and is generally found in open grassland habitats with nearby woodland and hedgerows which provide resting places or "forms" during the day. The hare's diet consists mainly of herbs and grasses in summer and
2	Spotted Flycatcher Muscicapa striata Action Plan 1. Introduction 1.1 The spotted flycatcher is a summer migrant to the UK. The species prefers habitats of open woodland, hedgerows with mature trees, parkland and large gardens. The species feeds almost entirely on insects. 1.2 The spotted flycatcher generally a
3	icroscopic plants and animals to larger species such as common frogs and dragonflies. In addition, standing open water habitats are commonly fringed by important wetland habitats such as marshy and swamp, which are covered in a separate swamp and marsh Habitat Action Plan. This broad standing open water Habitat Action Plan has been pr
4	nhance selected scrub habitats and create new scrub areas in appropriate locations with low current nature conservation particularly where these border existing woodland habitats. WT ? ? ? ? ? 4.2 Action Potential Partners Year Meets Objective No. 2003 2004 2005 2006 2007 2013 5.2.4 Develop generic management prescri
5	Swamp And Marsh Habitat Action Plan 1. Habitat Description 1.1 The term 'swamp and marsh' covers a range of wetland habitats where water is at or near the ground surface for most of the year. Swamp and marsh vegetation tends to be associated with ponds, floodplains and lakesides. 1.2
6	ion plan is reviewed and updated. WT ? ? 4.3 5.4 Awareness 5.4.1 Produce an internal communication so that best practice for the conservation of improved grassland habitats can be used by staff where they occur on site. WT ? ? ? 4.4 5.4.2 Make areas of improved grassland available for recreation and amenity where this does not
7	ecological survey programme. WT ? ? ? 4.1 5.1.2 Develop an information management system which records and manages improved grassland data alongside other priority habitats. WT ? 4.1 5.1.3 Implement data management system, recording improved grassland data & keep up-to-date as appropriate. WT ? ? ? ? ? 4.1 5.1.4 Research
8	animals and provides corridors allowing dispersal and movement between other habitats. Such habitats are becoming increasingly valuable for wildlife, as other grassland habitats are lost. 2.2 Current threats to the improved grassland habitat include: • Recreational pressure. • Adding nutrients through leaving grass cuttings 'in-s
9	on the broadleaved woodland habitat action plan. LA, WT ? ? ? ? ? ? 4.4 5.4.3 Encourage appropriate public access for study and enjoyment of broadleaf woodland habitats. WT ? ? ? ? 4.4 5.4.4 Publish results of broadleaved woodland habitat action plan. - ? ? ? ? ? ? 4.4 6. Partners EN – English Nature LA –
10	cological survey process. WT ? ? ? 4.1 5.1.2 Develop an information management system, which records and manages broadleaved woodland data alongside other priority habitats. WT ? 4.1 5.1.3 Implement data management system, recording broadleaved woodland data & keep up-to-date as appropriate. WT ? ? ? ? ? 4.1 5.1.4 Suppor
11	Partners Year Meets Objective No. 2003 2004 2005 2006 2007 2013 5.1 Data Collection & Information Management 5.1.1 Determine the extent of broadleaved woodland

