

This study analyses the conversations of two communication-impaired bilingual elders diagnosed with Alzheimer's disease (AD). The aim was to investigate the linguistic consequences of cognitive decline in English-Afrikaans co-ordinate bilinguals with AD. The results reveal linguistic behaviour as a continuum that includes elements of both languages. Wide use of the first language in conversation domains that were allocated to the second language was noted. The results also show that the severity of AD in bilinguals is a major factor contributing to language mixing. A key finding to emerge for applied linguistics and applied language studies is the need to combine studies in bilingualism with studies in ageing, since research of this nature is still in its infancy in Africa.



UNIVERSITY OF CAPE TOWN

# Language and Dementia in Bilingual Settings: Evidence from two case studies

Tracy Gail Beckett

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**Language and Dementia in Bilingual Settings:  
Evidence from two case studies**

Tracy Gail Beckett

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I thank God for leading me throughout this illuminating experience. Sincere thanks go to my parents, Caroline Maria and Denzil Arthur Beckett for nurturing my dreams and giving me the courage to stand alone.

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## Dedication

In loving memory of my grandparents: William and Gladys Beckett and Caroline and Johannes Daniels.

## Abstract

This study used qualitative methodology for an analysis of the conversations of two communication-impaired bilingual elders diagnosed with a mild/moderate stage of Alzheimer's disease (AD). The aim of the study was to investigate the linguistic consequences of cognitive decline on language in English-Afrikaans co-ordinate bilinguals with AD by monitoring the changes in these linguistic outcomes after three months, and to see whether the two languages are affected by AD in a comparable way. The impact of conversational disorders on clinicians and caregivers needs to be investigated to determine the full impact of a communication disorder such as AD from the perspective of the impaired speaker and the conversational partner, to functionally improve communication, self-esteem and psychosocial well-being. The results are based on observations and audio recordings of conversations with two participants. The results are presented broadly to demonstrate the participants' typical linguistic behaviour and reveal linguistic behaviour as a continuum that includes elements of both languages. Wide use of the first language in conversation domains that were allocated to the second language was noted. The results show that the severity of AD and language proficiency are major contributing factors for language mixing. As the disease progressed, the conversational partner carried the cognitive responsibility for upholding/maintaining the conversation. Emerging from this study is an enhanced awareness of the need to combine studies in bilingualism with studies in ageing, since research of this nature is still in its infancy in applied language studies and applied linguistics in Africa.

## Opsomming

Hierdie studie analiseer die gesprekke van twee tweetalige bejaardes wie se kommunikasie as gevolg van Alzheimersiekte aangetas is. Die doel is om die linguistiese gevolge van kognitiewe agteruitgang in Afrikaans-Engels tweetalige individue met Alzheimer's te ondersoek. Die resultate dui daarop dat linguistiese gedrag 'n kontinuum is met elemente van albei tale. Verder is 'n wye gebruik van die eerste taal in domeine toegewys aan die tweede taal, opgemerk. Die resultate toon voorts dat die graad van Alzheimer's in hierdie individue 'n groot rol speel in taalvermenging. Hierdie studie bewys dat studies oor tweetaligheid met bejaardestudies gekombineer moet word aangesien navorsing van hierdie aard in Afrika nog in sy kinderskoene staan.

## Isishwankathelo

Olu phando luhlalutya incoko phakathi kwabantu abadala ababini abathetha iilwimi ezimbini nabaneengxaki zokunxibelelana, abathe bafunyaniswa benesifo sokulibala esibizwa ngokuba yi-*Alzheimer's disease* (AD). Injongo yolu phando ibikukhangela ifuthe elinako ukuhla kwizinga lengqinqo

kwintetho yabantu abathetha isiNgesi nesiBhulu abane-AD. Iziphumo zibonisa indlela yokuthetha njengoluhlu lwezinto eziquka imiba ethile kuzo zombini ezi lwimi. Kuqatshelwe ukusetyenziswa kakhulu kolwimi lweenkobe kwincoko ebibekelwe ukuba yenziwa ngolwimi lwesibini. Iziphumo zikwabonisa ukuba ububi be-AD kubantu abathetha iilwimi ezimbini nguyena nobangela wokuxutywa kweelwimi. Esona siphumo siphambili nesithe savela ngenxa yolu phando, ingakumbi kwiingcaphephe ezisebenza ngolwimi nangokusetyenziswa kwalo yimfuneko yokuba izifundo ngeelwimi ezimbini zihlanganiswe nezifundo zobudala, kuba uphando olulolu hlobo alukaphangalali kangangoko e-Afrika.

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## Chapter 1. Introduction

### 1.1 Identifying the problem

In a multilingual<sup>1</sup> society, bilinguals interact with other bilinguals and opt to use their different languages in a complex network of interaction (Chivero, 2004). Despite various bilingual education programmes across the world, the description and an explanation of this complex language interaction is difficult to depict (Friedland and Miller, 1999).

The concept of bilingualism is broadly defined as a person with a good communicative command in two languages (Baker, 2002). Bilingualism is also narrowly defined as a person with “native” or “native-like” proficiency in two languages. However not all bilinguals achieve equal “native-like fluency” in both languages as “different abilities are involved in speaking, listening, reading, and writing, as well as phonology, grammar, vocabulary, and pragmatics” (Crystal, 1997: 364). Although bilinguals have an additional language at their disposal, the proficiency in both languages is not comparable. According to Cummins’ (1991:166) *linguistic interdependence hypothesis* children educated in a minority language develop skills in the majority language

to the extent that instruction in Lx<sup>2</sup> is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or environment) and adequate motivation to learn Ly.

Since the minority language is restricted, the opportunities for input from the majority language guarantee acquisition. Cummins (1989:23–4) concludes that the “consistency and strength of support indicates that highly reliable policy prediction can be made on the basis of this principle.” However, in the presence of many variables in his hypothesis this possibility becomes remote.

Several researchers in bilingual education note how inextricably linguistic, cognitive, affective, sociocultural and political factors are linked. Edelsky *et al.* (1983) presents a critique of Cummins’ theoretical framework (which includes the threshold hypothesis, the linguistic interdependence hypothesis, cognitive academic language proficiency (CALP), basic interpersonal communicative skills (BICS) and semilingualism). They argue that Cummins uses test data that measure literacy to conclude linguistic competence, a construct used in theoretical linguistics yet never mentioned

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1 The study extends the theory of bilingualism and bilinguals to include multilingualism and multilinguals.

2 Cummins refers to Lx as a minority language and Ly as a majority language.

in any of Cummins' articles. Edelsky *et al.* (1983) reject *semilingualism* and adopt the theory that a child acquires complete language proficiency.

Several linguists typologise bilingual competence. From a psycholinguistic view of bilingualism, Lambert (1990) cites Ervin and Osgood's study (1954) that clarifies the compound-coordinate distinction. Compound/*simultaneous* bilingualism is acquired in infancy (Baker, 2002). These bilinguals are said to have two essentially interchangeable language systems. An example of this type of bilingualism may be that the mother speaks L<sub>x</sub> and the father speaks L<sub>y</sub> to their child. On the contrary, co-ordinate/*sequential* bilingualism is acquired later and the two languages are used in different contexts (Baker, 2002). The co-ordinate bilingual's two languages are functionally separate with relatively little overlap. For example, L<sub>x</sub> is the home language and learnt informally while L<sub>y</sub> is learnt formally in school, adult language classes. (See Baker, 2002 for a succinct overview of bilingualism). Research on bilingualism suggests that bilinguals have an advantage over monolinguals in terms of their higher cognitive proficiency (Bialystok, Klein, Craik and Viswanathan, 2004). Although criticism of bilingual education exists (Krashen, 1996; Rosselli and Baker, 1996a) and is noted, it will not be discussed in this study (see Heugh, 2003a for a synopsis of the arguments against bilingual education).

Studies of bilingualism have often been hidden under the more universalistic interests dominating the past decades of research. Consequently, very little is known about the dynamic aspects of speech in individual bilingual communities over a period of time. Given the language diversity in South Africa's constitutionally established eleven official languages, bilingualism and multilingualism are common with even more languages existing under dialectal and regional varieties. Afrikaans, uniquely South African, the primary language of six million (used formally and informally), is spoken by 15% of the population (Giliomee, 2003). This Cape Dutch vernacular, viewed in the latter half of the twentieth century as the oppressive language of apartheid, evolved during the seventeenth century as a lingua franca from Dutch, with influences from other languages spoken by slaves and their descendants in the Cape (see Heugh, 2003b for an extensive overview of bilingual education in South Africa). By 1925 Afrikaans joined English as the second official language, giving rise to bilingualism. "According to Census figures, levels of bilingualism for 'white' South Africans in English and Dutch (later Afrikaans) were increasing from 42% in 1918 to 64% in 1936, and to 73% by 1951" (Heugh, 2003b:4).

The Western Cape province of South Africa is officially trilingual with home language speakers of Afrikaans (59.2%), English (20.3%) and isiXhosa (19.1%) (October, 2002). Afrikaans and English currently function as two of the *de facto* lingua francas, with Afrikaans occasionally

marked by situational and conversational code switching (hereafter CS) between Afrikaans and English (Venter, 2002). As the Afrikaans lexicon draws heavily on English loan words (nouns, verbs, adjectives, adverbs and conjunctions, mainly *but* and *because*), CS and language mixing (hereafter LM) are inevitable and common phenomena (McCormick, 1995), with CS defined as the use of elements (phonological, lexical and morpho-syntactic) from two languages in the same utterance.

CS, along with the other two forms of juxtaposition of two languages in bilingual speech communities should be distinguished, namely LM and fused lects (hereafter FLs), all of which have been well documented (Wei, 1994, 1998; Auer, 1998; Sebba and Wooton, 1998). Auer (1998) provides a tentative interpretation of the language alternation phenomena resting on a continuum presenting a transition as seen in the one-directional diagram below:



CS presupposes liberty of the individual speaker, and is a strategy used by bilinguals to convey meaning. It also takes into account the sequential position in which it occurs and from which it receives its meaning. In the case of LM the use of both languages is meaningful to the participants in an inclusive sense. The transition of CS to LM is the level of how the conversational partners understand and utilize the languages in question. Compared to CS, LM seems to require a higher bilingual competence; in addition, there is some evidence that alternational LM requires more proficient bilinguals than insertional LM (Poplack 1979, Backus 1996, Bentahila and Davies, 1996). On the continuum from CS to FL, the most balanced bilinguals are likely to be found here. On the other hand, FLs presuppose positive structural regularities and are seen as "stabilized mixed varieties" (Auer, 1998:3). The difference between LM and FLs is mainly a grammatical one. The mixing of languages are frequent type of bilingual speech between these two extremes in which the juxtaposition of the two languages lacks pragmatic-stylistic function (Auer, 1998). The move of LM to FL is grammatical in that there is less variation and more structural constancy. However, more studies are needed on differences within a bilingual speech community.

The realisation of a global village is symbolic of a rich and often complex multilingual character of most colonially defined states not only in Africa but across the world. This awareness is established in a plethora of literature on bilingualism that tends to focus on education and second language acquisition (hereafter SLA) mainly in early life (Bialystok, 2001; Martin and Bialystok, 2003; Broeder, Extra and Maartens, 2002; Heugh, 2002, 2003b). Nevertheless, there has been an overarching interest in language and ageing over several decades and an increasing awareness that

ageing is an inevitable part of life and central to our identity, as individuals retain the linguistic skill to communicate in several ways in countless interactions (Giles and Makoni, 2004). Africa's population aged 60 years and older is projected to increase from approximately 38 million in 2000 to 212 million in 2025 (UNPD, 2002). Increases in longevity result in increased morbidity and a growing number of older persons will be susceptible to cognitive impairment, specifically dementia and possibly Alzheimer's disease (hereafter AD).

While there has been considerable research on ageing in several disciplines, few studies have coupled research into language and ageing and even fewer have investigated bilingualism in ageing (in terms of individual differences in the bilingual experience in late life). Clinical studies have defined the genetic and biologic changes that underlie and offer possible targets for the treatment and compensation for the pathological changes that occur in AD, however the validity of the diagnostic procedures when extended to the non-Caucasian population is controversial (and will not be discussed in the study). AD has not been conclusively established in African societies (Ferreira and Makoni, 1999). This does not mean that AD does not exist in African, but that its non-diagnosis may be a function of inappropriate measurement instruments developed in Western countries. As a diagnosis of AD is often monolingual, there is a greater risk of false positives in low education subjects, since the tests are numeracy and literacy based and neither culturally adapted. Some studies suggest that learning may act as a stimulant for the brain, thus creating a larger reserve in the brain and prolonging the destroying of brain cells.

Recent findings show language proficiency in bilinguals to act as a buffer against cognitive impairment (De Bot and Makoni, 2004). Language proficiency is considered significant in older persons since features of cognitive decline are manifested early and more unrelentingly in monolinguals than in bilinguals. This implies that bilinguals may have a cognitive advantage towards the end of their life than earlier in their lives and language proficiency correlates to lessened decreases in cognitive performance, especially in "fluid intelligence" (executive functions) (Bialystok *et al.*, 2004:291) in terms of vocabulary and language use (Park, 2000). In a nutshell, this means that language becomes a resource in terms of when one language becomes difficult to access the individual is able to function in the other language in a given discourse.

Discourse analysis (hereafter DA) is an unbiased method for assessing communicative function and describing language deficits of individuals with AD, as used in earlier studies (Hamilton, 1994a; Ramanathan-Abbott, 1994; 1997; Makoni, 1997a). DA often defined as the analysis of language beyond the sentence, is the linguistic

analysis of *spoken languages* such as *interviews, speeches, narratives, commentaries, naturally-occurring conversations* between speakers and *written texts* of a speech community (Crystal, 1997:116). DA is also the ability to use suitable strategies to produce and interpret spoken discourse to create understanding in communication (Baker, 2002:131). DA is concerned with language use beyond the sentence/utterance level and the linguistic units of several sentences, such as coherence and cohesion across sentences, turn-taking practices, narrative structure, opening and closing sequences of social encounters; topic management, repetition and fluency (Crystal, 1997). Originally developed from *sociolinguistics, anthropology, sociology* and *social psychology*, DA adopts different theoretical perspectives and analytical approaches such as: *speech act theory; interactional sociolinguistics; ethnography of communication; pragmatics; conversational analysis* and *variation analysis*. Although each approach emphasises different aspects of language use, they all view language as social interaction (Crystal, 1997).

DA and pragmatics are tools used to analyse conversation. As a sub-discipline of linguistics, pragmatics is defined as the study of natural language understanding. It examines how the context influences the interpretation of meanings intended predominantly in utterances in the context of conversations and the way individuals adjust to situational circumstances (Crystal, 1997). This study defines *context* as situation, as it may include any imaginable extralinguistic factor such as social, environmental and psychological factors. In short, pragmatics studies the comprehension and production of a *speech act* in a conversation (hence conversational analysis) (Crystal, 1997). It makes a distinction between two meanings in each utterance of verbal communication, namely the *informative intent* (sentence meaning) and the *communicative intent* (speaker meaning) (Leech, 1983). The ability to understand another speaker's intended meaning is defined as *pragmatic competence*

which often includes one's knowledge about the social distance, social status between the speakers involved, the cultural knowledge such as politeness, and the linguistic knowledge explicit and implicit (Lui, 2004:1).

Standardised tests typically fail to address difficulties in connected conversations and the impairments on these tests are masked in discourse (Groves-Wright *et al.*, 2004). The analysis of conversational discourse arises from a need to describe and identify communication impairment that eludes traditional language assessment methods (via language tests). As such conversations are seen as a dynamic interaction whereby there is an exchange of information through a series of verbal exchanges in order to create meaning.

## 1.2 Rationale for the study

Research on language and ageing has until recently concentrated on monolingual subjects. The body of psycholinguistic research is considerable when viewed in terms of monolingualism, but sparse when analysed in terms of different language typologies. Most studies in bilingualism have been carried out in education contexts. In addition, language assessment is at the base of existing standardized tasks and plays an important role in the diagnosis of AD. According to De Bot and Makoni (2004:18) due to “the increasingly large numbers of elder individuals who are bilingual, assessing their language proficiency and cognitive capacity requires expertise in language testing—as a procedure in carrying out language in ageing research.” Bilingual speakers with AD may produce (in)appropriate language mixing when conversing with a bilingual researchers (Friedland and Miller, 1999).

A demented elder’s ability to communicate is of considerable importance (Swartz, 1998), since changes to language in AD occur in a predictable sequence, with the earliest disturbances observed in conversations (Baker, 1996a). Language assessment may be instructive to analyse how bilingual AD sufferers use language in the real context, in order to characterise their language proficiency, and to help them to live as normal and independent a life as possible. Despite increasing bilingualism as the norm, the knowledge of how bilingualism interacts with the ageing brain and its effects are scant. AD is of particular interest as few studies have dealt with AD in bilingual participants and DA in the Caucasian population in the Western Cape. It is crucial to understand the characteristic discourse used by bilinguals with AD through conversation. The study looks at conversational analysis (hereafter CA) as a form of discourse, since research on language and ageing has focused on discourse types “such as interviews, narratives, descriptions and procedural discourse” and not conversational discourse (Hamilton, 1994a:2). This emerging area of bilingualism coupled with ageing is a new sub-field of (applied) linguistics, resulting in pioneering (exploratory, descriptive and explanatory) investigations for studying the linguistic experiences of bilingual elders.

Against this background, the dissertation aims primarily to investigate the effects of cognitive decline on language in bilinguals<sup>3</sup> with AD and how these linguistic outcomes of cognitive decline change after three months (to see whether both languages are affected by AD in a comparable way). Earlier findings suggest that a bilingual’s second language (hereafter L2) may be more impaired than their primary/dominant language (hereafter L1). In addition, bilinguals with AD may be more likely to be diagnosed as impaired when speaking a language other than their dominant language and with bilingual L2 speakers.

