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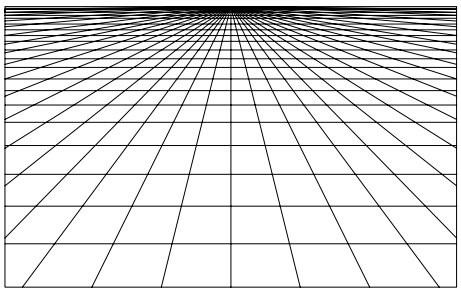

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The European *Information Society*: A Self-Fulfilling Prophecy?

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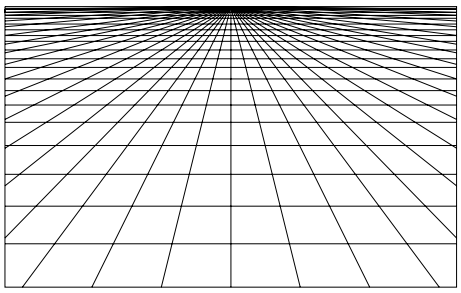

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Abstract

The European Union reveals through policy documents concerning the European Information Society a technological determinist stance. It can be argued that the adaptation of such a stance can be apprehended as part of a strategy, or rhetoric, and that it veils a hidden agenda. By way of a reification process, technological development is objectified, and consequently given an autonomous status. Thus, the European Information Society will reveal itself as a post-construct, superseding the real conflicts of contemporary society. It can, furthermore, be identified as a self-fulfilling prophecy.

1.0 Introduction – The Information Society: another Utopia?

> As the report goes and as the appearance of the ground shows, the island once was not surrounded by sea. But Utopus, who was conqueror gave the island its name (up to then it had been called Abraxa) and who brought the rude and rustic people to such a perfection of culture and humanity as makes them now superior to almost all other mortals.[1]

> If Europe can succeed and realise the enormous potential of the new economy, a prosperous future is possible for all Europeans.[2]

The *Information Society*. The label seems to be universally accepted, and have rapidly gained status as the most viable metaphor of contemporary society. The name conjures up an array of pictures and associations, most of them with high hopes for the future. In the form of commercials, media provides us with stories of information flow, of people connected and of technologies connecting people. We read *it* everyday in the press. The economists speak of *new economy*. The prophets of the internet tell of global communities, exchanging information. All seem to be related with the new *Information Society*. Yet, no one, it seems, really knows what it is. What is the *Information Society*? What constitutes its novelty?

[1] Moore, Thomas *Utopia*, book II, p. 60
[2] *e-Europe: An Information Society For All*, p. 6

The *Information Society*: Another utopian vision? Unfortunately, this seems to be the case. There is a long tradition in the West of giving new technology the role of an Utopus, ascribing technologies revolutionary effects for the human condition. In this tradition both the aeroplane and the telegraph was said to bring peace to the world. Men and women of different origins would finally be able to communicate without any constraint whatsoever. Consequently, nationalism, the evil incentive of war would vanish from the face of the earth forever. Planes would, furthermore, make standing armies obsolete. The First World War proved the prophets wrong. In the end the technologies never seem to deliver their promise. There is no good reason to think that our time will be different.

This dissertation concerns itself with the version of the *Information Society* and the view of technology underpinning it found in some carefully chosen EU policy documents. The basis of my argument takes its departure from the viewpoint that the *Information Society* must be conceived as part of a rhetoric. That it, thus, is part of some larger strategy, and that it veils a hidden agenda. When first reading the documents later to be presented, one is immediately struck by the affluent language and high promises they communicate, and one is forced to think there is some kind of explanation for treating the *Information Society* in the way it is treated. Thinking about the information society as a construction or a metaphor, might put the documents into perspective. It must, in some way or another, be in the interest of the EU to project a certain picture of the European *Information Society* to its citizens: A picture with promise of novelty and change.

Why and *how* will be discussed thoroughly in the later parts of this dissertation. The *how*-question is closely related to a certain view of technology: *technological determinism*. This view of technology underpins the very idea of the development of a new information society

through the emergence of new technologies in that it holds that technologies have autonomous effects on society. Hence, a large part of this dissertation will be dedicated to define and try to prove the notion of technological determinism untenable. In the first chapter different theories of technology that opposes a determinist stance will be presented in order to contrast the inherent assumptions of technological determinism. These theories share, although on different levels, a common insight: technologies and technological development must be the object of social study. Hence, it is in every conceivable way connected with the socio-political context within which it operates.

With this insight as my starting point, the notion of a *Post-Industrial Society* and *Information Society* will be discussed. I have chosen to discuss Webster's criticism of Daniel Bell because it reveals so many similarities with how the EU treats the *Information Society*. Furthermore, Webster's discussion of Bell touches upon some of the core questions related to the apparent transition from an industrial to a post-industrial society, or information society, which can, furthermore, be related to technological determinism. Hence, a thorough discussion of this material will be valuable when later analysing the EU *Information Society*.

Having assessed different theories of technology, I will conduct an analysis of certain EU documents concerned with the *Information Society*. My main concern is to show the technological determinist stance that underpins them. I will show that the documents are determinist in different ways, but I will, considering the limited scope of this dissertation, concentrate on certain language constructions and the notion of an *information revolution* found in the texts. Having thus found the texts to be determinist, I will subsequently discuss the technological determinist stance in relation to the insights of Feenberg's arguments in relation to Critical Theory and Isztvan Meszaros *The Power of Ideology*. I am now ready to

answer *why*. Critical Theory and Meszaros shows through discussion of what is called a scientific-technical-rationality, various mechanisms through which both technology and the capitalist ideology has been elevated to a certain status in modern, Western societies. This status is self-sustained through a reification process of fundamental social institutions. It will be argued here that the *Information Society* is such a construct. Thus, it will be argued that the *Information Society* must be seen as a self-fulfilling prophecy, maintaining a certain political ideology.

2.0 The Networks of Technology

2.1 Introduction

> If our thinking centres on the effect of technology on society, then we will tend to pose questions like, "How can society best adapt to changing technology?" We will take technological change as a given, as an independent factor, and think through our social actions as a range of (more or less) passive responses. If, alternatively, we focus on the effect of society on technology, then technology ceases to be an independent factor. Our technology becomes, like our economy or our political system, an aspect of the way we live socially.[3]

The first part of this chapter aims at a conclusion on the nature of technological determinism through a discussion on different approaches to the social shaping of technology. This is a tradition that sees technological development as an integrated part of the socio-historical context of the society in which it is produced: It is thus in Wajcman and MacKenzie's words an expression of how we live socially. My discussion of the various approaches is in no way an exhaustive account of the intricate and subtle differences between the various approaches, it is rather my intention to come to terms with technological determinism as it presents itself in different texts. As it is hard to find any academics arguing for a determinist stance[4], this seems to be the most logical approach. In my discussion of social shaping, I will touch upon

[3] MacKenzie & Wajcman ed., *The Social Shaping of Technology*, p. 2-3
[4] It must be pointed out that there is no *Theory of Technological Determinism*. It is rather a view that comes to show in some theories of social and technological change and that various authors have identified.

the methods of *Systems Theory, Social Construction of Technology* and *Actor Network Theory*. I will structure my discussion in a way that shows an ascendance of social shaping elements in the examples used in order to reveal the various ways it can be understood. The second part of the chapter will discuss the work of Frank Webster in *Theories of the Information Society* and his criticism of Daniel Bell's conception of a post-industrial society. The third part will discuss some of the issues touched upon by Feenberg in *Critical Theory of Technology.* In this part the role of technology is discussed in relation to an *Instrumental*, *Substantial* and *Critical Theory of Technology*. Finally, the fourth and concluding part will relate the arguments found within the various approaches more directly to what I have found to be the nature of technological determinism.

2.2 The Social Shaping of Technology

> … the stability and form of artefacts should be seen as a function of the interaction of heterogeneous elements as these are shaped and assimilated into a network. […] an explanation of technological form rests on a study of both the conditions and tactics of system building. Because the tactics depend, as Hughes has suggested, on the interrelation of a range of disparate elements of varying degrees of malleability, I call such activity heterogeneous engineering and suggest that the product can be seen as a network of juxtaposed components.[5]

Technological determinism can be characterised, at its simplest, as a belief in the autonomous and exogenous nature of technological development. "The relationship is isomorphic: society mirrors technology".[6] However, discussions of technology are most often more complex than this rather simplistic viewpoint might suggest. Arguments revealing a technological determinist stance always seem to accept the significance of factors other than technology, i.e. there are most often varying degrees of social shaping arguments in a technological determinist stance. Thus, it is sometimes difficult to determine what is determinist and what is not. The subsequent discussion will aim at revealing how these factors *other than technology* might be conceptualised, or theoretically framed.

[5] Law in Bijker et al. p. 113

Chris Freeman makes a case for technological determinism in his explanation of technological change, where social actors only have limited influence. He argues that paradigmatic technical change stems from new combinations of radical innovations related to major advances in science and technology and to organisational change.[7] These new developments may be so advantageous that their adaptation seems inevitable in a competing world economy. They are consequently, more or less, directly influential on society. Freeman argues further that if the problems of institutional adaptation and structural change are overcome, the new paradigmatic technical change will generate employment and productivity gains on a large scale.[8] Freeman may be correct in his observations and it is not my intention here to dispute his findings. However, he reveals in his argumentation a view on technological change that is thought-provoking in relation to our discussion.

In his explanation of paradigmatic technological change, Freeman emphasises the impact of existing technologies on society. Whereas, in a social shaping perspective it is necessary to *look behind* the technologies and explain the social and technical forces that combined have produced the technologies that are having effects. Thus, when Freeman argues that the social impact on technological development is limited, it is because he does not see, or want to see, beyond the artefact, by whom and within what system it is produced. These are essential questions if we are to understand why a certain technological development has been the dominating. Hence, Freeman may be accurate in his observations that radical innovations, based on science and technology, combined with organisational change has severe impact on societies. However, his arguments do not explain why the different phenomena have combined the way they have and in what way this reflects other aspects of society. In

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[6] Grint & Woolgar, p. 12
[7] Freeman in Finnegan et al. *Information Technology*: Social Issues, p. 5
[8] Freeman, p. 15

Freeman, technological change remains, more or less, autonomous. The social and political choice in relation to paradigmatic technical change is limited to different responses to what in Freeman's words seem like an overwhelming, technical process.

2.2.1 The Systems Metaphor

Thomas Hughes, in his article *The Evolution of Large Technical Systems,* sees the development of technology in terms of a systems metaphor. Hughes' *Large Technical Systems* includes technology, people organisations, genders, interest groups and many others besides. In this way it will in many respects remind the reader of *Actor Network Theory* (*ANT*), which will be discussed more thoroughly later in this chapter. Although there are obvious similarities between the two, there are also some important differences. The system which Hughes refers to, comprise, like ANT, of both physical and non-physical entities, i.e. physical artefacts, institutions, firms, laws and natural resources. But in contrast to ANT where each part of the network is treated equally, Hughes makes a distinction between what he calls artefacts and components of the system. The artefacts are socially constructed and are furthermore created by the system builders. This is not the case with components. These are not socially constructed and have a different status than the artefacts: They must be perceived as autonomous. Human beings are treated as components of the System.