	habitats on all Biffa landholdings through the ecological survey process. WT ? ? ? 4.1 5.1.2 Develop an information management system, which records and manages bro
12	ollection Site Management Monitoring Biodiversity Noxious Invasive Pest & Management & Audit Awareness Weeds Species Species SPECIES & HABITAT ACTION PLANS SPECIES HABITATS Skylark Woodland Nature Conservation Amenity Linnet Broadleaf Woodland Lowland Meadows Improved Grassland Brown Hare Scrub Swamp & Marsh Built Up Areas & G
13	contribution Montgomeryshire Lake Vyrnwy – 3 year population monitoring project undertaken with recommendations for future management of the moorland & woodland edge habitats Peak National Park UDV – UK's first major re-introduction project launched in October 2003 Black Poplar LBAP Target STW action STW contribution Derbyshire
14	ientific Interest (SSSIs) in our region. A number of these have been identified as being of European importance, and under EC Directives on the conservation of natural habitats, flora & fauna, and birds, are nominated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Special Areas of Conservation are strictl
15	ent Plans; and • Implementation/asset management of the Management Plans. Generation supports the employment of two rangers to help protect and enhance the wildlife habitats at our Musselburgh and Valleyfield ash lagoons. These rangers actively manage the reserves and help the public to enjoy the facilities provided. A valuable bi
16	tegy is to minimise damage to biodiversity when we develop new projects or as part of our maintenance operations and to positively enhance our landholding for species, habitats and heritage through measures such as our Rural Care Programme. ScottishPower aims to set a good example to other energy users by actively seeking to minimise
17	graze on Bridger Coal Company's successful reclamation site, also located in Wyoming. PacifiCorp regards mining activities as an opportunity proactively to enhance habitats. Taking part in biodiversity Our Environment Policy states that "…we will strive to continue to be regarded as a good and trusted neighbour…". We engage ou
18	tishPower Environmental Performance Report 2003/04 Performance Review Our strategy for the management of biodiversity issues is to minimise impact, positively enhance habitats, ensure that planned restoration enhances habitat and species where environmental impact is unavoidable and contribute to biodiversity processes such as Local
19	into sites in ten countries started the BirdLife International/Rio Tinto partnership. The organisations share the aim of enhancing the conservation of birds and their habitats as a means of contributing to sustainable development. The fourth annual Rio Tinto mine site birdwatching events organised by BirdLife and Rio Tinto during 200
20	y five of the world's people rely on plants for primary health care, and plants help regulate our climate and bind our soils. They provide food, fibres, timber, fuel and habitats for the wildlife, birds and insects that keep our fragile ecosystem in balance. Our Investing in Nature programme, through Botanic Gardens Conservation Internat

L.6.4 Randomly-generated twenty-line contextualised concordance report for BIODIVERSITY

There are seven lines (5, 6, 10, 11, 12, 15 and 16), in which I am not able to interpret the usage of the sign. In the remaining thirteen usages of BIODIVERSITY, there is a small group of three lines (8, 19 and 20) which I shall mention first. Two of these lines (8 and 20), use BIODIVERSITY to talk about the subject in general terms, as in line eight's "The water industry can have both positive and negative impacts on biodiversity through its discharges to rivers." In the third usage of BIODIVERSITY, in line nineteen, the green corporation argues that it is not an issue of relevance. In the remaining ten usages, BIODIVERSITY appears within the context of the management process, as I have illustrated with the yellow shading. It is part of an action plan: "BAP", in four usages (lines 1, 2, 3 and 13). It is part of a "strategy" in three representations (lines 4, 7 and 14). In two lines (9 and 17), it figures in "projects", and in the final example (line 18), action is being taken to reduce "impacts" on it.

Table L.17: Green business – randomly-generated twenty-line contextualised concordance report for BIODIVERSITY

