Effects of Alzheimer's dementia on conversational ability: a case study

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Abstract

This paper reports on a case study of the effects of dementia of the Alzheimer's type (DAT) on three aspects of conversational ability: turn-taking, fluency and coherence. Three conversations held over a period of 12 months with a bilingual DAT sufferer are analyzed. The results show that some aspects of conversational ability, such as turn-taking, are vulnerable to dementia and show no sign of potential recovery, unlike changes in fluency. The fluency of the subject's language use initially declined but subsequently improved somewhat. Her capacity to respond coherently systematically broke down and the responses became increasingly aberrant. The paper also highlights the problems of including conversational abilities as a separate, additional diagnostic measure of DAT.

Until recently research on the effects of dementia of the Alzheimer's type (DAT) on the language use of a sufferer has largely focussed on the speech of monolingual English speakers (Sabat, 1994). In general, the studies have been of a psycholinguistic nature and have been conducted in clinical settings. Few studies have examined the impact of the disease on the conversational abilities of a bilingual sufferer – and specifically on turn-taking, fluency and coherence. Hyltenstam and Stroud (1994) have focussed on the effects of DAT on some aspects of bilingual ability, including keeping two languages separate – Swedish and Finnish.

In general, DAT is found to have a disruptive effect on aspects of speech, such as word selection and coherence, before its impact on phonology, morphology and syntax are apparent (Sabat, 1994). The latter skills are well preserved until the final stages of human life, when a sufferer becomes mute. A rationale for studying the effects of dementia on speech are its effects on language as a reflection of the devastating impact which the condition has on memory and cognition. In addition, a diagnosis of DAT is largely based on an assessment of speech (Hamilton, 1994). It is instructive to analyze how DAT sufferers use language in real context, to characterize a DAT sufferer's communicative competence. Such an assessment is particularly important if the diagnosis is based on the sufferer's second language, since the effects cannot be easily separated from general second-language phenomena. The problem manifests itself especially when an attempt is made to determine whether the use of vocabulary is a second-language feature or an outcome of the effects of dementia – a problem which does not arise in investigations of the effects of DAT on first-language use. A further problem is that an investigator only encounters a DAT sufferer after

there is evidence of the impact of dementia. The investigator thus does not have access to the second-language abilities of the DAT sufferer in the premorbid stage (Van Els, 1986).

DAT-afflicted first-language speakers use a number of different strategies in their selection of words. At times they use imprecise substitutes, such as "thing" (Sacks, 1987). This imprecision renders their speech vague and incomprehensible. Another set of strategies frequently used are circumlocution and transposition, which produce words such as "colomotive" for "locomotive." However, since second-language speakers also transpose and use circumlocution strategies, the occurrence of such phenomena cannot be solely attributed to the dementia unless it can be demonstrated that the phenomena did not occur in the second-language use of the demented speaker in the premorbid stage – which may be very difficult to demonstrate convincingly. DAT sufferers are painfully aware of the difficulties which they experience in word selection and changes in their language use generally. "My English was better," is a frequent comment heard in conversations with DAT sufferers, which reveals a high degree of self-reflexivity even for a sufferer whose language is under stress from DAT. These strategies are however not peculiar to demented individuals; the strategies have been extensively studied as slips of the tongue among first-language speakers (Goldman-Eisler, 1968). There is nevertheless a difference between the use of these strategies by demented speakers on the one hand and by non-dementing first-language speakers on the other hand. Among non-afflicted first-language speakers circumlocutions and transpositions are a temporary and relatively unexpected phenomenon; unfortunately the phenomenon becomes a permanent part of the speech of demented individuals, or worsens.

Sharwatz, Narian and Saffran (1979) show a blurring of semantic distinctions between words, with one DAT sufferer not distinguishing between "dogs" and "cats" but distinguishing "animals" from "birds." In other words, the demented speaker was making a distinction at the animal versus bird level but was not successfully maintaining a distinction of the co-hyponyms which are members of the animal category. The dementia therefore also has an impact not only on how knowledge of words is retained but on how the knowledge is controlled (Bialystok, 1990).