3 In this study, the participants’ L1 is English: the language used most proficiently in the home.

## 1.3 Significance and relevance of the study

Like the work of Coupland, Coupland and Giles (1991) and Hamilton (1994), this study attempts to draw attention to the imbalance in the sociolinguistic research into language and ageing. This exploratory study will shed insight into the effects of cognitive decline/AD in bilingualism as well as insight into bilingualism and ageing from an applied language perspective. It is crucial to understand the linguistic consequences of cognitive decline on language in bilinguals with AD by monitoring the changes in these linguistic outcomes over time, and to see whether the two languages are affected by AD in a comparable way. The impact of conversational disorders on clinicians and caregivers needs to be investigated to determine the full impact of a communication disorder such as AD from the perspective of the impaired speaker and the conversational partner, to functionally improve communication, self-esteem and psychosocial well-being. The study’s findings may inform principled research questions and methodologies for larger group studies.

## 1.4 Contextual validity of the study

The study is based on the interactional sociolinguistic perspective developed by Heidi Hamilton (1994). The investigation is a case study of aspects of conversational analysis that are related to cognitive measures (such as scores on the MMSE) and linguistic measures. I examine issues (that will expand the reader’s knowledge) of conversational analysis as it relates to the design and execution of such a study. As ageing is a holistic human experience with several linguistic and social contexts, I adopt an integrative approach. It is anticipated that these approaches will establish a sense of understanding of this human condition.

## 1.5 Outline of contents

The structure of the dissertation is as follows:

- **Chapter two** begins with a historic definition and description of AD. A brief overview is given of methods of assessment and treatment currently in use. The chapter also highlights the effect of AD as a major cause for diminished communicative environments. Currently, no psycholinguistic evidence exists on how medication interacts with language performance. The chapter also reviews literature on language and AD and reveals that the effects of ageing are aggravated in language by the effects of AD, characterised by a reduction in and dysfunction of conversational content, language use and the cognitive processes that underlie language. The chapter also outlines a theoretical framework for the study. The conversational analysis structures included in the literature on linguistics and the pathology of communication in studies of Alzheimer’s patients are examined specifically. The chapter shows only a few investigations con-

ducted on the impact of AD on individuals in residential homes. Isolated studies on the effects of AD in the conversational abilities of bilingual sufferers in the South African context are discussed.

- **Chapter three** presents the research design and methodology used for the study, which is a qualitative study. The data are analysed using a conversational analysis framework. The study's sampling selection criteria; participant consent; participant description; setting; type of equipment used in collecting data; data collection procedure; treatment of data *via* transcription and transcription reliability are described.
- **Chapter four** is an analysis of individual case studies. Participants' performances on the conversational tasks, based on current knowledge of language decline in AD, are described. The data consist of an examination of the conversations between the two bilingual dementing participants and I at different times within the same setting. Comparisons in each study are made, using the participants' initial conversation as a baseline on which to measure their performances in consecutive conversations. The analysis provides distinctive conversational profiles of the two participants. Linguistic behaviour is examined through the use of extracts from the participants' conversations and the participants' abilities in each language are compared.
- **Chapter five** provides an interpretation of the conversations based on existing knowledge of language decline in AD. The discussion includes comparisons of individual differences and similarities within language and across time. These studies highlight the importance of language proficiency on linguistic behaviour. The intrusion of L1 utterances into L2 conversations is a prominent feature in the discourse patterns presented in both case studies. A general decline in performance is observed in both participants as the disease progresses. Both were susceptible to distractions from environmental stimuli, an inevitable effect of AD. Given the small sample size of two participants, the interpretations are tentative.
- Finally, **chapter six** draws conclusions from the study. Strengths and limitations of the study are discussed. Proposals are made for future studies. A need for further studies in the area of language and ageing is identified, not only to contribute to knowledge but also the development of new theoretical paradigms for understanding bilinguals with AD's social and psychological experience.

This dissertation speaks to those interested in Alzheimer's disease and the complex equation between memory and language use and should be read as a contribution to an important emerging area of research in bilingualism and ageing.

## Chapter 2. Literature review

Dementia<sup>4</sup> is rapidly becoming a matter of importance in the health management across the world and the South African community is no exception. Dementia is characterised by memory, personality, and behavioural changes, and is irreversible. Sub-types of dementia are vascular dementia/multi-infarct dementia (MID) (abnormalities in the vessels that carry blood to the brain); Lewy bodies variant (LBV), also known as dementia with Lewy bodies and caused by multiple small strokes; and Alzheimer's disease. Less common causes of dementia include Huntington's disease, Parkinson's disease, Pick's disease, Binswanger's disease, and HIV/AIDS (Kornstein, 2002). This study focuses solely on AD as an emerging area of research in bilingualism and ageing.

The chapter examines the literature on AD on language in monolinguals and its linguistic effect on bilingual speakers in particular. The objective is to examine the consequences of such impairment for bilinguals, to show the contributions that applied language studies can make towards deepening an understanding of AD.

### 2.1 AD: Definition and description

AD was originally described in 1906 by Dr Alois Alzheimer, as a progressive degeneration of the hippocampus and related areas of the midbrain and characterised by the presence of senile plaques, neurofibrillary tangles, granulovacuolar structures and an overall loss of neurons that occurs in middle/late life, which is irreversible and cannot be cured. (See Alzheimer, 1977 for a detailed description.) The causes of AD are not fully known (Whitehouse *et al.*, 2000) but include "genetic factors, chromosomal difficulties, slow-acting or dormant viruses, accumulation of environmental toxins such as aluminium or a combination of the above" (Hamilton, 1994a:7). (See Doody and Massman, 2001 for a detailed discussion on suggested causes of AD.) Studies suggest that individuals with a family history of dementia, stroke risk factors, high fat diets and inactive lifestyles, women and the elderly, are at higher risk for dementia (Kalaria, Ogeng'o and Patel, 1997, Kornstein, 2002). The importance of preventing a stroke by reducing risk factors such as controlling high blood pressure, and monitoring and treating cholesterol and diabetes should not be overlooked (Kornstein, 2002). However age is still seen as the biggest risk factor for AD (Health Source, 2002:1), with 65 as typical age of onset and the number of cases doubling every five years in individuals over 65 (Frazier, Cotrell and Hooker, 2003).

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4 The study adopts the definition of dementia as a group of symptoms that are caused by changes in brain function causing brain cells to die at a faster rate than normal (Kornstein, 2002).

A consequence of AD is a deterioration in cognitive function and working memory with an eventual loss thereof (Emery, 1999; Frazier *et al.*, 2003). Common patterns in the progression of symptoms in AD have been documented and indicate the stage of disease. *Stage 1* refers to a mild cognitive decline characterised by memory lapses, especially in word/name-retrieval difficulties, or recall of names or the location of everyday objects. *Stage 2*, moderately severe cognitive decline, reveals the emergence of gaps in memory and deficits in cognitive function; significant personality changes may emerge, and help with customary daily activities becomes essential. *Stage 3*, very severe cognitive decline (severe or late-stage AD) is the final stage of the disease when individuals lose the ability to respond to their environment, the ability to speak, and, ultimately, the ability to control movement (Alzheimer's Association, 2004).

Accurate diagnosis of AD (previously only through an autopsy) has improved significantly (see Braak and Braak, 2000 for a short discussion on post-mortem diagnosis). AD has not been conclusively found in black Africans. The effects of AD can only be reduced, or the condition optimally managed, via early detection, adequate cognitive and medical treatment, behavioural training as well as caregiver support (Molloy and Robinson, 2002). Medications such as *Cognex™*, *Aricept™* (*Donepezil*), *Exelon™* (*Rivastigmine*) and *Reminyl™* only slow progression of the disease, decreasing agitation and improving quality of life (University Memory and Ageing Center of University Hospitals of Cleveland /CWRU, 2001). To date, there is no cure for AD.

Literature on the use of language in the diagnosis of AD, specifically discourse structures subsumed in the literature on linguistics and the pathology of communication in studies with Alzheimer's patients, is reviewed in the subsection below. The aim here is to demonstrate the consequences of AD on language abilities.

## 2.2 Language and Alzheimer's disease: Literature review

A progressive decline in language abilities is an important clinical manifestation of AD and one of the earliest symptoms of the disease (Alzheimer, 1977; Emery, 2000; Groves-Wright, Neils-Strunjas, Burnett and O'Neill, 2004). Language and communicative impairments associated with different stages of the disease are well documented. The last two decades have been marked by an extensive range of epidemiological and analytical studies conducted on Caucasians with AD, but mainly in industrialised countries and only very few in third-world countries (Sabat, 1991; Hamilton, 1994a, 1994b; Ramanathan-Abbott, 1997; Perkins, Whitworth and Leser, 1998; Kemper and Kiegl, 1999).

Several studies have focused on language and cognition in AD, ranging from linguistic levels (morphology, lexicon, semantics, phonology to syntax based) to linguistic skills (comprehension, repetition, judgement, lexical

access and propositioning). A characterization of language impairment in the mild to moderate stages of AD is important since many individuals in early AD are able to continue living independently with language assessment and interventions (Mahendra, 2001; Groves-Wright *et al.*, 2004). A hallmark of AD is that conversational discourse is vague and verbose with a tendency to reduced word output and finally to muteness (Obler and Albert, 1981; Appell, Kertesz and Fishman, 1982; Shekim, 1983; Bayles, 1984, 1985, 2003; Bayles, Tomoeda, Kaszniak, Stern and Eagans, 1985; Blanken, Dittman, Haas and Wallesch, 1987; Sandson, Obler and Albert, 1987; Ripich, Fristch, Zioli and Durrand, 2000). These are also characteristics of clinical written abilities in early AD (Horner, Heyman, Dawson and Rogers, 1988; Neils, Boller, Gerdeman and Cole, 1989; Henderson, Buckwalter, Sobel, Freed and Diz, 1992; Cherney and Canter, 1999) characterised by grammatical errors.

Lexical retrieval difficulties are prominent in language pathology and they occur frequently during the early stages of the disease (see Croisile, Brabant, Carmoi, Lepage, Aimard and Trillet, 1994; Emery, 2000; Rosselli, Ardila, Araujo, Weekes, Caraccido, Padilla and Ostrosky-Solis, 2000; Burke and Shafto, 2004 and Strauss Hough, 2004 for reviews). These studies have found patients' language to be low in information, characterised by a reduction in speech output with more pauses and semantic jargon. Incomplete sentences and the use of repetition as lexical retrieval strategy were also reported (Appell, Kertesz and Fishman, 1982; Nicholas, Obler and Helm-Estabrooks, 1985; Hier, Hagenlocker and Shindler, 1985; Kemper, Almor, Tyler, Andersen and MacDonald, 1998; Moreaud, David, Charnallet and Pellat, 2001).

A study under way by Goral and Obler (2004) is examining the interaction of lexical decline in language attrition of bilinguals with lexical decline in ageing, using data from Hebrew-English bilinguals of different ages. The study emphasises the significance of variables such as age of testing, age of SLA, peak of language proficiency attained and patterns of language use in lexical retrieval decline in the speakers in question with the aim of contributing to the study of lexical decline process in ageing in general and bilinguals in particular.

Fluency impairments, a sensitive indicator linked to a decline in semantic memory (Chincotta and Underwood, 1998; Rosselli *et al.*, 2000), are known to manifest early in the disease (see Lezak, 1995; Ruff, Light, Parker and Levin, 1997; Palmer, Baickman, Winblad and Fratiglioni, 2003; Strauss Hough and Givens, 2004 for reviews). A study on verbal fluency reported high age and low education as independent variables (Kemper *et al.*, 1998), while other findings report limited semantic fluency resulting in a reduction in the bilingual's fluency (Gollan and Kroll, 2001). In contrast to the research on verbal fluency in ageing bilinguals, a study by De

Picciotto and Friedland (2001) found that the patterns of use of more than one language had no significant effect on fluency. Despite this, other studies have shown that as severity of the disease increased, accurate responses decreased with progressive loss of comprehension (Kemper *et al.*, 1998; Strauss Hough, 2004; Groves-Wright *et al.*, 2004).

In consonance, non-linguistic aspects of language use are reported to play a role in language decline with age. Non-verbal cues in facial expressions are preserved (Ogrocki, Hills and Strauss, 2000), suggesting that facial expressions, tone of voice and touch are important when communicating with a person with AD (Bucks and Radford, 2004).

Research has shown that a cognitive deterioration in dementia affects not only linguistic and non-linguistic factors, but pragmatic aspects of communication as well (Laine, Laakso, Vuorinen and Rinne 1998). Pragmatics is a distinct domain subsumed in the literature on linguistics and the pathology of communication in patients with AD (Obler and Albert, 1981; Appell, Kertesz and Fisman, 1982; Bayles, 1985; Bayles and Kaszniak, 1987; Smith, Chenery and Murdoch, 1989; Hamilton, 1994a; Kemper *et al.*, 1994; Sabat, 1994; Garcia and Joannette, 1995). Some studies have focused on the linguistic deficits of AD patients in experimental situations. For Causino, Knoefel, Obler and Albert (1995) pragmatic abilities, such as turn-taking structure, otherwise resistant to language deterioration, might be affected in late-stage AD. The linguistic skills of repetition have also been investigated (Rosselli *et al.*, 2000; Small, Kemper and Lyons, 2000) and a greater need for repair is reported as the disease progressed (Orange, Lubinski and Higginbotham, 1996). Other research has found repetition to improve picture (Heun, Burkart and Benkert, 1997) and story (Mahendra, 2001) recall.

Other attempts to describe the effects of AD have profiled linguistic levels of speech and language of individuals with AD (Bayles, 1982; Hamilton, 1994b). Results show that syntax and phonology remain unaffected, in the early stages of AD (Bayles and Kaszniak, 1987; Kemper *et al.*, 1993; Glosser, Friedman, Kohn, Sands and Grugan, 1998; Croot, Hodges and Patterson, 1999, Croot, Hodges, Xereb and Patterson, 2000; Bickel, Eysenbach and Schröder, 2000) but tend to become disrupted during later stages (Kemper *et al.*, 1993; Hamilton, 1994b; Kemper *et al.*, 1998). Several studies found impaired semantic abilities (Moreaud *et al.*, 2001; Kim and Thompson, 2003; Bayles and Kim, 2003; Strauss Hough, 2004). In summary AD affects the most complex levels of linguistic abilities and significant deterioration is found on all linguistic levels, although age was found to have no statistically significant effect (Juncos-Rabadán and Iglesias, 1994). Language in AD is not reported to become agrammatic, though grammar used may be simplified and restricted to a small number of well-practised structures (Strauss Hough 2004).

An overall decline in working memory has an effect on syntactic comprehension, but is relatively invulnerable once working memory constraints are taken into account (Walters, Rochan and Coplan, 1998; Kemper and Kiegl, 1999). While some studies report an avoidance of grammatical forms and syntactic structures that impose high memory demands (Kynette and Kemper, 1986), others have shown varying factors relating to syntax in relation to the impaired individuals' sentence comprehension (Grossman and White-Devine, 1998) and related participants' syntactic comprehension deficits to their degree of cognitive decline (Bickel *et al.*, 2000)

Studies on metaphors and idioms in impaired individuals found no decline in their use of figurative language (Papagno, 2001) indicating impaired individuals' ability to retain implicit knowledge (De Bot and Makoni, 2004). Bourgeois and Mason (1996) found AD patients produced more utterances, while Hopper, Bayles and Tomoeda (1998) also found an increase of meaningful utterances when patients were presented with stimuli during conversation.

Conversational abilities are retained during the early stages of AD, but decline as the disease advances (Hamilton, 1994a; Ramanathan-Abbott, 1994; Makoni, 1997a; Friedland and Miller, 1999; Ripich *et al.*, 2000), and are marked by false starts, phonological paraphasias and difficulties in articulation (Bayles and Kim, 2003). Findings suggest that persons with advanced AD developed strategies to compensate for their loss of conversational abilities, such as asking more questions, asking for help with the task when they felt unsure. Most importantly, these studies show that a desire to communicate is maintained even into the later stages of the disease, characterised by impairment on all linguistic levels (Hamilton, 1994a).

Selective aspects of participants' pragmatic abilities, such as topic treatment and turn structure, are sensitive to disruption in AD (Obler, 1985). In an attempt to characterize the linguistic aspects of normal ageing and early AD (Hutchinson and Jensen, 1980; Gravel, 1988; Causino Lamar *et al.*, 1995) studies report a reduction in topics, more turn taking (Ripich and Terrell, 1988), and topic digressions, with inappropriate topic initiations and irrelevant and vague output (Garcia and Joannette, 1995). Researchers suggest that inappropriate topic management and in particular memory deficits contribute to a pragmatic breakdown (Paradis, 1998; Bayles, 2003). These findings suggest that inappropriate topic changes characterize the conversational discourse of a person with AD, since topic management necessitates linguistic and psychological functions unavailable to the AD population.

According to research by Smith and Ventis (1990) topics developed more easily in interaction between persons with AD and healthy conversational partners than within a group of persons with AD. Bayles *et al.* (1985) found repetition and 'inappropriate' discourse, with no connections to prior utter-

ances, common characteristics of conversational discourse in AD participants, while Shindler, Caplan and Hier (1984) found their participants to be unable to monitor their own conversational output. Grafman, Thompson, Weingartner, Martinez, Lawlor and Sunderland (1991) account this breakdown and repetition to an internal script, similar to a lexical network, which relies on procedures being retold in a specific sequence.

Studies have also reported people with less education who are mentally inactive at higher risk for AD and speculate that learning itself may stimulate more neurons to grow. According to Snowden, Neary and Mann (1996) high linguistic ability in early life may function as a *neurological reserve capacity* that acts as a buffer to cognitive decline because the linguistic skills allow more efficient strategies for storing and retrieving information. This implies that it takes longer for the brain cells to be destroyed. An example of the idea of linguistic capacity as a compensatory mechanism of linguistic ability for neurological damage is illustrated in a participant who, despite being assessed as cognitively intact, postmortem analysis showed numerous neurofibrillary tangles and senile plaques, normally associated with AD (see De Bot and Makoni, 2004 for a concise description of this study). A longitudinal study by Kemper *et al.* (2001) who also looked at changes in linguistic ability in healthy adults and adults with AD, using language samples and clinical tests, found that although grammatical complexity and propositional content appeared to decline in both healthy and demented adults, the presence of AD accounted for the decline in the demented group.