N	Concordance
1	structors – usually on members' courses dealing with the planting and pruning of fruit trees. Bulmers participated in the development of the Herefordshire County BAP (Biodiversity Action Plan). • • • • Our nursery, started in the 1920s, has always grown a wide variety of apple and perry pears. When planted in farmers' traditiona
2	ientific Interest UK BAP United Kingdom Biodiversity Action Plan UNI Universities WT Wildlife Trust Middlemarch Environmental Ltd. Page 15 Biffa Waste Services Biodiversity Action Plan RT-MME-1175C BIBLIOGRAPHY & USEFUL REFERENCES Biffa Waste Services Ltd, (2001). 'Biffa and Biodiversity - An Introduction', Biffa Waste Servi
3	Waste Services and our partners consider that the implementation of the work programme has influenced the Biodiversity Action Plan outcome. The Biffa Waste Services Biodiversity Action Plan will be revised and updated in the light of review results and any changes in circumstances and/or any additional information that becomes availa
4	contents ScottishPower Environmental Performance Report 2001/02 | 2 Highlights Summary of contents GRI index/ indicators Page no. Our strategy for the management of biodiversity issues is to minimise impact, positively enhance habitats, ensure that planned restoration enhances habitat and species where environmental impact is u
5	ance Indicators for the Mining Industry", "An Evaluation of Social Impact Assessment Methodology", "Community Health Indicators in Minerals Project Development", and "Biodiversity Indicators and Minerals Development". Additionally the Group's businesses are encouraged to develop and report on measurement tools specific to their busin
6	47 INDEX Page Acquired businesses 4, 5 Assurance 9, 25, 27 Audits 24, 27, 31 Australian Minerals Industry Code of Environmental Management 10 Baseline surveys 22 Biodiversity 8, 10, 14, 34 Climate change 12 Closure 37 Codes of conduct 28 Community expenditure 22 Community issues 23 Consultation 9, 14, 15, 21, 22 Consumables
7	iodiversity strategy to comply with Southern Water's Environmental Policy commitment • undertake a biodiversity audit of the company's land holdings • implement the biodiversity strategy through a biodiversity action plan, using appropriate land management techniques and species/habitat protection measures. These management cont
8	l a minimum of secondary treatment at all its significant coastal WTWs. Biodiversity and land use The water industry can have both positive and negative impacts on biodiversity through its discharges to rivers, abstractions and its management of reservoirs. Both our electricity and water businesses have an impact on land use. Th
9	I hope that business can play its part at the local level with NGOs and the local community, in such issues as: scientific surveys to map and record biodiversity; local biodiversity management implementation projects; development of acceptable indicators to measure progress; trials of reclamation techniques focussing on habitats and eco-
10	ure scrutiny. Major issues in the public policy debate that Rio Tinto is currently engaged in are: * Climate change * Human rights * Global Reporting Initiative * Biodiversity * Product stewardship One of the vehicles Rio Tinto uses to address these issues are Industry Associations. Rio Tinto has endorsed the World Economic Fo

11	conditions. Lease conditions. Business procedures. Environment policy. Energy policy. Environment policy. Environment policy. Environment policy and objectives. Biodiversity action plans for developments. Biodiversity management plan for occupied premises. Environment objectives and targets. Project environmental requirements.
12	nvironment issues o Air emissions o Climate change o Energy efficiency o Environmental incidents o Environmental research o Renewable energy o Land use and biodiversity o Resource use o Waste management * Activities in 2003 * By-product management o Working with suppliers Add page Print report [0 pages] S
13	ower stations, flue gas desulphurisation technology, greenhouse gas abatement, air quality issues and associated health effects, ash site management, development of site biodiversity action plans and oil risk assessment for fluid-filled cables owned by EME.
14	* A strategy for managing operational and non-operational land * Identifying actual and potential land-based liabilities * A strategy for maintaining and encouraging biodiversity. We want all our sites bigger than 50 hectares to have a biodiversity action plan and will make progress toward this in 2004. Added together our large pow
15	mate change * Greenhouse gases * Emissions trading o Energy efficiency o Environmental incidents o Environmental research o Renewable energy o Land use and biodiversity o Resource use o Waste management o Working with suppliers Add page Print report [0 pages] Submit feedback Emissions trading The EU Emissio
16	imate change * Greenhouse gases * Emissions trading o Energy efficiency o Environmental incidents o Environmental research o Renewable energy o Land use and biodiversity o Resource use o Waste management o Working with suppliers Add page Print report [0 pages] Submit feedback Climate change Climate change is
17	il and gas sector through IPIECA (International Petroleum Industry Environmental Conservation Association). BP supports many specific projects to protect and promote biodiversity, including a National Marine Environment Centre at Cat Ba Island in Vietnam, conservation training at a regional centre in South East Asia and forest reh
18	gathered valuable learning on ways of monitoring agriculture impacts on the environment and on developing plans to improve wood fuel self-sufficiency, while minimising biodiversity impacts. It has helped to reduce environmental impacts, to demonstrate how partnering with other organisations can improve our progress and to build a blue
19	main factors resulting in loss of biodiversity. Climate change is also thought to present a major threat. BG Group's operations generally have limited direct impact on biodiversity. In particular cases, indirect impacts are potentially more significant however. These may result from land use changes resulting from increased access that
20	At our sustainable development conference we identified three other important aspects where we intend to define our contribution more clearly, namely climate change, biodiversity and community engagement. We have developed a climate change policy for our Group. This commits us to explore the opportunities for the use of the marketb