Narrative Discourse in English Speaking Coloured Persons with Aphasia and Normal Controls in the Western Cape, South Africa

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Abstract

This study aimed to characterise the discourse performance of English speaking Coloured persons with mild to moderate aphasia and matched controls. It ascertained whether various narrative discourse tasks resulted in differences in discourse performance between the two groups in the amount of information and the quality of information provided as well as the number of evaluative devices used in various narrative tasks. Furthermore, adaptation features, dialectal features and ethnic discourse markers were identified. A narrative Discourse Test Battery devised by Ulatowska et al (1998) consisting of two composite pictures, a picture sequence story, a story retell and a personal experience task were administered to all subjects. In order to gain further insight into higher level cognitive processes the formulation of main ideas, providing the lessons for the stories and interpreting proverbs were used. All narrative samples were transcribed and the data treated in terms of the length of narratives, propositional units, quality analysis and analysis of evaluation. The results indicated that for all of these methods of assessment the experimental group performed poorer than the control group. Statistically significant differences were noted on the measures of overall quality, coherence, clarity, referencing, expressive phonology and ritual utterances for some of the narrative tasks. Aphasic and general discourse adaptation features were evident across all narrative tasks. Dialectal features and ethnic discourse markers particular to this ethnic group were identified across all narrative tasks. Task effects existed in that the 'Fable' story retell and the 'Personal Experience' narratives showed the greatest differences between groups and revealed the most information with regards to adaptation features, dialectal features and ethnic discourse markers. In interpreting spontaneous proverbs and multiple choice proverbs the experimental group had greater difficulties abstracting and generalising information than the control group did. Furthermore the assessment tool, apart from the proverbs, was found to be culturally appropriate for this ethnic group.

Key words: Narrative discourse, aphasia, narrative length, propositional units, quality analysis, analysis of evaluation, proverbs, aphasic adaptation features, general discourse adaptation features, dialectal features, ethnic discourse markers, narrative task effects.

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1 Introduction

'Language can be studied not only with reference to its formal properties... but also with regard to the lives and thoughts and culture of the people who speak it.' (Edgar Gregerson, 1977: p156, cited in Kaschula & Anthonissen, 1995: p95).

The use of standardised assessment tools in measuring communicative competence in mild to moderate aphasics has received reports of dissatisfaction from many researchers (Grosjean 1989; Penn & Beecham, 1992; Lyons, Cariski, Keisler, Rosenbek, Levine, Kumpula, Ryff, Coyne & Levin, 1997; Boles, 1998; Honda, Mitachi & Watamori, 1999; Wilkinson, 1999). Apart from lacking the ability to tap the everyday communication difficulties experienced by persons with mild aphasia, they also fail to serve those individuals on which the assessment tools are not standardised (Penn & Beecham, 1992; Honda et al, 1999). As Penn & Beecham (1992) state, the population groups on which these tests are standardised do not represent the majority of the multilingual population of South Africa. As a consequence of this dissatisfaction the use of analysing various types of discourse is starting to become more favourable in both clinical and research fields of application. Although the use of more qualitative assessment tools which investigate the use of discourse are still new they serve the important role of determining the communicative competence of persons with aphasia in their everyday use of language (Wilkinson, 1999). They also serve to incorporate those individuals on which standardised tests are not validated, thus allowing Speech Language Pathologists (SLP's) to note linguistic differences in their patient populations.

This is of specific significance to SLP's working in countries where multilingualism is the norm rather than the exception. Although the use of discourse in assessment has been documented, little research has been done to investigate the discourse and linguistic characteristics of various cultural groups. Hence, the purpose of this study is to investigate the effectiveness of narrative discourse analysis in determining discourse performance in the English speaking Cape Coloured community of the Western Cape in persons with mild to moderate aphasia and matched normal controls. Coloured persons can be defined as individuals who have come from ethnically mixed backgrounds (Crystal, 1995). In addition, this study further aims to note the importance of investigating the discourse and linguistic characteristics of this group.

South Africa is a country rich in terms of its multilingual diversity (Penn & Beecham, 1992). As a result, the vast majority of its citizens exist along a continuum of multilingualism (Penn & Beecham, 1992). Within a country with eleven official languages, there are not only a large variety of African, Asian and European languages, but also accepted variations of these languages (Reagan, 1995). Over and above the official languages, there are regional differences in dialects and normal instances of code-mixing and code-switching in urban dwellings (Penn & Beecham, 1992; McCormick, 1995). Code-mixing can be defined as the alternation of one single word and code-switching as the alternation of elements longer than one word from two languages or dialects (McCormick, 1995). Code-switching and code-mixing are important and common features of the Cape Town speech communities as people deftly switch from English to Afrikaans (McCormick, 1995). Due to the language diversity in South Africa, bilingualism and multilingualism are thus commonplace.

For many years in South Africa, African languages were ignored with Afrikaans and English been the only two official languages (Louw-Potgieter, 1991). English was viewed as the 'high prestige' language as it had international acceptance whereas Afrikaans could only be spoken in South Africa and was associated with the predominantly Afrikaans speaking government of that time (Hugh, 1987 cited in Louw-Potgieter, 1991). A census administered in 1992 estimated that approximately 2.23 million people in South Africa; 1.75 million Caucasians, 0.44 million Coloureds and 0.04 million Africans, spoke English as a first language (L1) (Lass, 1995). The results of the 1998 census estimated that English was now spoken by approximately 2.4 million people; 1.71 million Caucasians, 0.58 million Coloureds and 0.11 million Africans (Orkin, 1998). The results are summarised below in Table 1.1.

Table 1.1. Total Number of Persons and Users of English as a Home Language by Population Group

Population	1992		1998	
	Total No.	English Speaking	Total No.	English Speaking
Caucasians	4.27 million	1.75 million	4.50 million	1.71 million
Coloureds	3.31 million	0.44 million	3.72 million	0.58 million
Africans	28.0 million	0.04 million	32.45 million	0.11 million
TOTAL	**35.58 million**	***2.23 million**	**40.65 million**	**2.4 million**

As can be seen, in keeping with overall increases in the total number of persons in the Coloured and African population groups over the past six years, there has been an increase in the

estimated number of Coloureds and Africans speaking English as a home language. However, despite an increase in the total number of Caucasians, the number speaking English as a home language has reduced slightly. It is more important to note however, that despite the increase in the number of Coloureds and Africans speaking English, the English used by these population groups is essentially different from that used by other cultural groups (Buthelezi, 1995). One would expect a difference in this form of English to that spoken by Caucasians, for as far back as 1978, English in the South African Coloured community was noted as a distinct form of English (Lanham, 1978; Crystal, 1995). The differences between South African Coloured English (SACE) and standard South African English (SAE) (as spoken by Caucasians) are a reflection of its history (the genesis of the Coloured community in the Cape Province), dating back to the earliest days of White colonisation.

The style of English used by both Coloured and African communities developed due to differences in educational experiences, cultures and lifestyles (Buthelezi, 1995; Reagan, 1995). Due to this, the English learnt by South African Coloureds and Africans was not the same 'standard' English as was spoken by the 'prestigious' Whites of the time (Buthelezi, 1995; Crystal, 1995). Another factor which encouraged the formation of South African Black English (SABE) and SACE, was that of the apartheid regime (Buthelezi, 1995). This ensured that there was minimal social interaction between first and second language (L2) speakers of English (Buthelezi, 1995). At this time Afrikaans was the mother tongue of the great majority of the Coloured community, but contact with the English speaking community, especially in the Cape, produced English-Afrikaans bilingualism and English-Afrikaans code-switching (Lanham, 1978; McCormick, 1995). SABE differs from SACE in that historically, most Africans learnt English in mission schools and the structure of their English was largely influenced by the various local African language backgrounds (Crystal, 1995).

SACE is thus described as being distinct in its phonology, grammar and vocabulary (Lanham, 1978). Few investigations have focused on the differences in the phonological features between SACE and SAE (Malan, 1996). Some of the features characteristic of SACE phonology include fronting of /a/ to /æ/, de-aspiration of stops, loss of voicing in word final position and stress shifts in polysyllabic verb forms to the final syllable (McCormick, 1995; Malan, 1996). SACE's grammar (morpho-syntactic features) is generally characterised by the non-standard use of verb forms, prepositions, pronouns and adverbials, amongst others (Malan, 1996). Some ways in which the verb form in SACE can differ from that in SAE is that there may be errors in the agreement of concord, deletion of contractible forms of *be* or the deletion of past tense *-ed*

(Malan, 1996). Prepositions may differ with regard to the generalisation of *by* to other semantic contexts or the substitution of prepositions (Malan, 1996). The non-standard use of pronouns is often characterised by the reversal of Standard English subject and object pronouns e.g. *us* for *we* and *they* for *them* (Malan, 1996). Some of the non-standard use of adverbials are reported by Malan (1996) as been the deletion of the *ly* suffix, allowing temporal adverbials to precede locative ones and the 'penultimate placement of adverbials such as *now* and *also*' (p138). In terms of the vocabulary of SACE there is the use of code-mixing and code-switching which can be seen as a form of identification with this cultural group (Crystal, 1995). Although these features have been documented in SACE the use of Afrikaans loanwords are optional rather than integral features of SACE (McCormick, 1995). Due to the differences between SACE and SAE the standard of English in SACE is not the same as many SLP's in the Western Cape, who have mainly been educated and raised with the standard form of English.

A large number of patients with communicative disorders presenting to Speech Therapy Clinics in the Western Cape, are from different cultural or linguistic backgrounds to that of the SLP's. The majority of adult patients presenting at these clinics are communicatively impaired as a result of neurological damage following a cerebrovascular accident (CVA) or closed head injury. To date, CVA's are the leading cause of death and disability in all race groups in Southern Africa (Fritz & Penn, 1992) and they are one of the major causes of death in the Western World (Langton Hewer & Wade, 1996). Large portions of the patients who survive a CVA suffer from some form of communicative disability (Penn, 1992). It is often viewed as one of the most debilitating handicaps as speech and language are the crux of socialising (Penn, 1992). SLP's thus play a large role in the assessment and remediation of communicative disorders post CVA, but many challenges are presented in this multilingual society. The assessment and treatment of communicatively impaired multilingual CVA patients has of late, received more attention in Provincial Hospital Clinics as clinicians are becoming increasingly aware of assessing and treating a multilingual population. In addition, a main area of concern is that of the assessment tools that are being used to determine communicative competency and prognosis in aphasia therapy.

As previously stated, although much research and time has gone into devising aphasia test batteries, many of them are not suited to various sectors of the South African aphasic population (Penn & Beecham, 1992). Wallace (1998) states that ethically, all patients should be tested with culturally and linguistically appropriate standardised tests. Although this is ideal,

most standardised test batteries used in South African Speech Therapy Clinics are all based on American and British standard English, which are not appropriate for our patient population. At present there is a dearth of testing material that has been standardised on the Afrikaans, English (Caucasian and Coloured populations) and Xhosa population groups (Penn & Beecham, 1992). The tests presently used are thus limiting when implemented on cultural groups other than those on which the test was originally standardised. English speaking patients, or those from different cultural groups, may therefore fare poorer purely due to the lack of cultural sensitivity of the material used.

Furthermore, the patients' and their families perceptions of their communicative impairment are never based on the results of a standardised test, but rather on the environmental demands placed on the patient (Penn & Beecham, 1992; Boles, 1998). Another interesting actuality is that more often than not, SLP's detect an improvement in their patients that are not observable when completing a standardised test (Boles, 1998). Boles (1998) does not find this surprising, as most of these tests only focus on "the patient's verbal responses to specific questions, elicited in didactic style." (p262). Lyons et al (1997) documented statistically significant improvements on informal measures as well as in how persons with aphasia perceived their well-being and communicative abilities despite minimal improvements on standardised tests. Standardised tests only test language performance and do not focus on communication in the broader sense (Boles, 1998). If this is the case, then alternative methods of assessment, moving away from standardised tests, are essential. In South Africa especially, there is a need to move away from the fractional view of communicative competence provided by standardised tests, and to focus on the "holistic overview of the multilingual patient's communicative competence" (Grosjean, 1989, cited in Penn & Beecham, 1992, p12). Due to the inadequacy of present standardised tests used in our clinics to assess communicative competence, clinicians are not tapping the richness of language in its natural environment.

The best way to thus assess and interpret improvement in persons with aphasia is to focus less on linguistic performance and more on communicative competence in discourse (Lyons et al 1997). As stated earlier, one way in which to move away from standardised test batteries is to assess the discourse abilities of individuals, which focuses on a continuous strand of spoken language longer than a single sentence (Crystal, 1987, cited in Lock & Armstrong, 1997). Discourse analysis has become popular over the past few years (Armstrong, 1991) and at present many discourse analysis methods exist, and have been shown to be particularly

sensitive to the breakdown in persons with mild aphasia (Chapman & Ulatowska, 1989; Penn & Beecham, 1992). The ability to formulate a discourse is an intellectual activity which not only entails the understanding and manipulation of linguistic information but also the cognitive operations which are essential to the organisation of information (Ulatowska & Chapman, 1994, cited in Honda et al, 1999). Penn & Beecham (1992) feel that it is more beneficial to assess persons with mild to moderate aphasia by using alternative methods, i.e. discourse analysis, than set standardised tests. In so doing, clinicians take into account the limited knowledge concerning the different linguistic environments, the lack of culturally sensitive testing material and the multiple contexts of an individual's language use (Penn & Beecham, 1992).

Discourse analysis in general addresses the problems of social, psychological, cognitive and pragmatic aspects of communication, as well as its linguistic aspects (Ulatowska, North & Macaluso-Haynes, 1981; Rosenbek, LaPointe & Wertz, 1989). The primary motivation for this method of assessment is that it focuses on characterising the aphasic deficit as it occurs in more natural conditions than those involved in standardised tests (Armstrong, 1991). It allows one to determine the aphasic individual's ability to integrate macro-linguistic and micro-linguistic knowledge together with cognitive processes (Lock & Armstrong, 1997). One can thus examine the patient's knowledge of the contextual use of language as compared to their knowledge of purely linguistic rules, i.e. their communicative competence. There are several different ways in which the discourse of individuals can be assessed. Conversational, procedural and narrative discourse analyses are methods used when investigating communication in a more natural manner (Rosenbek et al, 1989). Each form of discourse analysis places language in the contextual narrative and conversational setting in which language is daily used and understood (Lock & Armstrong, 1997). However, each has its own grammar and level at which it is analysed and thus offers different information to the clinician (Rosenbek et al, 1989).

Conversational discourse analysis differs from procedural and narrative discourse analysis in that an interaction occurs between the patient and a communicative partner, i.e. there is an exchange of information between a speaker and a listener with each having their turn to impart that information (Rosenbek et al, 1989). Procedural and narrative discourse however relies on the patient giving some form of output with limited prompting and conversational interaction. Conversational discourse assesses the natural interaction between persons with aphasia and others and in so doing focuses on their interactional ability in everyday contexts (Damico,

Oelschlaeger & Simons-Mackies, 1999; Perkins, Crisp & Walshaw, 1999). It concentrates on how the person with aphasia copes in conversation and is designed to capture the most salient properties of conversation (Boles & Bombard, 1998). Furthermore, it can describe the way in which the participants in a conversation interact and allows one to observe the repair strategies employed by both the aphasic and the normal individual when there is conversational breakdown (Ferguson, 1996; Boles, 1998). Despite its strengths in considering language in a natural environment there have been difficulties in its implementation. Conversational discourse analysis is unconstrained and thus discourse samples may be variable in terms of the topic matter and the participants' interactional styles (Lock & Armstrong, 1997). One might consequently obtain different findings from the analyses of samples taken at different occasions. As a result, conversational discourse analysis has been viewed as unsuitable for precise measurement over time and is thus problematic as an assessment tool and a base on which to construct therapy aims (Perkins et al, 1999).

Procedural discourse analysis investigates an individual's ability to explain how a familiar activity is carried out (Ulatowska, Doyle, Stern & Macaluso-Haynes, 1983b; Rosenbek et al, 1989). Although procedural discourse analysis does not represent a narrative story or conversation interaction, it does play an 'important role in everyday life, social interaction and recreational media' (Honda et al, 1999, p 476). In spite of the fact that it is not as often used as conversational or narrative discourse analysis, it has its benefits. It gives the clinician insight into how the patient organises a number of steps or procedures in either a conceptual or a chronological order (Ulatowska, Freedman-Stern, Weiss Doyle & Macaluso-Haynes, 1983a). Despite its benefits though, it consists of language that is syntactically simple and is constrained in terms of the temporal order (Ulatowska et al, 1981). Due to it's simplicity in syntax and internal organisation, it is obviously different from conversational and narrative discourse analysis and does not offer insight into the everyday use of language.

Due to the limitations of conversational discourse and procedural discourse analysis, narrative discourse analysis is currently one of the most studied types of discourse and has been a major focus in both clinical assessment and research in recent years (Ulatowska et al, 1983a; Rosenbek et al, 1989; Doyle, McNeil, Spencer, Jackson Goda, Cottrell & Lustig, 1998; Honda et al, 1999). There are many advantages to using this type of analysis as they are generally structured according to certain organisational principles such as story grammar (Honda et al, 1999). Narrative discourse exhibits the most discernable and most extensively studied internal

organisation of language (Ulatowska et al, 1981). The patient is required to produce a narrative based on presented stimuli; either single pictures, picture sequences, story retells or personal experiences (Yorkston & Beukelman, 1980; Kertez, 1982; Rosenbek et al, 1989; Correia, Brookshire & Nicholas, 1990; Brenneise-Sarshad, Nicholas & Brookshire, 1991). The type of task used, as well as the cognitive and linguistic demands of that task, will influence the measures of content, verbal disruption, cohesion and story grammar (Doyle et al, 1998). Very little is known about task effects on the content of narratives produced by persons with aphasia (Ulatowska et al, 1981; Correia et al, 1990; Brenneise-Sarshad et al, 1991). It is thus important to consider the differences between the types of stimuli used to elicit narrative discourse.

The use of picture description is an easy way in which to obtain narrative discourse with individuals who may have attention or memory difficulties as they rely on visual prompts and decrease the memory demands placed on the individual (Lock & Armstrong, 1997; Doyle et al, 1998). They are also amongst the most used stimuli as they are included in most standardised test batteries (Yorkston & Beukelman, 1980; Correia et al, 1990; Brenneise-Sarshad et al, 1991). Despite their abilities to generate story elements and narrative structure, the discourses are usually short and lacking in adequate discourse structure with little functional value (Lock & Armstrong, 1997). The responses obtained are also difficult to equate to real life communicative situations (Lock & Armstrong, 1997). Picture sequences have also been used in past research and place different cognitive demands on a patient than do single picture descriptions familiar in standardised test batteries (Brenneise-Sarshad et al, 1991). The retelling of narratives, i.e. fables, in narrative discourse analysis is used in order to evaluate the macro-level processing of language (Ulatowska, Hill, Thompson, Parsons & Wertz, 1998). Individuals must retain the story elements, place them in the correct temporal order, retrieve them from memory and then reformulate them linguistically (Doyle et al, 1998). They are thus required to draw on higher levels of inferences that are essential to macro-level processing (Adams, 1991, cited in Ulatowska et al, 1998). Relaying a personal experience can be viewed as the most effective technique in narrative discourse analysis as individuals get involved in rehearsing or reliving the event and the narrative is thus directed towards somebody outside of the individuals direct peer group (Labov, 1977; Ulatowska et al, 1983a). This form of narrative may be viewed as the closet of all tasks to a natural discourse (Ulatowska et al, 1983a). These forms of analysis may contribute towards patient management as well as providing clinicians with a means of identifying the salient errors in aphasic output (Rosenbek et al, 1989 and Honda et al, 1999).