Studies show that when examining turn taking in conversation, AD participants tend to produce fewer utterances overall (Hutchinson and Jensen, 1980; Golper and Binder, 1981; Sabat *et al.*, 1984; Ripich *et al.*, 1991; Sabat, 1991; Sabat, 1994; Garcia and Joannette, 1995; Causino Lamar *et al.*, 1995). These studies found that AD participants tended to make excessive requests for clarification in a manner that may be seen as violating the ordinary rules of conversation (Caspari and Parkinson, 2000), resulting from an inefficiency to monitor/keep track of the conversation. According to Perkins *et al.* (1998:38) these “cognitive deficits may compromise the ability of the person with dementia to secure the conversational floor or to hold onto it.” Delayed turn-taking latencies of people with AD have been reported in the literature, characterized by limited turns and semantically vague utterances (Sabat, 1991; Causino Lamar *et al.*, 1995). Delayed turn-taking of the investigator turns demonstrates an accommodation of the patient’s output, and is found to elicit coherent utterances from the patient (Sabat, 1991).

Cohesion and coherence are of considerable importance and found in several studies. This study adopts Venter’s (2002) definition of cohesion. On the one hand it defines cohesion as the linking of meaning across sentences. On the other hand, it views coherence as the appropriate mainte-

nance of participants’ to maintain the topic discourse through integrating meaning (Halliday and Hasan, 1976) in terms of plausibility, conventionality, conclusiveness and the conceptual links between individual utterances. Although investigators generally reported that the communicative and pragmatic aspects of AD discourse are maintained, the discourse has been marked with many instances of incoherence (Obler, 1985; Shekim, 1983; Bayles *et al.*, 1985; Nicholas *et al.*, 1985; Ripich and Terrell, 1988; Laine *et al.*, 1998) and incohesion (Hutchinson and Jensen, 1980; Appell, Keretz and Fisman, 1982; Shekim, 1983; Ripich and Terrell, 1988; Hamilton, 1988, 1991, 1994a, 1994b; Hyltenstam and Stroud, 1993; Ulatowska, Allard, Bristow, Haynes, Flower and North, 1988; Lesser and Milroy, 1993; Penn, 1985, 1988; De Santi *et al.*, 1990) which a number of studies have examined. They accounted the problem of cohesion to the frequent use of new topics, while ascribing the occurrence of poor topic maintenance, disorganised utterances and verbosity to incoherence (Brady, Mackenzie and Amistrong, 2003), suggesting that it reflects a decline in cognitive skills.

Code switching<sup>5</sup> (hereafter CS) between two languages and the mixing in of linguistic elements from those two languages within one sentence are frequent practices in the speech of normal bilinguals (See Friedland and Miller, 1999 for an overview of the literature on CS). CS is a skill that requires a good command of the languages involved, and can inevitably act as a linguistic tool. Studies have shown that CS rarely impedes communication (McCormick, 1995; Romaine, 1995). CS reflects a “pathological behaviour when produced during conversations with an interlocutor who is unable to understand both languages” (Fabbro, 2001:213). Isolated studies have examined CS in AD (Van de Ven, 1987; Perecman, 1984; Hyltenstam and Stroud, 1989, 1993; De Santi *et al.*, 1990; Luderus, 1995; Auer, 1998; Friedland and Miller, 1999) and reported significant patterns of CS and an inability to keep the two languages separate. Although these studies show evidence of a high increase in CS

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5 Code-switching refers to the interchange of components longer than a word from two languages, that may act as a “verbal strategy” compensating for lexical retrieval difficulties within a single conversation, often with a single sentence, even when the topic, participants and situation remain constant (Von Bentheim, 2000:2). Switching between languages is common in bilinguals, and may be a means of expressing solidarity with a social group of similar background, signalling the speaker’s attitude towards the listener, varying the level of formality of their speech to establish a degree of (in)compatibility (Crystal, 1997:365). According to Crystal, speakers are often unaware of the extent to which they have been switching in a conversation, and may even be unable to say which language they were using in their last sentence, if interrupted. In this study, code switching is not viewed as a sign of linguistic incompetence but an inevitable consequence of bilingualism.

incidences in bilinguals with AD, they are not clear about the causes/triggers of CS and what instances of CS are (in)/appropriate. Evidence from research on healthy ageing bilinguals shows that their languages remain constantly active while being processed in a monolingual mode (Smith, 1997; Brysbaert, 1998; Francis, 1999; Gollan and Kroll, 2001; Kroll and Dijkstra, 2002). A reduced capacity to inhibit the other language may well be one of the explanations for CS in AD patients (De Bot and Makoni, 2004).

Isolated studies have examined the impact of the disease on the conversational abilities of a bilingual sufferer. Part of this meagre statistic are two studies by Hyltenstam and Stroud (1989, 1993) who studied high proficiency bilinguals at an advanced stage of AD, focusing on the effects of AD on aspects of bilingual ability, in Swedish and Finnish. They found AD effects to be disruptive on aspects of speech, such as word selection and coherence. A study by Luderus (1995) found that the participants in three case studies code-switched more often from L1 (German) into Dutch (L2) than *vice versa*. Both studies show that patients reverted to their L1 when conversing with L1 speakers, and identified a relation between the severity of AD and the amount of CA. If this is so, then the level of proficiency in bilinguals is important to note since CS occurs from L1 to L2. Another recent ethnographic study on language use and language preference, through the medium of French, found language preference and language choice significant for constructing identity within institutional care facilities. According to this study languages have the potential for either social isolation or integration depending on whether care is institutionally monolingual (in other words, all activities/care are provided and expressed in one language only). This may result in a false reflection of minimal/diminished communicative and social functioning when personnel are unable to communicate in the elders' dominant and preferred language (Mueller, 2004).

Despite the extensive body of literature on bilingualism, mainly in education and a few in ageing studies (gerontolinguistics), few qualitative studies have been conducted on healthy ageing bilinguals (Clyne, 1977; Obler and Albert, 1980; Rosselli *et al.*, 1999; 2000). Clyne (1977) reported L1 (German) become more noticeable during L2 interactions, but could not confirm whether this could be attributed to normal ageing or to a cognitive decline as seen in AD. Unlike Clyne, Obler *et al.* (1980) found bilinguals to be superior to monolinguals in her investigation of the effects of bilingualism on category fluency and verbal fluency in healthy ageing subjects. In contrast, Rosselli and colleagues (2000) found that English-Spanish bilinguals did not perform any better than monolinguals, as found in a similar study of English-French bilingualism by Roberts and Le Dorze (1997). The differences in the latter two studies may have been dependent on the tasks used during each investigation, since the impact of bilingualism on conversational interaction also varied in both studies. Despite their similar research design, both studies

report different effects for bilingualism in the language performance of their participants. These results suggest that the effects of bilingualism on ageing may be compared across languages in some tasks and differ in other tasks across languages. However, these different studies highlight several complications when using a wide range of categories in language-based tasks when the effect of fluency is systematically compared.

Bilingualism is an "important variable that may moderate the effect of age on the language process," since even less is known about the brain changes over time, especially after a bilingual has used two languages for many years (Rosselli *et al.*, 2000:18). Studies in SLA use and eventual loss have increased significantly over recent years. A brief overview of ageing and cognitive impairment in the South African bilingual domain (in terms of Afrikaans and English) is given in the sub-section below.

### 2.3 Language impairment and ageing in South Africa

As the study focuses solely on individuals who have dementia (AD) and excludes individuals who may be demented and aphasic<sup>6</sup> it is necessary to distinguish between aphasia and dementia, since similar disturbances in aphasics' cognitive faculties (in terms of memory, perception, language) are found in cognitively impaired individuals with AD (Bayles *et al.*, 1989). The issues raised here apply to aphasia and dementia in bilinguals in South Africa, since aphasia tests have been widely used in assessing the language performance in impaired adults (Kempler *et al.*, 1998).

Interest in bilingualism and ageing has primarily focused on language in bilingual speakers with aphasia and dementia, with language mixing and CS frequently found. In an attempt to understand why one language recovers better than other(s), several studies have attempted to interpret the recovery patterns observed in multilingual aphasics (Bayles and Kaszniak, 1987; Huff, 1990; Sandson *et al.*, 1987; Juncos-Rabadán, 1994; Leiwo, 1994; Paradis, 1977, 1989, 1993, 1998, 2001; Ferguson, 1994, 1996; Fabbro, 2001; Penn *et al.*, 2004). Studies in bilingual aphasia show that although deterioration affects both languages, different patterns of decline and recovery are observed (Albert, 1978; Juncos-Rabadán, 1994; Dronkers, 1995; Lock and Armstrong, 1997; Springer, Miller and Bürk, 1998; Paradis, 1993, 1998b). Pathological mixing is reported to be a typical symptom frequently found in bilingual aphasics with dementia (Mendez, Perryman, Ponton and

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6 This study adopts a working definition of aphasia as a sudden onset and collapse of the linguistic system associated with traumatic brain injury, which changes positively over time. This implies that it does not necessarily affect or compromise the intellectual capability of the person (Makoni, 2004) in contrast to dementia that requires a longitudinal diagnosis. (Personal communication with S.B. Makoni on 3rd June 2004 in Pennsylvania, USA.)

Cummings, 1999). However few studies have examined bilingualism in AD populations in South Africa (Von Bentheim, 2000; Penn, Venter and Ogilvy, 2001; Venter, 2002). Both studies report similar levels of linguistic deterioration in elderly aphasics with lexical abilities remaining stable; a reduction in syntax affected by ageing; an increase in complex sentences; difficulties in integration of narratives into complex structures alongside attention difficulties due to working memory impairment.

However, unlike mild to moderate aphasics who are likely to return to their professions and perform their premorbid roles (i.e. return to work after rehabilitation from a stroke), people with AD cannot. The next subsection looks at the language research conducted in South Africa on impaired demented bilinguals. Even fewer studies have been undertaken in language and AD than in the assessment of aphasia.

## 2.4 AD and bilingualism

Studies on language pathology in AD have focussed on English and Dutch (Dronkers, 1986); Dutch, Italian and English (Van de Ven, 1987); Swedish-Finnish and Swedish-German (Hyltenstam and Stroud, 1989); Yiddish and English (De Santi *et al.*, 1990) German and Dutch (Luderus, 1995); the production of complex syntactic structures in Russian (Gubarchuk and Kemper, 1997<sup>7</sup>); English and Yiddish (Makoni, 1997a); Afrikaans and English (Friedland and Miller, 1999); syntactic comprehension deficits in German (Bickel *et al.*, 2000); and Spanish and English (Rosselli *et al.*, 2000).

Although a quick review of the extant literature reveals a heavy emphasis on microlinguistic abilities (phonology, syntax, grammar), isolated studies have investigated the effects of AD on the macrolinguistic abilities (thematic coherence, turn-taking, fluency) of bilingual sufferers in non-institutionalised settings. Given the variety of linguistic styles in South Africa, there is a need to characterize the natural discourse patterns of different linguistic and cultural communities. To date, Makoni (1997a) is one of only a few researchers to have worked in the area of language and ageing in South Africa. He examined ways in which an institutionalised demented speaker in South Africa, whose L2 is English, handled conversational coherence, cohesion, fluency and turn-taking, in order to construct a communicative profile of the AD sufferer. His results show that these aspects of conversational ability are vulnerable to dementia and show no sign of potential recovery, unlike changes in fluency, which initially declined but subsequently improved.

Makoni (1997b) has investigated ways in which communicative environments are operative parts of health care institutions. However the setting is notably different from this study. Furthermore, Ferreira and

Makoni (2002:22-23) demonstrated how dementia is culturally and linguistically constructed in an urban Xhosa-speaking population. Similarly, Ridge, Makoni and Ridge (2003) in their longitudinal study of the language production of an elderly woman, through accessing her medical and legal records, examined her retained language ability through an analysis of biomedical discourse. Although this research has no direct bearing on the present study, an analysis of those environments may have important implications for health care. Ongoing research (Giles and Makoni, 2004) also increasingly focuses on the communication beliefs (stereotypes) of ageing of younger (18-24) members of society, as a way of understanding ageing. The researchers view ageing as a product of an interaction between generations, by focusing on communicational beliefs of the youth in different ethnicities in West Africa and southern Africa.

The MMSE is the most widely used standardized cognitive and language instrument to identify individuals with dementia. Measures on the MMSE provide an initial objective measure of cognitive dysfunction (Mackinnon and Mulligan, 1998; KraFelc *et al.*, 2003). The MMSE is however literacy and numeracy based and is stratified in four components, namely: *registration, recall, orientation and language*, all literacy and numeracy based. The instrument has shortcomings for use in our multilingual population but will not be discussed here.

To date only a single study, by Friedland and Miller (1999), has been conducted on bilingualism in AD in the Western Cape. Their descriptive and experimental study of disturbances in language behaviour in four bilingual women with AD advocates the use of CA to define language behaviour. Their findings, however, are not informative regarding the mechanisms that govern CS in terms of its (in) appropriateness in any given situation.

The review of the literature has revealed that for language and AD, the effects of ageing are aggravated in language by the disruption of AD, characterised by a reduction in and dysfunction of conversational content, language use and the cognitive processes that underlie language. The chapter furthermore accounts a decline in language skills to working memory problems (Silveri and Misciagna, 2000). However the literature review identifies a problem, in that the impaired individuals' ability to retrieve words from memory in clinical settings do not give information on the impact of lexical retrieval difficulties encountered in normal interactions. In addition, both the number of participants used in the various studies and the diverse types of clinical tests may not be ideal for this qualitative type of study. This is a first study to examine the communicative performance (abilities and practices) of a non-institutionalised Caucasian bilingual AD population in the Western Cape Province, South Africa.

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7 This study focused on the Russian production of complex syntactic structures.

## 2.5 Theoretical framework

Based on the literature review, the following theoretical framework of the study was constructed:

Findings from various studies show that an increase in words and turns, listener judgement, lexical retrieval difficulties, lack of fluency, cohesion and turn-taking, incomplete sentences and missing elements, correlates with incoherence, and supports the notion that AD impairs communication. Language deterioration in the mild to moderate stages indicates early AD and a case study technique is best suited for an analysis of language changes over time (Yin, 1994; Hamilton, 1994a; Friedland and Miller, 1999).

It is unfortunate that a majority of diagnoses rely on the responses of an AD sufferer to a series of isolated and rigid questions in standardized dementia examinations, given the potential significance of a conversational component as a diagnostic tool to complement existing standardized tasks (Bayles and Kaszniak, 1987). Conversational analysis (hereafter CA) originates in the sociological, in particular ethno-methodological, work of Sacks, Schegloff and Jefferson (1974); Schegloff (1979) and Lerner (1991). CA is an important source of data for case studies as conversations are less demanding and can be maintained with minimal responses (Hamilton, 1994a; Chapman, Ulatowska, Franklin, Shobe, Thompson and McIntire, 1997; Garcia, Metthe, Paradis and Joannette, 2001; Venter, 2002).

Increasingly used to assess communicative (dys) function in language disorders, CA aims to ascertain and describe the nature and characteristics of unspoken rules that exist in naturally-occurring conversations, “not revealed through traditional methods of language assessment” (Van Leer and Turkstra, 1999:328) and sensitises the investigator to unexpected events by focusing on the case rather than groups of participants (Watson, Chenery and Carter, 1999; Struwig and Stead, 2001). The strength of CA lies in viewing conversation as a collaborative activity in that it contributes to improved communication, self-esteem and psychological well-being, while analysing the linguistic behaviour in which it occurred (Comrie, Mackenzie and McCalls, 2001). CA facilitates a sensitive analysis by exploring how conversations unfold turn by turn and is able to offer an analysis of how code switches affect the quality of interactions (Friedland and Miller, 1999).

CA has focused on different types of discourses produced by ageing persons either in writing or intergenerational relations (Ulatowska, Allard and Chapman, 1990; Riessman, 1993; Hamilton, 1994a; Orange *et al.* 1996; Anderson, Robertson, Kilbourn, Beeke and Dean, 1997; Ramanathan-Abbott, 1997; Perkins *et al.*, 1998; Watson *et al.*, 1999; Chenery and Canter, 1999; Hesketh and Sage, 1999; Perkins, Crisp and Walshaw, 1999; Friedland and Miller, 1999; Garcia *et al.*, 2001; Makoni, Ridge and Ridge, 2001; Coelho, . Youse and Feinn, 2003). Several studies

have demonstrated the usefulness of CA in enhancing communicative success when examining language pathology (Blonder, Kort and Schmitt, 1994; Ryan, 1995; Boles, 1996, 1997a, 1998; Anderson *et al.*, 1997; Boles and Bombard, 1998; Lesser and Perkins, 1999; Makoni and Makoe, 1999; Oelschlaeger and Damico, 2000; Von Bentheim, 2000; Venter, 2002; Brady *et al.*, 2003; Hird and Kirsner, 2003; Beeke, Wilkinson and Maxim, 2003). See Hird and Kirsner (2003) for the usefulness of CA. In Africa, CA has been carried out by anthropologists who focused largely on “complaint discourse” (Makoni, 1997a) to investigate older individuals’ articulation of their experiences of ageing. Several studies in language and ageing have successfully followed a single case study design (Caramazza, 1986; Hamilton, 1994a; Makoni, 1997a; Ridge, Makoni and Ridge, 2003), while others have investigated a larger sample size over a few years (Ramanathan-Abbott, 1993, 1997; Friedland and Miller, 1999). The studies highlight a need for longitudinal studies since AD lends itself to longitudinal assessment to document the unravelling of a demented individual’s linguistic system linguistically.

