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Humour, irony and sarcasm in severe Alzheimer's dementia – a corrective to retrogenesis?

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ABSTRACT
Retrogenesis is claimed to be the process by which degenerating mechanisms in the brain, as found in Alzheimer's disease (AD), reverse the order of acquisition of functions, including language, in normal child development. In FAST (Functional Assessment Staging of Alzheimer's disease) stages of AD are translated into corresponding developmental ages. Humour, irony and sarcasm are communicative strategies linked to meta-linguistic abilities developed late in childhood. If found in the conversation of people with moderately severe AD according to FAST, this could be an indication of problems in the FAST scale and subsequently in the concept of retrogenesis concerning speech and language abilities. Comprehensive, open-ended, naturalistic conversations between three nursing home residents with moderately severe AD according to FAST and their professional care-givers were analysed with concepts developed in linguistics as to the occurrence of humour, irony and sarcasm. Although the data material was limited, the findings indicate an unexpected communicative competence of the three participants. This is a corrective to retrogenesis and a caveat for poor expectations of intelligible conversations with demented people for professionals and the people they advise. Implications for research strategies and for the general knowledge of communicative competence in AD are addressed in the discussion section, and possible ways of elucidating deterioration of speech and language abilities in AD are suggested.

KEY WORDS – Alzheimer's disease, dementia, communication, retrogenesis.

Introduction

I knew what I was going to say. I still know it, it is in my mind but I cannot write/say it. I am waiting

(written by a man with Alzheimer's disease).

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The communicative ability of people living with severe Alzheimer's disease (AD) is regarded as limited when assessed by neurologists and psychiatrists in clinical examinations and tests, as opposed to the ability seen in open-ended, naturalistic conversations assessed in a linguistic frame (Hamilton 1994; Moos 2004; Sabat 1994). The bleak view of the communicative ability in severe dementia also found in widely read textbooks of geriatric psychiatry (Cummings and Benson 1992; Gulmann 2001; Miller and Gustavson 2000) might reduce care-givers' expectations of the possibility of intelligible conversations with people with dementia. Both professional and family care-givers can be influenced by authoritative, medical views expressed in education and information. It is therefore important to assess the rationale for poor expectations. One of the theoretical arguments for poor communicative ability in severe dementia is contained in the concept of retrogenesis. In the present study this concept is critically examined in the light of preliminary findings in Moos (2004) that nursing home residents with severe AD used humour, irony and sarcasm in naturalistic conversations with professional care-givers. In this process, implications for the general knowledge of communicative competence in severe AD may be explored.

Retrogenesis is argued to be the process by which degenerating mechanisms in the brain, as found in AD, reverse the order of acquisition of functions in normal child development, and constitutes the theoretical background for the notion of old age being a second childhood held by poets and playwrights since antiquity, *e.g.* Aristophanes and Shakespeare (Reisberg *et al.* 1999*a*, 2002). Reisberg and colleagues describe the functional losses in AD in seven observational stages, or FAST (*i.e.* Functional Assessment Staging of Alzheimer's Disease) (Reisberg 1986; Reisberg *et al.* 1998, 1999*a*, 1999*b*, 2002). Functional losses are described from stage 1 as 'no objective or subjective functional decrement' to 'loss of speech, locomotion and consciousness' as in stage 7 (Reisberg 1986: 35). Reisberg and colleagues argue that in the FAST stages, the progression of symptoms occurs in an inverse sequence from the order of acquisition of functions in normal human development. The stages of AD are translated into corresponding developmental ages, and a chart is proposed where functional landmarks in normal development and deterioration in AD are compared. The FAST stages (Reisberg *et al.* 2002: 204) relevant to this study are:

1. Severe AD in stage 7 is compared to a developmental age in childhood from one to 15 months, regarding the ability to speak more than five to six words, walk, sit up, smile, and hold up head.
2. Moderately severe AD in stage 6 is compared to a developmental age of from 15 months to five years, regarding the ability to control urine and

bowels, use the toilet and shower unaided and put on clothes without assistance.