DAT sufferers are frequently disoriented in time and space. This disorientation complicates the problem of determining whether the words have been appropriately selected or not. Methodologically, it is necessary to collect contextual information before judgements about word selection appropriacy

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are made, because of DAT sufferers' proneness to disorientation.[1,2] A failure to recognize that some of the meanings of words which demented speakers create are highly individualized and not necessarily shared by listeners, reflects a lack of "sociolinguistic sensitivity," which arises from an ill-functioning "audience design" and not necessarily from a revision of semantic distinctions between words (Penn, 1988; Bell, 1974). A lack of "sociolinguistic sensitivity" arises when a speaker does not adjust his/her language to take into account the background knowledge and assumptions of the hearers.

An absence of sociolinguistic sensitivity manifests itself when a DAT sufferer code switches into a language which the hearer does not understand (Hyltenstam & Stroud, 1994). However, demented speakers exhibit individual differences to the extent that their language use reflects a lack of sociolinguistic sensitivity, which renders detailed descriptions of individual language use more pertinent for diagnostic purposes than generalized statements of the language of a DAT sufferer.

One of the key aspects of communicative ability is a capacity to appropriately respond to an interlocutor's initiative, rendering the conversation coherent. Coherence makes conversation more than a collection of unrelated sentences (Halliday & Hasan, 1976; Penn, 1985). Coherence is however not a property of texts but a property which interpreters bring upon the text (Fairclough, 1992: 135). It is the outcome of the collaborative efforts of participants to "integrate knowing, meaning, saying and doing" (Schiffrin, 1987: 29). Coherence may be realised in different ways across cultures. In some cultures a question may be followed by an answer not immediately related to the question. An appropriate response to a question reflects the extent to which a hearer understands the speaker's intention. Implicit in any question is a restricted range of possible answers. Cohesion, unlike coherence, describes linguistic devices within a text, such as substitution, ellipsis and reference designed to make the text hang together (Halliday & Hasan, 1976). A number of studies have examined the cohesion and coherence of the language of demented speakers, particularly aphasic patients (Lesser & Milroy, 1993; Penn, 1985, 1988). Hamilton (1994) is one of a few investigators who have examined changes in the capacity of a demented person to respond appropriately to questions; however, her research has focussed on first-language speech.

To date there are no studies in South Africa which have looked at ways in which demented speakers whose second language is English handle conversational coherence. This is unfortunate, given the potential significance of conversational ability as a diagnostic tool to complement the Mini-Mental State Examination which is widely used to detect DAT. A majority of diagnoses rely heavily on the responses of a DAT sufferer to a series of isolated questions and not on the ability of the person to converse coherently.[3]

Turn-taking is another important aspect of conversational ability which is frequently investigated in aphasics (Lesser & Milroy, 1993) but rarely in DAT patients. There are at least three culturally-dependent rules which define turn-taking: (1) Only one person speaks at a time, and if there is overlap, one speaker withdraws to avoid simultaneous speech; (2) the person currently holding the floor can select another speaker, or a speaker can self-select; and (3) turn-taking requires "split-second timing," since the turn has to be managed in such a way that one turn immediately follows another, avoiding unnecessarily long pauses between turns – a feature typical of amateur production (Lesser & Milroy, 1993). Hamilton (1994) found that rules relating to structural manipulation of language such as turn-taking are less vulnerable to the effects of DAT than those relating to content-level manipulation in coherence. Turn-taking systems are well preserved in the speech of aphasics. It would therefore be of interest to investigate the impact of DAT on turn-taking rules, particularly since some rules are quite vulnerable in other areas of human experience. The inclusion of a conversational component as a diagnostic measure of DAT will enable an investigator to not only investigate coherence but also how well the turn-taking system is managed, since interaction involves the different components working in synergy.

Fluency is the third and last aspect of conversational ability which is examined in the paper. Fluency is defined as the speed at which an interaction occurs and the location and distribution of pauses (Goldman-Eisler, 1968; Towell, 1987). The speed of the interaction is affected by a number of factors, including length, frequency and distribution of pauses. The main aim of analyzing temporal variables is to examine the procedural skills of DAT speakers. Research on second-language procedural skills has largely focussed on the use of temporal variables among learners acquiring a second language and not on those whose second-language use is under stress from DAT (Faerch & Kasper, 1985).

By focussing on fluency, coherence and turn-taking, I attempt to construct a communicative profile of a second-language speaker who is a DAT sufferer, which enables me to compare the extent of the vulnerability of the three components in situations of communicative breakdown. The profiling has screening and diagnostic implications.