In spite of its usefulness, discourse analysis in any form has not been extensively used in clinics due to the time required for transcription and analysis (Boles & Bombard, 1998). There are two possible reasons as to why this is occurring. Firstly, there is no logical link between it and the remediation of the difficulties that the analysis highlights (Armstrong, 1991) and secondly, clinicians do not know what to expect from their patients in terms of specific discourse characteristics. Armstrong (1991) reasons that a possible explanation for the lack of a connection between assessment and therapy is that "many of these analyses originate from a psycholinguistic tradition which in aphasiology has focused primarily on the single-word and sentence levels" (p39). Due to this, clinicians may use discourse analysis but then have no direction where to progress from there. If the use of discourse analysis is not going to be seen as time consuming, then direction needs to be provided to clinicians in which way to assess and remediate the patient. Many therapy strategies for intervention at the discourse level have been proposed (Armstrong 1991; Penn & Beecham, 1992; Penn, Jones & Joffe, 1997 and Boles, 1998) and are useful guidelines for clinicians.

The second main reason for the failure to implement discourse analysis is that there are presently no norms for discourse performance. Many studies have attempted to characterise the language features of discourse in special populations, i.e. persons with Broca's and Wernickes's aphasia, Parkinson's disease or Alzheimer's disease (Ulatowska et al, 1981). Although these studies are beneficial, the results are still not applicable to different cultural groups. In many cases clinicians do not know if their patients are providing adequate discourse for their cultural and linguistic group. In the South African context, with its varying linguistic styles, there is a dire need to characterise the natural discourse patterns of different cultural communities. In so doing, one will be able to determine whether the features presenting in the patient's discourse are in keeping with their linguistic community.

Due to the limited use of narrative discourse analysis in clinical practice Doyle et al (1998) called for a test battery consisting of different narrative discourse tasks that would sample a range of stimulus attributes, presentation modes, cognitive demands and discourse types which are suspected to influence patients' performances. These researchers felt such a test battery, together with a standard set of defined dependent measures that sample a range of discourse parameters, would benefit future research and clinical application (Doyle et al, 1998). Ulatowska et al (1998) have studied the differences between cultural groups in terms of discourse features by using a Discourse Test Battery developed by these researchers which

focused on narrative discourse. Ulatowska et al (1998) in a sense have provided a test battery that meets the proposed requirements as determined by Doyle et al (1998). The Discourse Test Battery (Ulatowska et al, 1998) considers a range of narrative discourse tasks namely picture descriptions, a story sequence, retelling a story and generating a personal experience. It thus allows one to determine the effects of the stimuli on content and discourse performance. It also requires individuals to provide a main idea for each narrative as well as providing a lesson for the story sequence and fable. Together with the assessment of main ideas and lessons, proverb tasks consisting of spontaneous proverb interpretation and multiple choice proverbs are included to gain further insight into higher level cognitive processes (Ulatowska et al, 1998). As well as providing various stimuli, they have also provided a means of analysing the narrative samples in terms of narrative length, propositional units and the quality of the narratives. The task now is to determine whether this Discourse Test Battery (Ulatowska et al, 1998) is appropriate and applicable across cultures.

Ulatowska et al (1998) have compared healthy African-Americans and those with mild to moderate aphasia on this test battery. They found that this assessment tool was able to identify the grammatical and lexical features of the Black English Vernacular as well as determining the aphasic features. They concluded that the discourse tasks were also useful in highlighting ethnic discourse markers, e.g. effective use of repetition as an evaluative device, and that the test battery was culturally appropriate for the African American population (Ulatowska et al, 1998).

There is a scarcity of research in South Africa, in the Cape Coloured or any other ethnic group, with regards to the nature of narrative discourse and the presence of certain dialectal or ethnic features in discourse. In addition to this, research has been limited in determining the narrative discourse performance of persons with mild to moderate aphasia. Moreover, there is a high incidence of CVA's in South Africa, a dissatisfaction with standardised tests abilities to tap the richness of language and a potential for discourse analysis to revolutionise aphasia assessment and improve patients' communicative competence. Thus the need exists to investigate the discourse performance of other cultural groups as well as to note dialectal features and ethnic discourse markers. Furthermore it is necessary to determine whether this test battery is appropriate for other cultural groups.

Hence the primary aim of this study was to characterise the discourse performance of English speaking Coloured persons with mild to moderate aphasia (experimental group) and matched

normal controls on the experimental test battery of narrative discourse tasks as devised by Ulatowska et al (1998). In addition, analysis of evaluation, as proposed by Labov (1977) was incorporated as it was felt that it would reveal certain adaptation strategies used by the experimental and control groups. Furthermore, dialectal features and ethnic discourse markers were investigated in both the experimental and control groups in order to note the features of SACE within discourse and to determine whether these were preserved in the experimental group. The effects of the different narrative tasks on discourse performance in both the experimental and control groups were also ascertained.

Numerous theoretical and clinical implications as well as future research opportunities may emerge from this study. Hopefully the findings of this study will contribute to the assessment and therapy of persons with mild to moderate aphasia.

2 Methodology

This section presents the aims, methodological design, the subject selection criteria and the description of the subjects used within this study. In addition, the Discourse Test Battery (Ulatowska et al, 1998), methods of data collection and methods of analysis are described.

2.1 Aims

2.1.1 Primary Aims

a) To characterise the discourse performance of English speaking Coloured persons with mild to moderate aphasia (experimental subjects) and English speaking Coloured normals (control subjects) on a test battery of discourse tasks devised by Ulatowska et al (1998).

b) To determine the task effects on narrative discourse.

c) To determine the appropriacy of the Discourse Test Battery (Ulatowska et al, 1998).

2.1.2 Specific Aims

a) To ascertain whether there were differences between the experimental and control groups in their discourse performance.

b) To determine whether discourse tasks differentiated the experimental and control groups in the amount of information, the quality of information provided and the number of evaluative devices present in the narratives.

c) To note the dialectal features and ethnic discourse markers in the narratives of this cultural group.

d) To determine the adaptation features employed by the experimental and control groups.

e) To investigate the differences in proverb interpretation for the experimental and control groups.

2.2 Research Design

A descriptive research design was employed in this study. Both qualitative and quantitative analyses were undertaken. A factorial design with two group levels (experimental subjects and normal control subjects) and seven task levels (story generations from 3 pictures, story

sequence, story retell from a fable and a personal narrative), was used. The differences between the experimental and control groups were evaluated according to group and task effects.

2.3 Subjects

2.3.1 Sample Size

Eight Coloured persons with mild to moderate aphasia who use English as their primary language participated in this study. Eight normal Coloured controls with English as their primary language and no known history of neurological disorders, were matched for age, sex and educational level.

2.3.2 Subject Selection Criteria

The following criteria were applied in the process of selection of subjects:

- All the experimental subjects were required to have had a left-sided CVA.
- Experimental subjects were required to be more than three months post left-sided CVA.
- All subjects were required to be right-hand dominant.
- The subjects were to have no prior history of neurological impairments, i.e. no additional CVA's.
- Experimental subjects were required to score as mild to moderate fluent aphasics on the Western Aphasia Battery (WAB) (Kertesz, 1982). Persons with severe aphasia were not considered for this study as it was felt that they would not be able to produce the amount and variety of language required for detailed analysis.
- All subjects were required to have a minimal education level of Grade 7, as some portions of the Discourse Test Battery (Ulatowska et al, 1998) required the manipulation of complex linguistic tasks.
- All subjects were required to use English as their primary language in their home environment.
- Experimental subjects with mild to moderate dysarthria were accepted in the study as long as it did not affect the subject's performance.
- Experimental subjects with mild dyspraxia were accepted in the study as long as it did not affect the subject's performance.

2.3.3 Subject Description

All experimental subjects (S1 - S8) met the aforementioned selection criteria. Prior to data collection the researcher met with all experimental subjects for an initial interview. These subjects were all familiar with the researcher, as they had had previous contact with her through a Speech Therapy Assessment Clinic. All subjects had received counselling and education pertaining to their communication difficulties, but only three had received some therapeutic input. Questions, as described in Section 2.3.2 could be answered by the researcher due to her knowledge of the patients. A clinical diagnosis of mild to moderate aphasia was confirmed by the administration of the WAB (Kertesz, 1982). These results will be presented in Section 2.5.2.2. The majority of the Cape Coloured community has been exposed to both English and Afrikaans from an early age. In this study, only individuals who use English as their primary language were included. The subjects' exposure to English was determined by a Language History Questionnaire, which was adopted from Paradis (1987) and is presented, in Section 2.5.2.1. All other biographical and clinical information is presented below in Table 2.1.

Table 2.1 Experimental Group Subject Description

Subject	Age	Sex	Time Post CAV	Site of Lesion	Education	Occupation	Exposure to English	Previous Therapy
S1	40	M	4 months	L MCA	Gr 10	Salesman	since birth	yes
S2	60	M	13 months	L MCA	Gr 9	Boat Builder	prior to Gr 1	yes
S3	39	M	11 months	L Parietal	Gr 7	Admin Clerk	prior to Gr 1	no
S4	67	M	9 months	L Parietal	Gr 12	Book Keeper	since birth	no
S5	42	M	24 months	L MCA	Gr 12	Manager	since birth	no
S6	51	F	16 months	L MCA	Gr 9	Shop Assistant	since birth	yes
S7	45	F	17 months	L Parietal & Occipital	Gr 7	Food Prep	prior to Gr 1	no
S8	41	F	12 months	L MCA	Gr 8	Cleaner	prior to Gr 1	no

Key: M = Male L = Left MCA = Middle Cerebral Artery Gr = Grade
F = Female Prep = Preparation

The average age of the experimental group was 48.13 years. The majority of subjects had not yet received therapy as they were new patients to the assessment clinic when included in this study. Although S1, S2 and S6 had received some speech therapy it was not extensive at the onset of this study.

Table 2.2 below depicts the control group (C1-C8) that were matched for age, sex and where possible for vocation. The average age of the control group was 47.38 years. They all presented with no known history of neurological disorders. All control subjects had similar histories as their aphasic counterparts in terms of their use of English. See Appendix C and Appendix D for further details.

Table 2.2 Control Group Subject Description

Subject	Age	Sex	Education	Occupation	Exposure to English
C1	44	M	Gr 10	Lab Assistant	since Gr 1
C2	62	M	Gr 9	Stock Control	since birth
C3	36	M	Gr 10	Caretaker	since birth
C4	69	M	Gr 9	Shop Keeper	since birth
C5	46	M	Gr 12	Admin Clerk	since 3yrs
C6	44	F	Gr 9	Food Prep	since birth
C7	38	F	Gr 11	Admin Clerk	since birth
C8	40	F	Gr 10	Cleaner	since Gr 1

Key: M = Male F = Female Gr = Grade Prep = Preparation

2.3.4 Subject Consent

Consent was obtained from both the experimental and control groups prior to data collection. The purposes of the research as well as the procedures were described to the participants and where appropriate, to their families. Permission was obtained from the experimental subjects for the researcher to obtain additional medical information from their hospital records. A copy of the consent form is presented in Appendix A.

2.4 Pilot Study

Prior to the implementation of the research study, the test procedures were piloted on three English speaking Coloured persons with aphasia. None of these subjects were included in the main study as they scored as having moderate to severe aphasia on the WAB (Kertesz, 1982). The same combinations of tests were administered on all three subjects individually. All subjects were videotaped.

The pilot study was implemented for the following reasons:

a) To refine the procedural aspects of test administration.
b) To refine the procedures involved in the transcription and scoring of the narratives.
c) To determine whether the testing environment and equipment were adequate for obtaining the required narratives.

2.5 Data Collection

2.5.1 Materials and Test Battery

Prior to the implementation of the Discourse Test Battery (Ulatowska et al, 1998), two tests were administered in order to investigate for subject selection adequacy. The tests used were the Language History Questionnaire and the WAB (Kertesz, 1982).

2.5.2 Pre-Data Collection Testing

2.5.2.1 Language History Questionnaire

The purposes of the questionnaire were:

a) To determine the subjects' level of exposure to the English language.
b) To investigate their exposure to other languages in order to later determine possible 'contamination' effects of that language on their English production.

The researcher adapted the questionnaire from Paradis' (1987) Bilingual History Questionnaire and English History Questionnaire. Both questionnaires were combined and shortened, to form a Language History Questionnaire. This aimed to eliminate the repetition of questions. It comprised of questions pertaining to the subjects' exposure to the English language as children (both in the home and school environments), their use of the English language in adulthood and their exposure to other languages. See Appendix B for the complete questionnaire. Appendix C and D outline the amount of English exposure for both the experimental and control groups respectively.

2.5.2.2 Western Aphasia Battery (Kertesz, 1982)

The WAB was designed to assess the main clinical aspects of language function (Kertesz, 1982). For the purposes of this study it was administered to determine the severity of the subjects' aphasia. Those sections contributing towards the cortical quotient were not assessed,

as the subjects were not expected to have intact reading or writing abilities for the Discourse Test Battery (Ulatowska et al, 1998). Only the oral language sections, contributing towards obtaining the aphasia quotient, were administered in English and scored accordingly to classify the subjects as having mild, moderate or severe aphasia.

The sections scored were those of:

- spontaneous speech
- auditory verbal comprehension
- sequential commands
- naming
- sentence completion
- picture description
- auditory word recognition
- repetition
- word fluency
- responsive speech

Due to the inaccessibility of some test objects changes were made to the naming subsection. Those objects that required changing were 'bell' for 'gun' and 'peg' for 'pipe'. All changes attempted to compensate for word length. The test was administered in accordance to the test manual (Kertesz, 1982). No deviations were made from this format.

Figure 1. below depicts the aphasia quotient (AQ) scores for both the experimental subjects and their matched controls. Of interest is that the controls did not score optimally despite the researcher taking into account cultural differences in naming items, e.g. 'rubber' for 'elastic band', 'lock' for 'padlock'. C1 scored the highest of the controls with an AQ of 98. The remaining controls fell within 8 points of each other with the lowest AQ of 91 (C2). The experimental groups' scores varied from an AQ of 72 (S8) to that of 92 (S6). All experimental subjects were classified as having mild to moderate aphasia according to their AQ scores.

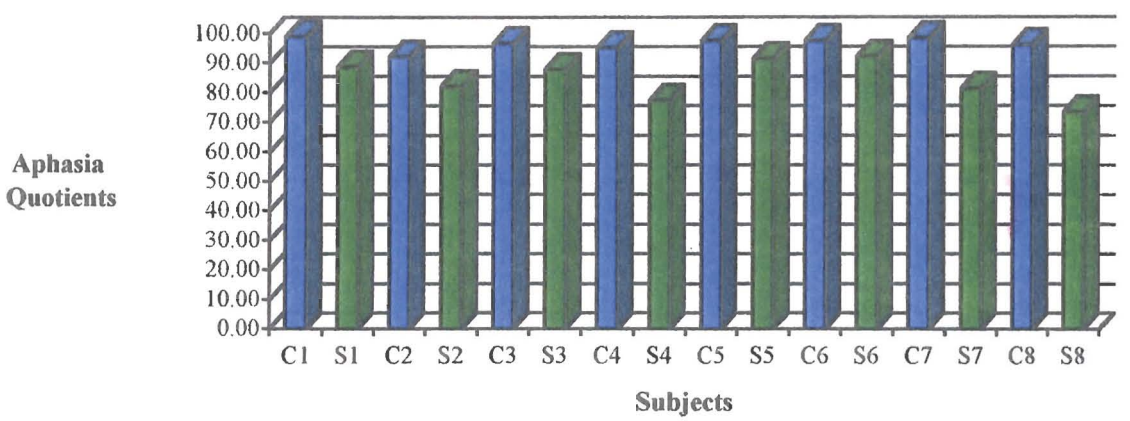

Figure 1. Western Aphasia Battery Aphasia Quotients for Control and Experimental Groups

2.5.3 The Discourse Test Battery (Ulatowska et al, 1998)

This test battery was used to elicit narrative discourse samples from both the experimental and control groups. Five different stimuli were used to obtain the narrative samples. These consisted of two single picture descriptions, the 'Apple Theft' picture sequence description, a 'Fable' story retelling, and a 'Personal Experience' narrative. For the purposes of this study the two picture description stimuli shall be referred to as the 'Composite Picture' task. In addition to this, five familiar proverbs were used to obtain spontaneous interpretations. The different stimuli used are outlined below in Table 2.3 and were adopted from Ulatowska et al (1998).

Table 2.3 Elicitation Techniques for the Discourse Test Battery (Ulatowska et al, 1998)

Test Stimuli	Description of Stimuli	Description of Task
Composite Pictures		
Easter Morning	This is a 'Norman Rockwell' picture of a family going to Church and the father is staying at home.	Required to generate a story and then to provide the main idea of that story
Counting Money	This is a 'Henry Roseland' picture of an elderly couple sitting and counting money at a table.	
Picture Sequence: Apple Theft	This is a sequence of four pictures depicting two boys trying to steal apples from somebody's garden.	Required to generate a story and then to provide the main idea and lesson of that that story.
Fable: Farmer and Sons	This is a fable about a farmer who dies and leaves his vineyard to his sons.	Required to retell the story and then to provide the main idea and lesson of that story.
Personal Experience Frightening Experience	A self generated narrative about a memorable experience.	Required to generate their own personal story.
Proverbs:	Five familiar proverbs were presented to the subjects.	Required to give spontaneous interpretations of them and to choose the best description of them from multiple choice options.

The narrative tasks used included story generation, story retelling, producing a summary of a story, the gist of a story and the lesson of the story. Each task focused on assessing different levels of language and cognitive complexity, these are presented in Table 2.4 as determined by Ulatowska et al (1998).

Table 2.4 Language and Cognitive Requirements for Narrative and Proverb Tasks (Ulatowska et al, 1998).

Task Type	**Required Skills**	
Story	***Language***	***Cognition***
Self-generated story	Joining of sentences	Narrative imagination and employment.
Retell	Joining of sentences	Working memory and attention.
Summary	More complex language useful	Reduction of information and generlisation.
Gist	Abstract lexion helpful	Generlisation
Lesson	Abstract lexion helpful	Generlisation
Proverb	***Language***	***Cognition***
Interpretation	Metaphoric language	Generalisation

2.5.4 Procedure

2.5.4.1 Testing Sessions

The researcher met with each experimental subject three times and each control subject twice. The first meeting with both groups was in order to establish report between the subjects and the researcher. With the experimental group, the second session focused on the administration of the Language History Questionnaire and the WAB (Kertesz, 1982). If the experimental subjects met all the selection criteria stipulated in Section 2.3.2, they were included in the study and a third session was scheduled in order to eliminate the influence of performance fatigue on testing. The Discourse Test Battery (Ulatowska et al, 1989) was administered in this session. No more than a week elapsed between testing sessions.

2.5.4.2 Testing Environment

The Language History Questionnaire and the WAB (Kertesz, 1982) were administered in a quiet room with adequate lighting. Subjects were placed at a table facing the researcher during test administration. For the Discourse Test Battery (Ulatowska et al, 1989) and the picture description task of the WAB (Kertesz, 1982) the subjects were seated in a sound proof room with adequate lighting and ventilation. The subjects were positioned in a chair opposite a video camera with the researcher sitting at a 45-degree angle to them. All discourse productions were videotaped for analysis.

2.5.4.3 Equipment

The narratives were videotaped on a Wide Lens x28 Digital Zoom Panasonic VHS Movie Camera NV-M50 that was positioned on a tripod facing the patient. The camera was positioned so as to incorporate the subject's entire body.

2.5.5 Instructions

2.5.5.1 Language History Questionnaire

The questions were administered in English by the researcher in the order in which they appear in Appendix A.