3. Moderate AD in stage 5 is compared to a developmental age from five to seven years, regarding the ability to select proper clothing.

Speech and language abilities are only described in stage 7, not in the previous six stages.

According to Reisberg and colleagues, the developmental ages in FAST are employed to give an assessment of the overall management and care needs of AD patients (Reisberg *et al.* 1998, 1999*a*, 2002). Researchers have recommended the theory of retrogenesis as a foundation for models of stage-specific treatment to people with dementia and their carers (Auer *et al.* 2007; Warchol 2004). Warchol (2004) presents an inter-disciplinary model for rehabilitation in long-term care based on the theory of retrogenesis, and Auer *et al.* (2007) describe an intervention in three specialised treatment centres where stage-specific retrogenesis training is part of the intervention. Also, FAST has been successfully used as a tool for assessing future care needs of people with AD in the community (personal communication with Hanne Nissen, an experienced psychiatric community nurse in the city of Aarhus, Denmark), and is recommended as a foundation of education of professional care-givers (Kabel 2001; interview with N. C. Gulmann, Head Consultant at the Gerontopsychiatric Ward, Aarhus University Hospital, Denmark).

The concept of retrogenesis has been developed to comprise not only the fields of function, but also of cognition, emotion, neurology and neuropathology (Reisberg *et al.* 1999*b*, 2002). What is of concern in this study is to examine the arguments for including speech and language abilities in the concept of retrogenesis. In the 1999 article, Reisberg and colleagues cite studies from three separate groups of investigators, noting that progressive losses in language abilities proceed inversely in AD to the progression of these skills in normal development (Reisberg *et al.* 1999*a*: 9). Language development and deterioration is the primary focus in only one of these studies (de Ajuriguerra and Tissot 1975). In this study, the authors compare the deterioration of some language components in dementia to the development of the same components in childhood. In 1975 there were gaps in the knowledge of language development in children, as the authors themselves state, as well as in the knowledge of language deterioration in dementia. When Reisberg and colleagues argue for including language abilities in the concept of retrogenesis on such an early source, they are endangering the concept in this respect. FAST was not designed primarily to assess language deterioration, but when used in clinical settings a tacit understanding that people with dementia are like children also in

communicative ability can develop. Reisberg and colleagues note several caveats that modify the concept of retrogenesis, some of them relevant to communicative competence (Reisberg *et al.* 1999*a*, 2002). The authors describe anecdotal evidence of situations where patients in the late FAST stage 7 sometimes utter intelligible phrases when startled or in pain, but they do not attempt an explanation for this, beyond stating that AD patients can to some extent draw upon previously mastered skills and knowledge (Reisberg *et al.* 2002: 202).

Much has been learned since 1975, certainly on language development in children, but also of communicative competence despite a diagnosis of dementia. Many researchers have studied language deterioration in AD using observation, tests and structured interviews.

Linguists have cited such studies, when describing language deterioration in dementia with reference to the clinical stages of early, middle and late dementia (*e.g.* Obler 2005; Orange 2001): the communication problems described for early stage dementia are difficulties in word finding, in understanding and producing complex sentences, and in maintaining topics in conversations. In the middle stage these problems intensify, and the communication of the individuals with dementia becomes empty and ambiguous, with poor comprehension and many repetitions. In the late stage little understandable language is used, and there is no testable comprehension. Obler (2005) sees some justification for comparing language and cognitive development in children to deterioration in dementia. Orange (2001) stresses the responsibility of the non-demented conversational partner for reducing the negative influence of communication difficulties, and suggests a care-giver training programme.

Some linguists have directly addressed the use of the theory of retrogenesis as a basis for describing communicative abilities in AD (*e.g.* Bayles *et al.* 2000; Hopper, Bayles and Kim 2001). Bayles *et al.* (2000) examined language comprehension and production of 49 individuals in late-stage AD in tests and structured interviews. The authors found that the demented participants did better than predicted in the FAST scale. Hopper, Bayles and Kim (2001) described cognitive-linguistic abilities of individuals in the early, middle and late stages of AD. They found that the theory of retrogenesis has limitations as well as negative connotations when used as a framework for improving care, including communication. Contrary to children, people with dementia have a cumulative life experience that should not be ignored.