If one artefact within the system is changed, this will have effects for the rest of the system. In one sense it seems that Hughes sees the system as the only constitutor of meaning in that a change of one segment will have effects for the others within the system, but at the same time we have seen that *components* within the system may have an autonomous status. Thus, Hughes opens up for a discrimination of certain segments on others and has adopted a more moderate stance than that of ANT: alterations within the system will change the

different entities within the system accordingly, but the system cannot be seen as the sole constitutor of meaning. There is in this sense no real reciprocity between artefacts and components of the system: it is possible for certain segments within the system; the components, or the system builders to exert influence on the artefacts. It can thus be argued that Hughes has not taken the argument to its logical conclusion, and that this therefore can be seen as an inconsistency in the theory. If adapting the system metaphor, i.e. if one sees the technological developments in terms of a system it may be argued that neither of the parts of this system may be given an autonomous status if it is to work as an analytical tool. A point which will become clear during our subsequent discussion.

Related to popular notions of a linear technological development, Hughes seems to believe that there is a pattern of evolution that the technical systems evolve according to. There are different phases in this evolution: invention, development, innovation, transfer and growth, competition and consolidation. However, the phases of evolution are not merely sequential; they overlap and backtrack. As the systems mature and evolve, they acquire style and momentum.[9] What this means is that a certain system becomes paradigmatic for the development of technologies within this particular system, and that technologies therefore apparently will develop according to certain traits given by the system. This also means that a mature system will exert a certain *influence* on society.

Hughes argue that once a technology is socialised within a system – is part of the technological system – it will contribute *to the common systems goal*.[10] Thus, one can argue that it is Hughes' belief that a system, once it acquires a certain strength or momentum, will execute a soft determinism on its technologies. The technologies will in this way be bound to certain paths or trajectories of development. What this also means is that once certain

[9] Hughes in Bijker et al. p. 56

technologies have become widespread, other technologies will evolve according to the paradigm set by the most influential technology. This argument may be loosely related to SCOT's *closure*, in that technologies arguably will be *closed* within a system. Inherent in this thought lies the consequence that because of the control of the dominant technologies exert, real changes within the technological base are difficult and measured unless a new revolutionary technology is developed. It is here Hughes is obviously mistaken; in his arguments he emphasise the influence of the existing technologies and *not* the social forces that are the real maintainers of a certain technological base in society. It can, furthermore, be identified as technological determinist.

Hughes treats radical invention and normal invention in a sense that is, as we shall see, in many ways an analogy to Kuhn's revolutionary and normal science. Radical inventions must not, according to Hughes be treated as part of a technical systems. A radical invention comes *prior* to the development of a system and it cannot become a component in an existing system, but can, and most times will, create an entirely new system of its own. Moreover, the social construction of technology only becomes clear during the phase where the invention is developed into an innovation.

This means that Hughes treats the inventor and invention as autonomous components free from any systems influence and it is clear that this may be seen as a shortcoming in Hughes' theory. If the creation of a technology in its earliest stage is not open for social study, it will necessary hold an autonomous status. It is clear that Hughes does not emphasise the technology in its early development as a sociological study-object in itself, it is the later development within society that remains the focus of Hughes. It is important to note that his

[10] Ibid, p. 51

system is built by system builders and must, although it comprises of both animate and inanimate parts, be conceived more in terms of a socially constructed system. The inventor and his invention are exogenous to any system influence – the social forces shaping the technology in later stages; they do not, according to Hughes, form a *system* of their own. This emphasis must be seen in contrast to SCOT's focus on the early development of technologies where the social forces shaping the development of technologies are analysed. We can, furthermore, identify this as a form of technological determinism in that it treats the technological object as autonomous.

2.2.2 Social Construction and Actor Networks

The social shaping approach defies the assumption that technological artefacts are beyond sociological study. The social shaping approach is a generic label for those accounts which suggest that *the capacity of the technology is equivalent to the political circumstances of its production*.[11] Within this approach the *Social Construction of Technology (SCOT)* and *Actor Network theory (ANT)* are the most recognised methods.

2.2.3 SCOT- Social Construction of Technology

The social construction approaches are mainly based on sociological theories. Their aim is to reveal the social determinants behind innovations and technological development. However, this emphasis on the social; a purely sociological discussion of technology, may be questioned.

SCOT emphasises the development of a technology in its early stages before it is *stabilised*. The technology is at this stage contingent and open for diverse influences and negotiations

[11] Grint & Woolgar The Machine at Work, p. 19

between different forces. During this period various forces shape both the future *abilities* and areas of utility of a certain technology. A well-known example is the bicycle. The bicycle was in its early development period a technology of many diverse forms and shapes. The different forms of the technology represented various social values and utility. The fact that the one we know today has become the *stabilised* version among the earlier prototypes is due to various circumstances; these are technical, social, political etc. For instance, a type may be inscribed with values such as safety and comfort, others with speed or robustness. However, once one model of a technology has become dominant, the technology has arguably achieved a status of *closure*. It is now less open for further negotiation. Thus the subsequent technologies within this area will be bound to a certain path in its further development and production.

SCOT holds that technological artefacts are culturally constructed and interpreted. What this means is that is that there is flexibility in how individuals interpret technological artefacts and how the artefacts are designed. The method see the need for an interpretative flexibility in relation to technologies; both the successes and failures of technological development must be studied in order to provide a satisfactory picture of the development of technological artefacts. There is often in the construction of history made quasi-linear models of technological development; these must indeed be seen as constructions and often distort the true picture. One must dispute the idea that there is an inherent logic in the historical technological development. If not, the consequence is often that the existing technological development is explained as the only rational or logical development, and that it thus acquires a semi-autonomous status. By analysing the relevant social groups influencing the technological artefact, SCOT sees the true conflicts behind the development of a technological artefact before it is stabilised; before it has achieved a status of *closure*. This is its strength. However, the emphasis on the closure of technologies might be seen as a

weakness or restriction in the theory in that technological development must be seen as a continuing process.

2.2.4 ANT-Actor Network Theory

In contrast, ANT wishes exactly to study the continuing development of technology. It holds as one of its theses that technologies are in constant negotiation in relation to their various environments. By creating actor networks, which comprise of technology and the social forces within and around it, technologies are studied. The network is in constant flux, it is furthermore one of *heterogeneous engineers*. This means, among other things, that the network is comprised, like that of Hughes' System, of both animate and inanimate *actors*. The driver of a car and the engine is, for instance, treated equally in an actor network study of the technology: *car*; they are both equal parts of a heterogeneous network which, in relation to the study, is the sole constitutor of meaning. The former would not mean anything within this particular network without the latter and vice versa. Thus, ANT tries to avoid the question of a *shaper* and a *shapee*. All technological developments must be seen as part of heterogeneous networks where social, political and technical forces are interdependent and inseparable. Thus, neither of the actors within a network have an autonomous status: This is only gained through a reciprocal positioning.

Callon attempts in *Society in the Making: The Study of Technology as a Tool for Sociological Analysis*[12] to develop a methodology for the study of technology based on his insights in a study of engineer-sociology. He contrasts the engineers insight with examples from traditional *sociology*, namely Tourraine and Bordieu. Simplistically, traditional sociology found in the works of both Tourraine and Bordieu separates the social and the technical sphere, and consequently cannot, according to Callon, explain the complexity of an evolving

society. The sociologist methods of surveys, interviews, opinion polls, participant observations and statistical analysis do not take into account the various non-social elements, as in the case of the EDF-Renault controversy, like electrons and batteries.[13] "Tourainian sociological theory, as with most other sociological theories, remains a clever and sometimes perspicacious construction; but it is bound to remain hypothetical and speculative because it simplifies social reality by excluding from the associations it considers all those entities – electrons, catalysts – that go to explain the coevolution of society and its artifacts."[14] Hence, Callon wants to adopt a new type of academic sociological study which takes into account both the social insights of traditional sociology and the technical of the engineers. His method of actor networking sees the precise study of sociology as the interdependence or interaction of artefacts, human or non-human, in the making of society and technology. In this way, it is possibe to abandon " … the constricting framework of sociological analysis with its pre-established social categories and its rigid social/natural divide. It furnishes sociological analysis with a new analytic basis that at a stroke gains access to the room to manoeuvre and the same freedom as engineers themselves employ."[15] It thus moves beyond the insights of SCOT which merely emphasise the relevant social groups behind a technology, a stance which can, furthermore, be accused of social determinism. Callon argues further that the Actor Network Theory – in contrast to systems theory – is applicable to the whole process of innovation and technological development. With the methodological tools of ANT the first stages of an invention to the diffusion of a *closed* technology can be studied. This is, according to Callon, what distinguishes ANT from the systems theory – ANT has taken the insights of systems theory a step further.[16]

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[12] Callon in Bijker et al. *The Social Construction Technological Systems, p. 83*
[13] Callon in Bijker et al., p. 95-96
[14] Ibid, p. 97
[15] Ibid, p. 100

[16] Ibid, p. 100-101

I would like to conclude the discussion of social shaping by looking at John Law's arguments in his article on the Portuguese expansion. Apart from showing how ANT can be used as a tool, this article has some very useful insights on the difference between *Actor Network Theory*, *Social Construction of Technology* and *Systems Theory*. In Systems Theory the innovators must be seen as systems builders; they manage an array of different components, or variables, which they try to fit into a whole. There are, as I have shown above, similarities between the social constructivist and systems approaches. Like Callon, Law is not satisfied with the sociological explanation of technological development – the one adapted by social constructivism. Hence, Law favours the historical approach. He argues thus: social constructivism simplifies and overemphasise the social forces behind the technology; the social factors should not be seen as standing apart and on its own, this must be seen as an unsatisfactory type of social determinism; an explanation of technology must rest on a study of both the *conditions* and the *tactics* of system building. Law calls this activity *heterogenous engineering* and suggests that the product can be seen as a *network* of juxtaposed components.[17]

It is, in contrast to the social construction approach, the interaction, or the collision, of social and technical elements that must be the emphasis of our study. "Thus the point is not as in sociology, to emphasize that a particular type of element, the social, is fundamental to the structure of the network; rather it is to discover the pattern of forces as these are revealed in the collisions that occur between different types of elements, some social and some otherwise.[18]

[17] Law in Bijker et al. p. 113
[18] Ibid, p. 114

Although Law prefers the historical approach - i.e. the systems approach to that of the social constructivist – he is not entirely satisfied with the systems metaphor either. As we have seen, the systems approach try to associate different variables into a whole. In other words: "They try to dissociate hostile systems and reassemble their components in a manner that contributes to what is being built."[19] In a heterogeneous network, this is not always possible to achieve. Law shows that in the case of the Portuguese expansion such actors as the currents and the winds cannot not be subdued to fit into a system, these are forces too strong to be tackled with, and must be seen as obstacles or colliding forces in a network. Thus, Law argues that the nature of a network is not that of an interrelated system working together towards a goal, but a network of heterogeneous antagonistic actors in struggle.

In conclusion, Law identifies his stance with the principle of symmetry; the same type of explanation should be used for both true and false beliefs. "The generalised version of the principle of symmetry (Callon 1986) that I have adopted here states that the same type of explanation should be used for all the elements that go to make up a heterogeneous network, whether these elements are devices, natural forces, or social groups. In particular, the principle of symmetry states that the social elements in a system should not be given special explanatory status."[20]

2.2.5 Conclusion

We have in this first part of the chapter seen that the boundaries between the different social shaping approaches to technology are sometimes blurred. However, there are important differences. Systems Theory can be related to ANT, but must be labelled determinist in that

[19] Ibid, p. 120

large systems of technologies arguably exert a soft determinism on societies. Moreover, the technological object is in itself not treated as a sociological study-object. SCOT must, furthermore, be criticised on the point of *closure* and for relying too heavily on a social explanation of technological development. The theory does not open for a continuing study of technologies and technological development. It is, therefore, reasonable to conclude that ANT must be seen as the more successful of the above-mentioned approaches in that it sees the interrelatedness between the technical and the social and that it gives attention to the totality of technological development. We can subsequently conclude with ANT that the relationship between the technical and the social is present throughout the process of technological development - from the early stages of an invention, to its diffusion within societies.