2.5.5.2 Western Aphasia Battery

The test was administered in accordance with the test manual (Kertesz, 1982). No deviations from this format occurred.

2.5.5.3 Discourse Test Battery Instructions

Instructions, as outlined by Ulatowska et al (1998), were delivered to each experimental and control subject. They were allowed unlimited time to respond to the given pictures and proverbs. No constraints were placed on the length of the narratives provided.

2.5.5.3.1 'Composite Picture' Description and 'Apple Theft' Picture Sequence

The procedure and instructions for the 'Composite Picture' and 'Apple Theft' narrative tasks were the same. The pictures were presented individually and the subjects were given time to study the picture and to make up a story about the people and events in the picture. Once they had studied the picture it was removed and they were requested to relay a narrative. On completion of the story they were asked to supply the main idea of the narrative. For the 'Apple Theft' sequence, subjects were also instructed to provide a lesson for the narrative.

2.5.5.3.2 'Fable' Story Retell

The fable was presented to the subjects in the written form. Prior to further instruction the subjects were informed that the researcher was required to read the fable to them so that those with visual or reading difficulties were not placed at a disadvantage. The subjects were

instructed to read the fable until such time that they understood it. Following this the researcher read it back to the subjects. On completion of this the written text was removed and the subjects instructed to retell the story to the researcher. They were then asked to provide the main idea and the lesson of the story.

2.5.5.3.3 'Personal Experience' Narrative

The subjects were informed that the researcher wished to obtain a story from him/her about a time when he/she was scared. The subjects were given time to think about such a story. If the subject had difficulties starting their own story then the researcher gave an example of a personal frightening experience. If this did not assist the subject then they were allowed to tell a story about a happy experience in their lives.

2.5.5.3.4 Spontaneous Proverbs

Preceding the implementation of this section an example of a proverb and its meaning was provided to each subject. Prior to the reading of each of the five proverbs, they were asked whether they were familiar or unfamiliar with the given proverb. They were then required to provide their own interpretation of each proverb. The proverbs assessed included:

P1 - Don't judge a book by its cover.
P2 - When the cats away the mice will play.
P3 - Blood is thicker than water.
P4 - Don't cry over spilled milk.
P5 - You reap what you sow.

2.5.5.3.5 Multiple Choice Proverbs

Immediately after the completion of the spontaneous proverbs, the multiple-choice versions of the same proverbs were presented to the subjects. Each proverb, and all of the choices, was read to the subjects. The subjects were then required to choose which answer best suited the given proverb. They could provide the answer verbally, by pointing or by giving the corresponding letter.

2.6 Treatment of Data

The videotaped sessions were subsequently transcribed and analysed as follows:

2.6.1 Transcription of the Narrative Data

The researcher transcribed the videotaped discourse samples word for word. Pauses were noted. For the purposes of Labov's analysis of evaluation (1977), presented in Section 2.6.3, non-verbal features such as gestures and expressive phonology were also noted. Transcription reliability was determined and will be discussed in Section 2.8

2.6.2 Analysis of Results

The experimental and control groups narrative discourse productions were analysed both quantitatively and qualitatively in order to highlight similarities and differences within and between groups. Furthermore statistical procedures see Section 2.7, were employed in an attempt to determine group and task effects.

2.6.2.1. Word Count

The numbers of words per narrative were counted according to several stipulations.

a) Words Counted

- Repetitions of words and word phrases
- False starts, i.e. incomplete or inaccurate information that is modified (Lock & Armstrong, 1997)
- Empty fillers and hesitations

b) Words Not Counted

- Unintelligible words or phrases
- The repetitions of sounds
- um's and eh's

2.6.2.2 Propositional Analysis

A propositional unit can be defined as an informational unit that contains a verb and an argument (Ulatowska et al, 1998). All transcripts were divided into propositional units. The following instances were not counted:

- Repetitions of words and word phrases
- Unintelligible words or phrases
- Empty fillers and hesitations
- False starts

Following this a ratio of number of words to propositional units was obtained for each subject across all tasks.

2.6.2.3 Quality of Narratives and 'Fable' Story Retell

All narratives, including the picture description from the WAB (Kertesz, 1982), and the story retell (fable) were rated for quality according to several dimensions. The Discourse Test Battery (Ulatowska et al, 1998) provides rating scales to determine the subjects' proficiency of global structure (narratives), completeness (fable), temporal sequence, reference, suspense (narratives), accuracy (fable), coherence and clarity. Each subject was rated according to the point system as presented below in Table 2.5

Table 2.5 Rating Scale for Quality of Narratives and Fable (Ulatowska et al, 1998)

Global structure (narrative) **Completeness (fable)**	Evaluates presence of setting, complicating action, resolution and coda. Completeness of critical story elements.	0-4 points
Temporal Sequence	Evaluates chronology of events in the narrative.	0-3 points
Reference	Evaluates occurence of reference errors.	0-3 points
Suspense (narrative) **Accuracy (fable)**	Evaluates presence of suspense. Evaluates correctness of information.	0-3 points
Coherence	Evaluates continuity of ideas.	0-3 points
Clarity	Evaluates clarity of language.	0-2 points
Maximum Score		**18**

For the purposes of this study, and in agreement with Ulatowska et al (1998), a four point rating scale was used to assess global structure. Agreement was reached between raters that for the purposes of this study one point would be ascribed to each critical story element.

2.6.2.4 Generalisation of Information

→ *Rating of Main idea*

For all narratives the main idea of the discourse samples was either given in the form of a few words, a sentence or a short story retell. The subjects' responses were then rated as being concrete or general and as either appropriate or inappropriate (Ulatowska et al, 1998).

→ *Rating of the Lesson*

For the 'Apple Theft' narrative and the 'Fable' story retell the subjects were required to provide a lesson. These responses were expected to contain an evaluative statement about the narrative, or to provide a moral lesson deduced from the narrative. As for the rating of a main idea, these statements were rated according to their being correct or incorrect and as either appropriate or inappropriate (Ulatowska et al , 1998).

2.6.3 Analysis of Evaluation

To gain insight into the experimental and control groups use of evaluation in their narratives, a method of analysis of evaluation based on one proposed by Labov (1977) was adopted. Labov (1977) proposes four main categories of evaluation, namely intensifiers, comparators, correlatives and explicatives with each category consisting of a number of subtypes. Table 2.6 outlines the four main categories, their subtypes and description.

Table 2.6 Analysis of Evaluation (Labov, 1977)

Category	Subtype	Description
Intensifiers *Defn* : These select a linear event and intensifies it.	Gesture	* Includes gestures which indicate meaning.
	Expressive Phonology	* Most common mode is to lengthen the vowel.
	Quantifiers	* Indicates the number of events, e.g. 7, all, some.
	Repetitions	* Intensifies a particular action and suspends it.
	Ritual Utterances	* Unexpressive utterances particular to a culture, and play an evaluative role, e.g. acutally, probably
	Wh-exclamations	* e.g. why, who, what
Comparators *Defn* : Compares the events that did occur to those that which did not occur. Occurs in co-occurrence with other evaluative elements or they act alone.	Imperatives	* A form of command, e.g. 'Do this'. 'Let's go'.
	Questions	* Making a request for action or information, making, a challenge or a display.
	Negatives	* Expresses the defeat of an expectation, e.g. not, neither, nor.
	Future Verbs	* e.g. I *am going* to...
	Modals	* e.g. would, could, might, will, shall, must,
	Quasimodals	* e.g. *used to* cry..., *supposed to* eat...
	Superlatives	* e.g. *most* beautiful, or words ending in -est e.g the *biggest* dog...
	Comparatives	* Words ending in -er, e.g. the *bigger* house...
Correlatives *Defn:* Brings together two events that occurred so that they are joined as one independent clause.	Progressive Participles	* Indicates that one event occurs simultaneously with another, e.g. be...ing.
	Appended Participles	* One or more verbs with -ing are aligned with the tense marker and verb *be* deleted, e.g. I was sitting, drinking a Coke.
	Double Appositives	* Hightens the effect of a description, e.g. a long one, a dagger.
	Double Attributives	* e.g. a *big red* house.
	Right-hand Participles	* Qualifies the noun, e.g. the kid.....impressing me.
	Left-hand Participles	* Characterises the noun, e.g. ugly looking girl.
Explicatives		* May be qualifications connected to conjunctions such as *while, though* OR may be causal, introduced by *since, because.*

2.6.4 Adaptation Features

For the purposes of this research study, adaptation features will be defined as compensatory strategies in discourse production that may be corrective or preventative in nature. These include reduced syntactic complexity, omission of grammatical morphemes and syntactic structures, use of repetition, phonemic paraphasias, semantic paraphasias, false starts and fillers. These impaired measures of the microlinguistic aspects of discourse production have been reported in Glosser & Desler (1990). Various adaptation features are particular to individuals with aphasia and shall be referred to as aphasic adaptation features. Those adaptation features that are common to persons with and without aphasia shall be referred to as general discourse

adaptation features. An in-depth analysis for the presence of aphasic adaptation features such as word finding difficulties (on nouns and verbs), phonological paraphasias, semantic paraphasias and circumlocution was carried out for each experimental subject on all narrative tasks. In addition to this, the frequency of occurrence of general discourse adaptation features such as 'uhms and ehs', empty fillers, false starts, pauses, repetition of sounds, repetition of phrases and repetition of ideas for no emphasis produced by each experimental and control subject was determined.

2.6.5 Dialectal Features

An analysis of the use of dialectal features for each narrative was undertaken. The term 'dialectal features' refers to the linguistic features characteristic of Cape Flats English, namely morpho-syntactic, lexical and phonological features (Malan, 1996). For the purposes of this study, the morpho-syntactic (grammar) and lexical (vocabulary) features of SACE were investigated. These investigations were data led.

2.6.6 Ethnic Discourse Markers

An analysis of ethnic discourse markers was undertaken for each narrative for both the experimental and control groups. Ethnic discourse markers can be defined as the presence of discourse features particular to a certain cultural group. The ethnic discourse features investigated were those of repetition for emphasis, direct speech, ritual utterances, conversational historical present tense, code-switching and code-mixing.

2.6.7 Proverbs

2.6.7.1 Spontaneous Proverbs

All spontaneous proverbs were rated according to Ulatowska et al's (1998) rating scale for spontaneous proverbs, see Table 2.7 below.

Table 2.7 Spontaneous Proverb Rating Scale (Ulatowska et al, 1998)

Points	Type of Response
6 Points	Correct Complete Abstract Response
5 Points	Correct Partial Abstract Response
4 Points	Response with an Abstract Component
3 Points	Correct Concrete Response
2 Points	Correct Partial Concrete Response
1 Point	Incomplete Response with a Concrete Component
0 Points	Incorrect Abstract Response
0 Points	Incorrect Concrete Response

2.6.7.2 Multiple Choice Proverbs

Notation was made as to which responses the subjects gave and were scored as either correct or incorrect.

2.7 Statistical Analysis

2.7.1 Propositional Unit/Word Count Ratio

In order to determine statistically significant differences between the groups on the various narrative tasks, the mean and standard deviations were obtained for the ratios of the experimental and control groups across all narrative tasks. Both multivariate and univariate tests of significance were undertaken. When $p < 0.05$ significant differences were noted.

2.7.2 Quality Analysis (Ulatowska et al, 1988)

The means and standard deviations were obtained for each device across all narrative tasks. A multivariate test of significance was applied ($p < 0.05$) to each narrative to determine significant differences between groups for overall quality of the narrative tasks. Following this

a univariate test of significance was applied ($p < 0.05$) to determine significant differences between groups for all variables on the various narrative tasks.

2.7.3 Analysis of Evaluation (Labov, 1977)

- The means and standard deviations were derived for the total use of evaluation for each group across all narrative tasks.
- An Analysis of Variance (ANOVA) was administered to determine whether statistically significant differences existed between groups in their overall use of evaluation across narrative tasks. A significance level of $p < 0.05$ was used to establish a significant difference. Narrative length was taken into account for this statistic.
- In order to determine group differences for each evaluative element across narrative tasks a Multiple Analysis of Variance (MANOVA) could not be administered due to the lack of homogeneity of variance and large variances noted in the data due to the small sample size. For this reason, the non-parametric techniques of the Mann-Whitney and Wilcoxon Rank Sum tests were used to determine significant differences between groups. A 'corrected-for-ties' 2 tailed p value of $p < 0.05$ was used to determine significance.
- In addition to these statistical procedures, percentages were derived for the total use of evaluation and each evaluative element across narrative tasks for both the experimental and control groups. This was undertaken in order to compensate for narrative length.

$$\frac{\text{Sum of particular evaluative element}}{\text{Total number of words in the respective narratives}} \times 100$$

2.7.4 Adaptation Features

Means and standard deviations were derived for the experimental and control groups for the general discourse adaptation features of repetition for no emphasis (repetition of sounds, words, phrases and ideas), false starts, pauses, the numbers of 'uhms and ehs' produced and lexical empty fillers. An ANOVA was then undertaken to determine whether there were significant differences ($p < 0.05$) between groups in their overall use of these features across narrative tasks.

In order to determine the significant differences between groups in the use of these features the non-parametric tests of the Mann-Whitney and Wilcoxon Rank Sum tests were implemented. Significance was determined on the 'corrected-for-ties' 2-tailed p value of $p < 0.05$.

2.8 Measures of Reliability

In order to validate the findings in this research, measures of reliability were obtained for the transcriptions, the scoring of the discourse analysis (Ulatowska et al, 1998), the analysis of evaluation (Labov, 1977), the analysis of the adaptation features, the dialectal features and the ethnic discourse markers.

2.8.1 Inter-rater Reliability

This manner of reliability testing determined the inter-observer agreement, i.e. the extent to which the different raters agreed that they viewed an event in the same manner. For all inter-rater reliability a word-by-word percentage agreement procedure was used. The following formula was employed (Cucchiarini, 1995):

$$\frac{\text{Number of Agreements}}{\text{Number of Agreements + Number of Disagreements}} \text{ X } 100$$

2.8.1.1 Transcription Reliability

Three qualified Speech Language Pathologists were used to determine word-by-word reliability. 20% of each narrative sample was randomly selected and independently transcribed (Strong & Shaver, 1991). Transcription percentage agreements were calculated by using a word-by-word agreement procedure detailed in Section 2.8.1. Inter-rater word-by-word agreements for transcriber 1 vs. transcriber 2, transcriber 1 vs. transcriber 3 and transcriber 2 vs. transcriber 3 are presented in Table 2.8.

Table 2.8 Inter-rater Transcription Reliability

	S1	S2	S3	S4	S5	S6	S7	S8
Rater 1 & 2	96.59%	99.25%	96.24%	88.02%	97.56%	96.83%	97.59%	96.13%
Rater 1 & 3	96.61%	98.95%	95.01%	93.08%	98.09%	98.72%	97.99%	98.79%
Rater 2 & 3	97.29%	99.07%	95.32%	88.02%	96.78%	98.10%	97.18%	95.27%
	C1	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**
Rater 1 & 2	99.17%	99.16%	97.72%	98.77%	97.19%	98.65%	98.41%	98.39%
Rater 1 & 3	99.39%	99.16%	99.74%	97.55%	98.29%	98.65%	98.02%	95.74%
Rater 2 & 3	99.37%	99.15%	99.73%	99.18%	96.65%	99.32%	98.02%	96.26%

Word-by-word agreement for the experimental group resulted in mean percentage agreements of 98.85% for transcriber 1 and 2, 97.58% for transcribers 1 and 3, and 96.63% for transcribers 2 and 3. The control group had word-by-word agreement of 98.53% for transcriber 1 and 2, 98.62% for transcribers 1 and 3, and 98.73% for transcribers 2 and 3. These results indicated high inter-rater transcription reliability. Where notable discrepancies arose in the transcriptions for any particular subject, changes were made to the scripts prior to further analysis.

2.8.1.2 Coder Reliability

2.8.1.2.1 Word Count and Propositional Unit Reliability

Another qualified Speech Language Pathologist randomly selected 20% of each narrative sample and performed word counts and analysed propositional units according to the methods adopted in this study. The therapist was trained for approximately 5 hours before the onset of coding of the propositional units. Practice trials were instituted on samples that were not included in the reliability measures. As for transcription reliability, a percentage agreement was used to determine inter-coder agreement (Cucchiarini, 1995). The word count word-by-word agreement resulted in a mean percentage of 98.78% for the experimental group and 98.52% for the control group. Percentage agreement for propositional unit analysis resulted in mean percentages of 86.1% for the experimental group and 92.05% in the control group. Agreement percentages across subjects for word count and propositional unit inter-coder reliability are presented in Table 2.9 and Table 2.10 respectively. These results indicate high inter-rater reliability.

Table 2.9 Inter-rater Reliability for Word Count

	S1	S2	S3	S4	S5	S6	S7	S8
Rater 1 & 2	98.78%	98.91%	99.63%	100%	99.21%	96.83%	98.89%	98.23%
	C1	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**
Rater 1 & 2	90.57%	93.02%	89.74%	90.91%	100%	94.44%	90.91%	92.86%

Table 2.10 Inter-rater Reliability for Propositional Units

	S1	S2	S3	S4	S5	S6	S7	S8
Rater 1 & 2	85.71%	90.48%	85.71%	92.86%	82.14%	85.82%	93.75%	97.44%
	C1	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**
Rater 1 & 2	90.56%	93.02%	89.74%	90.91%	100.00%	94.44%	90.91%	92.86%

2.8.1.2.2 Quality Analysis Rating Reliability, including Proverb Interpretation

The researcher carried out initial scoring. In order to determine whether the methods of analysis were consistent across all narrative samples, two other qualified Speech Language Pathologists were trained to analyse the data. They were then required to analyse these samples using the same methods adopted in the study. The analysis was performed in the presence of the researcher and discussion was entered into when disagreements occurred. The percentage agreement, as described in Section 2.7.1, was derived. The results are displayed in Table 2.11.

Table 2.11 Inter-rater Reliability for Quality Analysis

	S1	S2	S3	S4	S5	S6	S7	S8
Rater 1 & 2	91.67%	97.92%	97.92%	97.92%	97.92%	97.92%	95.83%	97.92%
Rater 1 & 3	93.75%	95.83%	95.83%	100.00%	97.92%	91.67%	97.92%	97.92%
Rater 2 & 3	97.92%	100.00%	95.83%	97.92%	95.83%	93.75%	100.00%	97.92%
	C1	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**
Rater 1 & 2	97.92%	97.92%	97.92%	100.00%	100.00%	95.93%	93.75%	100.00%
Rater 1 & 3	100.00%	97.92%	97.92%	100.00%	100.00%	100.00%	91.67%	100.00%
Rater 2 & 3	97.92%	100.00%	95.83%	100.00%	100.00%	95.83%	97.92%	100.00%

Percentage agreement for the experimental group resulted in mean percentage agreements of 96.35% for rater 1 and 2, 96.88% for rater 1 and 3, and 97.39% for rater 2 and 3. The control

group had percentage agreements of 97.92% for rater 1 and 2, 98.44% for rater 1 and 3, and 98.44% for rater 2 and 3. These results indicated high inter-rater reliability.

2.8.1.2.3 Analysis of Evaluation Reliability

The researcher scored the evaluations. Subsequent to this, a qualified Speech Language Pathologist familiar with this evaluation randomly selected 20% of each analysed narrative sample. Agreements and disagreements were noted and discussions took place prior to final scoring. Percentage agreement was determined and resulted in mean percentages of 91.47% for the experimental group and 92.53% in the control group. Inter-coder agreement percentages across subjects for the analysis of evaluation are presented below in Table 2.12. These results indicate high inter-rater reliability.