Over the years a growing body of research into aspects of limited conversational discourse (of relatively short duration in structured situations) between people with AD and non-demented conversational partners has enlightened the field of language deterioration in dementia (*e.g.* Garcia

and Joanette 1997; Mentis and Briggs-Whittaker 1995; Orange and Lubinsky 1996; Small and Perry 2005; Watson, Chenery and Carter 1999). Other researchers have recommended the study of comprehensive, open-ended, naturalistic conversations between people with AD and supportive conversational partners. Hamilton (1994), Sabat (1994) and Causino Lamar *et al.* (1994) found that it is only in such conversations that it is possible to describe the full range of communicative competence of a person with AD. Hamilton (1994) stresses the interactiveness of communication, where the contribution of the non-demented conversational partner is crucial to successful conversation. The present study into the use of the conversational strategies of humour, irony and sarcasm draws on a description of comprehensive, open-ended, naturalistic conversations in the original study (Moos 2004).

Humour (especially deliberate manipulations of ambiguities, as in puns), irony and sarcasm are manifestations of a meta-linguistic development (growing awareness of language as an object) developed in childhood not before the age of seven, concerning humour (Gombert 1992), and at the age of nine in the middle elementary school years, concerning irony and sarcasm (Ely 2005; Gleason 2005; Pan 2005). Meta-linguistic development is the result of a new kind of knowledge gained in the middle elementary school years, when the child learns to read and write and begins to interact with peers in social groups (Gleason 2005; Pan 2005). If the communicative strategies of humour, irony and sarcasm are found in moderately severe AD according to FAST, where the developmental age is from 15 months to five years, this could be a corrective to the concept of retrogenesis.

What is assessed in the present study is communicative competence, the ability to use language and express one's intent in a variety of situations (Gleason 2005). Linguistic competence, knowledge of phonology, morphology, syntax and semantics of a language (Gleason 2005), and the underlying cognitive resources for processing language, are not key issues. What is assessed in FAST and in the MMSE (Mini Mental State Examination), a widely used test developed to assess severity and symptoms of dementia (Gulmann 2001: 45), is also communicative competence, basically how the utterances of others are understood and the number of words used by the demented patients in medical interviews.

In summary, the aim of this study is to analyse the communicative competence of people with moderately severe AD according to FAST as to the occurrence of humour, irony and sarcasm in comprehensive, open-ended, naturalistic conversations with their professional care-givers. The use of these communicative strategies is seen as indicators of problems in the FAST scale and subsequently in the concept of retrogenesis

concerning speech and language abilities in AD. Implications for the general knowledge of communicative competence in severe AD and for research strategies will be explored in the discussion section.

Data and participants

The data came from an original study (Moos 2004), where comprehensive material of audio recordings of everyday conversations between eight nursing home residents with AD and their professional care-givers was analysed. The purpose of the study was to examine how the personal past of the nursing home residents was brought into conversations in daily care. Talking about the personal past was seen as a way of maintaining narrative identity, *i.e.* creating coherence and meaning in life. The eight participants had a diagnosis of AD from moderate to severe according to MMSE, and were assessed to be in the FAST stages 6 and 7. They had a linguistic handicap from early to late stages according to stage-specific descriptions (*e.g.* Orange 2001). The care-givers all knew the participants well. They were informed about the purpose of the study, but were asked to behave as usual. They were not interviewed about the findings.

Data consisted of information about the residents' personal past from institutional records, transcribed audio recordings of daily interactions (during care routines, meals and activities), and observational notes made by the researcher on non-linguistic signs and the situation. The demented participants often involved the researcher in the conversations; when this happened, the conversations were not analysed for content of personal past, but were still part of the analysis of communicative interaction.