2.3 The Critical Theory of Technology

2.3.1 Introduction

There is yet another theory which concerns itself with technology that I would like to examine namely, *Critical Theory.* Most of the scholars associated with this theory are identified as being part of the Frankfurt School. I will, in this paragraph, introduce some of the arguments of Feenberg's *The Critical Theory of Technology*, in which there are conceptions that can be related to the social shaping approaches and which furthermore reveal technological determinism in a different light than we have encountered earlier in this chapter.

2.3.2 Instrumental, Substantial and The Critical Theory of Technology

In Feenberg *The Critical Theory of Technology* the author divides what he sees as the most common conceptions of technology into an *Instrumental* and a *Substantive* theory, and later

[20] Law in Bijker et al. p. 130

compares these to a *Critical Theory* of technology. According to Feenberg, the instrumental is the one most adapted by governments and policy sciences. The instrumental view holds, among other things, that technology is neutral; that it holds its own cognitive status in every conceivable social context. Thus, it is not inscribed with any politics. Further, it is a usual instrumental contention that technology will increase the productivity of labour wherever it is applied; it will essentially hold the same norm of efficiency in any and every context. This notion of technology will, according to Feenberg, imply that the only rational stance is unreserved commitment to its employment.[21] However, not all technologies are welcome in the name of efficiency, or rationality. There is therefore a certain trade-off of efficiency in relation to environmental, ethical or religious goals. In other words, in some areas society is willing to trade reduced efficiency with ideological goals.[22]

Substantive theory, on the other hand, does not see technology as neutral, but as autonomous and thus reveals a technological determinist stance. The instrumental contention that the same technology can be used to serve various political or cultural ends, to not appeal to the substantive notion of technology. Jaques Ellul and Martin Heidegger, among others, believe that the emergence of technology constitute a new type of system in which the social world is restructured as an object of control. These theorists see the technology as a relentless threat that is indeed overtaking us. Humans are, according to Heidegger, reduced to standing reserves or raw materials. In this rather gloomy picture of technology it is implied that the " … instrumentalisation of society is (thus) a destiny from which there is no escape other than retreat. Only a return to tradition or simplicity offers an alternative to the juggernaut of progress."[23] However, the transition from tradition to modernity, one that is often taken to be

[21] Feenberg Critical Theory of Technology, p. 6
[22] Ibid, p. 6
[23] Feenberg, p. 7

intrinsic to modernity, is according to most substantive theorists a cultural construction. Hence, modernity, the emergence of machines, is the outcome of modern societies unwise (in many cases unwitting) choices. Hence, "Technology is not simply a means but has become an environment and a way of life: this is its *substantive* impact."[24]

However their apparent differences, the instrumental and substantive theory share many similarities: Similarities which, furthermore, distinguishes them from Critical Theory. First of all, they share a *take-it-or-leave-it* attitude to technology. We can see that this attitude can be related to technological determinism. Because, in either case, whether technology is taken as indifferent as the instrumentalist holds, or as a vehicle for a culture of domination, as is the substantive belief, can we change technology. Technology is destiny. "Reason, in its technological form, is beyond human intervention or repair."[25] This is why, Feenberg argues, critics of technology only see the rejection of technologies as the alternative to the exploitation of humans and environment. There is thus made a dichotomy between certain human values and technology, a dichotomy which is, moreover, culturally constructed. (It is Feenbergs belief that a new type of technology can transcend this principle.) The problem with moral boundaries to technology, however, is that it is extremely difficult to reach an agreement on what these choices should be. "The only consensus value left in modern societies is efficiency", Feenberg argues, "precisely the value we are attempting to bound so that other values may flourish."[26] What is needed to transcend the dichotomy between principles and practicality, (ideology and technology) is thus an alternative practicality more in accord with principle: We must see that technologies are socially shaped, and thus open up for a different interpretation of technologies. Feenberg sees the political attempts to bound

[24] Ibid, p. 8
[25] Ibid, p. 8
[26] Feenberg, p. 10

technology fall on the same paradox: “In the face of the technological challenge, only a particularly strong state can create a culturally and economically closed region for the furtherance of original cultural goals. Yet, paradoxically, a strong state can only sustain itself by employing the authoritarian technical heritage of capitalism.”[27]

2.3.3 Critical Theory

It is Feenberg’s belief that it is impossible to create a fundamentally different industrial civilisation through a different instrumentalisation of existing technologies.[28] The challenge of Critical Theory is thus to find a new way. They must choose a difficult course between resignation and utopia. In order to make this society into a freer one, the existing technological base must be transformed. Feenberg would like to construct a new form of critical theory, one which is able to tackle these problems. His formulation has similarities with substantive theory in that technology is more than a neutral tool. Our choice of technology shapes who we are and what we will become. “The act of choice is technologically embedded and cannot be understood as a free use in the sense intended by instrumental theory.”[29] However, the future fate of our societies is not decided by an immanent drift of technology, it can indeed be shaped by human action. The problem is that technical rationality has become political rationality. The values of the ruling class are embedded in the technological base, and are thus *political* before any apparent politics are inscribed in them; before they are used in any specific way, towards a certain goal. “The dominant form of technological rationality is neither an ideology nor is it a neutral requirement determined by the nature of technique. Rather, it stands at the intersection

[27] Ibid, p. 12-13
[28] Ibid, p. 13
[29] Ibid, p. 14

between ideology and technique where the two come together to control human beings and resources in conformity with what I will call *technical codes*."[30]

2.3.4 Conclusion

It is Feenberg's belief that there is a socially constructed dichotomy between human values and technology. Thus, it can be argued that there also is a socially constructed technological determinism inherent in our conception of technologies. In relation to this the instrumental and substantial views of technology share a take-it or leave-it attitude to technology. Values such as environment and ethics are thus seen as a trade-off in the current social system. Furthermore, technology is taken for destiny. A critical theory of technology must transcend this dichotomy and create a new theory of technology that must choose a difficult course between resignation and utopia. Technologies must be inscribed with a different set of values: In order to change society one must change the technological base. It is, therefore, necessary to communicate the insight that technologies are, in fact, socially shaped. And, it is furthermore inherently paradoxical to argue for a dichotomy between human values and technology in that the one will necessarily reflect the other, and vice versa.

2.4 Technological determinism

[30] Ibid, p. 14

I have now come to a point in the discussion where I finally can try to come to a conclusion on the nature of technological determinism. I will do this by assessing some arguments that can be related to the different approaches and conceptions explained in the preceding pages.

There are many layers or degrees of technological determinism and, as pointed out earlier, it is seldom found in its pure form. It is, furthermore, related to several outdated social theories that we will return to. The authors behind ANT and SCOT show in their work the complexity of technological development. There are many components that make up the equation of technological change. Determinism, whether social or technological, can be characterised as a belief in the power of some parts of this equation to exert influence on others to a degree that the one shapes the other. Thus, determinism, in relation to the theories we have discussed above, must be viewed as a simplified view that fails to see the true nature and complexity of social and technological development, and which treat societies and technologies in an superficial and unscientific way.

Firstly, the technology is treated as *autonomous*. Secondly, it is an agent of change; the technology itself has direct *causes* on humans and societies.[31] A historian, for instance, might see the expansion of the Portuguese armada as purely technological in that their ships were superior and that this was the sole, decisive factor. But, as John Law points out this will be to simplify matters and to overemphasise some parts of the formula – the network of heterogeneous actors - that made the Portuguese expansion so successful. One cannot treat the military technology of the Portuguese as an autonomous force. It is Law's belief that it is useless to isolate any one component in this way and name this the determinant of social or technological change. A certain type of technology may have certain effects, in a specific

[31] Wajcman & MacKenzie ed. *The Social Shaping of Technology,* p. 4

situation, but it is necessary to view this in a larger perspective and ask: What has shaped the technology that is having effects?[32] Furthermore, it is necessary to ask within which type of context, or paradigm, is the technology having effects? What are its surroundings? Because, if one believes in the autonomy of technology one will have to conclude that the surroundings exert no influence over its effects. Or, rather that it is no interaction, or negotiation, between technologies and their specific socio-economic contexts, which is proven to be an untenable notion. There are many examples to show that technologies have been used differently by consumers than the designers of a product have anticipated, and that technologies have been used differently, and thus have had different effects, in different circumstances. This is not to say, however, that technological objects cannot be inscribed with a certain type of effect, or politics, as Langdon Winner calls it. This can arguably be seen as the case with the bridges designed in New York to keep the black community from entering and using the recreational areas of Jones Beach. But to say that certain technologies have certain innate qualities individual of their design, context or usage must be identified as technological determinism, and thus flawed. One cannot argue by referring to the low bridge on the road to Jones Beach, that bridges in general have discriminating effects, any more than one may argue that a computer is an effective and time-saving technology in itself, without any reference to situation or human agent. The computer may be used to store and retrieve vast amounts of information and complete complex tasks at a speed impossible for the human brain, but it can also serve as an entertainment machine and deprive us of precious time.

In the case of Hughes, the large technological system is said to exert a soft determinism on society. The existing system, by its shear magnitude and momentum, is decisive in the way technology will be used and produced. Freeman believes in a related sense that there are

[32] Ibid, p. 2

waves of technological developments, and that some are so strong they determine the direction of societies. This is said to be the case in the Industrial Revolution, and might be the case in relation to the current development in information technologies. This view is not essentially opposed to a social shaping approach; it does not defy the idea that technologies are socially shaped, but rather overemphasise the pure technological role in historical changes. The technology is thus given a semi-autonomous, determinist role.

A more dramatic form of determinism holds that technologies shape the entire form of a society. The microchip revolution, for instance, is said to give impetus and to be the sole cause of the emergence of new society. In this society the technology forces us to change our ideas, our mode of work, our entire social structure, it seems, will be affected.[33] Thus, society merely mirrors its technologies. Technologies are indicative of how we see ourselves and live our lives. This is, unfortunately, the type of determinism we will later find in some of the literature concerning *The Information Society.* This form of determinism can, furthermore, be identified with questionable social theories that now are abandoned, but which, nevertheless, have been greatly influential for how we have viewed our societies. This train of thought holds there is a certain logic or structure inherent in the development of societies, where technologies are often believed to be the driving force or an important actor. This is related to the thought we encountered when discussing SCOT, where it was argued that history has made a quasi-linear model of technological development. By simplifying the line of development, that is, not giving attention to the real conflicts behind technological change, a snug linear development line might be drawn. A further consequence would be the belief that societies move towards some certain goals. This would mean that there is an inherent logic in the development from an agrarian to an industrial and now towards an information society,

[33] Wajcman & MacKenzie, p. 5

that the changes are sequential, and that every stage elevates society higher towards some goal. Hence, the development is believed to be irreversible. This type of determinism is related to a *teleological*[34] view on historical change: society moves towards some purpose or goal.

2.4.1 Conclusion

The faces of technological determinism are many, and there are various ways in which it can be used to explain historical and technological developments in a snug, linear and simplistic way. In light of the viewpoints on technology discussed above, it can be argued that ANT and SCOT are necessary supplements in any sociological or historical work on technology, and that the insights they give are useful in illuminating traits of society that are often taken for granted. It will be argued later in this dissertation that technological determinism is a potentially strong rhetorical weapon, which is embedded in conceptions of our societies that must be considered as misconceived as well as threatening for a democratic implementation and use of technologies.