More recently De Bot and Makoni (2004) have argued for the importance of adopting a Vygotskian (1978) framework on language and dementia to assess language abilities in the elderly. They argue that a focus should not be solely on what an individual is able to accomplish alone, but what he/she is able to do in consonance with other people/when receiving support. The capability to utilize assistance would thus be a more valid measure of cognitive status when the person is being assessed autonomously (Thorne, Makoni, Schrauf and Lantolf, 2004), suggesting a better measure of cognitive ability of how well individuals with AD are able to utilize the assistance provided, for an accurate evaluation of cognitive status. The zone of proximal development (ZPD) or a continuation of retained capabilities as described above raises issues of compensatory and scaffolding structures compelling researchers to reconceptualise cognitive impairment in dementing elders. According to De Bot and Makoni (2004), the consequences of the ZPD may help to delay institutionalisation of dementing individuals and provide an active continuation in a functional system where they (the demented) learn to function independently for longer than is normally the case.

This study is underpinned by and emerged from the theoretical issues discussed above consistent with the principles outlined in the area of bilingualism. It sets out to demonstrate the use of CA to achieve these objectives, in that CA in “bilingual speakers with AD remain a very neglected area” (Friedland and Miller, 1999:427).

### Chapter 3. Research design and methodology

I will now describe the research design and methodology for the qualitative case study using conversational analysis (hereafter CA) methodology, some theories of which were reviewed in my Chapter 2.

#### 3.1 Research design

This study’s research design is shown schematically in the figure opposite. The figure is based (derived and modified) on the case study method provided by Yin (1984). Yin’s (1994:20) five component research design identifies: a study’s questions; its propositions, if any; its unit(s) of analysis; the logic linking the data to the propositions and the criteria for interpreting the findings, as important for case studies. The figure indicates that the initial step in designing a case study consists of developing the theory and then showing the case selection and the definition of specific measures as important steps in the design and data collection process. Each individual case study consists of a “whole study” in which evidence is sought regarding the facts and conclusions for the case.

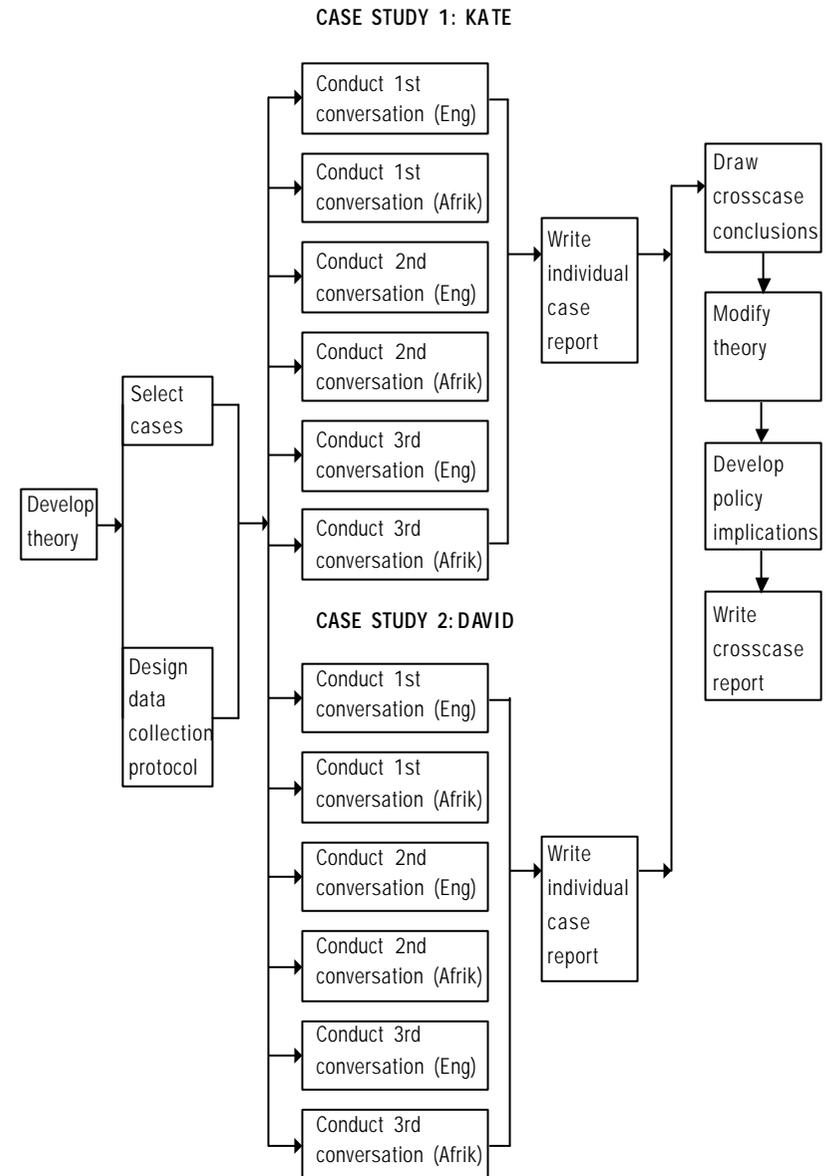
#### 3.2 Method

The present study is similar to singular examples of research design as done by (Yin 1984), participant selection, data collection (Hamilton, 1994a; Makoni, 1997a, Friedland and Miller, 1999; Brady, Mackenzie and Amistrong, 2003) and analytic tools (Hyltenstam and Stroud, 1989). Hamilton (1994a) advocates the use of the case study as appropriate for studies investigating the linguistic consequences of cognitive deterioration in the elderly, due to difficulties incurred in examining groups with AD. CA may provide sufficient data to describe the conversational interaction that assists the individual with AD to overcome causal linguistic impairments by complying with the three tenets of this qualitative method, namely: to describe, understand and explain (Gomm, Hammersley and Foster, 2000).

Despite intensive study of a relatively small number of cases, case studies are advantageous in that they allow for a comparison of individual cases by analogy (Struwig and Stead, 2001:8) to identify an interrelationship between the varieties of language phenomena where communication plays a vital role.

The strength of this method lies in its potential to reveal causal interactions, by providing richness of detail, and identifying causal and interaction variables which quantitative studies may easily omit (Yin, 2003). The present study does not lay claim that the findings might possibly be generalised beyond cases similar to the one(s) studied.

FIGURE: RESEARCH DESIGN



### 3.3 Participants

Before describing the participants, the investigator's own language background and level of bilingualism needs will be described. I am a twenty-something coloured compound bilingual female, with a post-graduate level of English and Afrikaans usage.

Prior to drawing a sample, permission was obtained from ARDA (The Alzheimer's and Related Disorders Association, Western Cape branch, now Alzheimer's South Africa) to present the study's research proposal at a support group meeting for caregivers of individuals with Alzheimer's disease. Several caregivers indicated interest in participating in the study. Information on persons with dementia pertinent to the sampling was obtained from these persons: personal details, literacy and education levels, employment and medical history of the sufferer.

Given that the selection of the cases was driven by theory, criteria for participation in the study included the AD sufferer to: (i) be 65 years of age or older; (ii) have mild to moderate diagnosis of AD; (iii) have no prior history of neurological impairment (severe AD would affect a participant's performance (Hamilton, 1994a)); and (iv) have a Grade 7 proficiency in English and Afrikaans (as language use in formal education is an important variable, (Rosselli, *et al.* 2000)).

Based on the above criteria, the potential participants' conversational success in the Paradis Bilingualism Questionnaire<sup>8</sup> (Paradis, 1987: see Appendix A) and my informal observations, 10 possible subjects were initially screened at their homes. Although a larger sample would have been ideal, the realized sample yielded only two participants: David and Kate,<sup>9</sup> both who were Caucasian and 72 years old (see figure p29).

Kate is an ex-secretary and bookkeeper with a love for horses. David was an ex-liaison officer for an international business conglomerate with an avid interest in high-risk (extreme) sports. Both participants were right-handed co-ordinate bilinguals and were matched for age, race and educational level. In short, David's exposure to Afrikaans was vast in that he used it in school, university, in the workplace, and when communicat-

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8 This study used an Afrikaans version of the Paradis (1987) "Test of Aphasia in Bilinguals." The test covers a wide range of skills and is similar to the battery of tests that was successfully applied by Irigaray in her 1973 research on language in normal and demented elderly. "[I]t is intended to be suitable for people whose educational and language proficiency levels may be quite modest. It therefore seems to offer a useful starting point for the development of appropriate procedures for assessing residual language processing abilities" (Baker, 1996b: 38).

9 Pseudonyms are used throughout.

ing with his father and his wife, respectively. With highest qualification at Grade 12 level, Kate's exposure to Afrikaans was similar and differed merely in that she only communicated in Afrikaans with her grandmother and her spouse respectively. The approximate disease duration of the subjects was also comparable.

### 3.4 Participant consent

Prior to participant consent, an application for ethics clearance along with this study's research proposal was submitted and approved. Verbal and written consent was obtained from the participants and their caregivers prior to data collection. The study's purpose and procedures were explained to the participants and their caregivers prior to the signing of the consent letter.

Anonymity and confidentiality of all data were assured. (See Appendix B for a copy of the consent letter.) After sampling, I consulted the participants' medical practitioners, who enabled me to scrutinise the medical records of the patients to confirm a diagnosis of AD. Information on the participants' general intellectual and emotional functioning was obtained through conversations with family members, to ascertain the participants' premorbid condition, and was instrumental in the method of triangulation. A process of triangulation was employed to provide an interpretation of their contexts and to address the construct validity of the study by substantiating the findings in the discourse (Cresswell, 1998; Struwig and Stead, 2001).

### 3.5 Participant description

The participants had been diagnosed with AD by a neurologist using criteria stipulated by the Diagnostic and Statistical Manual of Mental Disorders (DSM IV). Both participants had also undergone a computerized tomography (CT) scan investigation to ensure there was no evidence of focal neurological pathology. When diagnosed five years prior to the study, both were classified as at a mild to moderate stage of disease in their performances on the MMSE (Folstein, Folstein and McHugh, 1975), with scores between 10-23 on the MMSE categorised as impaired (exact scores were not provided by the practitioners). Due to the brevity of administering the cognitive diagnostic test (5-10 minutes) and on recruitment (in 2000) and both doctors agreed to retest using both English and Afrikaans MMSE tests. The following scores were obtained on these occasions: Kate scored 23/30 in the English and 22/30 in the Afrikaans test. David scored 18/30 in the English test and 11/30 in the Afrikaans test.

### 3.6 Setting

The participants resided in upper middle-income suburbs of Cape Town, where health care is relatively superior and affordable through access to specialists, medication, and other provisions and services. The conversations were recorded in the homes of the two participants between March and May 2000, usually in a comfortable sitting area of their choice with an audio tape recorder on a nearby table. These context and situational factors (in terms of participants, caregivers and the settings in which they are examined) are hereby noted because they partially constitute and describe the setting within which the discourse of the participants may be understood. It should be noted that the participants and I were alone during conversations and that the caregivers and helper only entered when they served us with tea or if the participants called for them.

### 3.7 Equipment

With the participants' permission, the conversations were recorded with the use of a Sakyno Model SK-3500 voice activated system<sup>10</sup> (mini portable cassette recorder) with built-in microphone. The audiotaped conversations were subsequently orthographically transcribed, verified and content-analysed, according to conversational analysis (CA) principles.

### 3.8 Data collection procedure

Data collection comprised audio-recordings of a combination of twenty-four naturally occurring conversations between the AD participants and the researcher, to examine their linguistic and pragmatic manifestations of dementia in everyday conversations. However, when a language breakdown occurred in the conversation, a set of predetermined topics and specific questions (see Appendix C) was used (by the investigator) to avoid conversation breakdown. In essence, the conversational topics were used to elicit response and input from the participants.

The two participants were assessed twelve times each over the three month period. The first conversation was in English (on a Monday) and the second was in Afrikaans (on a Tuesday) in the same week (see figure p29). Conversations in each language took place twice a month with each participant. Most interviews lasted between 30 and 60 minutes. The

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10 "Without this device to preserve the very sound of language, we should have no idea of how people *really* talk: their pauses, inflections, emphases, unfinished sentences, short periods" (Millet, 1981:32).

length of sessions in research of this nature was determined by the wishes and needs of the participants. Responses were not treated as facts, but as an instrument (technique) for language analysis in the conversational analysis discourse.

### 3.9 Treatment of data

#### 3.9.1 Transcription

The transcription system used was largely based on the version of Atkinson and Heritage (1984,1999), (see Appendix D). Measures of verbal efficiency comprised of words<sup>11</sup> per utterances and the frequency of words and utterances.

#### 3.9.2 Transcription reliability

Independent bilingual language practitioners verified verbatim transcripts and recordings (Müller and Guendouzi, 2002). This study concentrated on an analysis of the content of the verified transcripts. The transcripts were divided into speaker turns. A turn was taken to be a conversational contribution by one speaker, followed by either silence or the start of another speaker's contribution.

David's and Kate's cases are presented in Chapter 4.

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11 Words are defined as single lexical units. The study defines utterances as an interconnected group of words used to complete a thought. All utterances are used as turns. Furthermore the Childe's project guidelines and definitions (MacWhinney, 2000) of repetitions are used to refer to all instances of retelling without self correction.

## Chapter 4. Analysis of case data

This chapter gives an analysis of conversations I had with the two AD afflicted participants. The participants' conversations in English and Afrikaans at different times within the same setting are compared (Ramanathan-Abbott, 1997). Comparisons within each study were made, using extracts from the participants' initial conversation<sup>12</sup> (hereafter T1) as baseline, against which to measure changes (if any) in performances in consecutive conversations (hereafter T2). This method of analysis provides distinctive conversational profiles of the participants. In addition, the participants' abilities in each language are compared. First, the two case studies are analysed separately.

### 4.1 Case study 1: Kate

Kate was diagnosed with moderate AD five years prior to the conversations in the study. At the time of data collection, her MMSE score in English gave a cut-off for dementia, with a score of 25/30, while her MMSE score in Afrikaans of 22/30 indicated a mild to moderate diagnosis of AD. According to her doctor, Kate presented features typical of early AD. [A] is the participant, [B] is the investigator and [C] is the domestic helper who features briefly in the extracts presented here.

At T1, Kate uses the languages interchangeably, irrespective of the language used by the investigator. She switches languages when talking about events from the remote past, as though recounting her memories in the language in which they were encoded, as illustrated in the following extracts (see extracts 1 and 2).

Extract 1 (T1, Afrikaans monolingual conversation<sup>13</sup>):

Prior to the conversation, I informed Kate that we would be conversing in Afrikaans, however the extract below illustrates the language choice she makes when talking about events as shown in the following example.

- B *Watter gebed hou jy die meeste van?/What prayer is your favourite?*  
A *Ons is Katolieke./We are Catholics.*

<sup>12</sup> Each extract is "plurivocal, open to several readings and to several constructions" (Rabinow and Sullivan, 1987:12). As a reader, these transcripts can provide diverse perceptions in various historical contexts. The point is that all texts "stand on moving ground, there is no master narrative" (Riessman, 1993:15).

<sup>13</sup> This refers to the investigator and participants' explicit awareness of the language that is to be used in that interaction, with me initiating conversation in the said language, at a specific time with the participant.

- B *Ja/Yes.*  
A *Catholics you know (...) we have lovely prayers for our lady.*  
B *Wil jy dit vir my voorlees?/Would you like to read it to me?*  
A *Oh most gracious Lord Jesus, that never was it known. Many people think we pray to her because we are interceding like a mother, like a child interceded to Jesus (...) and some people think the Catholics worship the Virgin Mary. We don't. We respect her like we respect our own mother. A lot of people think that. They get this misconception (...) that we (...) I don't know what they call it, like adore her. We don't, OK. We only respect her as the mother of Jesus.*

Extract 2 (T1, Afrikaans monolingual conversation):

Extract 2 differs from (1) in the sense that Kate is able to maintain her L2, but switches to her L1 when an item about her past is called upon.

- A *Ja, ek het jou vertel van my pa, nie so nie?/Yes, I told you about my father, didn't I?*  
B *Ja, jy't my vertel dat hy 'n haarkapster was?/Yes, you told me he was a hairdresser.*  
\*A *Ja, die haarkapster – as the studente dit nie kon bekostig nie, het hulle dit op die boekie gedoen. [very long pause of nearly 2 minutes] **We had very good parents – they believed that if you want to do something you must work hard for it. Nothing is free and nothing gets handed to you. You must work hard!***

Several extracts in her L1 conversations show that she not only responds, but retains the ability to be an "equal" conversational partner in that she initiates many questions, introduces and maintains new topics over several turns, while no language mixing from L1 to L2 is found. Extracts 3 and 4 below demonstrate her linguistic behaviour.

Extract 3 (T1, English monolingual conversation):

- A *I don't believe that you have that on*  
B *What do you mean?*  
A *Your choice of nail colour.*  
B *Oh, I wore purple to church,*  
A *Oh – when?*  
B *On Good Friday.*  
A *Oh I see. It is rather pretty now that I look close.*

Extract 4 (T1, English monolingual conversation):

- A *Do you want to have a peep in here? ((laughs)) Maybe I shouldn't show you.*  
B ((laughs)) Why?  
[  
A ((laughs)) *I do it all in short hand so they can't read it*  
B *I'd like to see it, if I may?*  
A *I don't show it to anyone you know. I write everything in here, my thoughts 'specially.*  
B *It's like your personal diary.*  
A *Yes – if anybody phones or if my daughter didn't come.*  
B *This is interesting – then you make a note of it?*  
A ((laughs)) *Oh yes.*  
B *Where did you learn to do short hand?*  
A *At the convent school – we all did it.*

After three months, it was found that Kate's continuous topic changes, although retained, had declined somewhat. Unlike the continuous introduction of new topics at T1, Extract 5 is a clear example of a conversation that Kate maintained for 8 minutes before introducing a new topic.