The audio recordings were transcribed with conventions used in the textual programme CLAN (Computerized Language Analysis programs) that allow for description of linguistic as well as paralinguistic and prosodic features without losing clarity of content (Gleason 2005: 32). In the original study a content analysis was made, exploring and describing the ways the personal past was introduced, talked about or acted out by residents and care-givers. The linguistic handicap of the demented participants was initially assessed according to stage-specific descriptions (*e.g.* Orange 2001). These assessments were qualified and enhanced in an analysis of the communicative interaction between each resident and his or her care-givers. This was done in a discourse analytic frame proposed by Schiffrin (1987, 1994). Schiffrin described discourse analysis as the study of utterances as social interaction (Schiffrin 1994) and developed a frame of five components for studying discourse (Schiffrin 1987): exchange structure (*e.g.* turn-taking); action structure (*e.g.* organisation of speech acts, among them the use of

humour, irony and sarcasm); ideational structure (the relation between propositions or ideas); information state (the organisation of information and knowledge, what the conversational partners possess and what they share); participation framework (how conversational partners relate to each other and to the situation in what they say and do).

In the present study communicative interactions between three residents and their care-givers constitute the data material. The residents had a diagnosis of probable AD made by experienced psychiatrists. A clinical diagnosis of definite AD requires histopathological confirmation after death. A diagnosis of probable AD can be made when there is gradual progression of dementia symptoms, and other diseases with symptoms of cognitive deficits can be ruled out; a diagnosis of possible AD, the least certain diagnosis, can be made when the presentation of the course of the disease is somewhat aberrant (Cummings and Benson 1992: 59). Of the eight participants in the original study that were not participants in the present study for reasons of cogency, three had a diagnosis of only possible AD; one had so few understandable words that communicative competence was difficult to assess, and one was assessed to be in the moderate MMSE stage.

According to FAST, the three participants chosen for the present study were in the moderately severe stage with a developmental age from 15 months to five years, all having difficulties in dressing, bathing and using the toilet unaided. According to MMSE they were severely or very severely demented. Gulmann (2001: 98) integrates the FAST developmental ages and the MMSE stages in one framework: with a MMSE of 0 the developmental age is 0 years, with a MMSE of from 1 to 6 the developmental age is from 0 to 2 years and with a MMSE of from 6 to 11 the developmental age is from 2 to 3 years. Seen in this light, 'Hans' and 'Sigrid', who had a MMSE of 0, were very severely demented with a developmental age of 0 years; 'Helene', who had a MMSE of 8 was severely demented with a developmental age of from 2 to 3 years. The participants were given pseudonyms to stress the fact that the care-givers often introduced the demented residents' names. Informed consent by proxy was obtained in the original study.

Many utterances and actions may create a humorous effect and make people laugh, but what is of concern in this study is elaborate play on words, *e.g.* in puns (Pan 2005: 133). Production and comprehension of irony involve appreciating the possibility of words and phrases having meanings different from the literal ones, and that the speaker intends to convey the opposite of what the surface meaning suggests in order to create a humorous effect; irony used with the intent of criticising or hurting is sarcasm (Pan 2005: 136).

Relevant features of CLAN in this study are:

(.) or (1.1) denote pauses of less than 0.5 seconds or 1.1 seconds, respectively;
= means no pause between utterances;
: means prolonged sound;
, means continuing intonation;
comments describe non-linguistic and situational features.

The transcriptions are written in Danish and translated into English when possible.

Findings

Helene is a woman of 81 years. She is the mother of four children. She has no formal education, but was for many years a valued hostess to her husband's business associates. For some years she had her own business of china painting. Helene is the physically and communicatively best functioning of the three participants. She is able to use her communicative competence to facilitate the daily chores of bathing, etc., and to engage in challenging conversation. Her linguistic handicap was assessed to be in the upper part of the middle stage. Helene shows some initiative in conversations, but has to rely on her conversational partner to develop a topic. She has word-finding problems, and her conversation is at times characterised by ambiguity with few precise words, repetitions, and diminished attention to her conversational partner's need for information. She often engages in conversation, and is considered to be a sociable and friendly person.