2.5 The Information Society

2.5.1 Introduction

[34] **Teleological explanation**: Human action can be explained in terms of purposes: the diver's return to the surface is explained by his desire to breathe, and the student's assiduous pursuit of learning is for the sake of achieving enlightenment – or pursuing a career. Generally, when something (which need not be a human action) is explained in terms of a purpose, i.e. that for the sake it comes about, or exists, or has a certain feature, or operates, the explanation is teleological. **Teleology** 1) a theory which describes or explains in terms of purposes. 2) purposiveness (of a natural organism or system). *Penguin Dictionary of Philosophy*, p. 558-559.

There are many suggestions to what the current changes in information technologies have done and might do for contemporary society. However, there are few evidences to show that we are entering a new era: *The Information Society*.

Frank Webster divides in his book *Theories of the Information Society* the different theories of the information society into five categories: technological, economic, occupational, spatial and cultural. These categories show that the different perspectives and approaches to the information society are pluralistic. Webster's work also show that the word information is treated differently within the various approaches, and that the advocates of an information society usually see the quantity of information in contemporary society indicative of the emergence of a new information society. Hence, it is clear that a precise definition of information is crucial for our understanding of this debate. Webster identifies a semantic and non-semantic definition, which are related to a quantitative and qualitative approach, respectively.

With the distinctions named above, Webster discusses the different approaches in depth throughout his book. For our purpose his discussion of Daniel Bell's work on the *Post-Industrial Society* is the most interesting. Bell's work is considered seminal and is, although contestable, one of the most influential on contemporary society. It is, moreover, closely related to the information society - Bell even uses the two names interchangeably in his later work. It seems as though Bell's PIS and the EU's *Information Society* reveal many of the same thoughts concerning the role of technologies and information in society. It is also, as Webster identifies, the academic alibi for much popular writing on the information society, and therefore important to contest.[35] Furthermore, the notion of a post-industrial society can

[35] Webster *Theories of the Information Society*, p. 31

be identified with different viewpoints which are abandoned in most contemporary academic work, namely; *neo-evolutionism, teleology* and *historicism*[36] which all are related to technological determinism. Reviewing the arguments behind Bell's PIS will give us a better understanding of the mechanisms underpinning the *Information Society*.

Through this discussion of theories of the information society, where the work of Webster and Bell will be central, I will argue that the notion of both the *Post-Industrial* and the *Information Society* are based on methodologies that most of the time are questionable and very often incorrect. Thus, the arguments of the information society theorists, as identified below, must, in many aspects, be considered groundless and flawed.

2.5.2 What is information?

It seems as though information these days is treated more and more in terms of purely quantitative measures. Many would argue that *information* in computer networks is the equivalent of the bits exchanged through the network; that *information* is reducible to the binary-coded matrix of the computer visions and texts. If used, this definition would agreeably indicate that contemporary western society is more *informational* than the preceding in that the amount of *information* exchanged is larger than ever. But, if one simply considers the quantity of information, it is hard to understand why this would signify that what we have before us is something radically new.[37] Anthony Giddens, for instance, argue that all societies are information societies, and that the gathering and storage of information is essential for any society. If we are to understand the role of information in our societies it

[36] **Historicism**: One strand in historicism stresses the uniqueness of individuals, events, cultural phenomena, etc. in opposition to what is seen as a distortingly abstract rationalist search for timeless truths about man and history. Another strand in historicism stresses the assumption that the course of history is governed by general laws. Knowledge of these makes it possible to predict the future of a society, of Western civilization, etc. These laws are held to be inexorable, so that resistance on moral grounds is pointless. *Penguin Dictionary of Philosophy*, p. 250.

seems pivotal that we understand its quality. Information is semantic: it is meaningful; it has a subject; it is intelligence or instruction about something or someone.[38] Thus, the only way a break with the past can be identified is by assessing the value of information in society. The paradox is that the advocates of the information society fail to see this and argue that the quantitative changes automatically will lead to qualitative changes: "What we have here is the assumption that quantitative increases transform - in unspecified ways - into qualitative changes in the social system."[39] Thus, they fail to separate what is essential and what is not; what kind of information that constitutes contemporary society.

Along this train of thought, the information worker too must be assessed. The informational work is essential for many theories of the information society. Many hold that the day the majority of the population work with information is the day we enter the information society. This thought is also found in the EU texts. It is believed that the information revolution will create new information related services on a large scale. However, the problem is that the information worker is a methodologically slippery term. Many have tried to categorise workers in terms of different sectors, but the choices seems often to be arbitrary. What is an information worker? The fact is that no one have come up with a clear definition. Theorists lump together heterogeneous occupations in categories that are oversimplified, and that can be criticised on several points. Firstly, one type of occupation may do several types of work, i.e. a librarian may both stack books as well as give expert advise to scholars. How informational then is a librarian's work, semi-informational? Giving expert advise to scholars would surely qualify as information work, but stacking books? Moreover, what part of the job is important for social change, the daily routines of the library or advising customers?

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[37] Webster , p. 24
[38] Webster, p. 27
[39] Ibid, p. 25

Secondly, it is problematic to make a simplified and clear-cut distinction between information work and production employment. The fact is that much of the information work is in many ways intertwined with the industrial or production sector. Is an information or marketing employee in a car factory employed in the industrial sector or service/information sector? The question one is left with is how can we define an information worker? And, what is the real value of the information worker in society?

It is clear that information and the occupations related to it, are hard to define. This is also the case with the information technology. Frank Webster is a sceptic and wonders how much IT there really is in our society. "IT, it begins to appear," he says, "is everywhere … and nowhere too."[40] Moreover, in what way do we measure the current status of information technology in our societies, by production statistics, or consumption statistics. Do televisions and radio count as IT, or are we merely talking about computers? How about IT used in car factories or, for instance, in the fishing industry. Do these technologies count as information technologies? If so, what kind of information do they provide us with and in what way does this technology contribute to the development of an information society? Moreover, do the latter type signify a new information society or is it part of an industrial age? There are more questions than answers, it seems.

2.5.3 Post-Industrialism and the *Information Society*

> The Concept *post-industrial society* emphasizes the centrality of theoretical knowledge as the axis around which new technology, economic growth and the stratification of society will be organized.[41]

[40] Webster, p. 9
[41] Bell *The Coming of Post Industrial Society*, p. 112

It is Daniel Bell's belief that we have entered a *Post-Industrial Society* through the heightened presence and significance of information in our societies. This society is, furthermore, signified by the growth of the service sector: It is mirrored by its employment base; i.e. the amount of people employed in information intense service work. This society is a more caring society in that it is freed from the *more-for-less* mentality of the industrial past. In PIS there is shift towards a *sociologising* of society where the emphasis is on human relations. Furthermore, it is a society where the heightened presence of expert knowledge has transformed the laissez-faire of the past into a well-planned economy. The emergence of PIS is by way of an evolution based on the logic of rationalisation; the economising of the agricultural and industry sector has ensured a higher output per capita, and thus freed labour from these sectors. This has enabled the service sector to grow. Hence, Bell believes that the secondary sectors subsidises the tertiary; growth in terms of output per capita in the former sectors is a prerequisite for the emergence of a new service sector.

Bell argues that both quantitative and qualitative changes in relation to information have been important in respect to the PIS. The growth of the service sector is indicative of quantitative changes, whereas the growing base of theoretical knowledge indicates changes of a more qualitative degree. Furthermore, it is argued that today's societies are radically disjunctive; that is, they are divided into separate realms of social structure, politics and culture. PIS emerges through changes in the social structure rather than in politics or culture.[42]

2.5.4 Neo-evolutionism

Frank Webster shows in his work that the theories of Daniel Bell, although they may seem reasonable at first glance, are untenable. They are both methodologically and empirically

[42] Webster, p. 32

flawed. PIS is according to Webster, unsustainable in the light of substantive social trends. First of all, Bell's rationalisation theory must be criticised. The very logic he contends to be the driving force of PIS, is grounded on suspect theories within sociology that now are abandoned. His explanation of the sequential transformation of our societies can be identified as neo-evolutionism. In Bell's universe technology is the tool by which the society is transformed - it is the factor by which the secondary sector can be economised and higher output achieved - and where the logic of rationalisation is the prime mover, the invisible hand, if you like. As we can see this fits well with our former description of technological determinism. However, Bell emphasises that rationalisation must be seen as the real driving force, and thus frees himself of the technological determinist label. This does not, however, free him of accusations of other types of determinism. Inherent in Bell's thoughts is a theory of convergence; that all societies move in accordance with some pre-established logic, and that they will eventually move through the same stages. PIS can thus be seen as an elevated state of society, and it seems as though Professor Bell believes that America is leading the way into the PIS. In other words: "Bell necessarily contends that all societies are set on the same developmental journey, one which must be followed en route to PIS."[43] These views must be identified as *historicism* and *teleology*, both highly questionable, disputed and outdated theories of the development of society and which are furthermore related to technological determinism.

2.5.5 Radically disjunctive, or inexorably connected?

We must also criticise Professor Bell's contention that societies today are radically disjunctive; that they are divided into separate realms. This anti-holist view of society is a methodological simplification that has no root in the real life mechanisms of a complex

[43] Webster, p. 40

society. It is, furthermore, a snug methodological manoeuvre to keep off embarrassing questions of whether developments in any one realm exert influence on another.[44] The fact that Bell offers no explanation for this separation makes it even more suspicious, and it is Webster's conclusion that this is wholly untenable: "Since in the everyday world of human existence issues inevitably pose themselves in ways which involve the interconnections of culture and social structure, it is surely at the least evasive for Bell to insist on their radical disjuncture."[45] I believe that the arguments above, more than anything, highlight how frail the notion of a PIS in reality is.

It is also Bell's belief that there is a breakdown of a one-time common value system in the PIS. The once conjoined value system and social structure of the nineteenth-century Protestant character structure and the demands of socio-economic development is now non-existing. This poorly defended supposition is contrasted by points in later discussions where Bell show the interconnectedness of the different realms and the continuity with preceding value-systems. Thus, Bell reveals the paradox behind his theoretical stance.

2.5.6 The Tertiary Society

"For Bell, a *service society* is a post-industrial one too."[46] The most indicative trait of PIS, is the growing service sector. There are, however, several questions one must ask in relation to the significance of the service sector in today's society. First of all, the service sector's reliance on the industrial must be contested. There is no evidence to show that there has been a sequential shift from agricultural to industrial, and later to service. The explanation that Bell offers is, according to Webster, misconceived. The most drastic change has been from

[44] Webster, p. 33
[45] Ibid, p. 33
[46] Ibid, p. 35

agriculture to service. Furthermore, the industry sector has been stable for well over a hundred years. The decline in recent years is in many ways due to political decisions.

Bell offers no definition of service work in *The Coming of Post-Industrial Society*. The term is, at the least, dubious. The service worker is generally used in a rag-bag like manner in most of the works concerning its importance for contemporary society. It is, therefore, methodologically hard to pinpoint. In statistics, for instance, the service sector is used as a residual category for statisticians interested in examining employment by economic sectors. This is undoubtedly misleading. In fact, to separate service as an independent sector is questionable in itself. The different sectors are intertwined in such complex ways that it will lead to unsatisfactory results to treat them as apart. Further, much of the service work is actually an important and integrated part of the manufacture industry; it deals with operations that enhance the marketing, production and sales of goods. How can it then be argued that the service sector is separated and dependent of the industrial sector?