Extract 5 (T2, English monolingual conversation):

- A *We always go to mass.*  
B *Ok.*  
A *Ash Wednesday – Ash Wednesday when you get the ashes on your forehead.*  
B *Oh. Could you tell me more about Ash Wednesday?*  
A *Remember man that thou art dust and unto dust thou shalt return.*  
B *Who says that?*  
A *The priest.*  
B *Ok.*  
A *They burn ash, I suppose like they burn wood – I'm not quite sure – what they burn, must be something – something in the church – maybe – ag I don't know – I don't quite know what they burn.*  
B *Ok, and then what do they do?*  
A *Then he dips his finger – his thumb in there then makes a thing across – a cross on the forehead 'and remember man that thou art dust and unto dust thou shalt return.' But we go for communion every Sunday if we like.*

B *Ok.*

- A *And of course we go to confession – with in our religion we are bound to go every Sunday and if you miss your mass, on Sunday you have to go to confession because that's what we – call a mortal sin – yes – if we miss our Holy mass. We are bound to go.*

Kate's L1 responses at L2 monolingual interactions after three months (by T2), for the most part, were lengthy in relation to responses at T1. Although her discourse in Afrikaans monolingual conversations was still complex, noticeable less L2 interactions were noted over time and output became minimal in L2 conversations. However, when she switched to L1, the discourse was lengthier over time as seen in the extracts 6 and 7 below.

Extract 6 (T1, Afrikaans monolingual conversation):

- B *Hoe gaan dit vandag met jou?/How are you today?*  
A *O, so tussen die boom en die bas./Oh, so so. [literally: between the tree and its base]*  
B *Is dit jou suster daar binne?/Is that your sister inside?*  
A *Ja./Yes.*  
B *Wanneer het sy gekom?/When did she arrive?*  
A *Nou net!/Just now!*  
B *O, dis seker 'n aangename verassing vir jou?/Oh, isn't that a nice surprise for you?*  
A *Nie eintlik nie—kyk hierso!/Not actually—look here! [shows a scab on her arm]*  
B *Wat is dit?/What is it?*  
A *Ek het seker myself gekrap—Ek het dit seker teen its gekrap, jy weet. **You know about that? You know what they say that the older you get the thinner the skin becomes***  
*I think I scratched myself. I probably scratched it against something, you know.*

Extract 7 (T2, Afrikaans monolingual conversation):

This conversation about food took place after we discussed how her siblings had died of infant-related illnesses.

- A *Hoender kerrie ja, of **mutton**./Chicken curry, yes or mutton.*  
B *Hou jy van sterk kos?/Do you like strong food?*  
A ***It must have lots of flavour.** Ons kan almal goed, lekker kos kook van kleins af. Ek het gesê my ma het almal daardie kinders gehad, **and she always cooked good food. She was a wonderful cook and beautiful too, if I think***

**back. We always had good food. We were brought up, sy't ons groot gemaak op stews. Dis baie lekker. My ma het ook baie croissants gemaak. Mmm, lekker gebakte brood.**

It must have lots of flavour. We can all cook nice food since a young age. I said my mother had all those children and she always cooked good food. She was a wonderful cook and beautiful too, if I think back. We always had good food. We were brought up, she brought us up on good stews. It really is very nice. My mother also made croissants. Mmm, lovely baked bread.

By T2 Kate mixed L1 and L2. As evidenced above, the mixing illustrates how she is ostensibly unable to separate the two languages, especially at L2 monolingual interactions. More Afrikaans conversations were in L1 with individual CS.

However at T2 languages, Kate kept the languages separate and is monolingual at L1 interactions. No evidence of CS was found. Despite this, language mixing in L2 interactions appears to be triggered when she experiences lexical finding difficulties, or speaks about family members, but maintains L2 when talking about her grandmother. For example, extract 8 is an illustration of Kate's language mixing and her failure to sustain the language of the investigator when talking about the past.

Extract 8 (T1, English monolingual conversation):

- A **Ek kan Afrikaanspraat.**/I can speak Afrikaans.  
B Where did you learn to speak Afrikaans?  
A **Op dieskool – my ouma, my ouma, my ma se ma was Afrikaans, sy het Afrikaans gepraat – en my – my ouma se suster – auntie Bet – sy't by ons gewoon.** She was about ninety-odd when she died. Very long living family.  
At school – my grandmother, my grandmother, my mother's mother was Afrikaans, she spoke Afrikaans – and my – grandmother's sister – aunty Bet – she lived with us.  
B *So who speaks Afrikaans?*  
A **Almal het Afrikaans gepraat.**/Everyone spoke Afrikaans.  
B *And what about your brothers and sisters?*  
A **Nee, ons praat nie Afrikaans nie, net Engels.**  
*No, we don't speak Afrikaans, only English.*

Despite my constant use of English, Kate was unable to sustain this language choice on several occasions. In spite of this, there are examples of Kate's ability to keep the designated language and to keep the two languages separate at T1 (see extract 9).

Extract 9 (T1, Afrikaans monolingual conversation):

During a monolingual Afrikaans conversation, Kate used English when she spoke to Lettie, their domestic helper, who does not understand Afrikaans. Prior to this extract, the conversation was in Afrikaans and Kate only switched to L1 when she calls Lettie.

- A **Lettie!** [Kate calls loudly]  
C **Hello!** [Lettie echoes in response]  
A *Come here!*  
C Hello!  
A *Did you meet Lettie already?*  
B *Hi Lettie.*  
C *Hello*  
B *I didn't see you this morning, sorry.*  
C *That's ok.*  
A *She was here all the time. She made me breakfast already, didn't you Lettie.* [smiles with Lettie]  
C *Anything I can do for you Miss Kate?*  
A *No, Lettie, I'm ok. You go back to work now.*

Her ability to mix languages is retained and occurs across time during L2 interactions. Relevant examples of language mixing are found at T1 (see extract 10) and T2 (see extract 11), respectively.

Extract 10 (T1, Afrikaans monolingual conversation):

- A *Hmm. So lank dit darem netjies lyk. My pa was 'n haarkapster, en hy het altyd seker gemaak.*  
**Mmm, As long as it is neat. My father was a hairdresser, and he always made sure.**  
B *Het hy julle hare ook gedoen?/Did he do your hair also?*  
A **Yes always altyd. He done all our hair. A fringe for the girls and so short – like a bob you know.**  
Yes, always, always. He done all our hair. A fringe for the girls and so short – like a bob you know.

Extract 11 (T2, Afrikaans monolingual conversation):

Reminisces about her mother:

- A *Ek mis haar. But I used to remember, she used to klap me cause I was very cheeky ((lag sy)). I remember when she used to ask me to do something*

**and I wouldn't she'd come to slap me in the face lag Sometimes I'd just make I really mad when I talk back, you know** ((lag sy)). /I miss her.

B *So jy kon nie eers waag om terug te praat nie?/So you couldn't even talk back?*

[

A *O nee. Oh well, I guess it was all well, we didn't turn out bad at all! It's all for our own good.*

In the extract below, Kate uses language mixing as a resource to clarify her question posed to me.

Extract 12 (T1, Afrikaans monolingual conversation):

A *En toe, wat gaan jy doen met jou booties?* [referring to the investigator's boots]

And so what are you going to do with your booties?

B *Jammer?/Excuse me?*

A ***Your boots – are they comfortable?***

Kate only switched to L1 in Afrikaans conversations, when talking about topics relating to her earlier life experiences and lexical retrieval difficulties (see extracts, 13, 14, 15 below). This illustrates that her experiences are encoded in the language and are language specific. Code-switching instances by Kate are presented below (See Appendix E for similar extracts). Discussion is reserved for Chapter 5.

Extract 13 (T1, Afrikaans monolingual conversation):

A *Ja nege, en ek dink as daar, you know, 'n groot familie is, [...] dan is daar [...] I don't know what you call, [...] the Afrikaans word is, closeness.*

Yes nine, and if I think, you know, a big family [...] then there is [...] I don't know what you call, [...] the Afrikaans word is, closeness.

Extract 14 (T2, Afrikaans monolingual conversation):

B *So besluit jy self watter klere jy vir die dag gaan dra?/Do you decide what clothes you'd like to wear for the day?*

A *O ja, ek pick my eie klere uit, sit dit mooitjies op die bed, but depending on the weather you know. Mavis will just come and check up to see whether I have clean underwear on or not.*

Oh yes, I pick my own clothes out, and put it nicely on the bed ...

Talking about her earlier experiences also triggered a language change in the absence of lexical retrieval difficulties, as exhibited in the extract 15 below.

Extract 15 (T1, Afrikaans monolingual conversation):

A *My ma het ons goed geleer. She taught us to wash our face in milk. So maybe that's why I don't have a lot of wrinkles. But there was also a lot of beauty products then. But my mother taught us to have a good beauty routine*

My mother taught us well ...

Cognisant of the situational cues, Kate tried to make a language switch to maintain the language chosen, as seen in extract 16.

Extract 16 (T1, Afrikaans monolingual conversation):

A *Ek is so bly dat ek gesond is. You know when I was at Avondrust, the people were so bad there. I used to find people laying in my bed. They'd forget their room number and I'd find them in my bed. And then they were so confused that they thought it was their bed. Maar daardie mense was siek mense daar. Ek is bly ek bly nie meer daar nie.* ((lag sy))

I am so happy that I am healthy ... But those people were sick people there. I am happy that I don't stay there anymore. ((laughs))

Repetition is also typical in Kate's linguistic behaviour in L1 monolingual interactions and remained constant from T1 to T2. In this study, repetitions refer to instances where the participant says something, then stops and repeats earlier conversations verbatim. Extracts 17 and 18 illustrates her repetition style (involving memories of her former employer) from T1 to T2.

a) Extract 17 (T1, English monolingual conversation):

A *I've always had an extremely good memory, with part numbers and things like that, but as a matter of fact I had a boss that said to me, "Dolly I'm coming to visit you in the loony bin."* ((laughs))

b) Extract 18 (T2, English monolingual conversation):

A *That's where the boss told me, "Dolly, I'm going to visit you in the loony bin."* ((laughs))

Based on Hyltenstam and Stroud's (1989) findings, this study examined Kate's pragmatic ability in terms of topic treatment to compare her use of English and Afrikaans with respect to how the content of conversation was treated. In this section the participants' abilities in each language are compared to elucidate the question of differential availability of each language. The participant's ability to co-operate on the conversational topic, perform adequate turn taking and to monitor contributions is analysed. Selective aspects of the participants' pragmatic abilities studied

were the *topic treatment* phenomena which have been shown to be sensitive to disruption in AD (Obler, 1985; Hyltenstam and Stroud, 1989; Hyltenstam, 1995) and were therefore chosen for inclusion in this study. The extracts below indicate the four categories into which her utterances were classified:

Extract 19 exhibits Kate's *topic focused contribution* (TF), as an appropriate relation to the ongoing topic of discussion. Topic focused contributions (TF) are defined as a contribution which connects locally to prior utterances, while maintaining the thematic development of the talk as a whole (Hyltenstam and Stroud, 1989).

**Extract 19 (T2, Afrikaans monolingual conversation):**

- B *Hoe gaan dit vandag met jou?*/How are you today?  
 A *O, so tussen die boom en die bas.*/Oh, so so  
 B *Is jou suster daar binne?*/As your sister inside?  
 A *Ja, sy's die jongste*/Yes, she's the youngest  
 B *Wanneer het sy gekom?*/When did she arrive?  
 A *Nou net!*/Just now!

An example of her *topic related contribution* (TR) is presented below. Topic related contributions (TR) are defined as an utterance with some lexical connection to prior utterances, but with a vague thematic discourse contribution (Hyltenstam and Stroud, 1989).

**Extract 20 (T1, Afrikaans monolingual conversation)**

- A *Ek het die orrel gespeel in die kerk – ek moet dit gehou het.*  
 I played organ in the church – I should've kept it.  
 B *Het jy dit verkoop?*  
 Did you sell it?  
 [   
 A *Nee, nee – ek het dit vir die kerk gegee.*  
 No, no – I gave it to the church.  
 B *Waarom dan?*/Why then?  
 A *As ek nou moet dink, dan het my dogter my album.*  
 If I must think now, then my daughter has my album.  
 [   
 B *O, die album.*  
 Oh, the album.

- A *Sy sê nou seker vir almal – “Look this is my mother”.*  
 She's probably telling everyone – “Look this is my mother”.

**Extract 21 (T2, Afrikaans monolingual conversation):**

Is an example of her *topic digression* (TD) defined as an utterance appearing after a TF or TR that exhibits neither local connections to prior utterances nor thematic development of the talk (Hyltenstam and Stroud, 1989).

- A *Daar is baie om te leer – en the e's en r's and all the strokies en punte, dinge soos dit.*  
 There's a lot to learn – and e's and r's and they all little strokes and dots and things like that.  
 [   
 B *Waar het jy geleer om sulke goeie notas te neem?*  
 Where did you learn to make such good notes?  
 A *Hier sê ek – moenie vergeet om genoeg geld in the kerk se offer bordjie te sit nie.*  
 Here I said – don't forget to take enough money to put in the church's collection plate.  
 B *Waar het jy all hierdie geleer, Kate?*/Where did you learn all of this, Kate?  
 A *Ek is Katoliek jy weet, ek het jou seker nie vertel nie.*  
 I'm Catholic you know, I didn't tell you.

It is noted that Kate only digressed from the topics on one occasion, as shown above.

An example of Kate's *topic change* (TC) defined as a contribution, involves a complete change of topic framework in relation to the investigator's prior utterances. This intrusive utterance is one in which the speaker refers to a previously discussed topic of conversation and it is inappropriate within the context of the current topic of discussion (Hyltenstam and Stroud, 1989) See in the extract below:

**Extract 22 (T2, Afrikaans monolingual conversation):**

- B *Vertel my so 'n bietjie van jou eggenoot.*/Tell me a bit about your spouse.  
 A *My vel raak so dun. Hulle sê jou vel raak dunner soos jy oud raak.*  
 My skin is so thin. They say that your skin becomes thinner as you age.

## 4.2 Case study 2: David

David was diagnosed with AD five years prior to the study. At the time of data collection, David's MMSE in English showed a score of 18/30, which is well below cut-off for dementia, as was his Afrikaans test score of 11/30.

According to his doctor, David's cognitive examination revealed memory impairment and constructional abilities typical of moderately advanced dementia of the Alzheimer's type. Due to his poor physical health, David's conversational output in the latter conversations was characterised as short elliptical utterances and monosyllabic. As the study progressed David was hospitalised and readmitted for tests on numerous occasions. He died of congestive heart failure towards the end of the data collection period. It should be noted that data was only collected at home when David's wife indicated that it was appropriate to do so. [A] refers to the participant; [B] refers to the investigator and [C] refers to David's wife, who features briefly in the extracts presented here.

The data for David consist of responses to questions posed to him. David retains culturally learned expressions/phrases such as "Never you mind" and "Glory be!" when other aspects of language became difficult to access, in order to overcome some lexical retrieval difficulties (see extracts 23 and 24).

Extract 23 (T1, English monolingual conversation):

B: *Who was one of the best writers in your time?*  
A: *Oh glory be.* ((laughs))

Extract 24 (T1, English monolingual conversation):

B: *Why are you smiling?*  
A: *Just because I was thinking (...)*  
B: *About?*  
A: *Glory be, I forgot.* ((laughs))

David used mostly one-word utterances to refer to requests for clarification or interjections such as *ja, nee, o, regtig, miskien* (yes, no, oh, really, maybe) which this study defines as feedback signals (see extracts 25 and 26). Functionally, the definition of an *utterance* is all contributions to the content in the conversations, and is therefore comparable to turns. David's use of feedback signals such as *ja, mhm*, (yes, mmm) indicated that he still had the capacity to follow conversations. They are therefore considered to be utterances and counted as a *turn*, as shown in the extracts below:

Extract 25 (T1, English monolingual conversation):

B: *Do they have any children?*  
A: Children?  
B: *Yes, does your son have any children?*  
A: No.

Extract 26 (T2, English monolingual conversation):

B: *Where did you work?*  
A: *Work?*

When considering the results of an analysis of the utterances of David, it should be noted that large portions of his interactions were produced not in L2, but in L1, see extracts below:

Extract 27 (T1, Afrikaans monolingual conversation):

B: *Het jou ouers Afrikaans gepraat?*  
Did your parents speak Afrikaans?  
A: ***Glory be, no! My folks only spoke English at home.***

Extract 28 (T1, Afrikaans monolingual conversation):

B: *Ja, ek is tweetalig, maar ek kan 'n bietjie Xhosa ook praat.*  
Yes, I am bilingual, but I can also speak a bit of Xhosa.  
A: ***Oh, I don't know anyone who can speak any of those African languages.***

Extracts 29 and 30 are examples used to illustrate David's linguistic behaviour in terms of language choice:

Extract 29 (T1, English monolingual conversation):

C: *Hier's jou koffie./Here's your coffee*  
A: ***Baie dankie, maar*** /Thank you, but  
B: *Don't you want coffee?*  
A: ***Ag, los dit, Gladys, ek sal wag totdat dit afkoel.***  
Oh leave it Gladys, I will wait till it gets a bit colder.  
C: *Well then here* (lifting the plate and patty to his mouth), *do you want to try your vegetable patty?*  
A: ***What was that?***  
C: *Do you want to try your vegetable patty?*  
A: ***Yes, I'll eat it.***

The extract below is striking, in that this is the first and only instance on language switching found in L1 interactions with David.