There are 208 minutes of transcribed audio recordings of interaction between Helene and three care-givers on three different days. Prior to the humorous exchange below, Helene, H, and her care-giver, F, have been talking about life in general and life with dementia in particular. As a direct translation from Danish is impossible, the pun is explained:

F initiates the pun
88 F: snik snak
89 H: snak snik
90 F: ja (.) snak snik
comment: Helene laughs
91 H: snik snak
92 F: snak nok
comment: both are laughing (3.5)
93 H: snak ikke nok

'*Snik snak*' is a fixed phrase in Danish that means talking nonsense. '*Snik*' is a nonsense word, '*snak*' means 'talk'. Helene reverses the order of the words in 89, F acknowledges this in 90. Helene laughs, and repeats F's first utterance, F answers by elaborating the pun in 92 by saying '*snak nok*', meaning 'enough talk'. Helene concludes the exchange in 92, saying '*snak ikke nok*', meaning 'not enough talk'. The exchange is an elaborate play on words with contrasting sounds, creating a sophisticated meaning of Helene not wanting to stop the conversation. The situation and the previous talk, the smooth and quick exchange of utterances from the conversational partners, and the appropriate, mutual laughter make any other explanation less plausible.

In another exchange Helene uses irony, saying the opposite of what she means. Helene has just been helped into a nightshirt of vivid blue. The researcher compliments the choice by saying that the nightshirt is as blue as Helene's eyes. Helene says:

168 H: jeg ka jo (.) sku jo kunne gå ud og (1.3) overfalde enhver mand
168 H: So I can (.) so I could go out and (1.3) assault any man

The researcher, not having expected the irony, starts to explain what was meant, but Helene corrects the researcher's literal understanding of her remark by laughing. Helene shows in other exchanges that she knows she is in no condition to go out and sexually 'assault' a man. In the data there are several examples of Helene using humour and irony, but she is never sarcastic, perhaps a consequence of her not being seen to be angry in the data material.

Hans is a man of 84 years. He is a skilled workman and was for many years a travelling salesman. Hans restored the old house in the woods he used to inhabit with his wife. He used to spend a lot of time in the woods, fishing and hunting, and has drawn and painted many motives from nature. Hans' linguistic handicap is considered to be in the middle stage. He has word-finding difficulties and shortcomings in the understanding of words and complex sentences from his conversational partners. His own speech is ambiguous with few precise words, lacking identification and maintenance of topics and diminished attention to the need for information of his conversational partner. Hans is able to communicate, but usually with much help and guesswork from his carers. When he is exposed to too many impressions and demands, he gets angry.

There are 117 minutes of transcribed audio recordings of interaction between Hans and three care-givers on five different days. His unusually long sarcastic remark below falls in connection with an evening meal, where Hans, H, is very angry, and refuses to sit down at the table with the

others. The care-giver, A, tries to coax him to the table by recommending the food. H acknowledges the listing of offers:

51 H:= ja det er sildemaden
51 H:= yes that's the herring sandwich
52 A: og rullepølsen
52 A: and the sausage
53 H: ja det er dæleme skønt (0.5) pillemad
53 H: yes that is damn good (0.5) fiddling food
comment: H laughs and looks at the researcher
54 A: nej s:,
54 A: no H:,
55 A: sildemad med æg
55 A: herring sandwich with eggs
56 H: (0.5) med æ:g
56 H: (0.5) with e:ggs
comment: Hans says eggs in a sneering voice

Hans is being ironic in line 53, he does not think that the food is good. The swear word, his involving the spectator, the researcher, and the imitation and prolonged pronunciation of the carer's word 'eggs' said in a sneering voice, indicates sarcasm. He is angry and wants to hurt the carer. An example of humorous play on words occurs earlier. The care-giver, A, introduces Hans to the table, saying:

6 A: så (2.5) så skal vi have noget mad Hans
6 A so (2.5) so we are going to get some food Hans
7 H: madHans
7 H: foodHans
comment: Hans is smiling a little when he mimicks A
8 A: (0.7) ne:j
8 A: no:
comment: A laughs
9 A: der var ingen pause imellem
9 A: there was no pause between
10 H: (0.8) ne:j
10 H: no:

The lacking pause between the words 'food Hans' exaggerated by Hans in 7, acknowledged by the carer in 9, and the smile and the mimicking of H and the laughter of A, indicate a humorous exchange. The play on words is more evident in Danish, where the two words 'mad Hans' have identical vowels, and where the word 'mad' ('food') is part of many compounds for instance '*madkasse*' ('food box'). There are other examples of Hans using humour, irony and sarcasm, but not many and none as

evident as the above examples. Hans spoke with unusual eloquence during this evening meal.

Sigrid is a woman of 89 years. She was sent from home at an early age to be a servant girl. Later, when she married, she ran a smallholding with her husband and children. Sigrid also periodically worked as seamstress, home help and in a bakery. She was an active, content and sociable person. Sigrid needs to be guided – often non-verbally – to all procedures of dressing, bathing and toileting. There are 137 minutes of transcribed audio recordings of interaction between Sigrid and three care-givers on three different days. Her linguistic handicap is considered to be in the bottom part of the middle stage. She enjoys talking about the past, but her word-finding difficulties are pronounced, and often her words cannot be understood at all. Her speech is ambiguous and imprecise and often her conversational partners have to make guesses of her intended meaning. Of the three participants Sigrid has the most severe linguistic handicap.

In the following exchange the care-giver has left the room, and Sigrid and the researcher continue singing together. The researcher reminds Sigrid of the song's famous Danish author:

1 I: den er af Kaj Munk
1 I: it was written by Kaj Munk
2 S: så mener du den kan gå
2 S: so you think it is all right

Sigrid goes on telling with unusual clarity that she knew Kaj Munk in her childhood. Sigrid's utterance, 2, is assessed to be an ironic understatement, playing on the knowledge that everybody in Denmark considers the author more than just all right. The fact that Sigrid goes on telling about her acquaintance with the author indicates that she is participating in a, to her, intelligible conversation. On another day the care-giver, D, is trying to get Sigrid out of bed. Sigrid is sounding and looking angry throughout the exchange and is clutching at her duvet:

38 D: kom op at sidde på sengen Sigrid
38 D: come on up and sit on the bed Sigrid
comment: Sigrid is protesting, the bell summons the carer to another resident
39 S: så kan du da selv give dig til at lave det du er god til
39 S: so you can go and do what you are good at

It is not quite clear whether Sigrid is commenting on the fact that the bell summons the carer to another resident. But it makes sense in the situation that Sigrid is ironic in suggesting that the carer is good at anything at all, and her evident anger indicates sarcasm. In the data there are a few more

examples of Sigrid being ironic and sarcastic. There are no examples of play on words.

Discussion

The findings indicate that the three nursing home residents with moderately severe AD according to FAST and severe AD according to MMSE occasionally use the communicative strategies of humour (*i.e.* elaborate play on words), irony and sarcasm in conversations with care-givers.

Conclusiveness of interpretations

Linguists state that these communicative strategies are developed late in childhood together with the development of meta-linguistic abilities. As the developmental ages for the three participants according to FAST are from 15 months to five years this seems to be a corrective to the concept of retrogenesis. The FAST and the MMSE share a dependence on short interviews in test situations when the communicative competence of people with dementia is estimated. The MMSE is a snapshot of the present cognitive abilities, including communicative competence. In FAST a gradual decline of communicative competence is claimed, but a description of this decline is not offered. In this study doubt is raised about a decline of aspects of communicative competence in the FAST stage 6. The doubt is even more notable if Gulmann's integration of the FAST and the MMSE stages provides the basis for assessment, and the three participants are considered to be severely or very severely demented with a developmental age from 0 to 3 years.