Research method

The data analyzed in this paper derive from three conversations held over a period of a year, from January 1995 to January 1996, between the subject, a research assistant and myself. (A fourth person, the matron of the nursing home where the study was conducted, was only involved at the beginning of the conversations.) The conversations, which each lasted about 25 minutes, were audiorecorded and the recordings subsequently transcribed. Methodologically, research into DAT lends itself to a longitudinal design as unlike aphasia the effects of the disease are not abrupt and sudden (Hyltenstam & Stroud, 1994). Hamilton (1994) reports on a study which took place over four and a half years.

When I first met the subject, Dr L, in 1994, she was in the mild stages of the dementia. She was living in a nursing home for frail older persons outside Cape Town, South Africa. As a "total institution" (Goffman, 1961), life in a nursing home is fairly regulated and residents have few opportunities for genuine interaction (Nussbaum, 1993). The conversations with Dr L were some of the few opportunities which she had for extended interaction since her institutionalization 30 months prior to my first conversation with her. A lack of opportunities for interaction could be an important factor which contributes to conversational breakdown in institutionalized DAT sufferers (Lubinski, 1981).

Dr L, who is white, was 75 years old when I met her. She had led a professional career. Although she is bilingual (she was previously fluent in English and Afrikaans), English is her second language – which was the dominant language in her professional life. In her case, English may be described as an additional first language.

As I was personally involved in the collection and analysis of the data, I am therefore implicated in the picture which I paint of Dr L; my reactive and pre-emptive behaviours inevitably impacted on her conversational abilities (cf. Critcheley, 1953; Sabat, 1994; Hamilton, 1994). I was also involved in another sense: I came to know Dr L as a person who suffers from an unfortunate human predicament but who still has hopes and fears. Her hopes, in spite of the poor prognosis of

the dementia, are best captured in an extract from a conversation between us in October 1995.

SBM: *What's important is that we should talk. Is there anything you would like to talk about?*

Dr L: *I'd like to have a friend ... a human friend.*

"Humanistic linguistics" (Tannen, 1989: 197) establishes a sense of sympathetic understanding of the human condition of the people one is working with. A humanistic approach does not sacrifice principles of good research, rigour, discipline and thoroughness. Researchers who use this approach are aware that their social, geographical, historical and ideological location influence not only the nature and type of questions which they address but also how they address them. In this approach, best exemplified in Cameron, Frazer, Harvey, Rampton *et al.* (1992: 25), subjects are regarded as reflexive beings, not steroids or inanimate lumps of matter.

Modes of analysis

The data were analyzed in three main categories: turn-taking, fluency and coherence. Turn-taking in the discourse was examined to determine whether changes had occurred in Dr L's conversational abilities and involved analysing the timing of responses, the nature and type of repetitions, the role that they played in the conversation and how they were resolved.

Speaking rate was used as a measure of fluency. Speaking rate is expressed in terms of the number of syllables produced per minute by the total time taken to produce the utterances including pause time and multiplying by 60 (Towell, 1987: 123). Dr L's speaking rates were measured using an electronic stop-watch. The average length of her utterances was measured to examine changes in procedural skills.

The coherence of a conversation was assessed on the basis of Dr L's responses to questions directed at her. Coherence was determined in the following ways: Five undergraduate students were trained to judge the coherence of responses using extracts of questions and responses from the speech of another DAT sufferer. The judges were first-year students of English at the University of Cape Town (English was their second language). After initial training sessions the students were each provided three transcripts with questions and responses by Dr L. The transcripts represented the questions directed at Dr L and her responses in the three conversations. The questions and responses were randomised. Using a five-point scale the students were asked to judge the pragmatic coherence of Dr L's responses to questions directed at her. Dichotomous and three-point scales were rejected because they could not easily capture indeterminacies in coherence.

Five-point scales have been used in grammaticality judgements in studies of second-language acquisition; this is the first time that they have been used in judgements of pragmatic coherence (Sorace, 1990). Based on Sorace (1990), the judges of the pragmatic coherence of Dr L's speech were instructed to judge the degree of appropriacy/inappropriacy of responses to questions in the three transcripts according to their being (1) inappropriate, (2) mostly inappropriate, (3) somewhat inappropriate, (4) somewhat appropriate, and (5) appropriate. In making their judgements, the students were required to consider whether a response was the type of response which they would have expected to a question. After each judgement they were required to write a short explanation in the comment section to justify their decision. If at the end of the exercise they had more than one extract in each category, e.g. if they had regarded extracts A, B and D as inappropriate, they had to rank them in order of increasing degree of inappro-

priacy. If they came up with B, D and E, they were to regard B as the least inappropriate response and E as the most inappropriate response. Ranking scales have been found to be valid measures in grammaticality judgements (Sorace, 1990).