Table 2.12 Inter-rater Reliability Analysis of Evaluation

	S1	S2	S3	S4	S5	S6	S7	S8
Rater 1 & 2	96.43%	82.09%	97.59%	84.85%	92.05%	91.89%	95.59%	89.15%
	C1	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**
Rater 1 & 2	93.07%	91.09%	94.02%	96.00%	95.73%	87.93%	88.09%	91.55%

2.8.1.2.4 Inter-rater Reliability for Adaptation Features, Dialectal Features and Ethnic Discourse Markers

The researcher carried out the initial analysis. Two other qualified English speaking Speech Language Pathologists randomly selected 20% of each narrative sample (Strong & Shaver, 1991). They were then required to analyse these in terms of adaptation features, dialectal features and ethnic discourse markers. Agreements and disagreements were noted and discussions took place prior to final scoring. The percentage agreement, as described in Section 2.7.1, was derived for all subjects. The results are displayed in Table 2.13.

Table 2.13 Inter-rater Reliability Adaptation Features, Dialectal Features and Ethnic Discourse Markers

	S1	S2	S3	S4	S5	S6	S7	S8
Rater 1 & 2	82.91%	89.63%	92.54%	96.32%	95.63%	87.65%	84.53%	91.54%
Rater 1 & 3	86.54%	87.68%	96.52%	97.87%	94.65%	92.56%	87.54%	97.85%
Rater 2 & 3	87.08%	89.00%	98.23%	90.23%	91.56%	94.03%	84.65%	95.62%
	C1	C2	C3	C4	C5	C6	C7	C8
Rater 1 & 2	95.63%	94.36%	93.75%	91.65%	90.20%	96.78%	87.64%	98.54%
Rater 1 & 3	94.57%	96.42%	97.92%	87.93%	92.32%	93.54%	91.87%	95.61%
Rater 2 & 3	93.95%	95.03%	95.83%	89.52%	94.25%	94.56%	94.65%	94.74%

Percentage agreement for the experimental group resulted in mean percentage agreements of 90.09% for rater 1 and 2, 92.65% for rater 1 and 3, and 91.30% for rater 2 and 3. The control group had mean percentage agreements of 93.57% for rater 1 and 2, 93.77% for rater 1 and 3, and 94.07% for rater 2 and 3. These results indicated high inter-rater reliability.

2.8.2 Intra-rater Reliability

2.8.2.1 Transcription Reliability

The researcher randomly selected 20% of each narrative sample for transcription (Strong & Shaver, 1991). These sections were then transcribed for a second time. A word-by-word agreement was calculated and an agreement percentage determined (Cucchiarini, 1995). The results are presented in Table 12.14.

Table 2.14 Intra-rater Transcription Reliability

	S1	S2	S3	S4	S5	S6	S7	S8
Rater 3 & 3	95.58%	97.89%	95.47%	92.95%	95.39%	98.73%	97.59%	97.03%
	C1	C2	C3	C4	C5	C6	C7	C8
Rater 3 & 3	99.57%	99.72%	97.96%	98.36%	98.29%	97.33%	97.63%	96.28%

Word-by-word agreement for the experimental group resulted in a mean percentage agreement of 96.66%. The control group had a word-by-word mean percentage agreement of 98.42%. These results indicated high intra-rater transcription reliability. As for inter-rater reliability, where notable discrepancies arose in the transcriptions for any particular subject, these were

compared with the inter-raters' transcriptions and changes were made to the scripts prior to further analysis.

2.8.2.2 Coder Reliability

Inter-rater reliability was high for all means of analysis. For this reason, and the fact that discussion was entered into between the researcher and the other raters, it was not deemed necessary to determine intra-rater reliability for these measures.

Section 2 presented the methodology adopted in this study. Section 3 will comprise of the results of the analysis conducted on the narrative discourse productions.

3 Results

This section incorporates the results of the experimental subjects' and matched controls' performance on the Discourse Test Battery (Ulatowska et al, 1998). An attempt has been made to identify general trends both within and across groups, as well as individual differences in performance. Task effects will also be presented. Furthermore, the general discourse adaptation features, dialectal features and ethnic discourse markers displayed by both the experimental and control groups and the aphasic adaptation features of the experimental group will be discussed.

3.1 Length of Narrative and Propositional Analysis

3.1.1 Length of Narrative

The total number of words for each narrative was used to determine the overall length of the narrative. In contrast to Ulatowska et al's study (1998) false starts, repetitions of sounds, words, phrases and ideas and empty fillers were included when determining narrative length. The rationale used to support their inclusion was that these are considered important indicators of aphasic output and essential information could possibly be overlooked if they were excluded from the data.

Observations based on Table 3.1 and Table 3.2 in Section 3.1.3 revealed that in general the total length of narratives varied considerably between and within the experimental and control groups and across tasks. However, it appeared that the control groups' narratives were generally slightly longer than the experimental group. These results may be skewed as C1 had noticeably longer narratives than the other controls. Experimental subjects S1, S2, S3, S5, S6 and S8 all produced discourse productions of similar length to that of the rest of the control group whereas S4 and S7, who scored the lowest WAB AQ's, produced noticeably shorter narratives in comparison to the control group.

The narrative of 'Personal Experience' was the longest in both groups. The controls produced longer narratives than the experimental group on the narratives of the 'WAB' picture description and the 'Fable' story retell. For the remaining narratives, the experimental group generally produced longer narratives than the control group. This result should not be interpreted without considering that the experimental group used more empty fillers, false starts

and repetitions than the control group (to be presented in Section 3.4.2) and thus would justifiably have the longer narratives in certain circumstances. The effects of these features were taken into account when determining the propositional units.

3.1.2 Propositional Analysis

Each narrative sample was analysed in terms of the number of propositional or idea units present within each narrative. For the purposes of this analysis all false starts, empty fillers and repetitions, which did not carry communicative intent, were not included. Propositional units for each subject's narratives were counted and are presented in Table 3.1 and Table 3.2 in Section 3.1.3.

As for narrative length, there was a large amount of variability in the total number of propositional units used in both the experimental and control groups. However, overall it appeared that the control group used more propositional units per task than the experimental group. Despite this trend, when one considers the individual experimental subjects, the majority (S1, S2, S3, S5, S6 and S8) all produced similar, or slightly larger, amounts of propositional units to that of the control group. Subjects S4 and S7 used the least amount of propositional units. They also produced the shortest narratives and their poorer performance could be attributable to their lower WAB AQ's. The narrative producing the most propositional units in both the experimental and control groups is that of the 'Personal Experience' followed marginally by the 'Fable' story retell and the 'Apple Theft' narratives.

Whether these differences were significant cannot be determined for either narrative length or propositional units due to the large variability within both groups. The ratio of propositions to narrative length therefore needs to be considered and is discussed below in Section 3.1.3.

3.1.3 Ratio of Propositions to Narrative Length

In order to determine whether there was a difference between the amount of information provided and the length of the narratives, a ratio of propositions to the number of words for each narrative was determined. These ratios, together with word counts and propositional units, for the experimental and control groups are presented in Table 3.1 and Table 3.2 respectively.

Table 3.1 Narrative Length, Propositional Units and Ratio of Words to Propositions for the Experimental Group

	S1		S2		S3		S4		S5		S6		S7		S8	
N	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC
WAB	10	88	8	64	11	74	4	39	19	172	10	77	5	34	5	40
	1:8.8		1:8		1:6.73		1:9.75		1:9.05		1:7.7		1:6.8		1:1.18	
EM	11	104	6	57	15	104	6	35	13	97	21	131	17	86	11	95
	1:1.45		1:9.5		1:6.93		1:5.83		1:7.46		1:6.23		1:5.06		1:8.64	
CM	7	65	11	100	11	90	6	29	19	253	11	94	6	44	4	34
	1:9.28		1:9.09		1:8.18		1:4.83		1:13.31		1:8.55		1:7.33		1:8.5	
AT	8	88	23	179	11	124	7	43	14	156	24	176	14	86	18	95
	1:11		1:1.78		1:11.27		1:6.14		1:11.14		1:7.33		1:6.14		1:5.28	
FB	8	63	20	136	19	152	8	63	18	136	18	115	6	39	8	64
	1:7.87		1:6.8		1:8		1:7.88		1:7.56		1:6.39		1:6.5		1:8	
PE	26	226	135	1059	57	636	12	77	14	164	44	288	14	102	121	684
	1:8.69		1:7.84		1:11.16		1:6.42		1:11.71		1:6.55		1:7.29		1:5.65	
Total	70	637	203	1595	124	1180	43	286	97	978	128	881	62	391	167	1012
Ratio	1:9.1		1:7.86		1:9.52		1:6.65		1:10.08		1:6.88		1:6.31		1:6.06	

Key: N = Narrative PU = Propositional Unit WC = Word Count
WB = Western Aphasia Battery EM = Easter Morning Narrative CM = Counting Money Narrative
AT = Apple Theft Narrative FB = Fable PE = Personal Experience

Table 3.2 Narrative Length, Propositional Units and Ratio of Words to Propositions for the Control Group

	C1		C2		C3		C4		C5		C6		C7		C8	
N	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC	PU	WC
WAB	21	145	16	154	9	72	10	67	5	51	6	49	10	70	22	128
	1:6.9		1:9.63		1:8		1:6.7		1:10.2		1:8.17		1:7		1:5.82	
EM	18	141	15	113	8	57	5	49	7	60	8	47	13	81	6	53
	1:7.8		1:7.53		1:7.1		1:9.8		1:8.57		1:5.88		1:6.23		1:8.83	
CM	25	207	15	118	15	103	7	45	5	44	6	56	6	41	5	42
	1:8.28		1:7.87		1:6.87		1:6.4		1:8.8		1:9.33		1:6.83		1:8.4	
AT	34	256	24	175	15	99	14	93	12	100	11	83	14	99	11	81
	1:7.53		1:7.29		1:6.6		1:6.64		1:8.3		1:7.55		1:7.07		1:7.36	
FB	48	409	23	183	30	243	9	70	16	108	10	71	20	140	15	104
	1:8.52		1:7.96		1:8.1		1:7.78		1:6.75		1:7.1		1:7		1:6.93	
PE	72	535	74	557	96	627	37	259	20	205	22	162	83	583	20	138
	1:7.43		1:7.53		1:6.53		1:7		1:10.25		1:7.36		1:7.02		1:6.9	
Total	218	1693	167	1300	173	1201	82	583	65	568	63	468	146	1014	79	546
Ratio	1:7.77		1:7.78		1:6.94		1:7.11		1:8.74		1:7.43		1:6.95		1:6.91	

Key: N = Narrative PU = Propositional Unit WC = Word Count
WB = Western Aphasia Battery EM = Easter Morning Narrative CM = Counting Money Narrative
AT = Apple Theft Narrative FB = Fable PE = Personal Experience

In order to determine statistically significant differences between the groups on the various tasks the mean and standard deviations were obtained for the ratios of the experimental and control groups across all narrative tasks. These results are displayed in Table 3.3 below.

Table 3.3 Means and Standard Deviations for Propositional Unit/Word Count Ratios

	WAB		EM		CM		AT		FB		PE	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Subjects	8.1	1.06	7.39	1.68	8.64	2.36	8.26	2.5	7.37	0.69	8.16	2.23
Controls	7.8	1.5	7.73	1.33	7.85	1.04	7.29	0.56	7.52	0.65	7.5	1.16

Key: SD = Standard Deviation

Both multivariate and univariate tests of significance were undertaken. The multivariate test of significance revealed no significant differences between the two groups. The univariate test of significance was applied to evaluate the ratios for each narrative between groups ($df = 1.14$ and $p < 0.05$) and non-significant differences were found for each narrative.

Although statistical analysis did not reveal significant differences between groups and tasks, in general it was found that the control group produced fewer words per propositional unit than did the experimental group. Although statistical analysis did not support this observation, it implies that the experimental group used more words to convey an idea unit. This could be attributable to their increased use of repetition, false starts and empty fillers in their narrative.

3.2 Quality Analysis for Narratives and the 'Fable' Story Retell

As discussed in Section 2.6.2.3, the Discourse Test Battery (Ulatowska et al, 1998) allowed the researcher to analyse the various narrative samples according to global structure, temporal sequence, reference, suspense, coherence and clarity. The 'Fable' story retell could be further analysed in terms of the completeness of information and the accuracy of information. In addition to this, the main idea for each narrative was considered as well as the lesson for the 'Apple Theft' and 'Fable' narratives. The raw data for the experimental and control groups are presented in Table 3.4 and Table 3.5 respectively. See Section 2.7.2 for a description of the statistical procedures used.

Table 3.4 Experimental Group's Ratings for Quality of Narrative and Fable

Task	Features	S1	S2	S3	S4	S5	S6	S7	S8
Picture Description									
* Western Aphasia Battery	Global Structure	2	3	3	0	4	3	2	1
	Temporal Sequence	1	1	1	0	2	1	0	0
	Reference	2	3	2	1	3	3	3	1
	Suspense	0	0	0	0	0	0	0	0
	Coherance	3	2	2	0	3	2	2	1
	Clarity	1	1	1	1	2	1	2	0
	Total	**9**	**10**	**9**	**2**	**14**	**10**	**9**	**3**
Story Generation									
Single Pictures									
* Easter Morning	Global Structure	3	3	2	2	3	3	3	2
	Temporal Sequence	1	2	1	1	2	3	1	1
	Reference	2	2	2	3	3	3	2	1
	Suspense	0	1	0	0	1	1	1	0
	Coherance	2	3	2	2	2	3	1	1
	Clarity	1	1	1	1	1	2	1	0
	Total	**9**	**12**	**8**	**9**	**12**	**15**	**9**	**5**
	Main Idea	**CA**	**GA**	**CI**	**CA**	**CA**	**CA**	**CA**	**GA**
* Counting Money	Global Structure	3	4	2	1	2	3	1	0
	Temporal Sequence	2	3	2	0	2	3	1	0
	Reference	3	2	2	2	3	3	3	1
	Suspense	1	2	1	0	1	1	1	0
	Coherance	3	3	2	1	2	3	2	1
	Clarity	0	0	1	1	1	1	2	0
	Total	**12**	**14**	**10**	**5**	**11**	**14**	**10**	**2**
	Main Idea	**CA**	**CA**	**CA**	**NIL**	**CA**	**CA**	**CA**	**NIL**
Sequence Pictures	Global Structure	2	4	3	2	4	3	1	2
* Apple Theft	Temporal Sequence	3	3	3	1	3	3	1	2
	Reference	2	3	1	1	2	3	1	1
	Suspense	2	3	1	0	2	2	1	1
	Coherance	3	3	3	1	3	3	1	2
	Clarity	0	0	0	1	0	2	0	1
	Total	**12**	**16**	**11**	**6**	**14**	**16**	**5**	**9**
	Main Idea	**CA**	**CA**	**GA**	**CA**	**CA**	**CA**	**GA**	**CA**
	Lesson	**GA**	**GA**	**GA**	**GA**	**GA**	**CA**	**GA**	**CA**
Story Retell	Completeness	1	4	4	4	2	4	1	1
* Farmer and Sons Fable	Temporal Sequence	1	3	3	2	2	3	0	1
	Reference	2	3	3	1	2	3	2	2
	Accuracy	1	3	3	2	3	3	1	0
	Coherance	2	3	3	2	3	3	0	1
	Clarity	0	1	0	1	0	2	0	0
	Total	**7**	**17**	**16**	**12**	**12**	**18**	**4**	**5**
	Main Idea	**CI**	**GA**	**CA**	**GI**	**CI**	**CA**	**CI**	**CI**
	Lesson	**CI**	**GA**	**CI**	**NIL**	**CI**	**GA**	**CI**	**CI**
Story Generation	Global Structure	4	4	4	4	4	4	4	2
* Personal Experience	Temporal Sequence	3	1	3	3	3	3	3	1
	Reference	3	3	3	3	3	3	3	1
	Suspense	3	3	3	2	2	3	2	1
	Coherance	3	2	2	2	3	3	3	1
	Clarity	1	0	1	2	0	2	1	1
	Total	**17**	**13**	**16**	**16**	**15**	**18**	**16**	**7**

Key: CA = Concrete and Appropriate CI = Concrete and Inappropriate
GA = General and Appropriate GI = General and Inappropriate

Table 3.5 Control Group's Ratings for Quality of Narrative and Fable

Task	Features	C1	C2	C3	C4	C5	C6	C7	C8
Picture Description									
* Western Aphasia Battery	Global Structure	4	2	4	3	2	3	3	3
	Temporal Sequence	2	0	2	1	1	1	1	3
	Reference	3	2	3	3	2	3	2	2
	Suspense	1	0	0	0	0	0	0	1
	Coherance	3	2	3	3	3	3	3	3
	Clarity	2	1	2	2	2	2	2	2
	Total	**15**	**7**	**14**	**12**	**10**	**12**	**11**	**14**
Story Generation									
Single Pictures									
* Easter Morning	Global Structure	4	2	3	2	2	2	3	2
	Temporal Sequence	2	2	3	3	1	1	3	1
	Reference	3	2	3	3	2	2	3	2
	Suspense	1	1	2	1	0	0	2	1
	Coherance	3	3	3	3	3	3	3	2
	Clarity	2	1	2	2	2	2	2	2
	Total	**15**	**11**	**16**	**14**	**10**	**10**	**16**	**10**
	Main Idea	**GA**	**CA**	**CA**	**CA**	**CA**	**CA**	**CA**	**GA**
* Counting Money	Global Structure	4	2	4	3	1	3	3	2
	Temporal Sequence	3	1	3	2	1	1	2	1
	Reference	3	3	3	3	2	3	2	2
	Suspense	2	0	2	1	0	0	1	0
	Coherance	3	2	3	3	2	3	3	1
	Clarity	2	1	2	2	2	2	2	1
	Total	**17**	**9**	**17**	**14**	**8**	**12**	**13**	**7**
	Main Idea	**CA**	**CI**	**CA**	**CA**	**CA**	**CA**	**CA**	**CI**
Sequence Pictures	Global Structure	4	3	3	4	4	2	4	3
* Apple Theft	Temporal Sequence	3	3	3	3	3	2	3	3
	Reference	3	3	3	3	3	3	3	3
	Suspense	2	2	1	2	1	1	2	1
	Coherance	3	2	3	3	3	3	3	3
	Clarity	2	1	2	2	2	2	2	2
	Total	**17**	**14**	**15**	**17**	**16**	**13**	**17**	**15**
	Main Idea	**GA**	**CA**	**CA**	**GA**	**CA**	**GA**	**CA**	**GA**
	Lesson	**GI**	**CI**	**GA**	**GA**	**GA**	**GA**	**GA**	**GI**
Story Retell	Completeness	4	1	1	4	4	3	3	4
* Farmer and Sons Fable	Temporal Sequence	3	1	2	3	3	3	3	3
	Reference	3	3	3	2	3	3	3	3
	Accuracy	3	2	3	3	3	3	3	3
	Coherance	3	1	3	3	3	3	2	3
	Clarity	2	1	2	1	2	2	2	2
	Total	**18**	**9**	**14**	**16**	**18**	**17**	**16**	**18**
	Main Idea	**CI**	**CI**	**GI**	**CA**	**GI**	**CA**	**CA**	**GA**
	Lesson	**CI**	**CI**	**GA**	**GA**	**GI**	**CI**	**GI**	**GA**
Story Generation	Global Structure	4	4	4	4	4	4	4	3
* Personal Experience	Temporal Sequence	3	3	3	3	3	3	3	3
	Reference	3	3	2	3	3	3	3	3
	Suspense	3	3	2	1	3	2	3	2
	Coherance	3	3	3	3	3	3	3	3
	Clarity	2	2	2	2	2	2	2	2
	Total	**18**	**18**	**16**	**16**	**18**	**17**	**18**	**16**

Key: CA = Concrete and Appropriate CI = Concrete and Inappropriate
GA = General and Appropriate GI = General and Inappropriate

Table 3.6 below depicts the means and standard deviations for the features of quality analysis (global structure, temporal sequencing, referencing, suspense, cohesion, clarity, accuracy and completeness) for each group across all narratives.