The data material is too small for any definite conclusions as to the representativeness of the findings for all people with severe AD. In the original study (Moos 2004), the transcribed material was collected and analysed with the main purpose of describing the ways the personal past of the participants was addressed in the interactions. In this respect the occurrence of humour, irony and sarcasm was a chance finding, not aimed at in the original study in the selection of data material, participants and method. In the present study this constituted a limitation of analyses and findings. In the analyses for the three participants there is an increasing uncertainty of interpretation of data, seemingly corresponding to the severity of the linguistic handicap of the three participants. Helene and Hans produce and comprehend humour in collaboration with their conversational partner, Helene in an elaborate, Hans in a simpler play on words. There is no evidence in the conversations that Sigrid, who has the

most severe linguistic handicap, produces or comprehends play on words. The data material, however, is too limited to deduce a decline in the ability to use humour corresponding to the severity of the linguistic handicap. Although the data material is small, the participants' use of humour, irony and sarcasm is notable, and constitutes new knowledge in the research of communicative competence in severe dementia.

Implications for knowledge of communicative competence

An exploration of why the communicative strategies of humour, irony and sarcasm are still at hand despite severe AD may qualify and enhance knowledge of communicative competence in dementia and may provide new answers to riddles of unexpected clarity of utterances in end-stage AD. Researchers have found that talking about the personal past using memory books and other clues to trigger remembrance has improved communicative interaction in structured conversations between people with dementia and their professional or family care-givers (Bourgeois *et al.* 2001; Burgio *et al.* 2000; Mahendra 2001). The insights of the original study (Moos 2004) support the view that people with dementia show enhanced communicative competence in conversations about their personal past. But the three participants in the present study are not only communicating about the past, so other explanations are needed.

That the conversational strategies of humour, irony and sarcasm are preserved so late in the course of dementia could be explained by their being all-important in a rhetorical praxis. Here the aim of utterances is to influence the conversational partner to share one's view of the topic of conversation and change the situation (Fabricius and Roksvold 2008; Lindhardt 1999). Wright (2005: 156) cites Kenneth Burke for saying: 'Wherever there is persuasion, there is rhetoric, and wherever there is "meaning", there is "persuasion"'. Hans and Sigrid seem to be sarcastic when the situation is unbearable to them, and they want to change the situation, because the care-givers are intruding on their privacy and autonomy.

Other explanations for the demented participants' unusual competence in the present study could be what Hamilton (1994) calls the need to communicate, and Sabat (1994) the social will to communicate. The need to communicate is seen in natural settings, where persons with dementia are allowed to speak at their own pace about their own subjects; 'There must be a need for the patient to communicate before we can be sure that our statements regarding that patient's ability to communicate are valid' (Hamilton 1994: 19). Sabat (1994) finds a social will to communicate, when people with dementia are allowed to communicate about their lives, concerns and reactions to the dementia disease with a conversational partner

who regard them as persons whose behaviour is driven by the meaning the situation holds for them. People with dementia 'seek to avoid embarrassment and humiliation and may be less open about major issues in their lives with people whom they do not know well or at all' (Sabat 2002: 282). It can be argued that far from being unexplainable exceptions in communication, Helene's, Hans' and Sigrid's use of humour, irony and sarcasm are important rhetorical strategies still at hand despite dementia, when they have a will or a need to assert their personhood and autonomy in communication.

Implications for research strategies

Modern technology, *e.g.* cassette audio recorders, video cameras and computers, has made the recollection of comprehensive data on language development possible and analysis easier. This surge of technology and methods available in the 21st century has greatly improved and substantiated knowledge about language acquisition and development in children (Gleason 2005: 28). Research methods are observational, *i.e.* capture communicative behaviour as it occurs in real life, or experimental, where the researcher has some control and can manipulate variables (Gleason 2005: 30). Obler and de Santi (2000) state that language and cognitive abilities should be studied in dementia similarly to the studies of language development in children.