Furthermore, it is Bell's belief that the service sector will grow as we enter post-industrialism. This seems, however, not to be the case. Gershuny concludes that the very antithesis of Bell's Post-Industrial Service Society is emerging. According to Gershuny, the service sector has, in fact, declined the last 25 years. What we have seen instead, is the rise of the *self-service society*. During the 50's and 60's: "the major activity of industry was the manufacture of service products, in response to clear demand from consumers, that could substitute for service employees." [47]

2.5.7 Conclusion

[47] Webster, p. 46

We have seen that the notion of a post-industrial society is contestable in every aspect. Bell's arguments for a new society are either too vague, or simply flawed. It is, furthermore remarkable that Bell grounds his theories upon theorists like the sociologist Weber, whose theories were meant to explain the development of the modern industrial era, in his argumentation for a post-industrial society. In Frank Webster's words: "… Bell's dependence on themes central to nineteenth-century social scientists whose concern was to explore the emergence and direction of industrialisation severely undermines his case that PIS is novel."[48] We will later see how this discussion of Bell will be important in analysing the EU's notion of an *Information Society* and it can be argued that we can criticise the *Information Society* much in the same way as Webster's criticises Bell.

3.0 Analysis: The European *Information Society*

3.1 Introduction

I will now conduct an analysis of documents produced within the EU, based on the insights of the preceding theory chapter. It is my aim to show that they are based on technological determinist contentions, and thus conclude that the EU treats the information society phenomenon in a determinist manner. The documents that I have chosen are all, according to the *Information Society Promotion Office*-website, considered important for policies concerning the *Information Society*.[49] In the first part of the chapter I will establish the chosen documents into an EU context, placing them within the different bodies of the European Union, as well as discuss their interrelation and importance in the development of an *Information Society* policy. I will then draw attention to language construction that I find to be typical for the sentiments communicated. This will lead me on to the identification of a

[48] Ibid, p. 39

broad spectre of determinist constructions and arguments. The second part will discuss the notion of revolution found in the documents. These are closely related to Bell's PIS, and will thus be discussed in dialogue with Webster's critique of Bell.

3.2 The Policy Documents: *A Contextualisation*

> The Council invited the Commission to take up a number of measures in fields outlined in the Action Plan. The guidance given by the Council provided in particular an important impulse towards the liberalisation of telecommunications. *The Action Plan* has successfully established a first framework for the European Union information society policy. On this basis, good progress has been made over the past two years.[50] (my italics)

It is necessary to trace the development of an *Information Society* policy through the various documents later to be analysed in relation to technological determinism: Where within the EU and by whom they are produced and what position they have in relation to other documents. The White Paper[51]on *Growth, competitiveness and employment: the challenges and courses for entering the 21st century* (hereafter named *White Paper*), a document produced in 1993 for the European Commission by a group lead by Commissioner Delors, is the first important step towards developing the current information society policy. It emphasises the need for adapting a suitable framework, a Pan-European information structure named *A Common Information Area*, reaping the full benefits of the information revolution. The main purpose of this information structure is to create new markets and thus new employment.

It is proposed in the *White Paper* that a high-level expert group should present a report on the information society, so as to come to a conclusion on some concrete measures for

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[49] http://www.ispo.cec.be/basics/i_history.html

[50] *The Information Society: From Corfu to Dublin. The New Emerging Priorities*, The European Commission 1996, p. 1

[51] *Green Papers* are communications published by the Commission on a specific policy area. Primarily they are documents addressed to interested parties, organisations and individuals, who are invited to participate in a process of consultation and debate. In some cases they provide an impetus for subsequent legislation. *White Papers* are documents containing proposals for Community action in a specific area. They often follow a Green Paper published to launch a consultation process at European level. While Green Papers set out a range of ideas presented for public discussion and debate, White Papers contain an official set of proposals in specific policy areas and are used as vehicles for their development. (http://www.ispo.cec.be/policy/isf/green&wh.html)

implementation. This proposition, alongside with the general conclusions of the *White Paper*, were given full political support by the European Council.[52] Thus, the Bangemann report *Europe and the global information society – Recommendations to the European Council* (hereafter called the *Bangemann Report*) was presented in 1994 to the European Council in Corfu. The high-level expert group behind the report, which comprised of representatives from major European companies such as *AB Volvo*, *Olivetti*, *Telefonica* and *Siemens AG*, concludes, first and foremost, that a liberalisation of the European market will enable the European Union to reap the full benefits from the information revolution. (It should be noted that the group almost exclusively is comprised of represents from business and it can be argued that a general attitude towards the *Information Society* is communicated in the mere building of such an *expert group*!) Thus, the progress and implementation of an *Information Society* should, according to the *Bangemann Report*, mainly lie in the hands of the private sector. It can therefore be argued that the first steps towards building an *Information Society* policy reflects the concerns of business. The role of the European Union and the European governments should be to safeguard competition and stimulate to innovation and growth; "The prime task of government is to safeguard competitive forces and ensure a strong and lasting political welcome for the information society, so that demand pull can finance growth, here as elsewhere."[53]

The work of the two former documents culminates in a Communication from the Commission in 1994 *Europe's way to the information society: An action plan*, which constitutes a general framework for an action plan based on four main lines of action: 1) the development of a *statutory and legal framework;* 2) the encouragement of actions towards developing a Pan-European information structure where the *Information Society Project Office (ISPO)* will act as a catalyst, 3) *social and cultural aspects*; to promote Europe's

[52] Europe's Way to an Information Society: An Action Plan, p. 2

cultural and linguistic diversity, and 4) *promotion of the information society*; explaining the stakes of the information society, its opportunities and risks.[54]

The *White Paper*, *Bangemann Report* and *The Action Plan* form the foundation on which much subsequent policy rests. It is stated in several documents later produced by *Employment, Industrial Relations and Social Affairs Directorate-General (DGV),* and *Information Society Directorate-General (DGXIII)* that the suggestions for policy outlined in the *Action Plan*, which I remind you rely on the documents produced by the groups led by Bangemann and Delors, actually have been translated into policy. This is indeed indicated by the quotation introducing this paragraph, which states further that "Most of the measures outlined in the Action Plan have either been realised or are being launched."[55] It will therefore be argued in this paper that the Bangemann Report and the White Paper have been influential on *Information Society* policy.

In 1994-95 the Commission set up the *Information Society Project Office (ISPO)* – later named the *Information Society Promotion Office* – and the *Information Society Forum (ISF)*. The former was meant as a promotion and information office for the private and public sector in the areas of the information society, the latter a broad-based group of representatives given an advisory role to the European Commission. *ISPO* must, in light of the information provided above, be viewed in connection with the conclusions arrived at in the *Bangemann Report* and the *White Paper* since it can be argued that they, to a large extent, form the agenda it is set to pursue. From a list of members of *ISF* last updated in march 2000, one finds representatives from the *European Parliament*, *British Telecom*, *European Blind Union*,

[53] The Bangemann Report, p. 13
[54] Statement: Towards the Information Society, http://www.ispo.cec.be/backg/statemnt.html
[55] The Information Society: From Corfu to Dublin. The New Emerging Priorities, p. 1

Committee of the Regions, *Open University of Catalunya* and *SINTEF energy research* in Norway.[56] It is clear that these groups are more heterogeneous in their representation than, for example, the groups behind the *Bangemann Report* and the *White Paper*. However, it should be noted that they have been given a mere advisory role and that their influence therefore can be questioned.

The Fourth and the Fifth Framework Programme managed by the *Information Society Directorate-General (DGXIII)* under which the RTD-activity related to the information society is located, has likewise adopted external advisory groups to comment on policy. We find many of the same companies and institutions represented here as in *ISF*. However, whether these expert groups have any real influence or not may be questioned on the same grounds as the abovementioned example. What seems clear is that the *White Paper*, *Bangemann Report* and *The Action Plan* all have been influential in developing the Fourth and Fifth Framework Programme in that these documents have set the agenda for the measures for policy implementation.

These three documents, forming the base of *Information Society* policy, are followed by several policy papers from the European Commission in the years after, which are important in an information society policy perspective, and which I will use in my analysis. In 1996 a Green Paper is produced by the *Employment, Industrial Relations and Social Affairs DGV* named *Living and Working in the Information Society: People First* where the title suggests an orientation towards issues of a more socially inclusive character, as opposed to the more business-like arguments in the Bangemann report. The Green Paper aims at stimulating the debate on the development of the European *Information Society,* and focuses on the key

[56] http://www.ispo.cec.be/policy/isf/I_members.html

issues of the organisation of work, employment and social cohesion.[57] However, it seems that many of the same basic arguments concerning the development of an *Information Society* and the phenomena underpinning it are used in these papers too, only on a slightly different subject matter.

Although one can find many similarities with both the Bangemann Report and the White Paper, it is clear that the later documents reveal a more balanced and pluralistic view on some of the issues. In the case of the Green Paper *Living and Working in the Information Society: People First* this may be explained by the fact that it is a *Green Paper*, hence it is meant to stimulate debate around the issues communicated and is not a policy document as such. This explains its more tentative approach. Nevertheless, it reveals general ideas about the nature of the *Information Society* which can be related to the *Bangemann Report* and the *White Paper* and that we must pursue in our debate.

The Green Paper *Towards an Information Society Approach,* which is a joint paper from *DGV* and *DGX* analyses the convergence phenomenon that it finds is evident in the ICT-market, and poses questions in relation to these issues. It is argued that the changes resulting from the convergence process have potential for substantial wealth creation in Europe, improve quality of life for Europeans and to integrate region's on the periphery into the heart of the European economy.[58] *Job Opportunities in the Information Society*, a report developed by *DGV, DGXIII*, *Industry Directorate-General (DGIII)*, and *Human Resources, Education, Training and Youth (DGXXII)* for the European Council in 1998, still emphasises many of the same arguments that were put forward by the White Paper and Bangemann Report. This document examines the impact the *Information Society* is having and is generally positive in its outlook for Europe. However, it addresses a concern, which it shares with other documents, that the EU is not making the most of the information revolution.

[57] Green Paper *Living and Working in the Information Society: People First*, p. 3

Finally, the Communication on a Commission Initiative for the Special European Council of Lisbon, 23 - 24 March 2000: *e-Europe: An Information Society For All* produced in 1999, where the political initiative e-Europe is explained, will be touched upon. e-Europe is an initiative that will ensure that the European Union fully benefits from the changes the *Information Society* is bringing.[59] Its key objectives: to bring Europe online; create a digitally literate Europe and to ensure that the whole process is socially inclusive.

3.3 The Language of Technological Determinism

> This decade *is witnessing* the forging of a link of unprecedented magnitude and significance between the technological innovation process and economic and social organization. Countless innovations *are combining* to bring about a major upheaval in the organization of activities and relationships within society. […] A new information society *is emerging*.[60] (my italics)

These lines, taken from the White Paper, as we have seen one of the most influential on *Information Society* policy thinking within the EU, may seem puzzling at first glance. What is this new society? What is changing it and from where is it emerging? However, the very vagueness of these constructions will show itself to be quite revealing in relation to the technological view underpinning the *Information Society*. The language used, communicate an unproblematic attitude towards technologies and technological development, where it seems that the agents of change are taken for granted. They are, furthermore, language constructions that are extensively used in policy documents concerning the *Information Society* within the EU: e.g. "e-Europe is a political initiative to ensure the European Union fully benefits for generations to come from the changes the Information Society *is bringing*."[61]; "The European Union *is moving* decisively into the information age. The

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[58] Green Paper *Towards an Information Society Approach*, p. ii
[59] *e-Europe: An Information Society For All*, p. 2
[60] *White Paper*, p. 107
[61] *e-Europe: An Information Society For All*, p. 2

Information Society (IS) *is fast becoming* a reality for Europe's citizens and businesses and has already started *to transform* the way we live and work."[62] (my italics)

One could argue that the use of passive constructions as shown in the excerpt above is of no interest, that it is a non-intentional and practical use of language, and that it does not communicate any meaning in itself. All the same, it can be argued that the use of language as exemplified above; use of the passive, implicitly can be related to technological determinism in the EU documents. Hence, they may be indicative of a technological determinist stance in the documents and this may strengthen the argument that the policy papers are essentially technological determinist.

