Prosodic contextualisation of minimal responses to yes/no-questions in aphasic talk-in-interaction: a descriptive single case study of a Norwegian aphasic speaker

Prosodic contextualisation of minimal responses to yes/no-questions in aphasic talk-in-interaction: a descriptive single case study of a Norwegian aphasic speaker

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Abstract

The article explores aspects of the role of prosody as a contextualisation cue in aphasic conversation through auditory and acoustic analysis of an aphasic speaker's use of pitch variation in responses to closed yes/no-requests. The results reveal two prosodic realisations of 'yes' and 'no' contextualising different kinds of responses: a flat realisation with no prolongation and minimal pauses, signalling decisiveness, and a realisation with movement in pitch, prolongation and preceding pauses, signalling indecisiveness. The analysis also shows how the aphasic uses a particular realisation manipulatively for interactional purposes. The study illustrates the vital role that seemingly unimportant details play in the co-constructive process of creating meaning in interaction. The results indicate an area of competence that seems undisturbed in this speaker.

Introduction

Prosody plays a crucial role in the production as well as interpretation of verbal, vocal contributions to conversation. However, "[p]rosodic features, at once more elusive and apparently less significant, are easily ignored, and their contribution underestimated" (1). The present study aims at restoring some of this underestimation through examining the role of prosody as a type of contextualisation cue in aphasic talk-in-interaction. As contextualisation cues, given prosodic devices are "empirically detectable signs" (2, 3) that are used by speakers to "enact a context for the interpretation of a particular utterance" (4). Thus, prosody is "one of the orderly 'details' of interaction, a resource which interlocutors rely on to accomplish social action and as a means of steering inferential processes" (5).

In the present study, focus is put on the use of one particular prosodic device: variation in pitch, for one particular interactional purpose: to distinguish decisive from indecisive responses, by one aphasic participant in conversation. The article thus presents an exploratory, qualitative, single case study whose aim it is to demonstrate a locally negotiated meaning-making process through focusing especially on *one* of the means by which this process is accomplished. This is done without intention of withholding the existence of other types of means contributing to the same process. Generally, there is a redundancy in coding involved in contextualisation (4). Different types of contextualisation cues – phonological, grammatical, lexical etc. – often co-occur and function interdependently. This is demonstrated in several studies, including studies on aphasic talk-in-interaction, such as Goodwin (6, 7). He reports on a severely aphasic man who is only capable of producing three

words (*yes, no, and*), but who is nevertheless able to participate actively in conversation through the use of different types of communicative resources, among them prosody, gesture and sequential context.

Although a considerable amount of studies have been published on different aspects of prosody in population groups with speech and language impairments (cf. e.g. (8-14)), very few of these studies have used non-experimental speech data and/or have taken an interactional perspective on the topic (cf. (15,16) for a couple of exceptions, albeit from somewhat different perspectives). Given the importance of conversation as the primary locus for the establishment and coordination of interpersonal meaning, identities, and relationships, and the importance of prosody as one of the resources through which such interactional meaning is established (17, 18), analyses of the form and function of prosody in aphasic talk-in-interaction are clearly warranted as an important addition to the existing type of research on prosody and aphasia. In order to study the use of prosody in relation to interactionally relevant linguistic categories, such as turn taking, repair, or topic shifts, data from naturally occurring interactions are invaluable. It may be very difficult, or indeed impossible, to set up test conditions that allow the researcher a valid examination of the use of prosody in relation to such categories.

The sequential context in which the contribution of prosody is examined in the present study, is responses to closed yes/no-questions. This term is functionally defined. It refers to contributions about some type of "B-event" (something the recipient of the contribution, not the speaker, is assumed to have knowledge of) (19) that project (and often elicit) a simple 'yes' or 'no'

as a complete response. Particular syntactic and/or prosodic structures are thus not necessary defining criteria of yes/no-questions (20).