The rating scales were supplemented with a written justification by the students for some of the judgements. The procedure used to determine coherence is similar to the one used by Penn (1988) with aphasic patients. After establishing the coherence of the discourse, instances of responses regarded as incoherent were isolated and a grammatical analysis was undertaken to see if there was any mismatch between question and response.

Results

The effects of DAT on turn-taking rules, fluency and discourse coherence as found in the analysis of the data are set out below.

Turn-taking

The first conversation, which forms the base of the analysis, took place in January 1995, while the second and third conversations were held in October 1995 and January 1996, respectively. In the first conversation, which was a multiparty one, relative to all other speakers Dr L had a majority of turns. In the subsequent conversations I had approximately twice as many turns as she had. Dr L grabbed a majority of turns in the first conversation through a violation of one of the rules of turn-taking, i.e. that listeners do not normally interrupt speakers in ordinary conversation unless they have powers to do so in special circumstances, such as judges in courts.

Extract 1

Matron: *This is [Dr Mak...]*

Dr L: *... and [you are?]*

Matron: *I'm Sister T.*

Overlap was usually resolved in Dr L's favour, with the interrupted speaker giving up the floor. This is an example of overlap as captured in the transcription convention [ ] used when two speakers are talking at the same time. In this instance Dr L poses a question before the matron has completed her turn resulting in overlap. The turn-taking situation changed quite dramatically in the October 1995 and January 1996 conversations. In these conversations I had approximately twice as many "moves" (Goffman, 1967) as she had, which indicates how the latter two conversations were proceeding differently from the first one. For example, I had to respond to most of my own questions if I perceived that the question was not being answered, because of a relatively long period of silence after my initial question. I followed up my own contribution by either answering the question or reformulating it.

Reformulation and self-answering accounted for the large number of turns which I had relative to those which Dr L had. The interchange in Extract 2 between Dr L and me in October 1995 reflects the general character of the conversation.

Extract 2

SBM: *So where is your daughter?*

Dr L: (Silence)

SBM: *When your daughter left South Africa, where did she go to?*

Dr L: (Silence)

SBM: *Lets talk about something else. Some of the things which you used to do in your professional life.*

If I reformulated a question and did not succeed in eliciting either a verbal response or a paralinguistic gesture that the question had been understood, I abandoned the question and initiated a new topic (see Extract 2). I thus shifted the topic from discussing Dr L's family life to talking about her professional experiences as a social worker; I reformulated my question when I felt that Dr L was not responding quickly enough, or introduced a new topic.

The October 1995 contributions by Dr L were also marked by silences not only within turns but between turns.

Dr L: *No, I don't think* [0,7 sec] *I can remember the whole idea that I thought it was a good idea to have* [0,8 sec] *a little room like this.*

The silences within turns would have made Dr L quite vulnerable to interruption in ordinary conversation. However, she was rarely interrupted – a reflection of the concessions I was making to her assumed linguistic decline. There were some unexpected changes in the way that Dr L managed her turn-taking system. While the October 1995 conversation was marked by silences after a turn had been completed, the January 1996 one was marked by a decline in silences after a turn, with Dr L preferring to use filled pauses such as "uhm," or giving prolonged facial expressions. Silences within turns absent in the January 1995 conversation occurred quite frequently in the October 1995 conversation but rarely in the January 1996 one, possibly indicating that some lost turn-taking skills were recoverable.

Fluency

Dr L's procedural skills were measured on the basis of speaking rates and length of utterances. By comparing the speaking rates in the three conversations over the period of a year, I was able to gain some insight into the impact of the dementia on the subject's procedural skills. In January 1995 Dr L's speaking rate was 198 syllables per minute; in October 1996 it had declined by 31 % to 136 syllables. In January 1996 it had increased by 10 % to 150 syllables. The increases in the number of syllables produced per minute in January 1996 over October 1995 occurred at the same time as the average length of her utterances declined. It seemed that Dr L was able to produce more syllables per minute when her utterances were shorter. The increase in procedural speed in January 1996 was made possible by the emergence of a particular type of repetition, i.e. echolalic discourse. Echolalic discourse constituted illogical responses to utterances, suggesting that the inclusion of fluency as a diagnostic measure on its own is inadequate because in some cases an improvement in fluency is accompanied by a decline in meaning-creating abilities.