Table 3.6 Means and Standard Deviations for Quality Analysis Elements for the Experimental and Control Groups

		WAB Narrative		EM Narrative		CM Narrative		AT Narrative		FB Retelling		PE Narrative	
Analysis Features	Subjects	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Global Structure	Subjects	2.25	1.28	2.63	0.52	2.0	1.31	2.63	1.06			NA	NA
	Controls	3.0	0.76	2.5	0.76	2.75	1.04	3.38	0.74			NA	NA
Temporal Sequence	Subjects	0.75	0.71	1.5	0.76	1.63	1.19	2.38	0.92	1.88	1.13	NA	NA
	Controls	1.38	0.92	2.0	0.93	1.75	0.89	2.88	0.35	2.63	0.74	NA	NA
Reference	Subjects	2.25	0.89	2.25	0.71	2.38	0.74	1.75	0.89	2.25	0.71	NA	NA
	Controls	2.5	0.54	2.5	0.54	2.63	0.518	3.0	0.0	2.88	0.35	NA	NA
Suspense	Subjects	NA	NA	0.5	0.54	0.88	0.64	1.5	0.93			2.38	0.74
	Controls	NA	NA	1.0	0.76	0.75	0.89	1.5	0.54			2.38	0.74
Coherance	Subjects	1.88	0.99	2.0	0.76	2.13	0.84	2.38	0.92	2.13	1.13	2.38	0.74
	Controls	2.88	0.35	2.88	0.35	2.5	0.76	2.88	0.35	2.63	0.74	3.0	0.0
Clarity	Subjects	1.13	0.64	NA	NA	0.75	0.71	0.5	0.76	0.5	0.76	1.0	0.76
	Controls	1.88	0.35	NA	NA	1.75	0.46	1.88	0.35	1.75	0.46	2.0	0.0
Completeness	Subjects									2.63	1.51		
	Controls									3.0	1.31		
Accuracy	Subjects									2.0	1.19		
	Controls									2.88	0.35		

Key: NA = Not Analysed WAB = Western Aphasia Battery EM = Easter Morning
CM = Counting Money FB = Fable PE = Personal Experience
SD = Standard Deviation
Darkened areas - these elements were not required in the analysis of these narratives

The features of suspense in the 'WAB' narrative, clarity in the 'Easter Morning' narrative and global structure, temporal sequence and reference in the 'Personal Experience' narrative were not statistically analysed due to the lack of variance within groups.

When a multivariate test of significance was applied ($p < 0.05$) to each narrative, significant differences existed between groups for overall quality on the narratives of 'Personal Experience' ($p = 0.011$), 'Apple Theft' ($p = 0.019$), 'Counting Money' ($p = 0.02$), 'Easter Morning' ($p = 0.042$) and 'Fable' story retell ($p = 0.044$). When the univariate test of significance was applied ($p < 0.05$) to determine significant differences between groups on the various features across tasks, only three of the features were significantly different between groups.

→ *Coherence* was significantly different on the tasks of the 'WAB' (F = 7.23, df = 1.14, p = 0.012), 'Easter Morning' (F = 8.79, df = 1.14, p = 0.01) and 'Personal Experience' (F = 5.65, df = 1.14, p = 0.032) narratives. The measures are significant, but one needs to be aware that these were small sample sizes and the variances were not homogenous for the results on the 'WAB' and 'Easter Morning' narratives.

→ *Clarity* was significantly different on the narratives tasks of the 'WAB' (F = 8.4, df = 1.14, p= 0.12), 'Counting Money' (F = 11.2, df = 1.14, p = 0.05), 'Apple Theft' (F = 21.7, df = 1.14, p = 0.0003), 'Fable' story retell (F = 15.9, df = 1.14, p = 0.001) and 'Personal Experience' (F = 14, df = 1.14, p = 0.002) narratives. The significant measures for clarity on the 'Apple Theft' and 'Personal Experience' narrative tasks should be viewed with caution due to the variances not being homogenous.

→ *Referencing* was only significantly different between groups on the task of the 'Fable' story retell (F = 5, df = 1.14, p = 0.42) narrative.

None of the other features; global structure (narratives), temporal sequence, suspense (narratives), completeness (fable) and accuracy (fable) showed any significant differences between groups.

Further analysis for the quality of narratives investigated each feature and how they varied within and between the experimental and control groups. This is followed by an assessment of the main idea and lesson for each narrative. For all further discussions refer to the results reflected in Table 3.4 and Table 3.5 in Section 3.2.

3.2.1 Global Structure (Narratives)

As stipulated by Ulatowska et al (1998) global structure evaluates four critical elements, namely creating a setting and providing a complicating action, a resolution and a coda. No significant difference was noted between groups for this feature across all narrative tasks. However, quantitative analysis reveals that the control group, in general, produced more critical elements than did the experimental group thus exhibiting better global structure for narratives. Of clinical interest is that in both groups, global structure scores were higher on the 'Personal Experience' narrative than on the other narrative tasks.

Within the experimental group S8 performed the poorest across all narrative tasks. Of note is that she also had the lowest score on the WAB AQ. She was unable to provide any elements of global structure for the 'Counting Money' narrative and produced only the element of creating a setting for the 'WAB' narrative. For the remainder of her narratives she was restricted to two elements, namely complicating action and resolution. Although S4 and S7 produced limited global structure for their narratives they had all elements present in their 'Personal Experience' narrative. S8 was the only experimental subject not to have all elements present in this narrative.

Although, as previously stated, the control group performed better that the experimental group, they did not exhibit completely intact global structure elements across all narrative tasks. Performance however was more consistent than the experimental group. C1 had intact global structure across all narrative tasks. For the remainder of the group, no one individual performed markedly poorer. In general, where all elements were not present the element of producing an optional coda was consistently omitted.

3.2.2 Completeness (Fable)

The completeness of the narrative refers to the inclusion of all the critical story elements on the 'Fable' story retell task. The experimental group generally performed poorer on this task as they did not recall all of the critical elements. S1, S7 and S8 omitted most of the critical elements, even following verbal prompts by the researcher and the re-introduction of the written stimulus. The control group in general produced all critical elements except for C2 and C3. The circumstances surrounding the absence of the elements in C2 and C3 contrasted to those in S1, S7 and S8. The controls produced in-depth analyses pertaining to the narrative whereas the experimental subjects could not recall elements and gave very little information. When C2 and C3 were prompted, they could provide some of the critical story elements.

3.2.3 Temporal Sequence

Ulatowska et al (1998) state that the use of temporal sequence within a narrative can be determined by evaluating the chronology of events. Although statistical analysis revealed no significant difference between groups on the various tasks for temporal sequence, trends were noted. In general the experimental group had poorer use of temporal sequencing on the composite pictures and the 'WAB' picture description tasks. For the remainder of the tasks

temporal sequencing was relatively intact for both groups. S4, S7 and S8 performed poorer across all tasks with S4 and S7 improving on the 'Personal Experience' task. S8 revealed some preserved temporal sequencing abilities on the 'Apple Theft' narrative (picture sequencing task).

The control group in general presented with adequate temporal sequencing abilities. C2 performed poorly on the 'Fable' story retell task but as previously discussed in section 3.2.2, he did not provide a narrative but an analysis of the fable. The remainder of the controls all had preserved temporal sequencing abilities on this task. Of clinical interest is that the controls performed similarly to the experimental subjects on the narratives based on a composite picture description. Temporal sequencing was good for both groups on the tasks of the 'Apple Theft' and 'Personal Experience' narratives.

3.2.4 Reference

One determines the use of reference in a narrative by evaluating the occurrence of reference elements (Ulatowska et al, 1998). The experimental group generally preserved their referencing abilities across tasks but performed poorer than the control group. The controls performed well on all tasks. In the experimental group, S4 and S8 performed poorly in general but S8's performance improved on the narratives of 'Easter Morning' and 'Personal Experience'. Statistical analysis found that there was a significant difference between groups in their use of reference on the task of the 'Fable' story retell but observable differences did exist across the other narrative tasks. The most noticeable difference between groups was in the 'Apple Theft' narrative but statistical significance was not derived for this narrative due to the lack of variance in the control groups' data (all scored optimally). Within the experimental group however, six of the subjects had poor use of reference on this task.

3.2.5 Suspense (Narratives)

The element of suspense was evaluated for each narrative. The control groups narratives in general contained more suspense than did the experimental group. Of interest is that quantitative differences between the two groups were only noted on the 'Composite Pictures' and 'WAB' picture description tasks. The presence of suspense, for both groups, was seldom present on the 'WAB' picture description. This is expected considering the nature of the stimulus. The same amount of suspense was demonstrated for both groups on the 'Personal Experience'. It exhibited the most suspense of all narratives.

In both groups there were two subjects, S4 & S8 and C5 & C6, who demonstrated little use of suspense in all of their narratives. In the experimental group it would appear that the S4 and S8 had difficulties in their production of essential features and maintaining thematic unity in discourse across all narrative tasks. On the other hand, C5 and C6 only had a lack of suspense in the 'Composite Picture' and 'WAB' picture description tasks. Both control subjects produced their narratives in a very efficient manner.

3.2.6 Accuracy (Fable)

The accuracy of a fable is determined by evaluating the correctness of information provided by the individuals (Ulatowska et al, 1998). Although no statistically significant difference was noted between groups for this feature, quantitative analysis revealed that the experimental group performed poorly in comparison to the control group. All controls, except for C2, reproduced accurate fables. In contrast; S1, S4 and S8 all displayed some inaccuracy in the information provided. S1's production of the 'Fable' story retell was short and included two key elements (a man had a farm and grapes). Although S4's narrative was marked by false starts he managed to produce several key elements in his narrative. S8 however, produced short telegrammatic sentences, which were marked by incomplete ideas and information. Of all the experimental subjects S7 was the only one unable, despite prompting, to reproduce any correct elements for the 'Fable' story retell task.

3.2.7 Coherence

Coherence of narratives evaluates the continuity of ideas within each narrative (Ulatowska et al, 1998). Overall coherence on the narrative tasks was reduced in the experimental group. S4, S7 and S8 produced less coherence across narrative tasks. The control group generally showed intact coherence across narrative tasks. Statistical results support these observations in that there was a significant difference between the two groups in their coherence on the tasks of the 'WAB', 'Easter Morning' and 'Personal Experience narratives. Differences were also observed, although not statistically significant, on all other narrative tasks.

3.2.8 Clarity

The clarity of a narrative is determined by evaluating the clarity, or cohesiveness, of the language (Ulatowska et al, 1998). A marked difference existed between groups in the clarity of language used for all narrative tasks. Statistical analysis supported this in that significant

differences existed between groups for all narratives, except for that of the 'Easter Morning' narrative. In general, all subjects in the experimental group, except for S6, were unable to produce cohesive narratives. S4, S5 and S7 had improved clarity on the 'Personal Experience', 'WAB' and 'Counting Money' narratives respectively. Of clinical interest is that in the experimental group, reduced clarity was most prevalent on the tasks of the 'Fable' story retell and the 'Apple Theft' narratives. No such effects were evident in the control group. This is supported by the statistical results presented in Section 3.2. The control subjects, except for C2, were all able to produce cohesive narratives.

3.2.9 Main Idea

The main ideas of the discourse samples were evaluated according to two parameters. Each main idea was evaluated with regards to its appropriateness and whether the response was concrete or generalised. It can be deduced from Table 3.4 and Table 3.5 that no obvious difference existed between the experimental and control groups. In general, across all tasks, both groups' responses were appropriate and concrete with relatively few numbers of responses noted as inappropriate and generalised.

3.2.10 Lesson (Apple Theft and Fable)

As for the main idea, the lesson of the narratives was also evaluated according to its appropriateness and its generalisation. In general, on the task of the 'Apple Theft' narrative, the experimental and control groups produced lessons that were appropriate and general. For the 'Fable' story retell task the experimental group generally produced inappropriate and concrete responses. The control group also produced inappropriate responses with three responding with concrete responses and five general responses.

3.2.11 Task Effects for Quality Analysis

As can be determined from the summary in Table 3.7, the nature of the stimuli used influenced the quality of the narratives produced. Significant differences for overall quality of the narratives existed between groups on all narrative tasks except for that of the 'WAB' picture description. The only other prevalent task effects were for the features of coherence, clarity and referencing on various tasks, refer to Table 3.7. Otherwise, there were limited task effects for the remaining features, which are summarised in Table 3.7. These will be further discussed in Section 4.3.2.

Table 3.7 Task Effects for Quality Analysis

Western Aphasia Battery Picture Description	***Overall Quality***: No significant difference between groups. • Differentiated between groups for coherence and clarity. • The experimental group had poorer global structure on this task. • Slightly reduced order in temporal sequencing for both groups. • Referencing minimally affected in the experimental group. • Poorest presence of suspense in both groups with the control group using slightly more.
'Composite Pictures'	***Overall Quality***: Significant difference between groups • Reduced global structure on the 'Counting Money' narrative for the experimental group. • Differentiated between groups for coherence ('Easter Morning') and clarity ('Counting Money'). • Lowest scores for temporal sequencing abilities in both groups. • Referencing abilities adequate for both groups. • No use of suspense in the experimental group but minimal use in the control group.
'Apple Theft' Story Sequence	***Overall Quality***: Significant difference between groups • Adequate global structure in the experimental group but poorer than the control group. • Differentiated between groups for clarity. • Coherence was adequate for both groups. • Temporal sequencing was adequate for both groups. • Large observable difference between groups in their use of referencing. • Suspense was present for both groups but was not considerable.
'Fable' Story Retell	***Overall Quality***: Significant difference between groups • Differentiated between groups for clarity and referencing. • Coherence was adequate for both groups. • Minimal difference in temporal sequencing between groups.
'Personal Experience' Narrative	***Overall Quality***: Significant difference between groups • Differentiated between groups for coherence and clarity. • Global structure scores were highest for this task. • Temporal sequencing adequate for both groups. • Adequate referencing but the experimental group performed slightly poorer than the control group. • Use of suspense was similar in both groups, with most suspense being used on this task.

3.3 Analysis of Evaluation

Labov (1977) devised an evaluative tool to assess the number of evaluative devices used within a narrative. It provides information regarding the evaluative richness of each presented narrative. This study considered the differences between the experimental and control groups in their use of these evaluative devices as well as the use of these devices across narrative tasks. Results of the evaluative devices used by each experimental and control group individual in their narrative discourse productions are presented in Table 3.8 and Table 3.9 respectively. The means and standard deviations for both groups were derived for the overall use of evaluation across tasks. An ANOVA was applied to determine statistically significant differences between the groups, the results are presented in Table 3.10. Narrative length was taken into account when applying this statistic. The results from the Mann-Whitney and Wilcoxon Rank Sum tests determining significant differences between groups on all narrative tasks are presented in Table 3.11. In addition to these statistical procedures, percentages were derived for the total use of evaluation and each evaluative element across narratives for both the experimental and control groups. Quantitative observations were based on these results.

3.3.1 Overall use of Evaluation

When considering Table 3.8 and 3.9, it can be concluded that the experimental group used evaluation to a lesser degree than the control group on all narrative tasks. Refer to Table 3.8 and Table 3.9 for the raw scores and percentages derived for the experimental and control groups analysis of evaluation.

Table 3.8 Raw Scores for Analysis of Evaluation for the Experimental Group

	S1						S2						S3						S4						S5						S6						S7						S8						
	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	Total
Int																																																	
G	1	0	2	3	0	11	0	0	3	13	0	30	3	0	1	3	3	0	0	0	0	1	0	2	5	0	2	4	0	4	0	0	0	3	0	1	0	0	0	1	0	3	4	4	0	5	1	9	116
EP	0	1	1	1	1	10	0	1	1	8	0	14	1	1	1	2	0	17	0	0	0	0	0	3	1	0	1	1	0	0	0	0	0	2	0	6	0	3	0	4	1	4	0	2	0	2	1	19	109
Q	2	3	2	5	2	5	1	1	2	7	1	15	1	2	1	1	0	7	3	0	2	0	0	1	1	2	4	4	0	3	2	1	1	2	3	4	2	1	2	4	2	1	3	0	1	1	0	4	112
R	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	11	0	1	0	0	0	1	0	0	0	0	0	3	32
RU	2	1	6	2	2	7	0	0	2	0	0	20	4	6	8	6	9	44	0	1	1	0	0	1	10	3	6	7	6	7	1	0	0	1	0	2	1	2	1	1	0	5	0	3	3	0	0	14	198
WH	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	5	6	11	11	5	33	1	3	7	28	2	83	9	9	13	12	12	78	3	1	3	1	0	7	17	5	13	16	6	15	3	1	1	6	3	24	3	6	3	10	3	14	4	9	3	8	2	49	565
Com																																																	
I	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	9
QS	9	0	0	0	0	0	0	0	0	0	0	2	0	1	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	10	21
N	0	2	0	0	0	2	0	1	2	3	1	16	0	1	0	0	2	6	0	0	0	1	1	4	1	3	4	1	4	2	0	2	0	1	2	3	0	3	2	0	1	1	0	3	0	2	0	0	75
F	0	0	0	0	0	0	0	0	1	0	0	2	0	0	3	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	1	0	0	0	0	1	22	36
M	3	1	0	0	0	2	1	0	1	2	1	6	1	2	2	0	2	4	0	1	0	1	0	1	2	1	5	6	2	4	0	3	2	1	1	5	0	0	1	3	1	3	0	1	1	2	0	22	98
QM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	12
SL	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
CP	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	9
Total	3	3	0	1	0	3	1	1	4	5	3	34	1	4	8	0	6	14	0	1	0	2	1	7	3	5	11	8	7	6	1	8	4	2	3	10	0	1	3	3	2	5	0	5	2	4	1	63	264
Cor																																																	
PP	1	0	3	0	0	1	3	2	1	3	0	4	0	3	1	1	0	3	2	0	0	1	0	0	7	2	2	1	0	2	4	3	3	3	1	8	2	3	1	4	2	1	1	3	2	0	1	3	96
AP	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	11
DT	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	7
DP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RHP	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	1	0	0	0	1	2	1	1	1	0	0	0	0	2	0	0	0	1	16
LHP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	3	0	0	3	5	2	1	3	0	5	3	5	1	1	0	5	2	1	1	1	0	1	10	3	3	1	0	6	5	6	5	3	3	11	3	5	2	4	2	1	2	5	2	0	1	4	136
EX	0	0	0	0	0	2	0	0	0	0	3	15	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	5	0	2	1	1	0	2	0	0	0	1	0	1	39
Total	0	0	0	0	0	2	0	0	0	0	3	15	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	5	0	2	1	1	0	2	0	0	0	1	0	1	39
TET	9	10	14	12	5	43	19	5	12	36	8	137	12	18	20	13	18	109	5	3	4	4	1	15	30	13	27	25	13	27	9	18	11	11	8	50	6	17	9	18	7	22	6	19	8	13	4	117	1020
Words per task	68	104	65	98	63	226	64	57	100	179	156	1059	74	104	90	124	152	656	59	35	29	43	63	77	172	97	253	156	136	164	77	131	64	176	115	268	34	96	44	86	39	102	40	95	34	95	64	684	
% of evaluation	10.2	9.6	21.5	13.6	7.9	19	29.6	8.8	12.0	20.1	5.9	12.9	16.2	17.3	22.2	10.5	11.8	17.1	12.8	8.6	13.7	9.3	1.6	19.5	17.4	13.4	10.7	16.8	9.6	16.5	11.7	13.7	11.7	6.25	7.0	17.4	17.6	19.8	20.5	21.0	6.9	21.5	15.0	20.0	23.5	13.7	6.2	17.1	
Total % Use of Evaluation	14.6%						13.6%						16.1%						11.2%						13.8%						12.1%						20.2%						16.5%						