By using the passive, the author, like it is stated in the subsequent excerpt, can refrain from showing any known agent(s). " The great majority of passive constructions do not contain an agent phrase. A principal reason for choosing the passive is precisely that it is not possible or desirable to specify an agent. The agent may be unknown, redundant, or irrelevant."[63] As we can see, this is the case in the quotation above taken from the White Paper. The phenomena that are explained are said to emerge, without emphasising from where and by which force. This lack of specificity in some passages results in a general vagueness in the documents in relation to the current technological changes.

However, seen in relation to the general arguments used throughout in the EU-papers, it is reasonable to conclude that the use of passive holds meaning. Because, there can be found several passages in the documents arguing that the changes we are currently living through are indeed produced or led by technology. Thus, it can be argued that the passive constructions must be read in light of these arguments. In the White Paper, for instance, it is

[62] *Job Opportunities in the Information Society*, p. 1

stated that: "Modern technologies are fundamentally changing the relationship between the State and the general public."[64] And, in *Introduction to the Information Society the European Way* it is thus poetically stated: "In an already irreversible process, the nations of the developed world have travelled well down the path blazed by new electronic technologies."[65] Supplemented with a citation from the Bangemann report should leave the reader with no doubt: "Throughout the world, information and communications technologies are generating a new industrial revolution already as significant and far-reaching as those of the past."[66] There is no doubt concerning the agent in these lines. These are technology led developments. This is technological determinism.

Hence, in light of the arguments above, we may treat the passive constructions used throughout as indicative of the same contention that holds that the agent of change is the technology itself, and thus conclude that the use of passive in the documents is synonymous with technological determinism. It is therefore, on the basis of this conclusion reasonable to conclude that the documents indicate, in their very use of language, a technological determinist stance and from this it follows that, when the White Paper says that a new society *is emerging*; one may read it thus: *A new society is emerging and it is shaped and created by new technologies*.

3.4 Various forms of determinism

Let us look closer at the technological determinism found in the texts and discuss it in relation to how we have defined technological determinism earlier in the theory chapter. We have seen that determinism can be categorised on different levels. At its simplest, or most dramatic, according to point of view, technology is seen as the shaper of societies; it shapes the way we

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[63] Johansen, Lysvåg *Understanding English Grammar Part 1*
[64] *White Paper*, p. 109
[65] *Introduction to the Information Society the European Way*, p. 2

live, organise, communicate and work. Society is in this sense a mere reflection of technology. I will argue that we find this type of determinism in the EU documents. The White Paper says in its introductory part to *The changing society, the new technologies* exactly what has been emphasised above " … (ICT's) are transforming dramatically many aspects of economic and social life, such as working methods and relations, the organization of companies, the focus of training and education, and the way people communicate with each other."[67] Thus, it can be argued that there is an essential technological determinist argument in the paper. The changes explained are resulting in the emergence of a new society: the *Information Society*. As we have seen this new form of society is technology pushed, and it is argued that we, the citizens, must adapt to the changes. It is moreover stated that the move towards an information society is irreversible, and that it affects all aspects of society. The White Paper suggests that we embrace the changes and try to reap the benefits to its full extent by creating *A Common Information Area.* The creation of a common information area will enable the Community fully to seize the opportunities of the information society.[68] It is thus clear that direct social intervention and control over the benefits of the technology is given secondary status; we can by developing the right framework in some way control the impact of technology. This control, however, is reduced to a *take-it-or-leave-it* attitude towards technologies as we encountered when discussing Feenberg. Human control in this matter is given a simple function of either slowing the technological process down, or assuring its full and speedily impact. In no way can we actively shape its outcome. In this it is implicitly said that our economic and political institutions must change as a consequence of the emerging technologies. We can see that Delors and his fellow authors do not leave us much choice of intervention in their vision of modern society.

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[66] *The Bangemann Report*, p. 10.
[67] White Paper, p. 107
[68] White Paper, p. 109

The White Paper can arguably be seen as essentially technological determinist. Let us look closer at the different forms of determinism found. One of the specific areas that technologies are said to have influence in this paper is on marketplace. ICT's and globalisation, it is said, are forcing companies to rethink the way in which they do business and the way they organise their production. It is, furthermore, stated that the new technology is obliging businesses to exploit every opportunity available in order to increase productivity and efficiency. Hence, the argument of Daniel Bell that the rationalisation process gives the real impetus for technological change is inverted; technology fosters, or necessitates, the rationalisation process in modern society. What is interesting in this respect is that technologies not only have direct causes; that society mirrors technology, but that it fosters processes in society itself, processes which humans live by. In this way technologies have given impetus to processes that shapes our life, the way we think, we organise etc. Thus, the technology lies at the core of social change in western societies.

There are arguments closely related to technological determinism, and which, in the case of the EU documents, rely on the determinism already emphasised in the paragraph above. Bell contends that the Post-Industrial Society will eventually be a global phenomenon, and that the US is leading the way. We have identified this view above when discussing Daniel Bell's PIS as *historicism* or *teleology*. The same argument is found in the White Paper, it is stated thus: "The development of an *information society* will be a global phenomenon, led first of all by the Triad, but gradually extended to cover the entire planet."[69] In light of the arguments above we can see that this holds a determinist argumentation. I have earlier pointed out passages where the move towards an information society is seen to be an irreversible trend, hence the

[69] White Paper, p. 110

development is beyond human control. The same train of thought is found in this case. Inherent in the argument above is the thought that technologies and thus societies with them evolve according to a certain logic and towards a certain goal. Bell finds that the impetus of this *movement* is rationalisation. The White Paper, however, states that technologies, more specifically ICT's, itself foster the rationalisation process. It is thus a technological determinist stance inherent in the historicist argument above; technology is the prime mover of a certain perpetual process in modern societies, which moves us towards some distant goal, a process which furthermore eventually will become a global phenomenon.

In the Green *Paper Living and Working in the Information Society: People First*, there is found specific technological determinist contentions related to education. It is argued that the emergence of new technologies, more specifically, ICT's are said to necessitate a new education system; "What Europe needs is a substantial overhaul of education and training that can match the ICT revolution and keep pace with the continued ICT development during the years to come."[70] This argument follows a train of thought that new technologies necessitates new ways of structuring society.

There is another notion of the technology that I find significant in the White Paper and the Bangemann Report and which reveals a deterministic logic. There is a pronounced fear that the new technologies will not be welcome by the populace of Europe. It is, therefore, necessary to persuade, or promote, the idea of an *Information Society* or a common information area in order to fully exploit the potential thrust of ICT's. It is, furthermore, the advise of both the White Paper and the Bangemann report that we educate the citizens of

[70] Green Paper *Living and Working in the Information Society: People First*, p. 19

Europe in the *right way* of using ICT's and that we promote the new technology in order to gain its widespread support.

> The main risk lies in the creation of a two-tier society of have and have nots, in which only a part of the population has access to the new technology, is comfortably using it and can fully enjoy its benefits. There is a danger that individuals will reject the new information culture and its instruments. Such a risk is inherent in the processes of structural change. We must confront it by convincing people that the new technologies hold out the prospect of a major step forward towards a European society less subject to such constraints as rigidity, inertia and compartementalization.[71]

First of all it must be pointed out that this view contradicts earlier statements. If the information technologies will have such sweeping affects, it should not be necessary to educate the citizens of Europe in using it. Secondly, we can see that this is a type of determinism which hold that technology have certain immanent features or innate abilities. In this way ICT's are believed to have an innate ability: *efficiency*. Human agents must learn to utilise its potentials. This can be related to Feenberg's description of an instrumental theory of technology, which holds that technologies will have the same effects indiscriminately of their environments. Furthermore, in Bangemann there seems to be a reversed Luddite argumentation: ICT's are benevolent technologies that must, for the best of society, be embraced. Failing to do so may result in a two-tier society that is split between users and non-users of technology. "The information society has the potential to improve the quality of life of Europe's citizens, the efficiency of our social and economic organization and to reinforce cohesion. […] This presents us with a major challenge: either we grasp the opportunities before us and master the risks, or we bow to them, together with all the uncertainties this may entail."[72]

If we recapitulate and consider the arguments of ANT, it should be clear that this is a misunderstanding of the nature of technological development, and it must be viewed as

[71] The *Bangemann Report*, 11-12
[72] ibid, p. 11

determinist. One of the points stressed by ANT is that technology is shaped within heterogeneous systems and that technologies in no case can be viewed as stable; as the network, or system the technology operate within changes, the technology will change with it. This means that we cannot expect a technology to have the same effects in different environments. This is clearly in opposition to a *right usage* of technology. It is also clear that this can be related to Feenberg's argument that a *take-it-or-leave-it* attitude towards technology is commonly adapted and is further underpinned in the Bangemann report with the quotation above: "… either we grasp the opportunities before us and master the risks, or we bow to them, together with all the uncertainties this may entail."[73] The technology itself is thus seen as unchangeable and autonomous, it is a technology that will have certain effects regardless of human intervention, we can either take it, or leave it.

3.5 An Information-based Revolution

> Throughout the world, information and communication technologies are generating a new industrial revolution already as significant and far reaching as those of the past. It is a revolution based on information, itself the expression of human knowledge. Technological progress now enables us to process, store, retrieve and communicate information in whatever form it may take, whether oral, written or visual, unconstrained by distance, time and volume. **This revolution adds huge new capacities to human intelligence and** constitutes a resource which **changes the way we both work and live together.**[74]

That what we now are witnessing is in fact a revolution is one of the central and structuring themes in all of the documents here analysed. The fact that the EU sees the current changes as a revolution will necessary influence the way they treat ICT's, as well as the way in which they develop *Information Society* policies. It must therefore be a focal point to discuss this key concept. Furthermore, the very thought that technologies single-handedly can bring about a revolution should now be clear to all to be technological determinist and therefore wholly untenable. The idea of a technological revolution *causing* widespread social change is

[73] The Bangemann Report, p. 11

essentially determinist. I will try to come to terms with what the Union see as the main points of the information revolution, what its driving forces are, and its consequences. Subsequently, the notion of an information revolution in the EU documents will be compared and contrasted with Daniel Bell's PIS, in order to argue that it is untenable.

In Bangemann the *Information Society* is actually treated as the inevitable response to the aforementioned information revolution. And, thus opens up a new dimension in our discussion. *Because of* the information revolution, Europe is bound to change and the answer is the *Information Society*. Hence, the *Information Society* is here treated much the same way as the *common information area* is in the White Paper: The building of an *Information Society* is in this case believed to be under a degree of political and social influence. This view is underpinned by the definition of the information society in another document: "… *information society* reflects European concerns with the broader social and organisational changes which will flow from the information and communications revolution."[75] However, it must be stressed that the *Revolution*, that is, the information revolution in itself stands apart from the daily social workings of society. The revolution – the technological development - is thus seen as an autonomous force that comes before and is exempt from any social intervention and can be identified as technological determinist. Political control and social intervention is again merely given a secondary status; it comes in the wake of the revolution and has therefore in reality minimal control. This is reflected in suggestions for an action plan in the Bangemann report: "The prime task of government is to safeguard competitive forces and ensure a strong and lasting political welcome for the information society, so that demand-

[74] *The Bangemann Report* p. 10
[75] The Information Society the European Way, p. 2

pull can finance growth, here as elsewhere."[76] In light of the information revolution, embracing ICT's is the only *rational* political solution.