Yes/no-questions exemplify initial actions with more than one response option. One possible response is a plain 'yes' or 'no', reflecting certainty and decisiveness. Other response options are 'both yes and no', reflecting indecisiveness, and 'don't know', reflecting uncertainty. Ignoring rhetorical questions and "class room questions", generally, when posing a question, a speaker asks for information that s/he does not already possess, but believes that the recipient possesses and is willing to impart (20). In other words, questions or requests for information imply an assumption that the recipient of the question "knows the answer". Knowing the answer in this context equals decisiveness; a decisive response is thus normally expected following a yes/no-question. Furthermore, a yes/no-question exemplifies a strong initiative, that is, an initiating action with a strong soliciting force (21). Yes/no-questions establish a strong conditional relevance concerning the presentation of a response action as well as the type of response expected.

Material

The analysis is based on three audio- and video-recorded conversations (with a total duration of about 2.5 hours) between a Norwegian man suffering from a non-fluent Broca-type of aphasia and three different non-aphasic co-participants (16, 22, 23). The recordings were made 5-6 years post onset of the aphasia. The aphasic participant experiences severe limitations in verbal conversational production, lexically as well as grammatically. His productive vocabulary in conversation is extensively dominated by the response words *ja*

'yes', *nei* 'no' and variants of these, the personal pronoun *jeg* 'I', a few adjectives with fairly similar semantic content (*fint, god, bra* 'good, fine'), a conjunction (*men* 'but'), a fixed phrase (*vet ikke* 'don't know') and a couple of adverbs (*akkurat* 'exactly, precisely', *der* 'there'). This list of words accounts for about 70 % of his vocabulary in the recorded conversations. In addition to a limited vocabulary, his utterances in conversation are generally short, often consisting of single words, and consequently, there is a severely reduced variety of sentence and phrase structures in his speech production. His speech tempo is reduced, although each single word is not produced particularly slowly. Despite these severe linguistic difficulties, this aphasic speaker manages to take part in conversation through making the most of the resources he has left, and not least through engaging in extensive interactional collaboration with his conversational partner (23, 24).

Methods

The conversations have been transcribed, following a simplified version of the transcription system developed by Du Bois, Schuetze-Coburn, Cumming and Paolino (25), cf. the Appendix. The translations are meant to capture the content of the original, without aiming for idiomatic English. The pitch contours that are presented in relation to some of the data excerpts were extracted using the soft ware program *Praat 4.0.5* on a PC. The analysis of the relevant pitch contours is not solely based on acoustic (instrumental) analysis, though. Auditory (impressionistic) analysis is also undertaken.

The analytical process is based on the principles of conversation analysis, as presented by for instance Pomerantz and Fehr (26) and Wilkinson

(27). Basically, this means that the relevant analytical categories are grounded in the data themselves, and the validation of these analytical categories is sought in demonstrations of the participants' orientations to them. For the analysis of the form and function of prosody in verbal interaction, the ultimate aim, beyond mere recognition and description of certain patterns, must be "a reconstruction of patterns as cognitively and interactionally relevant categories which real-life interactants can be shown to orient to" (5).

Analysis

The point of departure for the analysis is the very limited lexical production of a particular aphasic speaker in recordings of spontaneous talk-in-interaction. The response words *ja* ('yes') and *nei* ('no') and variants thereof (such as *ja da, nei da* and so on) are frequent in the spontaneous verbal production of this aphasic speaker, and they are important in the interaction, although he is not always able to select the contextually "correct" or adequate form. *Ja* ('yes') seems to be more of a default form for him than *nei* ('no'), resulting in some cases of subsequent repair of the affirmative response, as in excerpt 1. In all the excerpts A refers to the aphasic speaker, whereas L and M refer to his non-aphasic co-participants.

Excerpt 1

1 L: … hva har'n .eh. .. husdyr   L: … what does he have .eh. .. a livestock

2 A: .. (0.5) ja   A: .. (0.5) yes

3 L: .. (kremt) hva slags da   L: .. (throat clearing) what kind then

4 A: … (2.6) nei du .eh. .eh. .ehm.   A: … (2.6) no you .eh. .eh. .ehm.

5		… (1.0) .eh=. tresking		… (1.0) .eh=. threshing
6	L:	.. ja vel	L:	.. oh yes
7		… han driver med korn - -		… he has grain - -

The affirmative response in line 2 is produced fairly rapidly following the request for information in line 1. However, as the response to the next follow-up question by L displays, the affirmative response is not the right one.