Key:

W	Western Aphasia Battery picture description
E	Easter Morning Narrative
CM	Counting Money Narrative
A	Apple Theft Narrative
FB	Fable story retell
P	Personal Experience

Int	Intensifiers
G	Gestures
EP	Expressive Phonology
Q	Quantifiers
R	Repetition for Emphasis
RU	Ritual Utterances
WH	WH-exclamations

Com	Comparators
I	Imperatives
QS	Questions
N	Negatives
F	Future Verbs
M	Modals
QM	Quasimodals
SL	Superlatives
CP	Comparatives

Cor	Correlative
PP	Progressive Participles
AP	Appended Participles
DT	Double Attributives
DP	Double Appositives
RHP	Right Hand Participles
LHP	Left Hand Partiriples
EX	Explicatives
TET	Total Evaluation per Task

Table 3.9 Raw Scores for Analysis of Evaluation for the Control Group

	C1						C2						C3						C4						C5						C6						C7						C8						
	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	W	E	CM	A	FB	P	Total
Int																																																
G	0	0	5	7	13	34	2	2	1	0	0	16	1	0	0	4	6	5	1	1	0	4	1	1	0	0	9	7	1	13	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	1	132
EP	11	7	11	12	36	51	3	2	3	4	7	35	1	2	4	3	10	14	0	3	2	0	2	10	1	4	1	6	6	19	1	1	1	2	1	12	1	0	0	0	2	18	3	1	1	4	5	9	343
Q	1	1	3	4	9	8	3	1	1	3	2	8	1	1	3	3	2	8	0	2	1	2	1	1	3	1	1	4	2	3	0	0	0	0	0	7	1	4	1	7	0	4	2	1	1	2	3	0	116
R	0	0	0	1	3	10	0	0	0	0	0	14	0	0	0	1	0	2	0	0	0	0	0	1	0	0	0	0	0	11	0	0	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0	1	51
RU	2	4	5	9	7	15	5	3	4	2	1	20	2	1	5	0	12	18	0	2	0	0	1	10	1	3	3	1	3	13	1	1	3	1	1	3	1	1	1	1	5	18	2	0	3	0	1	1	196
WH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	14	12	24	36	70	118	13	8	9	9	10	93	5	4	12	11	30	47	1	8	3	14	5	23	5	8	5	16	12	59	2	2	4	3	2	29	3	5	2	8	7	46	7	2	5	6	9	12	838
Com																																																
I	0	0	1	0	2	1	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
QS	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
N	2	5	1	5	6	10	0	1	0	1	5	17	0	1	1	0	2	12	0	2	2	1	1	4	0	0	1	1	1	4	0	1	0	2	3	10	0	1	2	1	1	4	0	1	2	1	1	4	116
F	0	0	0	1	2	3	0	0	0	0	0	1	0	0	1	0	4	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0	0	2	0	0	0	0	0	0	0	0	0	22
M	4	4	4	9	11	13	0	1	0	3	2	10	0	1	6	2	10	10	1	0	2	0	1	2	0	0	0	2	1	4	0	0	1	0	0	0	0	1	0	0	2	7	0	1	2	1	1	4	123
QM	1	0	1	0	0	0	0	0	0	0	0	3	0	0	0	1	2	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	2	1	0	0	0	0	0	1	0	0	0	0	0	21
SL	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	5	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	16
CP	0	0	1	3	2	2	0	2	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	20
Total	8	9	8	18	24	29	0	4	0	4	7	37	0	2	8	3	19	34	1	2	4	1	3	11	0	3	4	4	3	11	0	3	2	2	2	6	0	2	2	2	8	19	1	2	4	2	3	8	320
Cor																																																
PP	1	0	2	1	7	13	2	0	2	0	1	6	1	2	1	0	1	7	2	3	0	0	0	1	1	3	0	0	0	0	0	0	3	1	1	4	2	1	1	2	0	9	0	1	1	2	3	2	94
AP	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	7
DT	3	0	0	0	1	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
DP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RHP	0	0	1	0	0	1	4	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	1	0	0	2	0	0	0	25
LHP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	4	1	3	1	8	17	6	3	9	0	1	7	1	2	1	0	1	7	2	3	1	0	0	1	4	4	2	0	1	3	1	1	3	1	1	4	3	3	2	2	0	12	0	2	3	2	2	2	138
EX	0	0	1	1	1	2	0	0	0	0	0	1	0	0	1	1	2	6	0	0	0	1	0	1	0	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	24
Total	0	0	1	1	1	2	0	0	0	0	0	1	0	0	1	1	2	6	0	0	0	1	0	1	0	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	24
TET	26	22	36	56	105	166	19	15	18	13	18	138	6	8	22	15	52	94	4	13	10	16	8	36	9	17	11	22	16	74	3	6	9	6	5	29	6	9	6	12	15	77	8	6	12	10	14	23	1329
Words per task	145	141	207	256	409	535	154	113	118	175	183	557	72	57	103	99	243	627	67	49	45	93	70	259	51	60	44	100	108	305	40	47	56	83	71	152	70	81	41	99	140	583	128	53	42	81	104	130	
% of evaluation	18.0	15.6	17.4	21.9	25.2	31.0	12.3	13.3	15.3	7.4	9.8	24.8	8.3	14.0	21.4	15.1	21.4	15.0	6.0	26.5	22.2	17.2	11.4	13.9	17.6	28.3	25.0	22.0	14.8	36.1	6.1	12.8	16.1	7.2	7.0	24.0	8.6	13.1	14.6	12.1	10.7	13.2	6.3	11.3	28.6	12.3	13.5	16.7	
Total % Use of Evaluation	24.2%						17.0%						16.4%						14.9%						26.2%						14.5%						12.5%						13.4%						

Key:

W	Western Aphasia Battery picture description
E	Easter Morning Narrative
CM	Counting Money Narrative
A	Apple Theft Narrative
FB	Fable story retell
P	Personal Experience

Int	Intensifiers
G	Gestures
EP	Expressive Phonology
Q	Quantifiers
R	Repetition for Emphasis
RU	Ritual Utterances
WH	WH-exclamations

Com	Comparators
I	Imperatives
QS	Questions
N	Negatives
F	Future Verbs
M	Modals
QM	Quasimodals
SL	Superlatives
CP	Comparatives

Cor	Correlative
PP	Progressive Participles
AP	Appended Participles
DT	Double Attributives
DP	Double Appositives
RHP	Right Hand Participles
LHP	Left Hand Participles
EX	Explicatives
TET	Total Evaluation per Task

As can be deduced from reviewing the means, standard deviations and the ANOVA results presented in Table 3.10 below, statistically significant differences existed between groups on the 'WAB' ($F = 13.138$, $df = 1$, $p = 0.003$) and 'Fable' story retell ($F = 11.107$, $df = 1$, $p = 0.005$) tasks in the total amount of evaluation used.

Table 3.10 Means, Standard Deviations and p-values for Total Evaluation across Tasks

	WAB		Easter Morning		C.Money		Apple Theft		Fable		P. Expereince	
	S	C	S	C	S	C	S	C	S	C	S	C
Mean	0.119	0.073	0.081	0.107	0.095	0.116	0.132	0.129	0.049	0.102	0.204	0.216
SD	0.027	0.026	0.026	0.043	0.027	0.046	0.049	0.049	0.025	0.038	0.148	0.085
df	1		1		1		1		1		1	
F	13.138		1.136		1.125		0.067		11.107		0.035	
p-value	* .003		0.287		0.307		0.936		* .005		0.846	

* $p < 0.05$

Key: WAB = Western Aphasia Battery; C.Money = Counting Money; P.Experience = Personal Experience; SD = Standard Deviation; df = Degrees of Freedom

Furthermore, it was observed that within both groups there was variability in the use of evaluation across all individuals. In the experimental group S7, despite producing some of the shortest narratives, had the highest percentage of evaluation use across narrative tasks (20.2%) followed by S8 and S3. S4, who had the shortest narratives in this group, used evaluation the least (11.2%). Of interest is that even though S2 produced the longest overall narratives, he made less use of evaluation (13.6%) in comparison to the other experimental group subjects. In general, the experimental groups decreased use of evaluation could have impacted on their performance in the analysis of quality (Section 3.2) on aspects such as suspense and coherence.

For the control group C5 had some of the shortest narratives, yet overall he used the highest percentage of evaluation (26.2%) in the control group. Many controls, specifically C4, C6 and C8 produced shorter overall narratives and had reduced amounts of evaluation in their narratives. Apart from C5, C1 used the most evaluation in his narratives (24.2%) in comparison to the rest of the control group and was considered to be one of the most effective storytellers in this group.

Both the experimental and control groups used the most evaluation on the narrative task of 'Personal Experience'. The 'Apple Theft' and the 'Fable' story retell tasks in the experimental

group and the 'Fable' story retell and the 'Apple Theft' tasks in the control group followed the 'Personal Experience' task in the amount of evaluation used. The 'Composite Picture' and the 'WAB' picture description tasks rendered the least amount of evaluation respectively in both groups.

3.3.2 Evaluative Categories

The presentation of results will now focus on which evaluative categories were used the most in the experimental and control groups. They will also determine whether there were significant differences between groups for various elements within the evaluation categories. All quantitative observations and values depicted in Figures 2,3,4 and 5 are based on percentages as discussed in Section 2.7.3

As can be derived from Table 3.8 and Table 3.9, both the experimental (8.12%) and control groups (11.37%) used the evaluative category of intensifiers the most. This was followed by comparators (S = 3.79% and C = 4.46%), correlatives (S = 1.86% and C = 1.87%) and explicatives (S = 0.56% C = 0.33%). For the categories of intensifiers, comparators and correlatives, the experimental group produced fewer overall evaluative elements than did the control group. However, the experimental group produced more explicatives than the control group.

Differences also existed between groups on all the evaluative devices within the various categories of evaluation. As previously mentioned, the Mann-Whitney and Wilcoxon Rank sum tests were administered to determine these differences. Not all of the evaluative devices assessed were statistically analysed for all narrative tasks due to increased variance in the data. See Table 3.11.

Table 3.11 Evaluative Categories across Tasks, Mann-Whitney (U) and Wilcoxon Rank Sum (W) Results

	WAB		EM		CM		AT		FB		PE	
	U	W	U	W	U	W	U	W	U	W	U	W
INTENSIFIERS												
Gesture	24.5	75.5	NA	NA	24.5	75.5	26.5	73.5	23.0	61.0	27.0	63.0
p-value	0.38				0.36		0.56		0.49		0.59	
Expressive Phonology	9.0	75.0	15.5	68.5	12.0	48.0	17.5	53.5	1.5	82.5	14.5	50.5
p-value	* 0.016		0.13		* 0.026		0.12		* 0.001		** 0.066	
Quantifiers	24.5	75.5	31.5	67.5	21.5	78.5	31.0	67.0	24.0	60.0	29.0	65.0
p-value	0.41		0.96		0.23		0.92		0.37		0.75	
Repetition	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21	57
p-value											0.24	
Ritual Utterances	27.0	63.0	30.5	66.5	NA	NA	30.0	70.0	10.0	38.0	27.0	63.0
p-value	0.59		0.87				0.83		* 0.032		0.59	
COMPARATORS												
Negatives	NA	NA	23.0	77.0	27.0	63.0	27.5	63.5	21.0	57.0	15.5	51.5
p-value			0.32		0.58		0.59		0.23		** 0.079	
Future Verbs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.5	49.5
p-value											0.43	
Modals	25.0	75.0	27.0	73.0	31.0	67.0	30.5	69.5	18.0	54.0	26.5	62.5
p-value	0.39		0.57		0.91		0.87		0.13		0.56	
Quasimodals	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28.5	64.5
p-value											0.68	
Superlatives	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.0	54.0
p-value											** 0.1	
CORRELATIVES												
Progressive Participles	19.0	81.0	20.0	80.0	28.5	71.5	21.0	79.0	NA	NA	22.5	58.5
p-value	0.16		0.19		0.69		0.23				0.32	
Appended Participles	NA	NA	32.0	68.0	NA	NA	NA	NA	NA	NA	NA	NA
p-value			1									
Double Attributives	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29.0	71.0
p-value											0.73	
Right hand participles	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29.0	71.0
p-value											0.72	
EXPLICATIVES	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.5	60.5
p-value											0.59	

* $p < 0.05$ ** $p < 0.1$

Key: WB = Western Aphasia Battery EM = Easter Morning Narrative CM = Counting Money Narrative
AT = Apple Theft Narrative FB = Fable Story Retell PE = Personal Experience
NA = Not Analysed

The results presented in Section 3.3.2.1 to Section 3.3.2.4 are based on Table 3.11 above, as well as Table 3.8 and Table 3.9.

3.3.2.1 Intensifiers

a) Overall use of Intensifiers

In general the experimental group used fewer intensifiers than the controls across all narrative tasks. The task of the 'Personal Experience' narrative produced the greatest use of intensifiers for both the experimental and control groups. This was proceeded by the 'Apple Theft' task for

the experimental group and the 'Fable' story retell task for the control group. The fewest intensifiers for the experimental group were noted on the narrative task of the 'Fable' story retell followed by the story generation tasks. The control group produced fewer intensifiers on the story generation tasks followed by the 'WAB' picture description.

b) Use of Individual Evaluative Devices

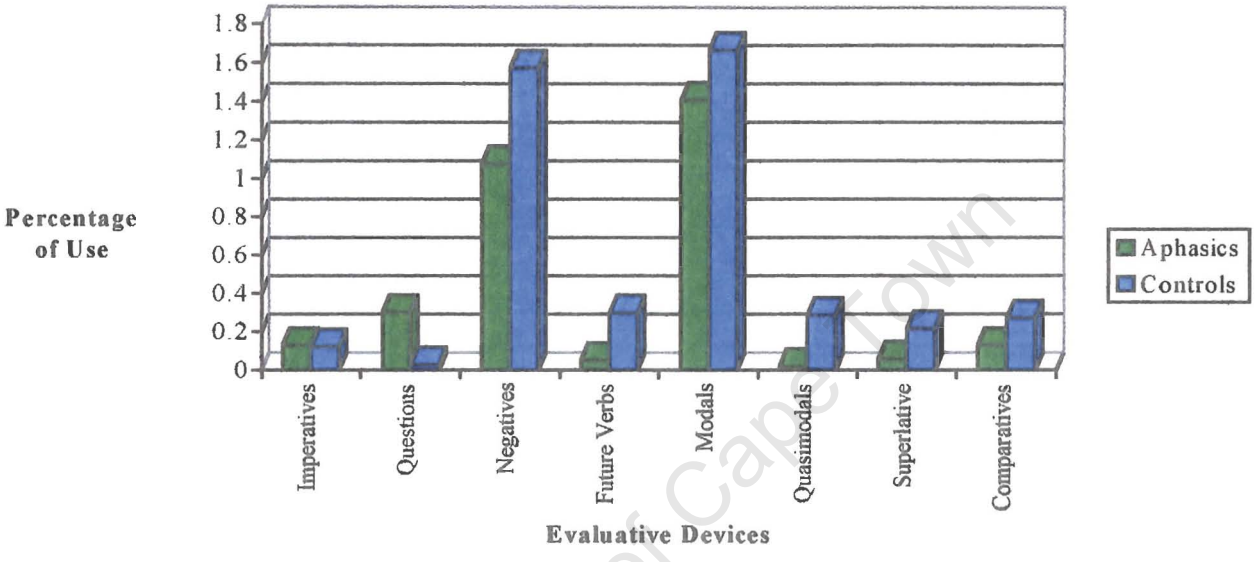

Figure 2. Occurrence of Intensifiers for the Experimental and Control Groups

As can be seen in Figure 2, quantitative differences existed between groups in their use of each intensifier element across tasks. Across all narrative tasks, the most frequently used intensifier for the experimental group was that of ritual utterances followed by gesture, quantifiers, expressive phonology, repetition for emphasis and wh-exclamations (one instance). The control group however, made more frequent use of expressive phonology, followed by ritual utterances, gestures, quantifiers and repetition for emphasis. There was no evidence of wh-exclamations for the control group. Although quantitative differences between groups varied widely for each narrative task and for all intensifiers, statistical analysis revealed that differences between groups were only significant on some tasks for different intensifiers.

Statistical significance (see Table 3.11), between groups was noted for the intensifiers of expressive phonology and ritual utterances. Significance was not recognised for these elements across all narrative tasks. Expressive phonology only revealed a significant difference between groups on the tasks of 'WAB' ($p = 0.016$), 'Counting Money' ($p = 0.026$) and the 'Fable' story

retell (p = 0.001). The use of expressive phonology on the task of the 'Personal Experience' narrative revealed a trend towards a significant difference between groups (p = 0.066). A larger sample size may have resulted in a statistically significant difference for this measure. For the evaluative element of ritual utterances a significant difference was noted only on the task of the 'Fable' story retell (p = 0.032).

c) Task Effects

There was variability within groups in the use of each evaluative element for all narrative tasks. Quantitative analysis based on the percentage of use of each device for each group revealed certain task effects, which are presented in Table 3.12. These task effects will be discussed in more detail in Section 4.3.3

Table 3.12 Task Effects for Intensifiers

Western Aphasia Battery Picture Description	• Minimal use of intensifiers by both groups. • Increased use of gesture by the experimental group in comparison to the control group. • Significant difference in use of expressive phonology between groups, experimental subjects used less. • Adequate use of quantifiers. • No repetition for emphasis noted in either group. • Limited use of ritual utterances in both groups.
'Composite Pictures'	• The experimental group used minimal intensifiers on this task • Limited use of gesture by the experimental group. • Significant difference in the use of expressive phonology (Counting Money) between groups with the experimental group using less. • Moderate use of quantifiers by the control group. • Few instances of repetition for emphasis in both groups. • 'Counting Money' narrative had the most use of ritual utterances, for both groups. 'Easter Morning' also showed evidence of this evaluative device for both groups.
'Apple Theft' Story Sequence	• Good use of intensifiers for both groups. • Increased use of gesture by the experimental group. • Good use of expressive phonology in both groups. • Most use of quantifiers in both groups. • Minimal use of repetition for emphasis in both groups. • Ritual utterances were not used considerably by either group.

'Fable' Story Retell	• The experimental group used intensifiers the least on this task whereas the control group used it substantially. • Minimal use of gesture by the experimental group but the controls made moderate use of this device. • Significant difference in the use of expressive phonology between groups with the experimental group using less than the control group. • Fewest quantifiers used by both groups. • Minimal use of repetition for emphasis in both groups. • Significant difference in the use of ritual utterances between groups with the experimental group using more. • Wh-exclamations used by one experimental subject on this task.
'Personal Experience' Narrative	• Both groups used intensifiers the most on this task. • Increased use of gesture by the experimental group but the control group used considerably more. • A trend existed towards a significant difference in the use of expressive phonology between groups with the experimental group using less. • Fewest quantifiers used by both groups. • The experimental and control groups used repetition for emphasis mainly on this task. • Ritual utterances used by both groups however the experimental group used more.