Coherence

It was important to study Dr L's capacity to respond to questions, as responses constitute an important aspect of conversational skill. Hamilton (1994) argues that the ability to know how to respond to a question reflects an ability to take the position of the other person in the conversation and a realisation that there is some information which the other person requires. In my analysis of Dr L's responses, I confined myself to two types of questions: "What" (WH) and "Yes/No" (Y/N) questions. Following on Hamilton (1994), WH questions were defined as a subset of questions occurring at the beginning of a question: Who, whom, whose, which, what and how. "How" is regarded as part of a WH question, although it does not begin with WH. WH questions are contrasted with

Y/N questions. The latter questions can elicit either a confirmation, a denial of a proposition, or a lack of knowledge about the proposition. Thus an exchange was defined as eliciting a Y/N response, even if the answer did not overtly provide a Y/N answer, as demonstrated in the following exchange:

Extract 3

SBM: *Do you grow your own vegetables?*

Dr L: *I grow my own vegetables.*

The judges had to determine the degree of appropriacy/inappropriacy of 36 of Dr L's responses. Based on the judgement of at least four of the five judges, an exchange was classified as "appropriate," "mostly appropriate," etc.

An analysis of the 12 responses by Dr L in the January 1995 conversation showed that nine of the responses were judged as "appropriate" (57 %). In the January 1996 conversation, three out of ten responses were regarded as appropriate (30 %). This reflected that over a period of 12 months Dr L's discourse coherence had declined in terms of degree of appropriacy from 75 to 35 %. Of the nine responses regarded as appropriate in January 1995, six were to Y/N questions. The three responses judged as "inappropriate" were all to WH questions. In October 1995 six out of eight responses to WH questions and two to Y/N questions were regarded as appropriate. In January 1996 only one of the three responses was regarded as appropriate – one to a WH question and two to Y/N questions. This showed that at every stage, a majority of responses generating responses judged as inappropriate were to WH questions. See Table 1.

Table 1

Classification of responses to questions in three conversations judged appropriate and inappropriate

Conversation/ Question	Judgement		Total responses
	Appropriate	Inappropriate	
January 1995			
WH	3	3	}
Y/N	6		} 12
October 1995			
WH	2	4	}
Y/N	6	2	} 14
January 1996			
WH	1	4	}
Y/N	2	3	} 10

WH = "What" questions.
Y/N = "Yes/No" questions.

Discussion

Turn-taking

In the majority of conversations parties compete for turns. This competition is usually more acute in multiparty than in two-way conversations. It is therefore interesting that Dr L was able to grab more turns in a multiparty conversation in January 1995 than in two-way conversations in October 1995 and January 1996. The grabbing of turns means that if the conversation is construed as "work," as Hamilton (1994) and others argue, Dr L, despite her dementia, was carrying a heavier load than the other participants, implying that dementia does not militate against conversational involvement if the topic is of sufficient interest to the sufferer. Dr L's interest in

the topic was evident in the fact that she initiated the topics herself. A less rosy picture of her conversational abilities emerged in subsequent conversations, which reflected the extent to which her turn-taking system was beginning to break down. Her contributions were marked by long pauses both within and between turns. It was difficult to determine whether the breakdown was an outcome of the effects of dementia, or a general lack of interest in the conversational topics.