Part of the reason for the frequency of the simple response words lies in the fact that for someone experiencing such great lexical and grammatical limitations in verbal production it is presumably, and demonstrably, easier to respond to closed yes/no-question than to more open questions, as illustrated in excerpt 2:

Excerpt 2

1	M:	… (1.4) ville du ikke gå på	M:	… (1.4) didn't you want to
2		NTH		go to NTH (("polytechnic"))
3	A:	.. nei uff	A:	.. no oh dear
4	M:	… (1.4) hvorfor ikke det	M:	… (1.4) why not
5	A:	e vet ikkje	A:	I don't know
6	M:	… (1.0) (lav latter)	M:	… (1.0) (soft laughter)
7	A:	.. (latter) åh fyttera-	A:	.. (laughter) oh damne-
8		uff		oh dear
9	M:	.. (latter)	M:	.. (laughter)
10		.. hvorfor var NTH så […]		.. why was NTH so […]
11		fælt da		awful then

12	A:		[ja]	A:		[yes]
13		nei			no	
14		men .eh.			but .eh.	
15	M:	var det for lang utdanning		M:	was the education too long	
16		eller			or	
17	A:	.. ja		A:	.. yes	
18		… akkurat			… exactly	

The open questions in lines 4 and 10-11, requesting a reason for or explanation of an action or non-action, are obviously difficult for the aphasic speaker to respond to, as evidenced in his rather formulaic response in line 5 (*e vet ikkje* 'I don't know'), the laughter and expressive phrases in lines 7-8, and the failure to provide more than a simple yes/no-response in lines 12-14. There is, however, an indication in line 14 that the aphasic speaker is aware of the fact that his response is not fully compatible with an open question format. He often uses the conjunction *men* ('but') to signal that he is not satisfied with the level of intersubjectivity reached so far. The conjunction functions as a repair-initiating signal. It is only when his co-participant reformulates her request as a closed yes/no-question (lines 15-16), that the aphasic participant is able to give a response that complies with the question format and that satisfies his communicative needs at this point in the interaction (lines 17-18).

Also in so-called "hint-and-guess" sequences, which are pervasive in this type of interaction (6, 23, 28, 29), response words like 'yes' and 'no' are very useful to signal whether a guess made by the interlocutor is acceptable or not.

However, there is a problem with the use of these simple affirmative or disaffirmative response words. In their lexical meaning, they are decisive, signalling either full compliance with the prior contribution or total denial. In many cases, such decisiveness is not what is called for, but rather a more hedged response. Auditory analysis of the data has revealed how the aphasic speaker realises the response words in prosodically different ways to contextualise them as either decisive or indecisive responses. An acoustic analysis confirms this auditory impression.

As decisive responses, following closed yes/no-questions, *ja* ('yes') and *nei* ('no') are realised with a rather flat pitch contour, as exemplified in excerpts 3 and 4 with accompanying pitch contours (cf. Figures 1 and 2). In excerpt 3, the participants are talking about the school that A's daughters go to, and in excerpt 4, the topic is his home.