3.3.2.2 Comparators

a) Overall use of Comparators

Overall, the experimental group used fewer comparators than the control group across all tasks excepting the 'Counting Money' narrative. For this task the experimental group used the most comparators. The controls made more use of comparators on the 'Fable' story retell task. Proceeding these tasks, both groups produced a greater amount of comparators on the 'Personal Experience' task than the story generation and 'Apple Theft' tasks respectively. The experimental group used the least comparators on the task of the 'WAB' picture description. For this task, modals were present in S1, S2, S3 and S5's narratives and one negative was present in S5's narrative. In general all other tasks produced similar amounts of comparators with variability between subjects. As for the experimental group, the 'WAB' rendered the least amount of comparators across controls. The only comparators used by C1, C4 and C8 for this task were modals and quasimodals. C1 presented with the additional comparators of negatives and superlatives.

b) Use of Individual Evaluative Devices

Quantitative information derived from Figure 3 below, revealed that across all narrative tasks, the most frequently used comparators for the experimental and the control groups were those of modals and negatives. Questions and imperatives were the only comparators that the experimental group made proportionately more use of than the controls.

Although one can observe that there are differences between groups in the amount of comparators used, none are statistically significant across tasks. However, in reference to Table 3.11, it can be concluded that a trend towards a significant difference existed between groups for the comparators of negatives ($p = 0.079$) and superlatives ($p = 0.1$) on the 'Personal Experience' narrative task.

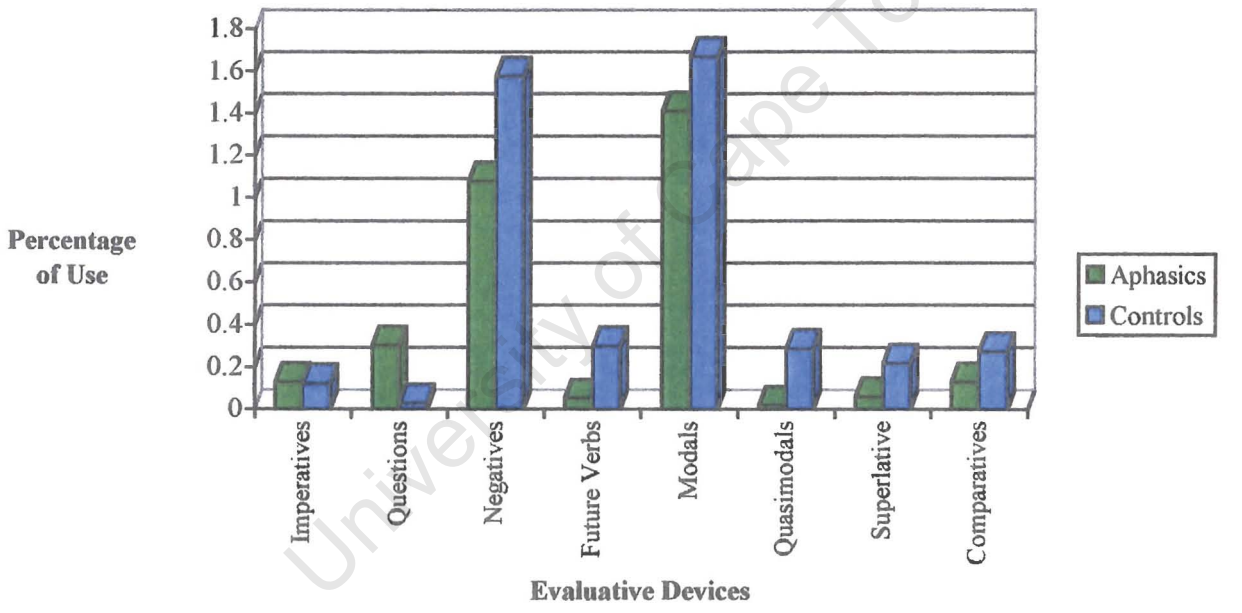

Figure 3. Occurrence of Comparators for Experimental and Control Groups

c) Task Effects

As in the use of intensifiers, there was great variability in the use of each evaluative device across all narrative tasks. As there was minimal use of many of these evaluative devices, task effects were difficult to identify. The effects that were noted are presented in Table 3.13 and are further discussed in Section 4.3.3.

Table 3.13 Task Effects for Comparators

Western Aphasia Battery Picture Description	• Least use of comparators for both groups. • Minimal use of negatives for both groups. • Limited use of all other comparators for both groups.
'Composite Pictures'	• Most use of comparators by the experimental group on the 'Counting Money' task. • Questions used minimally by some experimental subjects. • Increased use of negatives on the 'Easter Morning' task for both groups. • Future verbs used the most on the 'Counting Money' task but not to a large degree. • 'Counting Money' task produced the most modals for both groups. • Minimal use of other comparators for both groups.
'Apple Theft' Story Sequence	• Adequate use of comparators for both groups. • Minimal use of negatives for both groups. • Adequate use of modals for both groups. • Minimal use of other comparators for both groups.
'Fable' Story Retell	• Most use of comparators for the controls. • Increased use of negatives for the experimental group. • Least use of modals by the experimental group, but most use for the control group.
'Personal Experience' Narrative	• Both groups made adequate use of comparators on this task. • Significant differences existed for the devices of negatives and superlatives with the control group producing more. • Adequate use of modals for both groups.

3.3.2.3 Correlatives

a) Overall use of Correlatives

In general, when considering narrative length both groups made the same use of correlatives. Correlatives were more evident on the task of the 'WAB' picture description followed by the story generation tasks for the experimental group. Similar occurrences were noted in the control group but the 'Counting Money' task had the most correlatives in relation to the 'WAB' and 'Easter Morning' narratives. The experimental group used the fewest correlatives on the 'Personal Experience' task followed by the 'Fable' story retell task. The control group however used the fewest correlatives on the 'Apple Theft' task followed by the 'Fable' story retell task. This was consistent across the majority of individuals.

b) Use of Individual Evaluative Devices

Quantitative differences were observed between groups in the extent to which each evaluative element was used by each group. Figure 4. below depicts that the most frequently used correlative for both groups was that of progressive participles followed by right-hand participles. Both groups, with degrees of variance between subjects, used appended participles and double attributives across tasks. The least used correlatives for both groups were left hand participles (C = 2 occurrences) and double appositives (no occurrences for either group) across all narrative tasks. Progressive participles and appended participles were the two correlatives that the experimental group produced slightly more of across all narrative tasks in comparison to the control group. As for the category of comparators, although differences existed between the groups on all narrative tasks none of them were significant (see Table 3.11) and no general trends were noted. Due to the large variability in the data for this category most of the differences were not evaluated on the Mann-Whitney and Wilcoxon Rank Sum Tests.

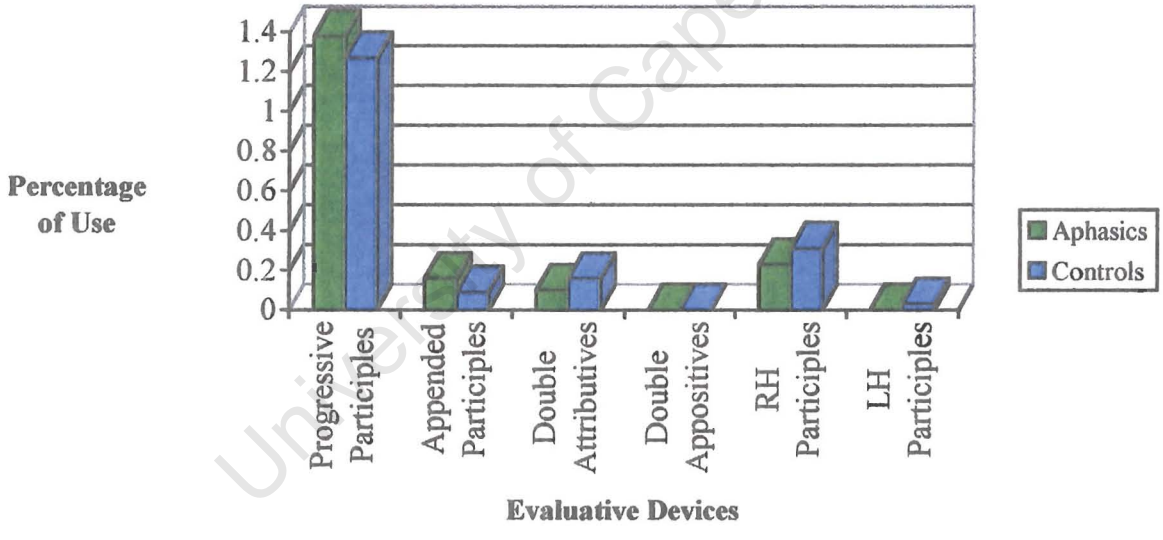

Figure 4. Occurrence of Correlatives for the Experimental and Control Groups

c) Task Effects

As in the use of intensifiers, there was great variability in the use of each evaluative device for all narrative tasks. The task effects that were identified are presented in Table 3.14. Of interest is that no experimental or control subjects made use of double appositives in any of their narrative samples. Left-hand participles were only evident in one experimental subject on the task of 'Counting Money'.

Table 3.14 Task Effects for Correlatives

Western Aphasia Battery Picture Description	• Most use of correlatives for both groups. • The experimental group used progressive participles, appended participles and right hand participles the most on this task. • Controls also made the most use of right hand participles on this task. • Minimal use of Double Attributives by two experimental subjects and one control subject.
'Composite Pictures'	• Increased use of correlatives on these tasks for both groups. • Both groups used progressive participles, appended participles and right hand participles to a degree. • Controls used progressive participles the most on this task. • No, to minimal evidence of double attributives or left hand participles for either group.
'Apple Theft' Story Sequence	• The least use of correlatives was noted for the controls. • Minimal use of progressive participles by both groups. • No, to minimal use of appended participles, double attributives, right hand participles and left hand participles.
'Fable' Story Retell	• Minimal use of correlatives was noted for both groups. • Least use of progressive participles for the experimental group. • No appended participles evident for both groups. • No, to minimal, evidence of double attributives, right hand participles and left hand participles.
'Personal Experience' Narrative	• The least use of correlatives was noted for the experimental group. • Controls used adequate amount of correlatives on this task. • Minimal use of appended participles, double attributives. • No, to minimal, use of right hand participles for both groups

3.3.2.4 Explicatives

a) Overall use of Explicatives

Although the experimental group used more explicatives for all narrative tasks except for that of 'Apple Theft', there was considerable variance in its use within both the experimental and control groups. S4 and S5 did not use explicatives in any of their narratives and S1 and S3 only made use of them twice in their 'Personal Experience' narratives. The distribution of the use of explicatives for the control group was similar to that of the experimental group with C7 and C8 not using any explicatives and C2 and C8 only using it on one occurrence in their 'Personal Experience' narratives.

b) Task Effects

Task effects are difficult to comment on with any accuracy due to the variance in the data and limited use of this device. However, there was a higher incidence of explicatives on the 'Personal Narrative' task for the experimental group and on the 'Apple Theft' task for the control group. Neither group made use of this device in the 'WAB' picture description.

Due to the variance in the data the Mann-Whitney and Wilcoxon Rank Sum Tests (see Table 3.11) could not be administered for all narrative tasks excepting the 'Personal Experience' narrative. As is depicted in Figure 5 below, the 'Personal Experience' narrative did reveal a difference in the percentage of use between groups but on statistical investigations it was not found to be significant.

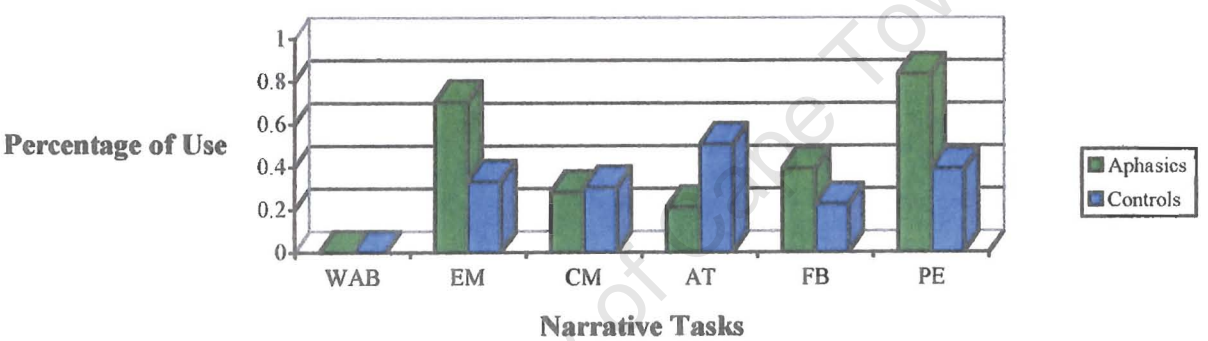

Figure 5. Use of Explicatives across Tasks for the Experimental and Control Groups

3.4. Adaptation Features

3.4.1 Aphasic Adaptation Features

The most prevalent aphasic adaptation features in the experimental group were those of phonological paraphasias, semantic paraphasias, circumlocution and word finding difficulties on nouns and verbs.

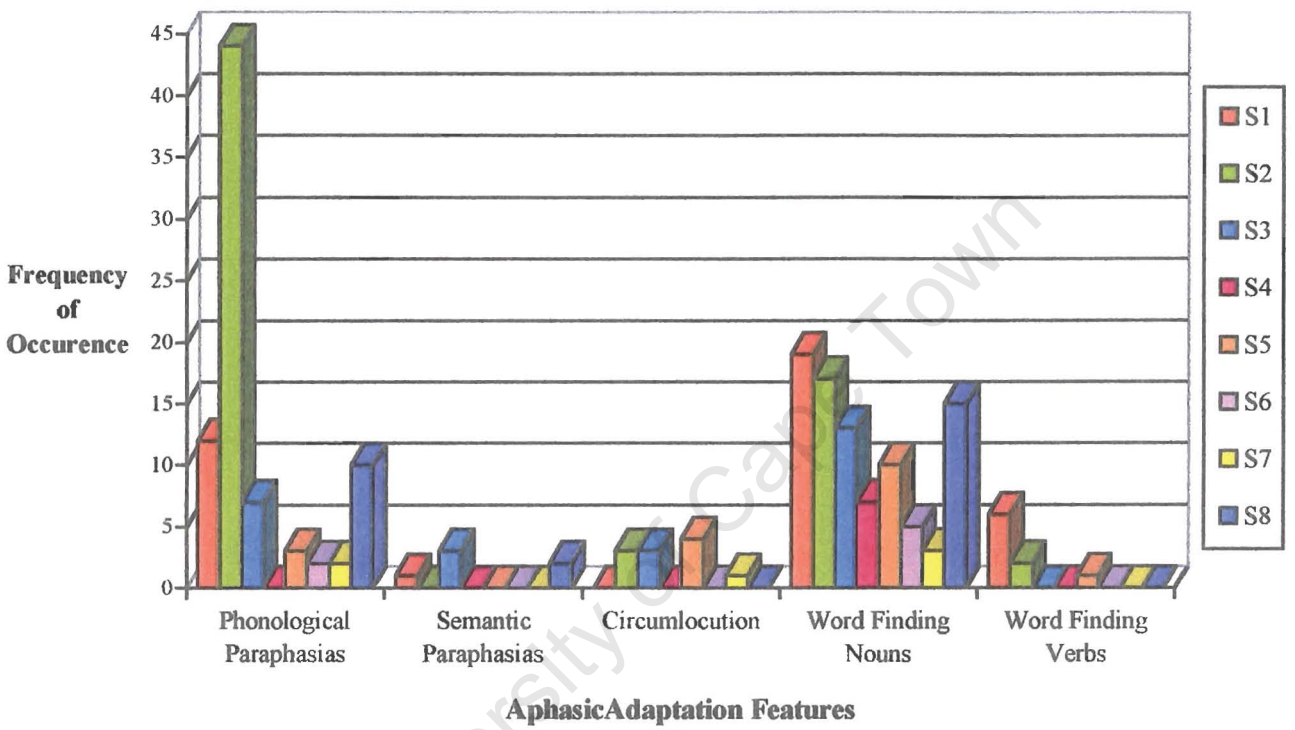

Figure 6: Distribution of Aphasic Adaptation Features across Experimental Subjects

As depicted in Figure 6, word-finding difficulties on nouns were the most consistent errors across all experimental subjects followed by phonological paraphasias. S2 (has received therapy) produced a considerable number of phonological paraphasias but attempted to correct them. Not all attempts at correction were successful yet he compensated by using a semantically related word or circumlocution. Two of the control group subjects made one use of a phonological paraphasia but immediately self corrected. In general, word finding difficulties on verbs and semantic paraphasias were not prevalent. Circumlocution was only used by S2, S3, S5 and S7.

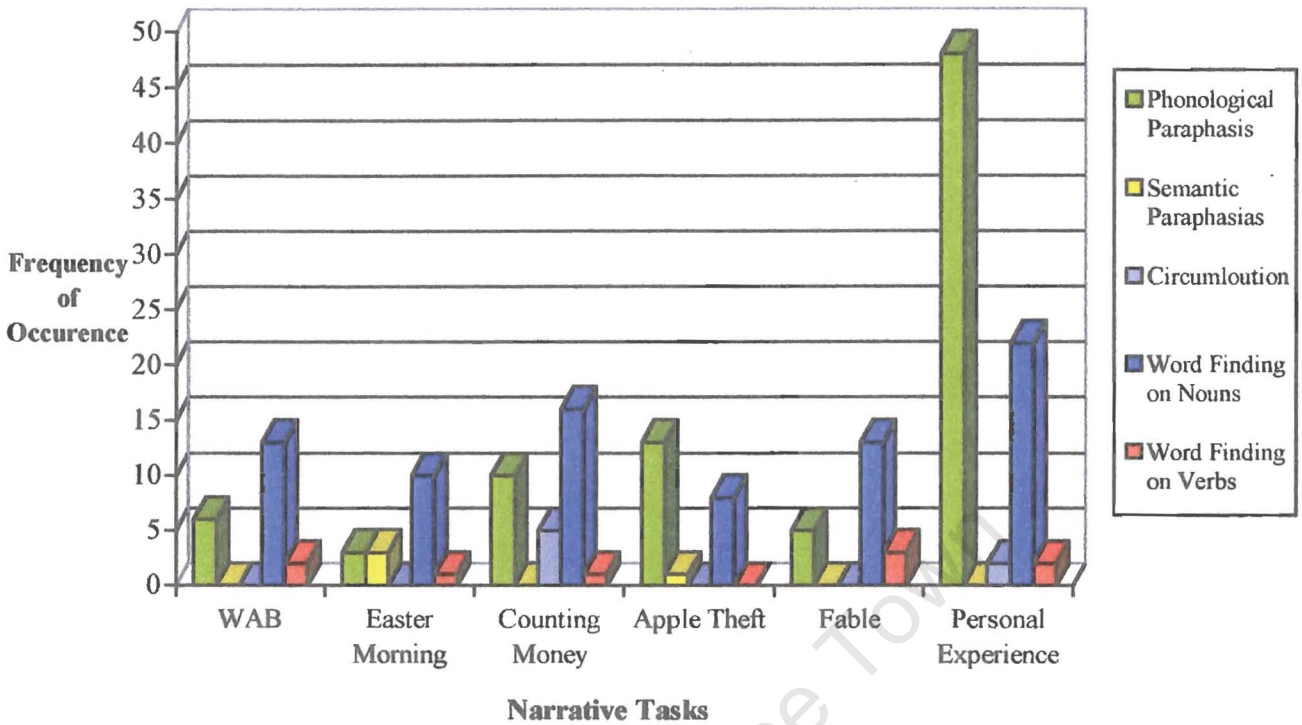

Figure 7. Frequency of Aphasic Adaptation Features across Narrative Tasks

As depicted in Figure 7. word finding difficulties and phonological paraphasias were found consistently across all narrative tasks. A large amount of phonological paraphasias were evident on the 'Personal Experience' narrative. No other general patterns for error distribution across narratives could be noted.