In the multiparty conversation Dr L grabbed more turns by violating one of the rules of turn-taking, i.e. that speakers do not normally interrupt each other, except in special circumstances when one of the speakers has institutional power over the other – as in court cases. Psycholinguistically, the interruption may have been that Dr L was beginning to lose the ability to accurately determine the end point of a turn. The absence of "split-second timing" may have been accentuated by a feeling on Dr L's part that her relationship with the researchers was asymmetrical and she exercised the right to interrupt the researchers when she felt that they were being irrelevant (Fairclough, 1992). The psycholinguistic changes may have resulted in Dr L adopting a "new type" of conversational style (Tannen, 1984). The power dominance changed in subsequent conversations in my direction and that of the co-researcher. The fact that I gave in to her in most situations when there was overlap reveals the extent to which I was "accommodating," i.e. adjusting my language style to what I perceived to be changes in her linguistic ability (Coupland, Coupland & Giles, 1991). The adjustment took the form of reformulating my questions if I felt that Dr L was not responding to a question directed at her. Reformulation is a linguistic strategy used in conjunction with other strategies, in special type of language situations, e.g. mothers speaking to children or first-language speakers interacting with foreign or second-language users (Clark & Clark, 1977). The linguistic adjustment could be pernicious in situations which exaggerate the language handicap of a demented speaker, reinforcing a negative stereotypical image. Under-adjustment could also be equally disempowering, since it deprives a demented person of the necessary linguistic support. More extensive research is required to explore the effects of over- and under-accommodation.

Turn-taking skills are not marked by an inexorable decline. Surprisingly, the longer that Dr L was demented, the more in control she became of some aspects of turn-taking. For example, the October 1995 conversation was marked by silences both at the end of turns and within turns. The occurrence of long pauses within turns implied that Dr L was taking the floor before planning her discourse in advance – a feature typical of some aphasic discourse and second-language production. Dechert (1984) divides second-language learners into two categories: "planners" and "correctors." Planners organize their discourse in advance, while correctors organize their discourse as they go along. In the light of Dechert's distinction, Dr L was behaving more like a corrector than a planner. The situation changed quite dramatically, as was seen in a comparison of the October 1995 conversation with the January 1996 one. In the latter conversation Dr L seemed to have partially recovered some of her turn-taking skills, as the conversation was marked by an increase in the use of filled pauses.

Fluency

Dr L's procedural speed was characterized by a U-shaped curve. Initially the fluency was high in January 1995, took a dip in October 1995, and subsequently improved in January 1996. The U-shaped phenomenon has been observed in grammatical accuracy in both first- and second-language speech. The increase in procedural speed was made possible by an emergence of echolalic discourse. (Echolalic discourse is a type of repetition that inflates the speed at which responses are produced because of limited demands on processing capacity.)

Coherence

The analysis of discourse coherence raised a number of interesting methodological and theoretical questions. The five-point scale used allowed the judges to determine the appropriacy of the responses in terms of varying degrees of appropriacy/inappropriacy. The results however showed that the judges were extremely normative in their judgements, preferring, contrary to their performance during the training sessions, to regard a response as either appropriate or inappropriate. Practically, this meant that a five-point scale was operationalized as a dichotomous scale, with coherence treated as an "either/or," rather than in terms of degrees.

Within-category mistakes

In the January 1995 conversation inappropriate responses showed that Dr L was responding to WH questions in a way which created pragmatically incoherent responses. The following extract is an example of a within-category mistake.

Extract 4

SBM: *When did you last go to the symphony orchestra?*

Dr L: *I order food.*

"I order food" would have been an appropriate response if the question had required information about what she does. Hence, Dr L responded to a "when" question as if were a "what" one. This within-category inappropriacy differed from a cross-category pragmatic error which takes place when a WH question was answered as if it were a Y/N question. Cross-category errors increased dramatically in the October 1995 and the January 1996 conversations. Extract 5 from the January 1996 conversation is an example of a cross-category error.

Extract 5

SBM: *How do I get to your house?*

Dr L: *Yes.*

In the October 1995 conversation, cross-category and within-category errors alternated. There was therefore a very systematic development of incoherence in Dr L's speech. Although her speech became increasingly incoherent, the degree of incoherence was masked by her ability to accurately use formulaic speech. Her responses were frequently marked by the use of expressions such as "I beg your pardon." The use of formulaic constructions enabled her to search for appropriate responses. She also seems to have been able to retain in her memory the use of fixed expressions which may culturally be attributed to her Afrikaans background. She combined the words "Good dankie;" "dankie" is the Afrikaans word for thank you. Some of the expressions retained seem to have been part of her professional way of forming a relationship: "What can I do for you?" Dr L seems to have been able to retain control of the more automatic aspects of her discourse which were less taxing (cf. Hamilton, 1994).