Excerpt 3

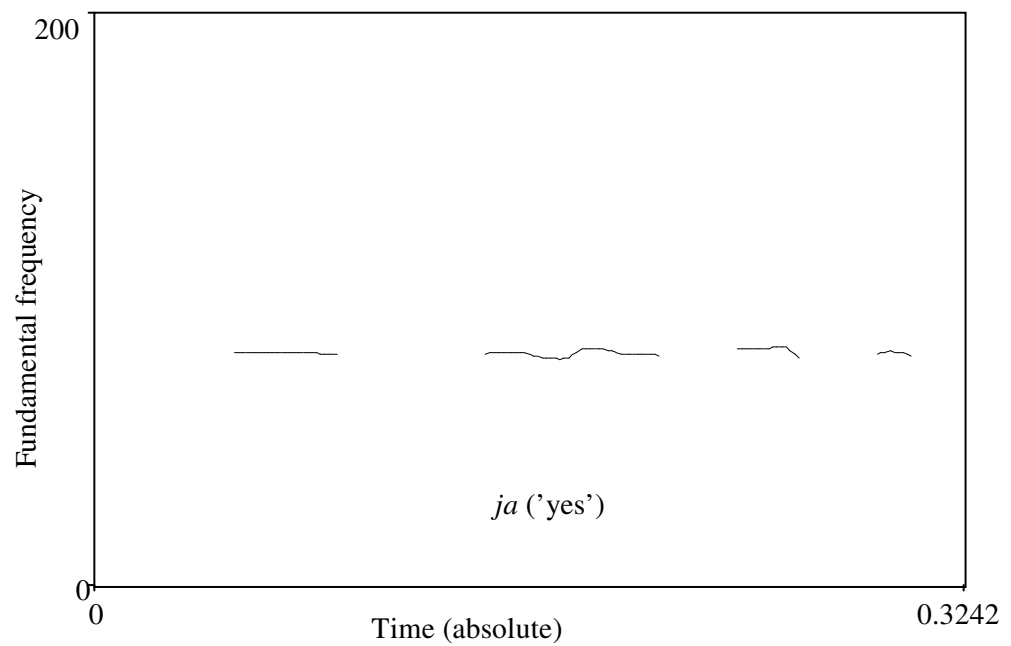| 1	L:	var det der Heidi gikk òg	L:	is that where Heidi went too
2	A:	.. (0.2) ja	A:	.. (0.2) yes
3	L:	ja	L:	yes
4		… (0.8) er dem fornøyd - -		… (0.8) are they satisfied - -
5	A:	[tja .. .eh.]	A:	[well .. .eh.]
6	L:	[fornøyd med det]	L:	[satisfied with that]

Figure 1. The pitch contour of the unmarked, affirmative response in excerpt 3, line 2.

Excerpt 4

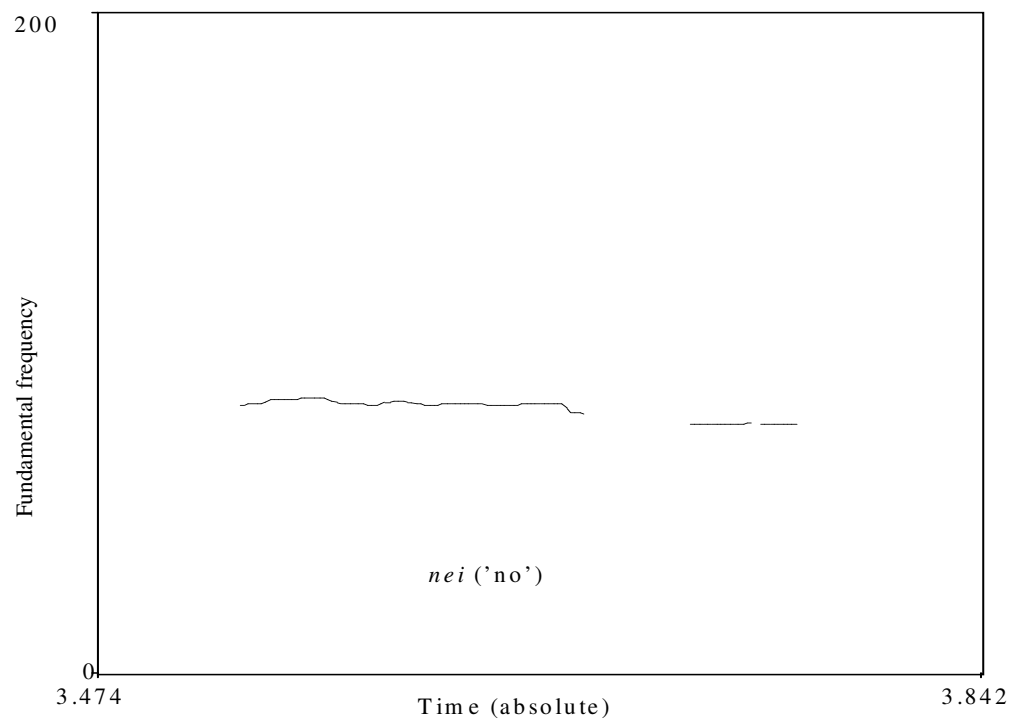|				
1	L:	og dere bor der dere - -	L:	and you live where you - -
2	A:	.. (0.6) nei	A:	.. (0.6) no
3	L:	.. å nei	L:	.. oh no
4		har dere flyttet		have you moved
5	A:	.. ja	A:	.. yes