Many researchers of language deterioration in dementia use rigid designs with a large number of participants, control groups, elicitation tests or structured interviews (*e.g.* Dijkstra *et al.* 2002; Ripich, Carpenter and Ziol 2000; Small and Sandhu 2008; Welland *et al.* 2005). Production and comprehension of humour could probably be elucidated in studies using such rigid designs, while irony and sarcasm are rhetorical strategies that make less sense outside a naturalistic setting. Also, studying irony or indeed sarcasm outside such settings has ethical implications. There is a shared understanding in dementia care that people with dementia do not understand irony and sarcasm and will be confused or even hurt by the intent if others use it.

Researching humour in a structured manner could shed light not only on actual comprehension and production of humour of a large number of people with dementia in different stages of dementia, but also on cognitive resources. Gombert (1992: 9) makes an interesting distinction between meta-linguistic *skill* that designates linguistic knowledge applied more or less automatically without reflection or deliberate decision by the individual, and meta-linguistic *ability* reserved for situations where intentional and reflective use can be established. The intuition of the author of

the present study is that people with severe dementia would fail on the latter account, suggesting a deterioration of meta-linguistic ability in AD that needs to be explored.

Orange and Kertesz (2000: 173) recommend as a research strategy for the coming decades 'a set of comprehensive and integrated models of discourse processing, using special populations of dementia as the framework for their development'; this will according to the authors enhance the understanding of the relations between cognition, language and social processes. Orange (2001) in her suggestions for enhancing communication between people with AD and their family members recommends strategies involving linguistic abilities, memory and attention. Hopper, Bayles and Kim (2001) describe a framework for studying retained neuropsychological abilities of people with AD: for each stage of AD attention, memory, communication, auditory and hearing comprehension, naming, discourse and functional capacity in daily living should be studied as foundations for communication-stimulating programmes and care-giver training.

Communicative competence as a social process is often best studied in naturalistic settings. The linguist Heidi Hamilton (1994) conducted a four and a half years in-depth investigation into deterioration of communication of one woman with AD in a sociolinguistic frame. Hamilton analysed comprehensive transcriptions with comments on situation and interaction, for her a crucial strategy to the understanding of communicative competence in AD (1994: 4). In Moos (2004) the eight participants did better in all aspects of communication described in Schiffrin's discourse analytic framework than the degree of AD would suggest. One very old woman (blind and hard of hearing) with a diagnosis of possible, severe AD surprisingly had no linguistic handicap at all, when conversation between her and the care-givers was analysed as to exchange structure, action structure, ideational structure, information state and participation structure. Schiffrin's discourse analytic frame for naturalistic conversation seems a possible way to assess language and social processes for individuals with AD. Hamilton (1994) and Sabat (1994) used their own interpretations of what was said and what was meant in their conversations with demented conversational partners. To include the interpretations of the non-demented conversational partners could be a way to validate findings in future research.

Cognitive resources, attention, memory, auditory and hearing comprehension and functional capacity could be studied with methods including observation, tests and structured interviews. Together with discourse analysis of comprehensive, open-ended, naturalistic conversations, this might constitute an integrated framework for studying the communicative

competence of the individual and enhance the possibilities for appropriate communication with people with AD in general.

Conclusion

The comprehension and production of humour, irony and sarcasm of the three participants in this study are correctives to retrogenesis concerning speech and language abilities in severe AD. The knowledge gained is not a conclusive refutation of a decline of communicative competence in dementia in some way comparable to development in childhood, but it is a caveat for poor expectations of intelligible conversation with demented people for all professionals and the people they advise. The FAST is considered a useful tool for assessing care needs in the community, but caution is needed when communication is included. The three participants' use of humour, irony and sarcasm in interactions with their caregivers adds to the general knowledge of communicative competence in severe AD. Possible explanations for this use are touched on, but need to be explored further. In this study, aspects of communicative competence in severe AD were analysed as social processes in comprehensive, open-ended, naturalistic conversations. An integrated framework, including observations, tests and structured interviews, for studying all prerequisites for communicative competence in AD is suggested but needs further exploration.

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