Attempts have been made in pragmatics to explain how discourse responses which, on the face of it are illogical, can result in successful communication by evoking notions of implicature and indirect discourse. Extract 5 could not be

regarded as an indirect response to the question "How do I get to your house?", since by saying "yes" she was not providing information which would facilitate the development of the conversation. The implication of my question (or illocutionary force of my utterance) was that Dr L was interested in inviting me to her house, so by saying "yes" she was simply supplying me with information which I already had and this was a violation of the maxim of relevance (Grice, 1975).

The illogical responses did not result in a conversational breakdown; an absence of conversation breakdown was a result of a tendency on my part to accept illogical responses and to build upon them for further conversation (cf. Hamilton, 1994). The acceptance of illogical responses was a politeness strategy, i.e a desire not to violate negative face requirements (Levinson, 1983). I accepted the responses as I did not want to impose my own interpretation of coherent discourse upon her. On reflection, it is possible that my acceptance of Dr L's responses was subconsciously motivated by a desire to broaden my dataset. Perhaps I was accepting sequences and responses which I might not have accepted if I was not the researcher. Although I am a researcher I am human. I have personal interests which influence both the type of research that I conduct and how I conduct it.

Conclusions

Conversational abilities are multidimensional and include fluency, coherence and turn-taking. The components react differently to the impact of dementia, or DAT, particularly fluency. Although the subject's fluency in her use of a second language declined as the disease progressed, it subsequently improved but was accompanied by a decline in meaning-making abilities. The coherence of her responses declined systematically, beginning with within-category errors and ending with cross-category errors. The analysis of conversational coherence was also complicated in that some of the incoherence, or indeed coherence, reflected the extent of the collaborative support which she was receiving (cf. Hamilton, 1994) and the assumption that I was making that an utterance next to a question, was a response to the question. Future research, especially on cross-cultural communication, should take into account the possibility that a response to a question may occur only a number of turns after the question. In some cultures, a response does not have to immediately follow the question.

Although some aspects of language use are vulnerable to dementia, others appear to remain impermeable. The use of formulaic constructions and other semi-fixed constructions by the subject showed that certain aspects of her use of a second language did not fall prey to her condition, which implies less creativity in language use than conventionally assumed in linguistic studies. Memory may play a much more central role in language use than is thought, particularly in accessing partially-assembled constructions.

Finally, the study has highlighted the difficulties of integrating a conversational component as an additional diagnostic measure of DAT. Different aspects of conversational ability respond differently to the impact of the dementia with fluency seemingly improving and meaning-making abilities declining. Another problem of including a conversational component as an additional diagnostic measure arises from the fact that conversation is a joint enterprise whose success depends not only on the input of the demented speaker but on the collaboration of non-demented parties as well. Thus, diagnostic decisions based on conversational abilities are judgements not only of the demented individual but also of normal speakers.

Notes

1. The disorientation has an effect on lexical usage. The subject in my study, whose mother tongue was Afrikaans, consistently used the term "street" instead of "corridor" in a conversation with me in English. This substitution could be due to a blurring of distinction between words as a result of DAT. Interestingly, the subject's use of street instead of corridor was appropriate. Although the conversation took place in a nursing home, the subject was unaware of her surroundings and transposed the conversation back to the past. Her use of "street" towards the end of the conversation was appropriate when she said "I will walk you down the street," when she actually meant corridor. For her we were in a different place and time.

2. Contextual evidence is also necessary when interpreting the speech of a DAT sufferer. The subject in my study used the word "garlic" when referring to her kitchen, producing utterances which on the face of it were uninterpretable, such as "I had a nice kitchen in my garlic." As a result of her interest in spices she had begun to use the words garlic and kitchen interchangeably, creating a unique sense of idiolectal synonymity.

3. During the apartheid era English and Afrikaans were the two official languages in South Africa. The new Constitution recognizes eleven official languages: English, Afrikaans and nine indigenous African languages. The language policy has indirect implications on the type of research which can be conducted on dementia in South Africa. Until recently, the majority of people who were diagnosed as having DAT were speakers of English or Afrikaans. With official recognition of the African languages and easier access for Africans to health services, diagnoses should in the future also be made through African languages. Research is being planned to study the effects of DAT on the use of Xhosa.

References

Bell, A. 1974. Language style as audience design. *Language in Society*, 13: 145-204.

Bialystok, E. 1990. *Communication strategies: a psychological analysis of second language use*. Oxford: Basil Blackwell.