Figure 2. The pitch contour of the unmarked, disaffirmative response in excerpt 4, line 2.

In both of these examples, the aphasic participant responds to closed yes/no-questions with a simple, minimal affirmative or disaffirmative response word. His response in each of the excerpts is in compliance with the format set up by the co-participant's request, and evidently, the responses are in compliance with the intentions of the speaker (cf. that there are no subsequent self-initated repairs in these sequences). As can be seen from the acoustic, instrumental analysis, the response words are delivered with a level pitch, resulting in a flat contour. It is worth noticing that in each of the cases, the relevant response words are presented with just a minimal gap between the prior contribution and the onset of the response word, and the response is usually not prolonged in

any way. I shall refer to these prosodic realisations of the minimal response words as unmarked (30). The vast majority (at least 80 %) of the minimal response words following yes/no-questions in the data, are realised in this unmarked way.

In the opposite case, that is, in contexts in which a decisive response for some reason or other is not in order, the response words are realised in a prosodically different way, as illustrated in excerpt 5 and the accompanying pitch contour (cf. Figure 3). In this excerpt, the participants are talking about A's daughters and their experience of school.

Excerpt 5

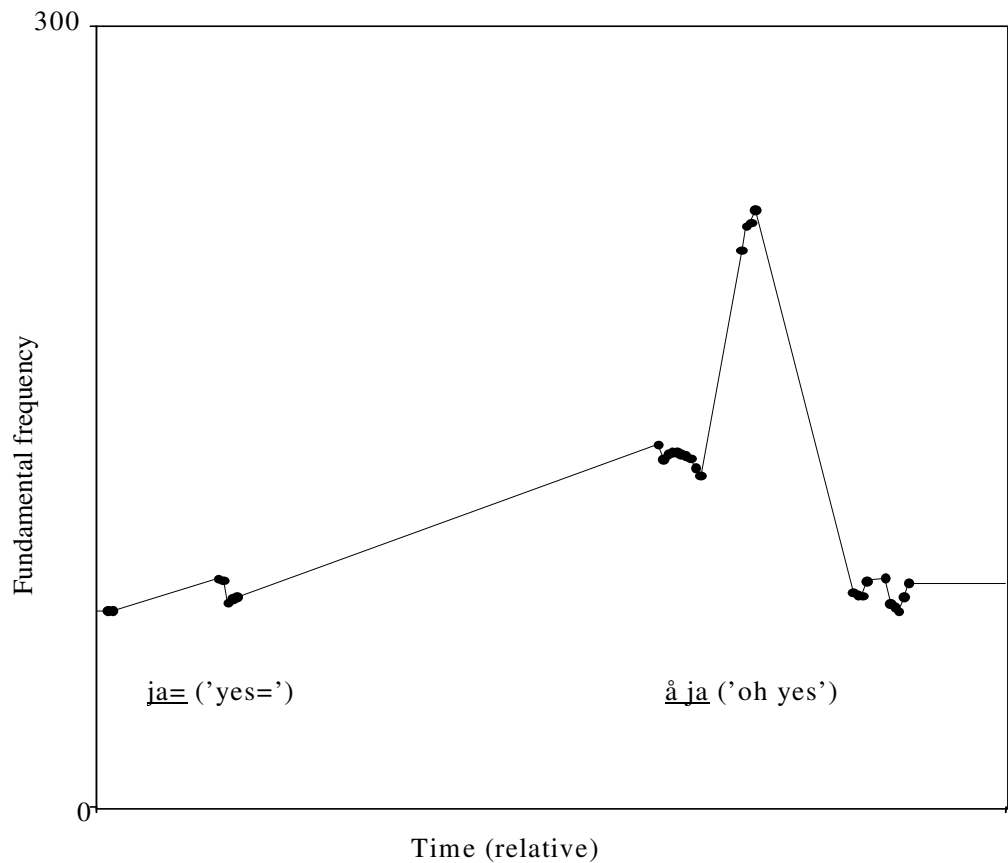| 1	L:	… (0.8) er dem fornøyd - -	L:	… (0.8) are they satisfied - -
2	A:	[tja .. .eh.]	A:	[well .. .eh.]
3	L:	[fornøyd med det]	L:	[satisfied with that]
4	A:	… (1.0) .eh.	A:	… (1.0).eh.
5		… (2.6) (hand + head gesture)		… (2.6) (hand + head gesture)
6		(h) .. ja=		(h) .. yes=
7		.. å ja		.. oh yes
8		.. [å ja]		.. [oh yes]
9	L:	[å ja] .. sånn litt både	L:	[oh yes] .. like both yes and
10		[[og]]		[[no]]
11	A:	[[ja]] akkurat	A:	[[yes]] exactly