Furthermore, the information revolution is a market-driven revolution and the success of the information society can only be ensured by opening up the market forces where the technologies can develop freely. Hence, the Bangemann group believes that Europe must make a break with policies that are founded on principles which belong to a time before the information revolution. It can, therefore, be argued further that the EU believes that we have entered a new political paradigm in the *Information Society*. This as a consequence of the information revolution. We can see that this point is related to the determinist argument that a technological development necessitates a new political structure.

The discussion above differ slightly from the more clearly, or simple, stated technological determinist arguments we have encountered before in our discussion and their views can be related to Thomas Hughes and Chris Freeman. The information revolution, as it has been explained above, can arguably be seen as a new *large technological system* or a *large wave*. The relationship is no longer isomorphic; society mirrors technology. However, the large system of the new technology exert such a strong influence on society that it eventually is bound to change. In this line of argument what is really said is that it is nearly inevitable that we change, but not wholly determinate that we do so. Hence, there has been an autonomous technological development where technologies do not have the immediate effects in which they are inscribed with, without the consent of individuals and social institutions. Thus, the technologies do not directly change society, but there are very strong incentives to change society in the wake of technological development; this is, for instance, the only rational

[76] The Bangemann Report, p. 13

answer if we are to maintain our standard of living – our way of life. Furthermore, it is the only path that will lead us towards a better, more caring society, and it is therefore only logical that society will adapt the new technologies and the consequences it will bring. We must adapt in rhythm with changing technologies, because they lead us towards the future.

3.6 A more caring society?

> We are living through a historic period of technological change, brought about by the development and the widening application of information and communication technologies (ICT's). This process is both different from, and faster than, anything we have seen before. It has huge potential for wealth creation, higher standards of living and better services.[77]

Let us now look closer at the changes that arguably will follow in the wake of the information revolution. The EU *Information Society* is in many respects similar to Daniel Bell's Post-Industrial. As it is stated above, the *Information Society* will apparently give new opportunities and better quality of life for its inhabitants. However, although it is thought that we will enter a new paradigm, with a whole new set of rules, Bell's *sociologized* society is nowhere to be found in the EU documents. On the contrary, the rationalisation process, underpinned by technology, is still the driving force of society. Nevertheless, PIS and the *Information Society* share many of the same features.

It is stated in the Bangemann report that the information revolution will provide European citizens with a more caring society, with a significantly higher quality of life.[78] There will be new ways to exercise creativity and new opportunities for citizens on the periphery to express their cultural traditions and identities. In addition to new business opportunities and thus new employment, a more efficient and transparent government and administration can be

[77] Living and Working in the Information Society: People First, COM(96)389
[78] The Bangemann Report, p. 11

expected. On what grounds the Bangemann report comes to this conclusion is, however, uncertain and may prove to be mere speculations.

The EU documents rely, on most parts, on mere quantitative measures when explaining the information revolution and the emerging *Information Society*. It is the amount of information exchanged, the ability to store and retrieve it and the speed by which it can be processed which is the crux of the information revolution. However well this may sound, there is no evidence that this intensification of information indicate a type of society. The fact that the documents offer no evidence for their arguments is questionable in itself, and it does not strengthen their argument that they rely on thoughts that can be found in authors like Daniel Bell. As we have witnessed, Bell believes that the quantification of information in society would lead to qualitative changes. This is also the case in the EU documents. The information revolution – an intensification of information, as already pointed out several times, is believed to provide profound qualitative changes for contemporary society. It is reasonable to conclude that the *caring society* can be falsified on the same grounds as Bell's PIS.

3.7 Conclusion

We have seen that the passive constructions typical for the EU-documents here analysed, can be treated as synonymous with technological determinism. And thus conclude that the documents reveal in their very form a determinist contention. It is, furthermore, evident that the documents hold determinist contentions from the most simplest; society mirrors technology, to the more complex forms which are related to social theories such as *historicism* and *teleology*. Finally, the notion of an Information Revolution has been identified as technological determinist and, furthermore, contested by relating it to Webster's criticism of Daniel Bell.

4.0 Ideologies of the European Information society

4.1 Introduction

Is restoration of what Feenberg calls the fragmented society possible without the moral cost of romantic retreat? Feenberg suggest that we move forward to nature without looking sentimentally back. For him, a return to naturalness would mean a retreat behind the level of emancipation achieved by modernity and debase man to mere functions of the whole. What is needed is a concretisation of technologies, and neither a return to some primitive stage, nor a great leap into some utopian new age. We must adapt a critical stance towards technologies that see the contingency of the existing technical codes. Only by doing so can we invest the technologies with social values different from those inscribed today. Furthermore, we must transcend the idea that technologies are opposed to nature, or that they thrive on it like parasites. This idea must be understood as a social construction.

I have through prior discussions attempted both to prove the notion of a new *Information Society* to be wholly untenable and the view of technology underpinning it to be, in different degrees, technological determinist. I have done so with a mission, so to say, and it is my aim in this final chapter to unveil the hidden agenda behind the EU's adoption of a technological determinist stance, and thus the ideologies in which the *Information Society* is saturated. The aim being to assess several of the arguments made by Meszaros and Feenberg and introduce the reader to the process of *reification*, important indeed in understanding the ideology inscribed in a technological determinist stance. The mechanisms explained by Meszaros and Feenberg will form the basis for further discussion of the EU-papers.

4.2 The objective subjectivity of technology

> If the impact of science and technology on society appears to be relentless and possibly overwhelming, raising the spectre of total paralysis and social disintegration watched in anguish by helpless governments, that is not on account of their intrinsic characteristics. Rather, it is because of the way in which the dominant social forces – including in a prominent position those described as helpless governments – relate themselves to science and technology; either assuming responsibility for their control in the service of human ends or, on the contrary, using them as a convenient and foolproof alibi for their own abdication to the powers of alienation and destruction.[79]

Critical Theory attacks the existing form of capitalism by criticising its form of rationality. The argument is that there is a certain scientific-technical rationality in modern capitalistic societies which serves the ruling hegemony. It is my belief that it is necessary to discuss the technological determinism of the EU, and their praise of a new information society in light of these arguments. Central to this rationality is what Lukacs called *reification*. " … reification occurs when something that depends on human decision and action, for instance an institution or a social practice, is treated as if it cannot be so affected, but somehow as independent existence of its own, like an external object."[80] In this sense, modern institutions like science is reified, that is, they are treated autonomously. This is also the case with technology. In fact, it is the argument of some authors that the very system of modern capitalism is treated as reified in contemporary society, because the pillars on which it relies, vital social institutions, are treated as reified.

There are various mechanisms that have led to this current status of capitalism. These mechanisms have long been the focus of critical theory. Lukacs, for instance, sees the scientific–technical rationality as a formal rationality. This point is also found in Marcuse, whereby he believes that formal universals, as opposed to substantive universals, by way of abstracting from the whole, not towards its potentiality, but towards it form, decontextualise their objects. This process of formalisation which results in a decontextualisation is one of great importance. In being decontextualised within a formal system, the potentiality of objects

[79] Meszaros *The Power of Ideology*, p. 196

are restricted to the horizon of the existing technical code. They are thus transformed into mere means towards a certain goal. Furthermore, the object is perceived as truth, and by doing so comes under the horizon of the existing reified society and its modes of practice. Feenberg argues further that: "In cutting the essential connections between the objects and their context formal abstraction ignores an important dimension of reality, the inner tensions that open possibilities of progressive development. Instead, objects are conceptualised as fixed and frozen, unchanging in themselves but available for manipulation from above." […] " … formalisation and functionalisation are, *prior* to all application, the pure form of a societal practice."[81]

The technologies are thus *a priori* inscribed with certain values that stems from the way they are treated within the social system and which sets the boundary for its utility and potentiality. What seems to be said here is an inversion of the technological determinist stance we have encountered before, here technologies do not impinge on the social system, it is the system that objectifies the technology. In this sense, the phenomenon of technological determinism, which hold in one sense that technologies are objective, or autonomous in themselves, and with certain innate qualities, can really be seen as an ideological trait of the existing political system; *capitalism*. They are objectified with a certain set of values. This is of great importance in relation to the EU documents and may shed light on the adoption of a technological determinist stance, a point we will return to later. For now it will suffice to conclude that on the grounds of the arguments above it is reasonable to say that *pure objectivity reveals itself as object for a subjectivity which provides the Telos, the ends*. This means that by giving an object a reified or autonomous status within a certain system, the reified object will inexorably mirror the system, with its set of values, within which it has

[80] *Penguin Dictionary of Philosophy*

been reified. Hence, the system will also provide the imminent goal towards which the object will strive. We can see that this *a priori* formalisation of, for instance, technology is an effective tool in cloaking the real politics inscribed in a specific form of technological development by insisting on its objectivity which is the case in technological determinism.

We may now offer the EU-documents a sidelong glance and relate the current theoretical debate to our earlier findings. One of the essential traits of technological determinism is that it sees the technological object, in fact, technologies as a whole, as phenomenon or institution, as autonomous. This is precisely what the EU communicates in a sentence like the following taken from the White Paper: "Information and communication technologies (ICTs) are transforming rapidly many aspects of economic and social life, such as working methods and relations, the organization of companies, the focus of training and education, and the way people communicate with each other."[82] The technology is an autonomous force that impinges directly, or indirectly, on society. It is reasonable to say, in light of the arguments presented throughout this paper that technological determinism and reification are more or less synonymous phenomena. Or, that they at least are inexorably connected. One might argue that it is the reification of vital institutions in society that has been consequential for a determinist stance, or that the determinism found in the EU-texts mirrors a reification process of institutions in society. Hence, it is reasonable to argue that technological determinism somehow exemplifies a reification process, and that the determinist arguments found in the EU-texts, which profess the technology to be objective, or autonomous, may be treated as an *objective* for a certain *subjectivity*, and thus inexorably connected with the existing political system.

[81] Feenberg *Critical Theory of Technology*, p. 170

4.3 Ahistorical conflict-attenuation: Science as legitimator

> … the required definitions of *modernity* are constructed in such a way that the socio-economic specificities are obfuscated or pushed into the background, so that the historical formation described as the *modern society* in the various ideological discourses on *modernity* should acquire a paradoxically *timeless* character in the direction of the *future,* on account of its uncritically overstated contrast with the more or less distant past.[83]

In Critical Theory it is argued that there are four primary moments of technical practice: *decontextualisation, reductionism, autonomisation* and *positioning*. Feenberg sees these moments all as reifying, and argues that they offer no foothold for an alternative technological development. However, he holds that there is a dialectic of technology that works with dimensions of the object denied at the primary instrumentalisation. This second instrumentalisation comprise of four moments that Feenberg calls *concretisation*, *vocation*, *aesthetic investment* and *collegiality*. It is the argument of Feenberg that these can form the basis of a new technical code.

The reified, decontextualised objects must be concretisised or *recontextualised*. Concretisation is thus the discovery of synergisms between technologies and their various environments. We can here see the obvious relation with the insights of a social shaping of technology approach, in that the technological objects are treated within a system, or network, of different components. It is only within a context of various social, and non-social, formations that a technological object can be seen as substantially meaningful, and not merely as a formal abstraction. Put another way, it is only in relation to different contexts we can perceive every aspect of the objects potentiality. We can further conclude that the EU merely treats technologies on the level of primary instrumentalisation.

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[82] *White Paper*, p. 107
[83] Meszaros, p. 16

The reification process with its resulting decontextualisation of objects, have, furthermore, other severe implications for modern society. Related with decontextualisation is a process of de-historisation, a process which has transformed the status of the current form of capitalism into a self-sustained system. This system is made legitimate through a reification and eternalisation of certain fundamental social institutions, institutions that thus is under the control of the capitalist hegemony.