Extract 30 (T1, English monolingual conversation):

A: *You know, typical South African rugby.*  
B: *Mmm, so you enjoyed rugby?*

- A *Yes!*  
 B *What position did you play in the team?*  
 A *Wing.*  
 B *Ok, so you must have been really fit to play a tough and physical sport such as rugby?*  
 A ***Ja, maar ek was nooit a man wat tefisies geraak het met sommer enige iemand nie.*** ((laughs))

Yes, but I was never a man to get too physical with just anyone. ((laughs))

David succeeded in separating his languages, in a manner consistent with the language I used and as shown in the examples mentioned. Despite attempts to initiate conversations with David initially through stimulus questions (i.e. Appendix C) at T2, it became increasingly apparent that David was unable to maintain a single topic beyond one response per turn, as seen in the following extract:

**Extract 31 (T2, English monolingual conversation):**

- C *Do you know that he used to write me such beautiful letters and poems too!*  
 B *Is it! I believe that you are a poet, David.*  
 A *Mhm.*  
 C *Yes he used to like send me love poems.*  
 B *Oh, what a romantic.*  
 C *Yes and all his other girlfriends loved it too ((laughs)). Isn't that so David?*  
 A *Mhm.*

By T2 David's interactions in his L1 has declined as seen in the following extracts. In these extracts, David failed to be explicit and the issue of repetition (see extract 32) and confusion (see extract 33) comes to the fore.

**Extract 32 (T2, English monolingual conversation):**

- B *So what do you enjoy doing with your time, David?*  
 A *Nothing*  
 B *I'm sure that is very nice, now that you're retired.*  
 A *Mhm.*  
 B *So, what are your favourite meals?*  
 A [Meals?  
 B *Yes, what do you enjoy eating?*  
 A *I don't know.*

**Extract 33 (T2, English monolingual conversation):**

- B *Tell me a bit about your sons?*  
 A *Three.*  
 B *Ok. So how old are they?*  
 A *Gavin is the eldest.*  
 B *Ok.*  
 A [Coughs] *I think his – problem cough if I remember correctly is Alzheimer's.*  
 B *Ok.*  
 A *The second eldest is Shane – uhm and the youngest Morgan.*  
 B *Ok.*  
 A *He is a very fascinating young man. He doesn't work – what is his problem now again – Alzheimer's I think.*

Guided by on Hyltenstam and Stroud's (1989) findings, this study also examined David's pragmatic ability in terms of topic treatment to compare his use of English and Afrikaans with respect to how the content of conversation was treated. The extracts below denote the four categories into which his utterances were classified:

Extract 34 exhibits David's *topic focused contribution* (TF), as an appropriate relation to the ongoing topic of discussion.

**Extract 34 (T1, English monolingual conversation):**

- B *How many children do you have?*  
 A *I had three – all boys.*  
 B *What are their names?*  
 A *Gavin is the eldest – then there's Shane – and Morgan.*

An example of his *topic related contribution* (TR) is presented below.

**Extract 35 (T1, English monolingual conversation):**

- B *Okay. Do you enjoy working in the garden?*  
 A *Me!*  
 B *Yesyou David.*  
 A *Maybe.*  
 B *Is that a yes.*  
 A *Hmm.*  
 B *The lawns are lovely and green.*  
 A *Sure.*

Extract 36 (T1, Afrikaans monolingual conversation) is an example of his topic digression (TD):

B ((Laughs)) *Kuier jou seuns gereeld by jou?*  
Does your sons come to visit fairly often?

A *Ja, maar selde.*/Yes, but seldom.

B *Wie sou jy sê kuier jou the meeste?*  
Who would you say visits you the most?

A *Wel, Gavin is die oudste en – die jongste is Morgan, Shane is dood.*

Well, Gavin is the eldest and – the youngest one is Morgan, Shane is dead.

An example of David's *topic change* (TC) is found in the extract below (T1, English monolingual conversation):

Extract 37

B *So Gavin is your oldest son?*

A *If I remember correctly his problem is Alzheimer's.*

### 4.3 Summary

This chapter provided an illustrative analysis of various extracts from different conversations with Kate and David to support pertinent points in the interpretation of the effects of AD on the linguistic abilities of the participants to select the appropriate language in conversation across time. Kate and David may be characterised as “non-balanced” (Rosselli *et al.*, 2000:18) English-Afrikaans bilinguals, mastering both languages at different levels and at different times and retained fewer words in L2, except when tested in the L1.

In summary Kate's linguistic behaviour in terms of her mixing of languages is notably different in that she fails to keep her languages apart at T1 and this is even more prevalent at T2. Her extracts do however show that she is able to recall her experiences/memories in the language in which they were first encoded. The extracts also show that she has retained ability as a conversational partner to maintain and introduce new topics. CS was found in L1 and L2 interactions. Kate produced more language in all her interactions, and her L1 is more accessible than her L2, illustrating that her experiences are encoded and are language specific. Kate's CS involved a transition from L2 utterance to L1 utterance completion, with a few exceptions to this pattern. Many of the CS mentioned in Kate's discourse took place after a pause or what seemed to be a hesitation on Kate's part as if searching for a lexical solution. However at T2, topic changes, although

retained, are somewhat reduced in comparison to that of T1 and she still retained an ability to maintain topics in L1 and L2 interactions similar to that of T1. However, her L1 utterances during L2 interactions are lengthier in comparison to similar language responses found at T1, with notably less utterances in L2 over time, hence L2 output at T2 becomes minimal, marked by reduction in topics. Extracts show that she was unable to keep the language of the investigator during L2 interactions. Despite this, at T2 her interactions in L1 were monolingual (she succeeded in keeping the languages apart) hence no language mixing, however L2 utterances in L1 interactions are triggered by memories of her grandmother, in particular.

Unlike Kate's data, David's extracts were not as complex as Kate's but they show his ability to retain culturally used expressions when other aspects of language become difficult to access, in order to mask lexical retrieval difficulties. This ability was retained over time in his L1, as can be seen in the data in T1 and T2. No culturally used utterances were found in his L2. His language production in L1 is comparable after three months and rather similar over time. It is interesting to note that the amount of language produced by David is quite similar in each English interaction, characterised by brevity and short utterances. His amount of L2 utterances during L1 interactions is relatively low in comparison to his L1 utterance production, and a significant decrease is found in the data. He also uses more L1 utterances at T1 compared T2, but his L2 output is reduced to short elliptical fragments by T2. An interesting finding is that the only instance of language switching is found from L1 to L2 during L1 interactions, namely when talking about sports: rugby, as seen in extract 30. This could possibly reflect his use of Afrikaans, strongly associated with the previous apartheid regime, rugby and camaraderie/solidarity.

The results presented above are discussed and interpreted in Chapter 5.

## Chapter 5. Interpretation of data

This chapter provides a general discussion and interpretation of the results of the study, as outlined in Chapter 4. The discussion examines the participants' abilities in each language across time and may be considered as language-general (as it is documented in previous studies of typologically different languages) and those specific to this study. In light of the small sample size, the analysis is necessarily limited by the presence of the existing disorder and treated with caution since the study did not investigate sociolinguistic comparisons (in terms of topics and situations) between normal and pathological language decline over time. A comparison of the two participants is then made.

In the subsection below I review the findings and provide an interpretation. David is treated first as his linguistic behaviour is not complex. Interestingly, David only uses Afrikaans utterances in English conversations in response to his wife and in the following examples with me.

### 5.1 Linguistic analysis of David

David's conversational productions in both languages were considerably limited, not dissimilar to the findings elicited by Hyltenstam and Stroud (1989; 1993). The analysis shows that David appeared to have no difficulty in making the correct language choices when conversing with the investigator. In most Afrikaans monolingual conversations he rarely initiated topics and made minimal effort to change topics. Responses were more likely to be elicited to social questions (which demanded only a single word answer) than to questions educing information (Stevens, 1985; Fromm and Holland, 1989). Findings are also supported by Hier, Hagenlocker and Shindler (1985) who found that their participants made fewer relevant observations, with their speech conveying less information as research progressed.

David's paralinguistic capabilities seem to be retained/intact. At T1, David merely used facial expressions and gestures to respond to queries and requests, and to acknowledge comments. He also expressed comments, disagreements and assertions in this manner. He often asked for clarification or to repeat a question. Ripich *et al.* (1988) found that patients often employ non-verbal behaviour to elicit information to either aid or mask their conversational interaction. By T2, David's use of facial expressions was almost non-existent for most of the time during the conversations, apart from consistent gazes into his lap.

As the study progressed, it became increasingly apparent that David was unable to maintain a single topic beyond one response per turn. A study by Hamilton (1994a) found a similar relationship of impoverished speech, failure to keep track of conversations, and repetition in conversation. She

found these communication difficulties to be significant of the impaired individual in a later stage of AD. Despite the economy of speech (lower phonological and syntactic skills in L2 by T2), his L1 and L2 utterances were articulated fluently and effortlessly, without difficulties in pronunciation. This response indicates agreement with Bourgeois and Mason (1996) who found AD patients produced more utterances, while Hopper, Bayles and Tomoeda (1998) also found an increase of meaningful utterances when patients were presented with a stimulus during conversation and reported problems in 'unsupported' CA with their patients. However, David's general behavioural slowing (restriction of his movement in terms of needing assistance with all basic needs and confinement to his bed) may have affected his linguistic comprehension and language/linguistic production (Rosselli, *et al.*, 2000; Gubrium, 2000).

Results show that although David did not lose his capacity to speak and understand L1 and L2, CS was less prominent. David experienced minor difficulties in keeping the L1 and L2 separate, accounting for the infrequent language mixing behaviour (Friedland and Miller, 1999). Despite his ability to attend to the situational cues, he used either language irrespective of the language I used. Only my conversational turns initiated new topics and his wife's entry into the conversation served to secure David's attention and triggered responses in Afrikaans. Investigator turns that were contributions to ongoing topic treatment were responded to in English. The interjection *ja* (yes) was frequently used to agree with me or to corroborate a question. An analysis of David's conversational output shows that sports (rugby), interactions with his wife, and speech on conversational demand, triggered a language change, meaning that information and memories are recalled in the language in which it was initially intercepted.

Furthermore, David succeeded in using the appropriate base language, Afrikaans without CS. David's speech in English monolingual conversations is characterised as repetitive with reduced conversational input, empty speech with lexical retrieval difficulties, disturbances in his mood, vague in content and less coherent. During Afrikaans monolingual conversations, he produced fewer utterances relevant to the immediate topic, more digressions, an increase in topic avoidance and restricted his L2 output to one-word semantically unrelated utterances. This finding suggests that David's differential performance might be explained by the inadequacy of his cognitive resources for functioning in his L2, coupled with an inability to deactivate his first language when speaking his second. This could be because David is a co-ordinate bilingual and learnt his L2 formally and mainly used it at school, in comparison to the L1 that he acquired informally as a child, at home. The findings are in keeping with earlier studies that impaired individuals exhibit pragmatic difficulties in separating the two languages and in choice of language (De Santi *et al.*, 1990, Hyltenstam

and Stroud, 1989 and Friedland and Miller, 1999), while failing to maintain topics, poor turn-taking and inclined to verbosity (Mackenzie, 2000).

David's language behaviours are hard to interpret as he often used pronouns with no clear reference and vague terms and empty words. He appeared to have lost his awareness of his language problems. As the data collection progressed, repetitive talk became more evident and conversational interactions in both languages were reduced. He appeared to have lost interest in me as conversational partner and asserted his wishes regarding his basic needs in as few words possible. His conversational attempts were limited to a set of *mmm, oh, no, hmm* kind of reactions, with slight intonational variation signalling some form of comprehension. This is typical of his economy of speech over time in L1 and L2. David fits the description of Dronkers, Ludy and Redfern (1998) as an example of an individual with little to no verbal output except for the recurring utterances that varies with changes in stress and intonation. This strategy works well for him in terms of maintaining near-normal pragmatics.

Though he experienced difficulty initiating and changing topics, he exhibits excellent pragmatic abilities by using appropriate turn taking, stylistic variations and paralinguistic and non verbal skills that keep him part of the conversation. However, in view of David's apparent disengagement in the Afrikaans conversation, his performance in English conversations is of interest in that it indicated that important processing abilities were still intact, despite complicating factors. Towards the end of the study, David's speech only signified the pain he was in prior to congestive heart failure. The results are in keeping to that of Hamilton's findings of *Elsie* in her last stages of AD (1994a).

According to his wife, David chose to speak English irrespective of whom he talked to, but mostly spoke Afrikaans (her L1) to her. This is surprising, given that his premorbid English was the language he used and which he often chose. A plausible explanation could be the "affective", in that David respects his wife and learned to "accommodate" his wife's language needs (De Bot and Makoni, 2004). The cognitive demand of the linguistic function of coherence and cohesion on David may have accounted for parts of his Afrikaans monolingual discourse to be ill-formed and often unrelated to the text as a whole (Van Leer and Turkstra, 1999), as coherence varies in contexts and influences the languages used (Ramanathan-Abbott, 1997). Another possible reason that may have accounted for David's Afrikaans monosyllabic responses at T2 may have been the feature of AD that sufferers often experience "good" and "bad" days.

David's apathy related to increased problems in his cognitive and daily functioning. Since apathy is strongly associated with cognitive and daily functioning problems, and found in individuals in advanced stages of AD,

it is likely that an evaluation of David's apathy levels (similar to a diagnosis of depression) may strongly suggest that by T6, David moved into the advanced stage of AD (Sperry, Strauss and Landes, 2001).

David retained culturally learned expressions such as "Glory be" and "Never you mind" and his automated use of these expressions helped frame his conversations and mask lexical retrieval difficulties, despite the difficulty of accessing other aspects of language (Sacks, 1987). By T2 a deterioration is noted in terms of David's communicative competencies (signalled by a decline in figures of speech, fewer words/utterances and a reduction in turn-taking). The use of these strategies is not peculiar to people suffering from dementia and has been documented in second language use, (Bialystok, 1990; Blonder *et al.*, 1994). However, these strategies may signal incoherent discourse, and can be construed as an index of dementia, rather than a discourse style appropriate to the context and users linguistic and cultural norms (Schegloff, 1996; Makoni, 1996).

David's thematic contribution to the discourse was often vague, indiscernible and sometimes off-focus, as seen in extracts shown under the headings of TD and TC. Each time the topic changed, he would ask for clarification by saying *What? Hmm, It's what?* Or he repeated the question. David changed topics when talking about AD and wanting information about the research and my reasons for being there. David focussed more on the L1 monolingual conversations when talking about family, previous employment and hobbies, and produces utterances that add to the thematic development of his conversation. He also uses more topic-related utterances when talking about things in general such as the home, his health and the garden. Often these utterances were monosyllabic with the use of *Yes, No, Ja, Ok*, but the information was incomplete and did not contribute to the maintenance of conversations. It may be significant to note that David digresses from topics when they are about his sons, in particular his son who passed away. This could be interpreted as when finding the communication stressful, he reverts to the "power-role" by asking what my motives were. A noticeable trend appeared in that topic digression is usually followed by topic change, on which he makes requests for clarification.

Observations and conversations between David and his wife regarding his dependence on her for all assistance may have had elements of "infantilization" (Makoni and Makoe, 1999:212). According to the authors infantilization is not only a linguistic strategy that carers adopt to protect themselves against intrusion and violation of private space typical of some nursing work, such as bathing, dressing and eating. It provides a linguistically acceptable mode of violating private space by carers looking after frail adults, making them feel that they are losing "negative face".

Contrary to the findings by De Bot and Makoni (2004) that the effects of higher education lead to more extensive linguistic skills, with a larger

vocabulary, repertoire and more ways of expressing communicative intentions, David hardly showed his large repertoire despite graduate-level education. Aware of his impaired communication skills, David may not have perceived me as an equal partner in conversation and, as a result, assumed a less active role and contributed fewer turns/less utterances (Kemper, 2004; Kemper *et al.*, 2001). Similar results were found in conversations with dysarthric (Comrie, Bayles and Tomoeda, 2001) and aphasic (Perkins, 1995) patients and the researchers. This imbalance in conversation may be attributed to a lack of knowledge (of the investigator) that creates an increasing need to maintain the topic of the conversation.

The severity of AD may also have been a factor that contributed to the reduced participation in conversation, since David (low MMSE scores five years earlier) deviated, for the most part, from the conversational pattern. The extended periods of silence during not only Afrikaans but also English conversations are not unusual, as indicated in the literature (Coulthard, 1985). A reduction in speed of processing skills is an accepted consequence of increased normal ageing (which may lead to a need for more time to organise and plan this input to the conversation). David may have “learned to compensate for word retrieval problems in spontaneous discourse by not initiating responses”, in line with earlier findings that impaired individuals avoid grammatical forms and syntactic structures that impose high memory demands (Schmitter-Edgecombe, Vesneski and Jones, 2000:489, Kemper, 1992). Another contributing factor might be in light of the CA; I was more likely to provide opportunity for the participants’ contribution compared to an interview situation.

A stark contrast between David’s linguistic performance in his L1 and a lack of communication in L2 highlights a need for ethnolinguistic background to be taken into account in the assessment of cognitive dysfunction or decline. Such assessment needs to be carried out in the language that permits optimal performance, and the use of tasks that do not disadvantage those with low levels of education or literacy.

## 5.2 Linguistic analysis of Kate

Kate had a rich linguistic repertoire (Hyltenstam and Stroud, 1989). She uses English (L1) when she talks not only about experiences from her childhood, but also about her adulthood. However, English is certainly Kate’s stronger language since it is the language in which she was formally educated (Daller, Van Hout and Treffers-Daller, 2003). While Kate found English to be more accessible than Afrikaans, a majority of her utterances during L2 interactions were in L1, particularly in language turns and when talking about events from her past (Dronkers, 1986). This finding is consistent with the intuitions of the “mother tongue hypothesis” in that she

recounts her memories in the language in which they were first encoded, namely Afrikaans (L2), in more detail and with more emotion (Schrauf, 2000:408).