Figure 3. The pitch contour of the marked, affirmative responses in excerpt 5, lines 6-7.

In excerpt 5, the response words in lines 6 and 7, which are given in response to a yes/no-question, and, hence, complying with the question format, are realised with much more movement in pitch, as evidenced also in the instrumental, acoustic analysis. Although the response seems to be in compliance with the question format, it does not seem to comply fully with the communicative intention of the aphasic speaker in this sequence. Firstly, it can be noticed that the presentation of the response words in lines 6 and 7 are foreshadowed by hand and head gestures indicating some uncertainty. A puts his left hand forward, palm upwards while leaning his head from side to side three times. Secondly, from the following turns of this excerpt, it is evident that

the stance of the aphasic speaker at this point is not one of decisiveness. He cannot agree fully, nor disagree with the prior turn. The co-participant offers a (re)formulation of the aphasic speaker's contribution in her next turn (lines 9-10), in which she suggests a candidate interpretation of his response as neither fully affirmative nor fully disaffirmative, but "a little bit of both". This interpretation is accepted by the aphasic speaker (line 11). Furthermore, the presentation of the aphasic speaker's response words in this excerpt is delayed (cf. the filled and empty pauses in lines 4 and 5 as well as the short inbreath in line 6), and the articulation of one of the response words is prolonged (*ja*= 'yes=' in line 6). I shall refer to such prosodic realisations of the minimal response words as marked (30).

The response by A in excerpt 5, shows similarities with dispreferred turn shapes (hesitations, pauses, etc.) (30), and it is interesting to note that the markedness associated with dispreferred turns is found also in the prosodic realisation of the response words in lines 6 and 7. However, not all the relevant sequences in the data fit with an analysis in terms of preference organisation. Nevertheless, an interesting question for further study with these or other types of aphasic data would be to analyse sequences where preference organisation is in use.

So far then, two prosodically different realisations of the minimal response words, an unmarked and a marked realisation, have been identified, and it has been established that the different realisations are linked to different interactional functions. The unmarked version is used when the relevant response word expresses a decisive, complete response, whereas the marked version is used to express an indecisive, incomplete response. As mentioned,

the unmarked realisation is by far the most frequent one in the data. In itself the identification of particular prosodic configurations with particular interactional functions is a piece of evidence that the aphasic participant is able to use prosodic means in a very "normal" way as contextualisation cues in interaction (cf. Lind (16) for other examples of how pitch variation is used as a type of contextualisation cue by this aphasic speaker).

However, the most "creative" use of the different realisations of the response words has not been described yet. There is one sequence in the data in which a certain realisation of a response word is expected, but in which the opposite prosodic realisation is used, resulting in a particular interactional effect, cf. excerpt 6.