Science and capitalism are in this sense inexorably connected in that capitalism has adopted a scientific approach in its norm of rationalisation. Science must further be seen as the prime legitimator of modern capitalism through a reification process that has given it an *objective* status. What this means is that science is perceived as truth, and that it further cannot be accused of being ideologically invested in the existing political system. On basis of objectified science, capitalism can profess itself as the bearer of rationality and reason. This system is, furthermore, self-sustained in two ways. Firstly, it is made legitimate through its own reified institutions. Secondly, it disqualifies any opposition as irrational or ideological.

Inherent in this system is a self-professed pluralism: A pluralism which effectively dichotomises the existing system with other *more ideological*. And which, furthermore, must be seen as sham pluralism in that it takes its plurality from the existing reified system, which thus narrows its potentiality. This leads us to some of the core arguments of this debate. Arguments that, furthermore, are central for our subsequent discussion of the EU's technological stance.

We can namely see through the various mechanisms described above that the existing hegemony acclaims a self-professed *objectivity*. This system is based on reified institutions

that de-historises the system itself. The consequence is what Critical Theory calls *ahistorical conflict-attenuation*. By eternalising the pillars on which the system is grounded, one can argue that the existing socio-economic context; the real conflicts of contemporary society, are transcended. Modern society and its institutions are thus made timeless. Thus, the political decisions of this system do not mirror the real interest of contemporary society, but rather some self-acclaimed goals stemming from the system itself. These goals must be seen as ideological in every sense, because they are the product of a certain class, maintaining their position by oppressing others. However, the fact that the system rests on the supposition of objectivity and plurality, and furthermore in this sense opposes itself to ideology as such, it is viewed as non-ideological.

We have already seen that technological determinism can be related to reification. Reification is moreover a central part of ahistorical conflict-attenuation. What is interesting is the fact that the information society is explained on the basis and constructed as a consequence of its own reified social institution; namely technology. We can thus see the construct of the *Information Society* as part of a conflict- attenuating process, because it is founded on a reified, decontextualised and thus de-historised pillar. The process in which technology is de-historised thus helps objectify the very *Information Society* construct in itself. The construct does not mirror the real socio-economic context, but rather the *a priori* inscribed values of its reified technological institution. It does nothing but sustain in its own *a priori* inscribed values. It is thus nothing more than a self-sustained, ideological construct.

4.4 Technological Determinism as Ideology: Transcending the paradox

How can it be that reports produced by so-called *expert groups* within the EU adorn to such untenable visions of technology as has been shown throughout this paper? The answer may be

found in the citation from Meszaros introducing this chapter. In this respect we would have to argue that it is not due to some intrinsic value of technologies themselves that the EU embrace a determinist stance, but rather an attitude towards technologies that might be seen as exactly what Meszaros calls a *foolproof alibi* that has compelled the *expert group* to reach the conclusion they have. If related to the high-level expert group behind the Bangemann Report, it should be fairly obvious that a group solely comprised of businessmen in major European companies should reflect the values of a certain social segment. It can thus be argued that the *Information Society* policy communicated acts as an alibi for the furtherance of the relative power of this group.

As we have seen the common information area, and the *Information Society*, is in one sense, both arguably inevitable responses to the information revolution in the White Paper and the Bangemann report, respectively. In these constructed visions of society there lies inherent different political decisions. The common theme is that technologies necessitate a deregulated market-economy. It should now be clear to all that a market economy is part of an ideological system like every other social/political system. The reader might wonder why I emphasise this rather obvious point. The answer is straightforward; it is because the EU papers refrain, in adapting a certain notion of technology, from showing the, by closer scrutiny, obvious ideological motivation behind their construct of an information society. Furthermore, in light of the real political solutions suggested for future Europe, many of the values professed to be flowing from the *Revolution* must be seen as paradoxical. Thus, there is no congruence between the real politics adapted and the rhetoric applied. This paradox, however, is transcended in the EU-documents by adapting a technological determinist stance. It is a foolproof alibi adapting certain political solutions.

It is here critical theory can help explain why and how this paradox can be transcended. When the EU treat technologies in a determinist manner, they exemplify exactly what critical theory argues; namely, that vital institutions within modern society are reified. Trough our analysis of various EU-documents we have found them to be determinist in different aspects; technologies are treated as autonomous and with certain innate qualities; it is argued that technologies develop according to some inner logic, and that this development is set on a certain journey towards certain goals. What seems to be the argument is that because of these *traits* there has to be adopted a certain policy in treating the new technologies. Technological determinism is in this sense a justification. Because of the immanent nature of technologies, and technological development in general, the EU has been compelled to adopt the policy currently executed in Europe. Hence, the policy is arguably a direct logical consequence of the innate qualities of technologies and technological development. Thus, we must, according to the EU-papers, trust the technologies and its consequential policies the building of what they so nicely call *a more caring society*.

From this it is clear that the EU transcends the above-mentioned paradox by arguing that the policies applied are the only options congruent with the rationale of the technological development. Hence, a different policy would undermine the potential benefits of the information revolution. There is here an obvious *take-it-or-leave-it* attitude towards technologies, as explained earlier by Feenberg. However, it is inversion of the common opinion of a technological trade-off because of the EU's insistence of the benevolent nature of ICT's. In one sense the application of a different policy would be *a trade-off*; one would trade the potential benefits of the most applicable policy with a less suitable for contemporary society. In another sense, the currently adopted policy is the *only* that will eventually lead to a

better society, in that it is the technological development itself that holds the promise of a new age, and thus the only logical policy is the one that exploit it to its full extent.

However, it is clear that this circular argumentation can be falsified by the theory of reification. We have seen that the reified objects within a certain society must in every sense be seen as an integrated part of the ideologies of the existing system.

4.5 The *Information Society* as post-construct

There are further implications involved in the construction of *Information Society*. We have earlier related it to Bell's notion of a Post-Industrial Society and falsified it methodologically on the grounds of Webster's critique in Theories of the *Information Society*. It becomes more and more evident as this paper unfolds and draws to its close that the *Information Society* indeed must be seen as ideological construct.

Feenberg draws attention to a process where he argues that post-constructs, as the post-industrial society, are used to supersed the existing conflicts of contemporary society. It is his contention that we will see an infinite number of these constructs in the future if we do not re-concretisise the reified political system. It can be argued that we can identify the *Information Society* as such a post-construct. One of the main arguments of both the White Paper and the Bangemann report is namely that the information revolution and the (nearly) inevitable *Information Society* that will follow in the wake will introduce Europe to *a whole new ballgame.* Political and social institutions will be essentially changed. In fact, society will be essentially different. Why such an insistence on a break with the past?

For the European voters employment is one of the quintessential questions in relation to the whole project of the European Union. And, it is exactly new employment that is arguably one the main assets of the new *Information Society*. In light of earlier discussion we must conclude that the information society whatever it might be, or become, will be in its very essence a continuation of what one may call the industrial society. It is therefore reasonable to conclude that the construction of an *Information Society* must be identified as a post-construct veiling the true conflicts of contemporary European society. With the promise of a new society, the EU is, for instance, transcending social problems like the high unemployment of industrial Europe.

4.6 A self-fulfilling prophecy

We have encountered *ad nauseam* the arguments of the EU documents advocating for an essentially different Europe within the new information paradigm. However, the rhetoric used dismisses the very thought that a novel society may emerge through the impact of information technologies. In fact, the exact opposite is the case. The *Information Society* is in its very essence the continuity of the existing social and political system. We can show this by identifying the rhetoric behind the *Information Society* as a self-fulfilling prophecy.

It has been argued in this paper that technological determinism is related to the process of reification. Thus, technology must be viewed as a reified social institution. This means that its potentiality will necessarily reflect the existing social and political system. Hence, when technology is given revolutionary abilities of social transformation, it must be deemed untenable, or wholly wrong. It can be argued that the very opposite is actually the case.

Furthermore, when the EU profess that an essential new society, the *Information Society*, will emerge in the wake of technological revolution, this must also be proved as untenable, in fact, wholly wrong. This is by now old news. But let me expand on these thoughts. What this infers is that it we can extract a general rule from the arguments above: *It is by definition impossible for a new society to emerge through its own*, *reified institutions*. This is why Critical Theory calls for a concretisation of technologies. This is also why the EU's prophecy of a new society, is nothing more than an empty promise, or a prophecy.

This prophecy must, moreover, be seen as self-fulfilling in light of the following arguments: When the EU argues that technologies are the essential driving force of the information revolution, they are by definition saying that the reified institution of technology is the

driving force. Being inscribed with the values of the existing political system it is really the existing political system itself that is real mover behind the changes. Thus, the prophecy of a new society will only, can do nothing but, mirror the values of the existing system; by relying on its own reified institution for the advent of a new society this society cannot transcend, or make an essential break with the past or with the existing political system. A prophecy, or end; the *Information Society*, that uses as means a self-professed objectivity; its *reified technological institution* in the guise of technological determinism, will by definition be paradoxical and self-fulfilling: Objectivity will become an objective for a certain subjectivity, and thus be *a priori* self-explainable. Thus, the *Information Society* must be seen as a self-fulfilling prophecy.

4.7 Conclusion

I have in this chapter explained the process of reification and related this to the EU's adoption of a technological determinist stance, as well as its creation of an information society. I have found that the adoption of a determinist stance transcends the many paradoxes between the ends put forward and the means applied in the documents analysed. It thus elevates itself above any real social critique. By objectifying the processes according to which the society is said to evolve, one separates the means – the existing political system and its political decisions – from the Telos, the ends – the furtherance of a capitalist ideology. In relation to this I have identified the *Information Society* to be an artificial post-construct, used rhetorically to supersed the real conflicts of contemporary society. Thus the *Information Society* and the emphasis on its preceding information revolution must be seen as nothing more than a self-fulfilling prophecy in that it is, in every conceivable way, the policy-makers' own projection and vision of the future.

5.0 Conclusion: Sustainability or Dystopia?

Thus the information society monster bites its own tail. It holds nothing but an empty promise. I have in this dissertation attempted to contribute to a stimulating debate of ICT-policy through an analysis and criticism of the notion of an European *Information Society* found in EU policy documents: A policy which in reality should reflect the real socio-economic context in Europe, as well the existing mechanisms of technological development. Critical Theory, identified as part of a Neo-Marxist tradition has provided a large part of the arguments used in the latter section of this dissertation. I would like to point out that I have, by no means, wished to write a Marxist polemic against a capitalist hegemony. But rather that their insights have proved most useful in explaining what has here been argued to be the true workings and the logic behind much thinking on the *Information Society*. It is not the criticism of a certain ideology or political system that has been my immediate aim in this dissertation, but rather a discussion, or a deconstruction, of the underlying mechanistic matrix of ideology, as such, exemplified in the construction of the *Information Society*.

Modern Europe would like to think that it has elevated itself above ideology. By closer scrutiny, this is, of course, not the case. Every political system, every society, will necessarily cling to a certain ideology that opposes it from others. This dissertation has hopefully shed some light on the capitalist ideologies latest workings in the guise of an *Information Society* construct.

In order to create a sustainable policy for the development and adaptation of new technologies in our societies we must learn to see its many different potentialities and shake the many technology related superstitions of the past. Failing to do so will only mean a furtherance of certain ideologies by cloaking the true socio-economic context of technologies as

deterministic developments. This means in reality that as long as governments and institutions such as the European Union rely on simple determinist arguments, there can be no real advancement towards a sustainable policy of technology. The current policy, it seems, only increases the relative power of the dominant economic forces. Thus, the European Union's slogan *An Information Society for All* must be seen as paradoxical, and the European *Information Society* might for some reveal itself as a Dystopia rather than the Utopian vision of the future envisaged by the European Union.

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