Several studies have examined the implications and effects of language in *autobiographical memory* and similarly found participants’ memories to be encoded in language (Altarriba, 1992; Altarriba and Santiago-Rivera, 1994; Conway, 1996; Barsalou, 1998; Conway and Pleydell-Pearce, 2000; Marian and Neisser, 2000; Rubin, 1998; Schrauf and Rubin, 1998, 2000 and Schrauf 2000, 2003). An immediate interpretation of this distribution is that the availability of syntactic structure is greater for Kate when interaction is in Afrikaans because “memory retrieval for events from childhood and youth (in the country of origin) are more numerous, more detailed and more emotionally marked when remembering is done in the first language ... rather than in the second language” (Schrauf, 2000:387). In an exploratory study Schrauf (2003:235) investigated Spanish-English bilinguals’ use of both languages to trigger specific memories of certain events and found his participants’ memories to be encoded in language and across the two languages at all linguistic levels (morphology, lexical, semantic and pragmatic elements). According to Schrauf (2003:235) a person tends to recall a specific incident through *scenes*, *thoughts* or *words* in the hope that they will trigger the forgotten memory. This result can be understood when we see that Kate successively reverts to English in her long turns, seemingly unaware of the situational demands to speak Afrikaans (Hyltenstam and Stroud, 1989). In a nutshell, this finding suggests that for Kate, memories are encoded in language and her linguistic behaviour illustrates her recovery of the old memories against the new (De Bot and Makoni, 2004).

Kate’s speech constituted favourite words or phrases, or sometimes an entire over-learned repertoire lasting several minutes, which is produced essentially verbatim on each occasion (see extracts 17 and 18 in chapter 4). According to Snowden, Neary and Mann (1996) these verbal preservations are common, particularly in the middle stages of the disease.

An analysis of the utterances produced in each language by Kate revealed not only a larger proportion of utterances, increase in turns and new topics when Kate speaks her L2, but also when she speaks her L1, when the conversation is in Afrikaans (see extracts 13 and 14) which confirms findings that bilinguals code-switch to their stronger/dominant language (Blonder *et al.*, 1994; De Bot and Makoni, 2004). This evidence of Kate not following the situational cues I provided is extraordinary, as the analysis discloses that her speech is less proficient in the Afrikaans interactions, though predominantly in English. Despite being unaware of the problems resulting from inappropriate language use, she retains an ability to activate the appropriate language to amend a language breakdown. Findings suggest an increase in the severity of AD may correlate with an increase in

language mixing behaviour (Friedland and Miller, 1999; Hernandez *et al.*, 1999), despite her verbosity in all language interactions across time. Similar findings of verbosity, failure to maintain topics and poor turn taking were found by Mackenzie (2000). According to De Bot and Makoni (2004:19) “‘disinhibition’ is likely to be the cause of verbosity that is often associated with ageing, but also with the lexical retrieval difficulties and seemingly off target language use found in cognitively impaired people.”

Kate’s language mixing comprised CS and lexical borrowings from the two languages within a single sentence, with lexical retrieval difficulties (Rosselli, *et al.*, 2000; Goral and Obler, 2004) which may suggest that CS is present in fluent demented persons (De Santi *et al.*, 1990). Her inability to keep the two languages separate resulted in a large number of mixed predictions. Studies by De Santi *et al.* (1990) and Hyltenstam *et al.* (1989, 1993, 1995) found that the CS produced by AD speakers are similar in grammatical structure to that of healthy bilingual populations and that there is increased correlation between degree of CS and language proficiency than CS and the severity of dementia (Friedland and Miller, 1999).

In short, her CS was triggered by a change in topic or a lack of a lexical item or distractions from environmental stimuli (when her caregiver or domestic helper entered in the room), (Crystal, 1997). When Kate speaks L1 we find no CS into L2. This parallel finding is supported by Hyltenstam and Stroud (1989:223). When Kate speaks her dominant language L1, her L2 is never activated, thereby inhibiting interaction at varying stages of conversation. Both languages are activated when she speaks Afrikaans, accounting for the CS at different points in the conversational process. L1 is inhibited, but activated when lexical retrieval difficulties become apparent, and are in keeping with findings by Friedland and Miller (1999:436) that “code-switching in the L2 interaction [is] more pronounced in speakers who were less proficient in their L2.” However coherence is also found to trigger CS (Schrauf, Pavlenko and Dewaele, 2003:230).

Consistent with findings by Hutchinson and Jenson (1980), who studied the discourse skills of five women with AD, Kate also initiated new topics more frequently and provides appropriate responses, aware of the researcher and her own language difficulties (Blonder *et al.*, 1994). When she experienced lexical retrieval difficulties, she switched languages, and did so with ease, using verbatim stretches of speech (Baker, 1996a). Watson, Chenery and Carter (1999:207) found similarly that when their subjects’ signalled trouble in the conversation, a higher proportion of topic maintenance elaboration was identified which contributed to the decline of the conversation. Garcia and Joannette (1995) attributed their study’s topic change findings to the failure of their participants to continue the topic or due to repetition.

In summary, Kate maintained excellent pragmatic behaviour (in terms of turn-taking, topic management) in spite of impoverished verbal language. She demonstrated a variety of speech acts, responding to directives and initiating questions and comments in normal fashion. She introduced topics and maintained and changed terms. She initiated questions, responded as a listener, used normal pauses, nods and gestures appropriately and waited her turn in the conversation and maintained the topic. Her relevant lexical items were appropriate, though limited. She uses normal intensity, normal vocal quality, rate and smoothness. Kate also exhibits normal distance, normal contacts and body gesture. Kate hardly asks for clarification; instead, she uses repetition to maintain a conversation as conversational partner. Her non-verbal acknowledgement of the listener’s social context is indicative of a preserved pragmatic knowledge that enables her to recognise and appreciate different social contexts and to adjust accordingly.

In a great deal of the conversations shared with Kate, religion is a recurring topic, which she continues through long-remembered rituals (hymns and prayers) that keep her connected to the present and aid in coping with AD. According to Makoni (2001:3) these private devotional activities and spirituality enhance individual self-perceptions and demonstrate that women benefit more from congregational participation, while men benefit mainly from devotional activities. Kate’s post-hoc analysis of her conversation revealed no significant differences between her performance at T1 and at T2. The researcher-participants roles may also be relevant and have a bearing on the results if the study. Kate demonstrated a pattern of virtually equal researcher-participant contributions with regards to the conversational partnership. This is dissimilar to a relationship between severity and conversational activity in a study between two aphasic speakers, where the participants relied heavily on minimal turns and the investigator to maintain/sustain conversation (Perkins, 1995).

A majority of Kate’s utterances are topic focussed and topic related. Her contributions appear to be more or less consistent in each interaction across the languages. Minimal topic discrepancies and topic changes are prominent during the Afrikaans monolingual discourse; however an increase is noted in the above mentioned topic analysis over time. It seems unlikely that my communicative style alone could account for majority TF utterances produced in Kate. She appeared to have only minor difficulty in language choice and language separation. In general, she used either L1 or L2 irrespective of my language use. She experienced difficulties in keeping to one language in the Afrikaans monolingual conversations, which resulted in communicative consequences, by adding to the number of CS utterances. Kate asked many questions, introduced and maintained new topics

over several turns. Her responses for the most part were lengthy, contrasting markedly to the linguistic behaviour exhibited by David.

### 5.3 Summary

There is no correlation between the severity of AD and the amount of CS with regards to David and Kate. The level of proficiency plays a key role in that CS tended to occur from L1 to L2 and not vice versa (Luderus, 1995). Kate's lack of disinhibition and control (characteristic of AD patients) did not lead to a lack of conversational control over the two languages used in the conversations. When tested in L2 CS occurs and increases over time. During her L1 and L2 interactions at T2 she was unable to keep the languages apart. Similar to earlier findings (Perecman, 1984; Van de Van, 1987; Hyltenstam and Stroud, 1989; De Santi *et al.*, 1990) she was unable to 'block' the inappropriate language due to a language choice difficulty (Luderus, 1995). She also notably failed to maintain a distinction between conversing in an English monolingual interaction and an Afrikaans monolingual interaction (Hyltenstam and Stroud, 1989).

Typical of Kate's linguistic behaviour was the vast amount of CS from L1 to L2 characteristic of bilingual dementia patients. However, her CS was not haphazard (Hyltenstam and Stroud, 1989). It appears that "the peculiarity of a testing setting in which languages all of a sudden have to be strictly separate ... is unusual and may therefore lead to disorientation" (De Bot and Makoni, 2004:10).

These studies highlight the greater importance of language proficiency in both languages as an influence on linguistic behaviour, than the stage of AD. The intrusion of L1 utterances into L2 conversations is a prominent feature in the discourse patterns presented in both case studies. Kate's L1 use is automatic, while her L2 use depended on her conscious efforts. Like Kate, David was least proficient in his L2, however Kate showed more language mixing in L2 interactions using the L2, despite her stage of diagnosis. Her CS increased (narrowing her linguistic, syntactic and semantic distance between the two languages) as the AD progressed. However, a general decline in performance is observed in both participants with increasing disease severity, and both were susceptible to distractions from environmental stimuli, an inevitable effect of AD (Friedland and Miller, 1999:442). These results indicate that AD exerts a strong impact on the two participants' language performance that is evident in the conversational discourse.

In short, findings applicable to both participants were:

- AD did not affect David and Kate's respective L1 and L2 use equally. The impact of AD on working memory may have accounted for the

difficulties experienced by both participants in terms of their linguistic behaviour;

- Both suffered alteration in all aspects of linguistic skills and levels of both languages; however deterioration of their language capacities was unique to each case. Deterioration differed in that the degree of alteration depended on the topics, linguistic skill and levels and the language used across time. This general alteration may have been derived from a "generalised reduction in cerebral activity due to cerebral atrophy which accelerates after the age of 70" (Juncos- Rabadán, 1994:72);
- Both participants demonstrated deficiencies in L1 and L2 as found in similar studies (Dronkers, 1986; Hyltenstam and Stroud, 1989)
- Cognitive flexibility decreased from T1 to T2;
- Both participants used L1 to recall information which demonstrates a richer associative network in English and their use of languages for different purposes, in different facets of their lives and in interactions with different people in their environment (Rosselli, *et al.*, 2000);
- Both used L1 and L2 in their daily interactions, however the extent of their language use is not reflected in their lexical representations (Rosselli *et al.*, 2000) and may be a reflection of a memory deficit typical of AD (Dronkers, 1986);
- L1 is less impaired in comparison to L2 over time (Hyltenstam and Stroud, 1989).

Unlike the findings on bilingual aphasics (Kainz, 1983), AD affected both participants' non-automatic language (L2) requiring a conscious use. The findings of this study cannot be generalised to other interactions between other conversational partners at other times or places. Given the small sample size, the interpretations provided here are tentative. From the above it is clear that knowledge of the participants' language history is important in determining his/her language choice, and that merely stating whether the participant was exposed to a language does not provide any information regarding the nature of the participant's language proficiency. Based on the empirical observations of both participants in their respective settings, this study's findings are unable to clarify whether pathological CS is a pragmatic disorder of communication in AD as found in other studies (Fabbro, 1999; Fabbro, *et al.*, 2000). In other words, is CS a sign of impairment for Kate, or is this a reflection of her retained linguistic ability?

An in-depth analysis of the conversational discourse with both participants, highlights my avoidance to engage in collaborative amendments when a language breakdown occurred and my use of minimal turns such as *ja* and *ok* in all monolingual interactions, since " 'ja' [and 'ok'] is used by both English and Afrikaans speakers ... and is therefore not language

specific” (Friedland and Miller, 1999:441). Since it appears that the impaired speaker runs out of associated ideas, or is not interested in participating, and in keeping with studies involving other neurologically impaired populations, I compensated by assuming the responsibility for introducing topics, while adopting a passive role within the maintenance and structure of the discourse (Hird and Kirsner, 2003). Cautioned by Hamilton (1994a) against viewing participants’ inappropriate responses as reflecting a language deficit, I was mindful of the possible influences of my own bilingual proficiency on the participants’ language separation difficulty, as I adapted to the way the participants spoke, depending on their estimated level of linguistic decline over time.

## Chapter 6. Conclusions and Recommendations

### 6.1 General conclusions

This dissertation set out to describe and explain linguistic behaviour in two bilingual individuals with AD. Language proficiency is a skill and is said to decline with non-use (De Bot and Makoni, 2004). The findings of this study, suggest that L2 declines more rapidly with little to no use, despite minimal lexical and semantic retention and the effects of AD. However, it is not known whether an L2 user must reach a particular threshold in a L2 if the decline is to be slowed down.

Despite the small sample size, the study demonstrated the advantages of CA, in assessing linguistic behaviour affected by age-related deterioration of languages in adults in the presence of AD. When compared to other DA approaches used in earlier studies on bilinguals with AD, CA is the preferred systematic, in-depth and sensitive analysis tool (Friedland and Miller, 1999:443), to compare over time and across investigators and interactions to characterise linguistic behaviour. Through CA, comparisons can be made of abilities at different levels. Although the usefulness of CA was outweighed by the time required for data collection, transcription and analysis, there were differential findings on each occasion. The CA of both participants was unconstrained and their discourse extracts varied in terms of topic matter and interactional styles. This signals that CA may be “unsuitable for precise measurement over time and this is problematic as an assessment tool” (Von Bentheim, 2000:7). Language mixing was also more evident in these bilinguals.

The results of the study indicated that the case of David did not turn out to be as anticipated (unique and unproblematic), but rather extreme (in speech). His reduced working memory capacity may have been the reason why he avoided processing complex sentences, since working memory and executive functions are key aspects affected by AD (Kemper and Harden, 1999). Similar to findings in previous studies, David did not show any difficulty in keeping his languages apart or in choosing the right language in conversations (Hyltenstam and Stroud, 1989). The study attributed Kate’s simultaneous L1 and L2 acquisition to her excessive mixing in of L1 during monolingual L2 interactions, and shows that “when language[s] match at encoding and at retrieval, remembering is more effective” (Schrauf, 2000:411). She did however not revert to her L1 when talking to a L2 speaker (Lettie). Time and type of acquisition may also have had a bearing on how the results are interpreted, and may have accounted for the differences found in the activation/inhibition of the participants’ linguistic abilities. These factors may have conspired with their stage of AD, to produce specific types of language decay/decline for the two different

bilingual participants. Kate's ability to retain meaning sensitises one to her *residual competence* (what she can no longer do) (Makoni and Nelson, 2004). The study indicates that the conversations are significantly and negatively affected as a result of the presence of AD and that the functional relevance of this impact lies in reduced frequency: for David, loss of conversational interactions with premorbid conversational partners.

To my knowledge no previous research has been conducted on the conversational discourse performance in two case studies of English and Afrikaans speaking Caucasians with AD, from a CA framework. Previous research on bilinguals has included language mixing, that focused on providing a constructivist account of (in)appropriate language behaviour (Friedland and Miller, 1999). The study also differed from the research conducted by Hyltenstam and Stroud (1989) using the same arbitrary categories to tally utterances.

The study does however assert a heightened understanding of language and ageing as it relates to AD, which may inform future large group studies. It is really on the premise of personal experience with the AD participants that one can understand what is happening to them. This study clearly revealed that language issues are indeed everywhere, even when the same language is spoken.

## 6.2 Limitations of the study

In light of the very small sample size, only a few claims are made regarding the generalisability of this study's findings, although triangulation aided in the validity of the research findings (Yin, 1984:21). The analysis is partial and preliminary, and should be treated circumspectly since there is no sociolinguistic data with which to compare normal and pathological ageing over time. The question of sampling in ageing and AD research is complex due to the problem of finding fluent elderly bilingual individuals who meet the criteria and difficulties, if not the impossibilities of "controlling for experimental mortality" (Makoni, 2001:8).

Another limitation of the study is that ethnic, cultural, racial, social and generational differences between the participants and I may have influenced the study's results. For example, Kate tended to produce typical *kombuis* Afrikaans (non-standardised form of Afrikaans) following instances of CS, which may have resulted from her association of the typical non-standardised form of Afrikaans which "coloureds" are known to use.

My role as a participant-observer in the events studied may well have altered the course of events and hampered the study, in that I assumed responsibility for sustaining and directing conversations (as in David's case). This "communicative predicament" may have had a detrimental effect on his self esteem and limited his (possibilities of) meaningful inter-

action in that it reinforced age-related stereotyping. This may have led to a reduced self-esteem and withdrawal, hence leading to further expectations of incompetence encircled by negative feedback (Ryan, 2000:272). For this reason one may say that CA is not "completely objective and value-free" as the investigator is part of the research reality (Struwig and Stead, 2001:16).

The methodology used for the two case studies disqualifies providing a generalisable conclusion, as case studies establish meaning rather than location. The meaning (in case studies) is ambiguous because it arises out of a process of interaction between people: self, teller, listener and recorder, analyst and reader (Riessman, 1993:15).

The 30–60 minutes duration of conversation per participant was problematic, and led to an uneven dispersion of conversational variables. CA was lengthy and time-consuming, resulting in lengthy transcriptions and an arduous analysis. Further difficulties to maintain any sense of an agenda was exacerbated by the introduction of new topics at any given time (Kate), and the failure to elaborate upon topics (David) introduced by the investigator.

The task of transcription of conversations is problematic yet inevitable, as it involves decision-making on what aspects of language to include and exclude, and should not be seen as a direct reflection of the conversations. The contexts themselves may have promoted or inhibited the participants' linguistic performances, as one is never able to separate context from the purpose of interaction and the degree of communicative sophistication (linguistic behaviour) of the participants. A practical problem lay in obtaining tape recordings that were sufficiently clear, without allowing the recorder to dominate the scene, thereby losing any chance of tapping the speaker's most natural kind of speech.

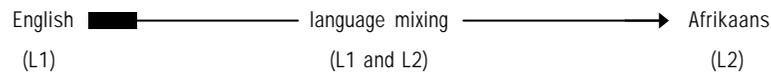
The tallying of utterances through *arbitrary categories* (code-switching, topic digression, topic focused, topic change) forfeited vital information regarding the cause and nature of the language behaviour. A key dilemma was addressing questions of language mixing to determine whether individual instances of mixing were effects of the disease or not. It seems that language choices and mixing (in the case of Kate) were based on the awareness that I understood and was able to interact in both languages, although only one language was used in each conversation.