Excerpt 6

1	L:	.. serveres det med krem	L:	.. does it come with whipped cream
2		[eller]		[or]
3	A:	[ja]	A:	[yes]
4	L:	.. med krem	L:	.. with whipped cream
5	A:	.. ja	A:	.. yes
6	L:	.. javel	L:	.. I see
7		… pære		… pear
8	A:	.. ja= .. men [.eh. .. ja]	A:	.. yes= .. but [.eh. .. yes]
9	L:	[eller] no'	L:	[or] some
10		fersk[[en]]		pea[[ch]]
11	A:	[[ja]] akkurat	A:	[[yes]] exactly
12		.. ja		.. yes

13	L:	… eller - -	L:	… or - -
14		.. det er en slags frukt		.. it's some kind of fruit
15	A:	.. ja akkurat	A:	.. yes exactly
16	L:	.. jaha	L:	.. yes
17	A:	.. jada	A:	.. oh yes
18	L:	.. jaha	L:	.. yes
19	A:	.. <h ja h>	A:	.. <h yes h>
20	L:	… no' hermetisert	L:	… some kind of tinned
21		[frukt eller]		[fruit or]
22	A:	[ja akkurat]	A:	[yes exactly]
23		.. ja		.. yes
24	L:	(latter) du vil ikke gå	L:	(laughter) you don't want to
25		noe nærmere		enter that
26		[inn på det (latter)]		[any more (laughter)]
27	A:	[(latter) nei	A:	[(laughter) no
28		akkurat		exactly
29		.. du		.. you
30		.. nei søren]		.. no damned]

The topic in this excerpt is the Christmas menu, and in trying to establish what the aphasic participant usually has for dessert on Christmas Eve, the participants find themselves in the middle of a hint-and-guess sequence. In such sequences, the interactional roles, with certain rights and obligations attached to them, are allocated in a very particular way. The aphasic participant is obliged to provide the hints, on the basis of which the co-participant is to

make qualified guesses. The aphasic participant also has the right to evaluate the contributions of the co-participant, that is, acknowledge the guesses as correct or incorrect interpretations. The main function of a hint-and-guess sequence is usually to establish (part of) a contribution attributed to the aphasic participant (23, 29). In other words, hint-and-guess sequences usually arise on the initiative of the language impaired participant, as a means of establishing a contribution "belonging" to this participant.

However, in excerpt 6 above, the case is somewhat different. The topic (what to have for dessert on Christmas Eve) is in one sense the aphasic participant's topic; he is the one who knows the answer, so to speak. In another sense, though, it is not his topic; he is not the one who has initiated it. His co-participant has brought it up, and she is also the one who insists on staying on this topic through initiating and maintaining a hint-and-guess sequence dealing with the topic in question. She makes several guesses (cf. lines 1, 4, 7, 9-10, 14, 20-21) to which the aphasic participant responds with minimal affirmative tokens (cf. lines 3, 5, 8, 11-12, 15, 22). All of these response utterances are presented with the unmarked prosodic realisation, that is, the flat or only slightly falling contour, no delay and no prolonged articulation.

However, the affirmative responses are not treated by the non-aphasic co-participant as signalling affiliation or compliance with the content of the prior turn (the guess). Even though affiliative responses are provided, the non-aphasic participant continues to make guesses. A reason why she does not interpret the affirmative responses as affiliative, may be that a very simple and unmarked realisation of an affiliative, affirmative response in this particular context (the hint-and-guess sequence) is not what is expected. Solutions to

hint-and-guess sequences are usually marked by several affirmative tokens and mutual celebration (23, 28, 29). Furthermore, in excerpt 6, several of the responses by the aphasic speaker are presented in overlap with the prior guess by the non-aphasic speaker (cf. lines 3, 11 and 22). By almost interrupting his co-participant the aphasic speaker seems to signal unwillingness to continue with the topic. This unwillingness is reinforced by the unmarked prosody of the response tokens as well as the fact that he provides only minimal response tokens and no additional hints. Together with other cues then (e.g. the lack of further hints, the interruptive character of the response turns), the unmarked prosody of the response words in this excerpt serves to contextualise a metacommunicative "message" from the aphasic participant to his conversational partner to the effect that he does not wish to pursue the topic in question any further. This is exactly what is made public through the verbal contributions in lines 24-30.