Cameron, D., Frazer, E. Harvey, P., Rampton, M.B.H. & Richardson, K. 1992. *Researching language issues of power and method*. New York: Routledge.

Clark, H. & Clark, E. 1977. *Psychology and language: an introduction to psycholinguistics*. New York: Harcourt Brace Jovanovich.

Critcheley, M. 1953. *The parietal lobes*. London: Edward Arnold.

Coupland, N., Coupland, J. & Giles, H. 1991. Accommodating the elderly: invoking and extending a theory. *Language in Society*. 17(1): 1-41.

Dechert, H. 1984. Individual variation in language. In: Dechert, H., Mohle, D. & Raupach, M. (Eds) *Second language production*. Tubingen: Gunter Narr, pp. 162-174.

Faerch, K. & Kasper, G. 1985. *Strategies in interlanguage communication*. London: Longman.

Fairclough, N. 1992. *Discourse and social change*. Cambridge, UK: Polity Press.

Goffman, E. 1961. *Asylums. Essays on the social situation of mental patients and other inmates*. Garden City, NY: Doubleday.

Goffman, E. 1967. *Interaction ritual*. Garden City, NY: Doubleday.

Goldman-Eisler, F. 1968. *Psycholinguistics*. New York: Academic Press.

Grice, H.P. 1975. Logic and conversation. In: Cole, P. & Morgan, J.L. (Eds) *Speech acts, syntax and semantics*. Volume 3. New York: Academic Press, pp. 41-58.

Halliday, M.A.K. 1978. *Language as social semiotic*. London: Edward Arnold.

Halliday, M.A.K. & Hasan, R. 1976. *Cohesion in English*. London: Edward Arnold.

Hamilton, H. 1994. *Conversations with an Alzheimer's patient*. Cambridge: Cambridge University Press.

Hyltenstam, K. & Stroud, C. 1994. Second language regression in Alzheimer's dementia. In: Hyltenstam, K. & Viberg, A. (Eds) *Progression*

and regression in language. *Sociocultural, neuropsychological and linguistic perspectives.* Cambridge: Cambridge University Press.

Lesser, R. & Milroy, L. 1993. *Psycholinguistics and pragmatic aspects of aphasia.* London and New York: Longman.

Levinson, S. 1983. *Pragmatics.* Cambridge: Cambridge University Press.

Lubinski, R.B. 1981. Language and aging: an environmental approach to intervention. *Topics in Language Disorders.* 1: 89-97.

Nussbaum, J.F. 1993. The communicative impact of institutionalisation for the elderly: the admissions process. *Journal of Aging Studies,* 7(3): 238-246.

Penn, C. 1985. The profile of communicative appropriateness: a clinical tool for the assessment of pragmatics. *South African Journal of Communication Disorders,* 32(2): 18-23.

Penn, C. 1988. The profiling of syntax and pragmatics in aphasia. *Clinical Linguistics and Phonetics,* 12(3): 179-207.

Sabat, S. 1994. Language function in Alzheimer's disease. A critical review of selected literature. *Language and Communication,* 4(1): 331-351.

Sacks, O. 1987. *The man who mistook his wife for a hat and other clinical tales.* New York: Harper & Row.

Schiffrin, D. 1987. *Discourse markers.* Cambridge: Cambridge University Press.

Sharwatz, M., Narian, O. & Saffran, E. 1979. Dissociation of language function in dementia: a case study. *Brain and Language,* 7: 277-306.

Sorace, A. 1990. Indeterminacy in first and second languages. Theoretical and methodological issues. In: De Jong, J.H.A. & Stevenson, D.K. (Eds) *Individualizing the assessment of language abilities.* Clevedon, PA: Multilingual Matters, pp. 127-154.

Tannen, D. 1984. *Conversational style: analysing talk among friends.* Norwood, NJ: Ablex.

Tannen, D. 1989. *Talking voices. Repetition, dialogue and imagery in conversational discourse.* New York: Cambridge University Press.

Towell, R. 1987. Variability and progress in the language development of abstract learners of a foreign language. In: Ellis, R. (Ed.) *Second language acquisition* London: Prentice Hall, pp. 113-129.

Van Els, T. 1986. An overview of European research on language attrition. In: Weltens, B., De Bot, K. & Van Els, T. (Eds) *Language attrition in progress.* Dordrecht, Holland: Providence Foris, pp. 1-12.