Since the study had no access to information on the participants' premorbid bilingual proficiency and linguistic behaviour (apart from secondary information from their caregivers), it was not possible to determine whether the language interactions used in the data were outcomes of the effects of AD, or if this was a retained linguistic ability. For example, it was difficult to ascertain the extent to which CS was part of Kate's normal language use; according to De Bot and Makoni (2004:19) guessing what the motives are hazardous, and should be discouraged.

### 6.3 Theoretical and clinical implications

The findings of the study have various theoretical, clinical and research implications. The study was exploratory in nature and contributed knowledge regarding the conversational discourse, characteristics of bilingual Caucasians with mild to moderate AD. The study indicated that various language features are preserved in a bilingual speaking person with mild to moderate AD. In addition, the findings indicated that the L1 provided the participants with various compensation strategies when lexical retrieval difficulties occurred.

CS and language mixing can be placed on a continuum that includes elements (morphemes etc) between Afrikaans and English.



The use of both languages may to a large extent be influenced by the severity of the AD and the levels of language proficiency in the participants' premorbid condition.

As suggested in previous studies, given the complementary aspect of conversational analysis, a combination of the MMSE, cognitive tests and informant reports may improve performance on screening for AD. The implication of assessment of linguistic abilities through CA at various intervals over time may serve as a means to chart disease progression (Makoni, 2004).

This study demonstrated the value of CA in the investigation of the effects of AD in the abilities of a dementing individual to select the appropriate language in a conversation. It is however noted that conversation is a joint enterprise whose success depends not only on the input of the impaired speaker, but on the collaboration of non-demented parties as well. This means that diagnostic decisions based on conversational abilities are judgements not only of a demented individual but also of normal speakers. These findings have implications for (provision of) assessment and interventions based on the creation of effective forms of communication that are less reliant on cognitive ability.

Given a global emphasis on preventive measures to reduce disability and therefore health care costs, it is in the interest of all to consider carefully what may be done at an earlier stage to reduce negative outcomes of AD.

### 6.4 Future research: rethinking language and ageing

The study was exploratory in nature. Since it was only the second in South Africa to investigate, document and provide insight into the communicative effectiveness of CA in the study of the dementing bilingual partici-

pants' linguistic abilities to select the appropriate language in conversation, it anticipates that the findings of the study will encourage future research in this area. During the course of the study various areas for future research were identified and are discussed below.

Emerging from this study and those cited is an overarching need to combine studies in bilingualism with studies in ageing to understand the linguistic consequences of cognitive decline in the elderly. Future studies should look at investigator variation in language when using CA in bilingual and dementing elders, since studies show intergenerational and interethnic complexities that elders are inflicted with when communicating not only with younger people (the investigator) but with similar-age peers (Dorjee and Giles, 2004). This issue of ageism is compounded especially in the neurologically impaired elderly population (Makoni, 2004). Further research is needed to examine investigator bias, in which participants and an investigator are matched for race and ethnicity, as demonstrated in an expansive study which included over a 1000 subjects (De Bot and Makoni, 2004), to overcome some researcher biases.

#### Representative research

The discussion of language(s) in ageing in healthy and in neurologically impaired populations is still in its infancy. Since no research has investigated the linguistic behaviours of individuals with AD who have acquired languages simultaneously, considerable research is needed to build a representative picture of the linguistic behaviour in bilinguals with AD. However, this related groundwork may help to inform principled research questions and methodologies for larger group studies. This study has also identified a need for suitable normative data on people without AD, of equivalent age, background and experience, to aid in the interpretation of individual performance, since assessment for AD seeks to identify cognitive decline that is greater than would occur in normal ageing. This in itself is problematic, as linguistic norms are open to contestation (why some features are included and others excluded). The underlying construct of language in the norms needs explication. A general tendency is to use binary categories. A more sophisticated model using a probabilistic approach is needed.

#### Sample size, proficiency and situational characteristics

A small sample size was used since the study was exploratory in nature. Future studies should involve larger participant groups, for a representative analysis of aspects of the conversational process that have shown to be disruptive in participants with AD (such as topic management, topic repair, fluency, repetition, pre-contribution pauses, lengths of utterances, non-

verbal responses, turn-taking and total word counts in each language production) (Perkins *et al.*, 1995). Attention given not only to the participants, but also their familiar communicative partners' linguistic behaviours may be invaluable. 5–10 minutes for a conversational sample is reasonable as it provides an adequate representation of the “main” conversations from which to measure conversational variables (topic management etc.).

For the purpose of this study only the discourse behaviour in mild to moderate AD was investigated. The effects of severe AD on conversational discourse need to be investigated to determine the status of communicative competence in that case.

Further investigations are needed on the role of participants' different proficiency levels, the research settings, and the impact of topics and the investigator on the linguistic behaviour in bilinguals with AD, to provide an accurate representation of the L2, since the age of L2 acquisition and the degree of proficiency attained are important determinants of proficiency in L2 (Perani *et al.*, 1998). For this, longitudinal study is recommended to monitor linguistic behaviour as AD progresses, as this is unknown.

This study also identified a need for more research on the effects of non-verbal contributions, such as eye contact, gestures and posture, which are important behavioural functions that may have additional potential use for people with severe AD, who rely on non-verbal means when their verbal contributions are limited.

It is anticipated that the results of this study will stimulate future research into conversational participation in AD involving larger numbers of participants and across time, as the disease progresses. The following variables are important to consider when studying language in AD:

- a collection of data over time will permit testing of the hypothesis of the relationship between AD severity and conversational participation;
- time since AD onset should be taken into account;
- replication would help to ascertain whether the significant differences described in the investigation characterise conversational interaction of the AD group, or whether the conversational irregularities observed are idiosyncratic with respect to either the participants or the investigator as a conversational partner;
- the representiveness of data is a concern as the unfamiliarity of the investigator and circumstances may elicit conversations that are not entirely illustrative of the participant's conversational styles. This variable may affect interpretation of the results in relation to everyday communicative situations, thus the inclusion of a familiar conversational partner should be considered; and

- given that the role of a communicatively impaired speaker depends on the investigator's contributions, the conversational style of both should be analysed, qualitatively as well as quantitatively.

An increase in AD research is necessary not only in language and ageing from the area of applied language studies, but in all research disciplines (to pre-empt major problems ahead and provide an enhanced quality of life through comfortable, dignified and solicitous care) since there is no certainty when deterioration in communication and working memory gives way to a loss of internal sense of self-identity. It is anticipated that this synthesis of psycholinguistic knowledge in relation to dementia will advance an understanding of the problems of AD and language organisation in the multilingual brain.

## 6.5 Forget that they forget: a closing note

When I began my work as a researcher in the homes of the two participants, I experienced an enormous gap (in terms of ethnicity, culture, race, social and generational differences) between the participants and myself, until I started to know them and their family members. Before long, I was able to see them as individuals: Kate still wanted to look beautiful and put on lipstick and nail polish, while David preferred to go into a world of his own where he felt comfortable and safe.

Interacting with these participants in their homes for several hours a week over a few months, gave me some insight into the subculture of their homes and lives. It humbled me to have them include me in their lives and to disclose a plurality of intimate thoughts to me. Memories of a short time spent with David came flooding back to me, on hearing about his demise. It outlined that death is an inevitable part of life, and yet, while medical advances cannot prevent death, they have changed our manner of dying. A memory of David lives on in all those who were somehow touched by his presence. It is in this sense that we can say that the human life cycle is never-ending.

I would like to end by dedicating a poem<sup>14</sup> not only to the two participants but to all the Davids and Kates in the world.

A weak old man lay on his bed.  
There was little time before he was dead.  
A crowd of people surrounded him.  
Their faces all looked sad and grim.  
They all spoke to him, they held his hand,  
But they all spoke a language he could not understand.  
He could not express what he was thinking about.  
His mind was a cage full of butterflies,  
Wanting to get out.

When he tried to speak the wrong words came.  
 He tried over and over again,  
 But the crowd around him just sat and stared.  
 He began to think that they did not care.  
 He gave it up; he wanted to cry.  
 His mind was a cage full of butterflies,  
 Wanting to fly.

His body ached; he was in pain,  
 Like he had been hit by a small freight train.  
 When it would be over he did not know.  
 His mind was a cage full of butterflies,  
 Wanting to go.

He could not take it; he wanted to die,  
 So that up to God he could fly.  
 Then suddenly he started to go.  
 He felt cold all the way from his head to his toes.  
 He suddenly felt a sharp pain in his back.  
 He cried out loud, then all went black.  
 He opened his eyes; he could see a light.  
 He felt so relaxed and he felt no fright.  
 He had gone to heaven and the Lord he did see.  
 Back home, the butterflies danced  
 And were free.

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14 The poem: *A cage full of butterflies*, composed by Rogan Kerr, 14, after Granddad died (ARDA, 2003: 7).

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## Appendices

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### Appendix A

Adapted and translated version of the Paradis Bilingual Questionnaire  
Paradis, M. (1987) *The assessment of bilingual aphasia*. London: Lawrence Erlbaum Associates Publishers.

#### AGTERGROND VAN DIE TWEETALIGE PERSOON

##### \*Lees die volgende hardop voor:

1. Wat is u geboortedatum?
  2. Waar was u gebore?
  3. Watter taal het u as kind die meeste gepraat?
  4. Het u as kind enige ander tale tuis gepraat?
- \*As die antwoord op (4) “nee” is, gaan dan verder met vraag (6)**
5. Watter ander tale het u as kind tuis gepraat?
  6. Wat was u vader se moedertaal?
  7. Het hy enige ander tale gepraat?
- \*As die antwoord op (7) “nee” is, gaan dan verder met vraag (12)**
8. Watter ander tale het u vader gepraat?
  9. Het u vader enige ander tale tuis gepraat?
  10. Watter taal het u vader die meeste met u gepraat?
  11. Wat was u moeder se eerste taal?
  12. Het sy enige ander tale gepraat?
- \*As die antwoord op (12) “nee” is, gaan dan verder met vraag (15)**
13. Watter ander tale het u moeder met u gepraat?

14. Het u moeder enige ander tale tuis gepraat?
15. Het iemand anders na u omgesien toe u klein was?
- \*As die antwoord op (15) “nee” is, gaan dan verder met vraag (21)**
16. Wat was hierdie persoon se eerste taal?
17. Het die persoon enige ander tale gepraat?
18. Watter tale het die persoon die meeste gepraat?
19. Het die persoon enige ander tale tuis gepraat?
- \*As die antwoord op (19) “nee” is, gaan dan verder met vraag (21)**
20. Wat was hierdie tale?
21. Watter tale het u as kind the meeste met u vriende gepraat?
22. Hoeveel jare was u op skool?
23. In watter taal het u onderrig ontvang?
24. Watter taal het die meeste van die leerlinge by die skool gepraat?
25. Het u taal van onderrig verander tydens u skoolopleiding?
- \*As die antwoord op (25) “nee” is, gaan dan verder met vraag (29)**
26. Wat was hierdie taal?
27. Na hoeveel jaar van onderrig het u onderrigstaal verander?
28. Watter taal het die meeste van die leerlinge by die skool gepraat?
29. Het u enige opleiding na skool ondergaan?
30. Wat was die taal van onderrig tydens die opleiding?
31. Watter beroep het u beoefen na voltooiing van u opleiding?
32. Watter tale kon u praat voor die diagnose van Alzheimer’s demensie?
33. Het u vermoë om die bogenoemde tale te praat, verander na die diagnose van Alzheimer’s demensie?

#### HISTORY OF THE BILINGUAL INDIVIDUAL (English translation)

What is your date of birth?

Where were you born?

Which language did you speak the most as a child?

Did you speak any other languages at home as a child?

**\*Move to question 6 if the answer is “no” to the above**

Which other languages did you speak at home as a child?

What was your father’s first language?

Did he speak any other languages?

**\*Move to question 12 if the answer is “no” to the above**

Which other languages did your father speak?

Did your father speak any other languages at home?

Which other languages did your father speak the most with you?

What was your mother’s first language?

Did she speak any other languages?

**\*Move to question 15 if the answer is “no” to the above**

Which other languages did your mother speak?

Did your mother speak any other languages at home?

Did anyone else look after you when you were a child?

**\*Move to question 21 if the answer is “no” to the above**

What was this person’s first language?

Did this person speak any other languages?

Which other languages did this person speak?

Did this person speak any other languages at home?

**\*Move to question 21 if the answer is “no” to the above**

What were these languages?

Which language did you speak most often to your friends?

How many years were you at school?

What was your language medium of school education?

What was the language spoken by most children at school?

Did your language medium of education change while you were at school?

**\* Move to question 29 if the answer is “no” to the above**

What was the new medium of education?

After how many years of education did your language medium change?

What was the language spoken by most children at school?

What training have you had after school?

What was the medium of education during this training?

What was your occupation?

What languages could you speak before the onset of Alzheimer’s disease?

Has your ability to speak the above-mentioned languages changed since the onset of Alzheimer’s disease?

## Appendix B

Participant Consent Letter

CALLSSA

University of Cape Town

I ..... understand the purposes of the study to be undertaken and agree that my data may be used for research purposes, and that I can choose to withdraw from the study at any time. I furthermore give the researcher consent to have access to my medical records for the purposes of gaining information about my disease.

I am aware that the interview will take approximately an hour, and that the data along with other identifying information gathered during the study, will be kept strictly confidential.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Family member’s Signature \_\_\_\_\_

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Your participation in this project is appreciated.

Please contact me if you require any information (Ph: 083 368 6000)

Yours sincerely,

.....

T. Theunis (Researcher)

Assoc Prof S.B. Makoni (Supervisor at that time)

## Appendix C

### Predetermined conversational topics

Research shows that reminiscing is perceived as safe for people with Alzheimer's disease because they are more in control when talking about the past (Hamilton, 1994a). What should be taken into account, is that reminiscing with a patient is not similar to encouraging him/her to live in the past. Below are the nine topics used in the first language production task. (Topics taken from Sheridan, 1992:102-07)

#### Home

Where was your first home? Did you move often? Why? What was your favourite house?

#### School

Where did you attend your first school? What was the school like? Who taught you? Who was your favourite teacher? What was your favourite subject?

#### Names

Do you recall the names of childhood friends? Who gave you your name (parents/grandparents)? Is there a special name you would like to have been called by? What is your favourite name? What names don't you like? Why?

#### Housekeeping

How was the housewife's week organized long ago? Did she have special days for certain chores? What were they? What did she use as an iron? Is the housewife's role as important nowadays?

#### Christmas

How did you celebrate Christmas when you were a child? Was it a special holiday for you? What was your favourite Christmas game? Did you ever go to a fancy-dress Christmas ball? What was your most memorable holiday? Who did you go with? Tell me about some funny happenings.

#### Gifts

Were you ever given a gift that you have always treasured? Why was it special? Describe some gifts you were given. Do you still have it?

#### Romance

Tell me about your first romance. Do you recall your first dance or your first date? How did you meet your spouse? When did you know you were in love? How long did your engagement last? Any stories about your

courtship? How did he propose? Tell me about your wedding? Where did you go on your honeymoon?

#### Children

At what age did you have your first child? How did you decide on the name? Tell me about some of the happy times. What about the hard times?

#### Work

What job did you have? Do you recall spending your first week's or month's earnings? Who worked with you? What jobs did members of your family do?

## Appendix D

### Transcription conventions

The system of the Sacks-Schegloff-Jefferson transcription conventions was (simplified) adapted from the version by Atkinson and Heritage, 1984 and 1999.

#### Simultaneous utterances

Utterances starting simultaneously are linked with a single left-hand bracket:

Georgia: I use my notebook to write my thoughts.

[

Gabriela: That is amazing.

#### Overlapping utterances

Where overlapping utterances did not appear simultaneously, a single left-hand bracket marks where the overlap begins

Georgia: I use my notebook to write my thoughts.

[

Gabriela: That is amazing.

#### Intervals within and between utterances

Untimed pauses heard between utterances are described within single or double parentheses and are inserted when they occur:

Ian: Can we go now?

(pause)

Darren: Yes, in a minute

They are also described by 3 dots. Pauses were not timed in the transcripts.

#### Characteristics of speech delivery (discourse)

A single dash indicates the intonation of a word broken off before it is completed. A comma completes the intonation of a phrase broken off if it is finished. Speaker's emphasis is indicated by underlining:

Dennis: Don't touch my car.

**Colons** (:) are used to mark a lengthening of the sound it follows (usually the entire syllable). The number of colons corresponding to the length of the prolongation. More colons prolong the stretch:

Ilona: My legs are so::: so::re, re:::ally

Doubled letters indicate a lengthening or stress of a single sound.

#### Transcription Doubt

Items enclosed with single parentheses are (inaudible) doubted hearings by the transcriptionist

Irvin: Are you going to (p- )

Deon: I think I (will)

The transcriber's comments are endorsed in double parentheses. No hearing of talk is identified when a single parentheses is empty, and marked (unclear). The notation ((pause)) between turns indicates a noticeable (larger than normal) period of silence ((laugh)). Despite many editings, the transcripts undoubtedly contain errors that different transcribers may hear differently. Square brackets indicate the transcribers words for example, [she echoed].

**A hyphen** attached to the end of the word indicates that a brief pause began with an abrupt halt or clipping off that word.

#### Citation conventions

**Boldface** is used to indicate emphasis by the analyst to indicate the particular section of interest in a transcription example.

*Italics* is used to depict direct translation of spoken utterances from Afrikaans into English and *vice versa*.

#### Intonation patterns:

Terminal punctuation marks: the period (.) (indicating falling intonation), question mark (?) (standard question intonation); and exclamation point (!) (denoting an intoned delivery) – are used in this transcript to indicate *intonation* patterns rather than grammatical sentences.

#### Other publications in the Occasional Papers series:

1. Bloch, C. 1998. 'Literacy in the Early Years: Teaching and Learning in Multilingual Early Childhood Classrooms'.
2. Plüddemann, P., Mati, X. and Mahlalela-Thusi, B. 2000. 'Problems and Possibilities in Multilingual Classrooms in the Western Cape'.
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