Conclusion

The article has presented data of a non-experimental nature, that is, observations of spontaneous verbal interaction involving an aphasic speaker with very limited speech production, displaying how this speaker is able – actively and creatively – to make use of the prosodic device of pitch variation in a systematic and meaningful way as a resource for communication, and, furthermore, that his use of this resource is recognisable and interpretable by his co-participant.

As this was a single case study, the results presented here do not lend themselves to any kind of distributional generalisations as far as

conversational, prosodic or other abilities of aphasic speakers in general are concerned. This is reinforced by the fact that aphasia as a condition is characterised by extensive interindividual variation. However, the fact that the aphasic speaker contextualises decisive and indecisive minimal responses to closed yes/no-questions in prosodically different ways, in a consistent manner, and that he is able to manipulate with this type of contextualisation for interactional purposes (as demonstrated in excerpt 6 above), indicates that his use of prosody as a contextualisation cue in conversation is not coincidental. The analysis thus adds to and strengthens our general knowledge of the role of prosodic devices as contextualisation cues in different types of interactive processes, and it indicates an area of competence that has not been disturbed by the aphasic impairment in this case. (In an experimental test, it is revealed though, that not all aspects of prosody are unimpaired in this aphasic speaker (13).)

The article has focused on the use of pitch variation in relation to one particular type of word (minimal response words) in a particular type of sequential context (following closed yes/no-questions). In an earlier study, other functions of pitch variation in the speech production of this particular speaker have been demonstrated (16). In this study, it was shown how sudden leaps in pitch contribute to the contextualisation of certain utterances as instances of direct reported speech. Furthermore, it was demonstrated how utterances can be contextualised as requests and responses through terminal rises and falls, respectively. And finally, it was shown how pitch variation can be used to demarcate functional-grammatical units within larger contributions, thus contributing to the expression of syntactic relations in the absence of

lexical-grammatical markers. It is also likely that other prosodic and paralinguistic features than pitch, such as duration, volume, and voice quality may be used for interactional purposes in aphasic talk-in-interaction. Here further studies are needed.

The present analysis demonstrates the importance of prosody as *one* type of contextualisation cue in aphasic talk-in-interaction. During the dialogical and co-constructive process such interactions exemplify, the participants must rely heavily on all available cues for establishing and interpreting conversational contributions. Details that are seemingly unimportant from a purely structural linguistic point of view, such as marked versus unmarked pitch contours, presence or absence of pauses, sequential ordering, and gestures, are demonstrably of vital importance for the participants in their interactive, collaborative work. The analysis also illustrates how prosodic phenomena, such as pitch variation, achieve their meaning as contextualisation cues in a local, sequential context, through the interactive establishment and co-ordination of contributions. The aim of the present study has been to contribute to a partial exploration of the use of prosodic devices in aphasic interaction. This is a rather new area of research, and there will be many topics in need for an exploration, concerning production as well as perception of different types of prosodic devices relating to different types of interactional tasks managed by participants with different types of aphasia.

Appendix

Key to transcription symbols

..	a short pause (less than 0.3 seconds)
…	a medium length pause (0.3-0.7 seconds)
…(N)	a long pause (more than 0.7 seconds)

(In relation to minimal responses to yes/no-questions, certain medium or short pauses were also measured, using soft ware for acoustic analysis (Praat).)

.eh., .ehm=.	filled pauses
=	lengthening
--	truncated intonation unit
(h)	inbreath
<h xxx h>	uttered on inbreath
[xx] [[xxx]]	overlap
[xxx] [[xxxx]]	
(non-verbal)	non-verbal, e.g. laughter, throat clearing etc.
((comment))	transcriber's comment

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