3.4.2 General Discourse Adaptation Features

Adaptation features used by both the experimental and control groups were noted. The aspects focused on were the use of repetition for no emphasis (repetition of sounds, words, phrases and ideas), false starts, pauses, the numbers of 'uhms and ehs' produced and empty fillers. An ANOVA was undertaken to determine whether there were significant differences between groups in their overall use of these features on the different narrative tasks. Table 3.15 presents the means, standard deviations and p-values for each narrative.

Table 3.15 Means, Standard Deviations and p-values for General Discourse Adaptation Features

	WAB		EM		CM		AT		FB		PE	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Subjects	16.75	12.65	11.12	8.94	19.00	9.39	15.50	11.03	14.75	12.81	49.25	52.85
Controls	5.87	7.69	7.63	7.89	6.25	4.95	7.88	9.11	13.50	5.61	21.12	9.39
p-value	0.566		0.42		* 0.004		0.154		0.804		0.161	

* $p < 0.05$

If one were to compare the use of these features across groups it is evident that the experimental group generally made more use of them than did the control group. The experimental groups' communicative difficulties could account for this. It would also have an impact on the overall quality of the narratives. Although differences did exist, the task of 'Counting Money' was the only one which resulted in a significant difference between the overall use of these features in the two groups ($F = 11.53$, $df = 1$, $p = 0.0044$).

Figure 8. below depicts the use of the individual features between groups. In order to determine the significant differences between groups in the use of these features the Mann-Whitney and Wilcoxon Rank Sum tests were implemented. Results are displayed in Table 3.16. In the presentation of results refer to Figure 8 and Table 3.16 for the respective quantitative and statistical information. Certain features were not analysed on various tasks due to the lack of variability in the data.

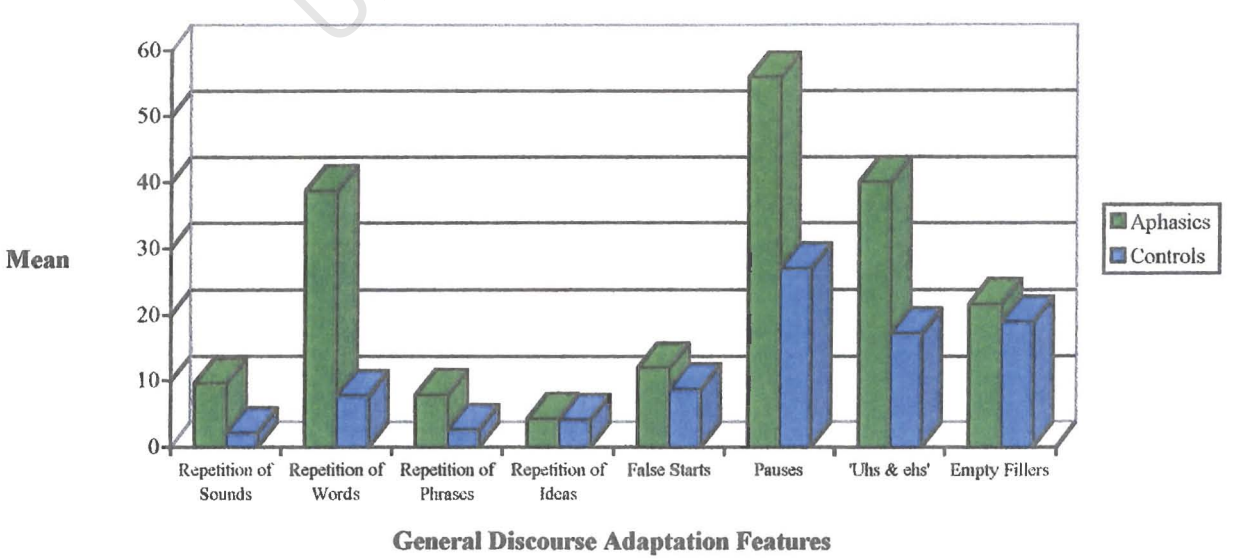

Figure 8. Mean Differences in the use of the General Discourse Adaptation Features

Table 3.16 Differences in General Discourse Adaptation Features - Mann-Whitney (U) and Wilcoxon Rank Sum (W) values

	WAB		EM		CM		AT		FB		PE	
	U	W	U	W	U	W	U	W	U	W	U	W
Repetition of Sounds	NA	NA	NA	NA	NA	NA	23.0	77.0	NA	NA	15.5	84.5
p-value							0.304				** .069	
Repetition of Words	NA	NA	13.5	86.5	NA	NA	24.0	76.0	20.5	79.5	19.5	80.5
p-value			* .0372				0.387		0.216		0.185	
Repetition of Phrases	NA	NA	NA	NA	NA	NA	23.5	76.5	14.0	86.0	19.0	81.0
p-value							0.33		* .0447		0.143	
False Starts	NA	NA	31.5	67.5	NA	NA	31.0	67.0	31.5	68.5	27.0	73.0
p-value			0.955				0.91		0.956		0.593	
Pauses	10.5	89.5	NA	NA	9.5	90.5	NA	NA	16.5	83.5	22.0	78.0
p-value	0.233				* .0172				** 0.103		0.289	
Uhms & ehs'	19	81	26.5	73.5	NA	NA	9.0	91.0	29.0	65.0	23.0	77.0
p-value	0.167		0.556				* .014		0.751		0.341	
Empty Fillers	24.5	52.5	24.0	60.0	21.5	78.5	27.5	63.5	16.5	52.5	22.5	58.5
p-value	0.66		0.3916		0.249		0.61		** .097		0.317	

* $p < 0.05$ ** $p < 0.10$

Key: N/A = Not Analysed

→ *Repetition without Emphasis*

Quantitatively, the experimental group demonstrated a greater use of repetition of sounds, words and phrases than did the control group. The observed difference between groups was considerably more on the repetition of words. The repetition of ideas was equally present in both groups. Despite these observable differences, results from the Mann-Whitney and Wilcoxon Rank Sum tests revealed that a significant difference between groups existed only in the use of 'repetition of words' ($p = 0.037$) on the task of 'Easter Morning'. A trend was observed in the use of 'repetition of individual sounds' on the 'Personal Experience' narrative task ($p = 0.069$).

→ *False Starts*

Although present in both groups, the experimental group used slightly more false starts than the control group. This is not supported by statistical analysis in that no significant differences were observed across tasks.

→ *Pauses*

The use of pauses was the most prevalent feature used in both groups. However, the experimental group generally, across tasks, used considerably more than the control

group did. There was a significant difference between groups in the use of this feature on the task of 'Counting Money' ($p = 0.0172$) and a trend towards a significant difference was identified on the 'Fable' story retell task ($p = 0.103$).

→ *'Uhms and ehs'*

Following the use of pauses, there was an increased use of 'uhms and ehs' in the experimental groups' output. Although quantitatively it appeared that the experimental group used considerably more than the control group, no statistically significant differences were identified except on the task of the 'Apple Theft' narrative.

→ *Empty Fillers*

These included all of the ritual utterances previously analysed as well as fillers, which were not seen to be specific to this cultural group. Although no statistically significant difference existed between the groups, the experimental group was observed to use a larger quantity of these than the control group. A trend towards a significant difference was only noted on the task of the 'Fable' story retell narrative. Reasoning behind this could be that the experimental group struggled with the complexity of the task in terms of the required memory and higher level cognitive functioning.

3.4.3 Dialectal Features

Dialect refers to the 'variety of language spoken in one part of a country, or by people belonging to a particular social class (Kaschula & Anthonissen, 1995: p3). McCormick (1995), Lass (1995) and Malan (1996) have identified some distinctive linguistic features of Cape Coloured English. Many of these documented features were evident in both the experimental and control groups in this study. An overview is provided pertaining to common features of SACE that were produced by the individuals in this study.

3.4.3.1 Morpho-Syntactic Features

3.4.3.1.1 Verb Forms

One of the most common non-standard syntactic features used by this cultural group are those associated with the verb (Malan, 1996).

→ *Verb/Noun Agreement*

- The verbs 'to be' and 'to have', both as auxiliary and main verbs, take on the same form as the third person singular and plural (McCormick, 1995). This was noted in both groups across all tasks.

was/were e.g. C2: 'They were people that was not used to…'
S6: '...and as they was doing that…'

is/are e.g. C1: 'The kids is busy ….'
S1: 'The two of them is probably talking...'

got/had e.g. C2: 'It's not like they got new electricity…'
S6: 'When I realised I got a stroke…'

- Verbs other than *be* take a singular form with a plural subject and a plural form with a singular subject. This was equally present in both groups across all tasks.

has/have e.g. C6: '...and said to them he have treasure buried…'

- Omission of final consonant /s/

This was equally present in both groups across all tasks.

e.g. C4: 'She take your feet and bring water'
e.g. S6: 'He just want to read his Argus'

→ *Deletion of contractible forms of be, have and modal auxiliaries.*

This was equally present in both groups across all tasks.

are e.g. C4: 'I think they going to Church'
e.g. S8: 'But why you talking me like that?'

is e.g. C8: 'The father sitting on the chair.'
S8: 'She leaving'

have (only present in the experimental group's narratives)
e.g. S1: 'I got another guy that's…'
S8: 'You hear they been killed'

→ *Use of 'did'*

It is often found that the past tense is indicated by using 'did' unemphatically (McCormick, 1995). This was evident in some of the individuals in this study.

e.g. C2: '…don't know if he did chase them …'
C1: '…and he did put everything in to produce good grapes.'

→ *Deletion of past tense* ed *markers*

Occurs in both the experimental and control groups with the experimental groups displaying in to a greater degree.

e.g. C4: 'We live very happily until such time that she had cancer.'
S4: 'There was a boy that look for trouble.'

3.4.3.1.2 Nouns

→ *Plurality of Nouns*

it/them e.g. C2: 'Took all the apples…..put it in a bag'
this/these e.g. S2: 'This was ANC papers that we gave out'

3.4.3.1.3 Prepositions

→ *by* is used in place of *at, with, on, in* and *to*

e.g. S1: 'I got another guy that's by the river'
S2: 'Came behind by the window'
C2: 'Outside by the window'
C3: 'and there by a little lake'

→ *Substitution of other Prepositions*

This is present in both the experimental and control groups but was not done consistently by any one individual. Substitutions noted were:

at for in e.g. C7: 'The car's parked at the garage'
on for at C2: 'Woman sitting on the table …'
at for to C4: 'Sent his dog at the front…'

→ *Omission of Prepositions*

The prepositions of *on, of, if, at, to* and *it* were omitted from both the experimental and control groups narratives.

on e.g. S1: 'I was th this side of the door.'
of S2: '…because what he said to us afterwards.'

if C2: '…I don't know if they coming or they going out'

at C7: '… watch TV till late night.'

to S8: 'Why you talking me like that?'

it S8: 'When I used to work was never like that.

3.4.3.1.4 Definite and Indefinite Articles

Lass (1995) reported that the allomorphy of the definite and indefinite articles often occurs in SACE. Although no change was detected in the production of definite articles, change did occur with the indefinite article. In most instances when there should have been /æn/ before vowels, a /ə̤/ was produced. Lass (1995) stated that this only occurs in extreme cases but was noticed in almost all of the subjects included in this study.

e.g. C5: 'He was a unsociable character….'

S3: 'There was a opening in the fence…'

Although no changes were noted in the production of the definite article, it was deleted in some instances.

e.g. C3: 'I think that people is busy'

3.4.3.1.5 Adverbials

→ *Deletion of* ly *suffix occurs optionally* (Malan, 1996).

This was observed more in the control group than the experimental group.

e.g. S5: 'I was driving too slow for his liking.'

C1: 'I was feeling real scared.'

→ *Penultimate placement of adverbials*

e.g. C8: 'There were other guys also fishing.'

C2: 'And there's a candle burning also.'

S7: 'And I saw a house also.'

3.4.3.1.6 Conjunctions

Both the experimental and control subjects made use of serial verb constructions without the standard English markers of *and* or *to*.

e.g. S2: 'Stand there from six in the morning to go buy bread.'

C3: 'I went to go look for a lawyer.'

3.4.3.1.7 Omission of *ing* in Suffix Position

Although this was not documented in any of the literature reviewed it was a common feature amongst some of the experimental and control subjects.

e.g. C1: 'Mummy was busy prepare something to eat.'

S2: '... and try to get all the things out of the jar'

S6: '...he was explain to the lady...'

3.4.3.1.8 Double Negatives

Although Malan (1996) reports the use of double negatives in Cape Coloured English. Although negatives were used widely by both the experimental and control groups in this study, the use of double negatives was only noted on one occasion in S6.

e.g. '...they couldn't find no treasure'.

3.4.3.1.9 Word Adaptations

Some of the experimental and control subjects made changes to words in their narratives to give them extra emphasis and to substitute for the correct grammatical lexical item. The adaptations that were noted consisted of the core lexical item plus the suffix *est*.

e.g. 'That was the badest experience...', '...it was the scardest of my entire life...'

'I was the worriest of all of them.'

3.4.3.2 Lexical Features

3.4.3.2.1 Afrikaans Influence on English Word Order

The influence of Afrikaans on English syntax was noted for both groups in this study.

e.g. C3: 'When we come from Church, then there be trouble.'

'As ons van die Kerk af kom, dan is daar moeilikheid.

C7: 'My bedroom curtain was a little bit open.'

'My slaapkamer se gordyn was a klein bietjie oop'

C5: '…with his dog on the side…'

'…met sy hond langsaan…'

3.4.3.2.2 Code-switching and Code-mixing

→ All experimental and control groups narrative samples showed limited evidence of code-mixing and only one incidence of code-switching. This could be attributed to an interlocutor difference or the recognition of English as a more prestigious language within the Cape Coloured community (Crystal, 1995). As in McCormick's observations (cited in Malan, 1996) some of the words borrowed from Afrikaans are used as fillers and carry no directly translatable English equivalent, e.g. '*Agh*….. I just went along with it' and '*Ja*…. he was in a lot of trouble'. There were also Afrikaans words used by the experimental group that were used to add emphasis to the subjects' output.

e.g. S4: 'I just gave him one *tramp(kick)* to the head.'

S7: '…sitting with a *klomp (whole lot of)* newspapers…'

S8: '…why must I *sukkel (struggle)…?*'

→ Other borrowed words that were used by more than one individual were '*pikkie*' and '*picannin*' which imply small children and '*ouens*', which refer to big people.

e.g. S2: 'We was just *pikkies* when we got caught.'

S2: 'Those big *ouens* came and arrested us…'

→ The word *dinges (thing)* was often borrowed when the experimental group had word finding difficulties and was used as a filler.

e.g. S2: 'We went to hand out those eh um *dinges*…'

→ The only other instances of code-mixing were produced by two of the controls.

e.g. C3: 'Well he *seker (certainly)* came from work.'

C7: 'There was a, sorry I use the word *'kaffir' (African)*, coming down the road.'

→ In all of the narrative samples obtained in this study there was only one instance of code-switching in experimental subject S8. She made use of this in an instance of direct speech: "...and she just walked past and said, *'Kom sluit die deur toe'" (come and close the door).*

→ Words such as 'agh', 'ja', 'pikkie', 'sukkel' and 'dinges' are often used for emphasis in both the Cape Coloured and Caucasian cultures.

3.4.3.3 Ethnic Discourse Markers

3.4.3.3.1 Repetition for Emphasis

As presented in Section 3.3.2.1, both groups used repetition for emphasis in their narratives. The experimental group used fewer instances across tasks than the control group. There was much variability in the use of this feature between and within both groups across the narrative tasks. It can be stated that generally both groups made greater use of this feature in their 'Personal Experience' narrative with the experimental group to a lesser degree.

e.g. S6: '.... I was so frightened 'cos I did didn't know what's going to happen to me and I started crying, crying.'

C1: '...I start running now. And I was running and running and as I run then I still hear the voice.'

For further examples please refer to the transcripts in Appendix E.

3.4.3.3.2 Ritual Utterances

Subjects used ritual utterances, particularly on the task of 'Counting Money' followed by the 'Personal Experience' narratives. The results concerning the use of this feature have been presented in Section 3.3.2.1. Of interest is that the experimental subjects used more of these devices than the controls. Ritual utterances common to both the experimental and control groups included:

in accordance with it	*actually*
you know	*in connection with it*
I mean	*like*
Okay	*that's the thing*
in that regard	*in actual fact*
whatever whatever	*and all these things*

Refer to the transcripts in Appendix E for contextualised examples.

3.4.3.3.3 Direct Speech

Little is known about the cross cultural differences in the norms for the use of direct speech in narrative production (Romaine 1997). Despite this its use was noted in both groups studied in this research project. The use of direct speech was not evident in the 'WAB' picture description task, the story generation tasks (except for C1 on the 'Counting Money' narrative) or the 'Apple Theft' task. Only two of the controls, C1 and C3, used this feature on the 'Fable' narrative task. Of importance is that this feature is the most prevalent for both groups on the task of 'Personal Experience'. Table 3.17 details the number of instances all subjects used this feature. Of interest is that the higher instances of direct speech qualitatively correlated with the emotive component in the narratives. S8's narrative (refer to the transcript in Appendix E) contained exceptionally personal information and she got very involved in her delivery of the narrative making remarkable use of this feature. The effect of its use on the narrative was beneficial to the overall suspense and impact of the narrative. Similar effects were noted for S2, C1 and C7s' narratives.

e.g. S8: '... I have to sit up to wait for her to come __ open the door for her. I se l, I said to my, she said, "Mommy look, eh eh it's holidays." I said, "eh, Right enough it's holidays. Did you hear what happened with kids __ down the road?..." '

Table 3.17 Instances of Direct Speech in the 'Personal Experience' Narrative Task

Personal Experience		Personal Experience	
S1	0	**C1**	6
S2	6	**C2**	0
S3	3	**C3**	3
S4	1	**C4**	1
S5	0	**C5**	0
S6	2	**C6**	0
S7	0	**C7**	4
S8	21	**C8**	1

3.4.3.3.4 Use of Conversational Historical Present Tense (CHP)

Documentation regarding it's use in the English speaking Coloured community is scarce but use of this device was present in both the experimental and control groups' 'Personal Experience' narratives. There was limited evidence of it across the other narrative tasks. As Romaine (1997) reported, the alternation between CHP and the past is a stylistic device used to add a theatrical component to a narrative. If this is so, then it stands to reason that there would be greater evidence of this device in their 'Personal Experience' narrative. Below is an extract from C1's 'Personal Experience' narrative, which demonstrated the constant movement from CHP to the past tense.

e.g. C1: '... And on my way back, well I was on foot, I have to walk home. And suddenly I hear something behind me and I know things is not good for me because we live in crime, we live in lots of things. And I said to myself, 'Wow, terrible things is going to happen.' Then I start walking faster but my heart was start doing this and I was feeling real ice. I was real scared and I said to myself, 'If home can just be very near me now'. '

3.4.3.3.5 Code-switching, Code-mixing and Dialectal Features

The dialectal features of SACE and the use of code-switching and code-mixing, although not as prevalent as in Afrikaans, are markers of the Cape Coloured communities sense of identity (McCormick 1995). They could thus also be viewed as ethnic discourse markers.

3.5 Proverb Interpretation

The interpretation of proverbs requires a myriad of complex cognitive, linguistic and logico-symbolic operations in order to understand non-literal language (Chapman, Ulatowska, Franklin, Shobe, Thompson & McIntire, 1997; Ulatowska, Sadowska, Kadzielawa, Kordys & Rymarczyk, 2000). They are thus often used to assess patients' abilities to think in an abstract manner (Ulatowska et al, 2000).

3.5.1 Familiar vs. Unfamiliar Proverbs

The familiarity with a proverb should facilitate the process of understanding its figurative meaning (Ulatowska et al, 2000). The proverbs of P1, P2 and P3 were familiar to all

participants in the experimental and control groups. P4 was unfamiliar to two experimental subjects (S7 & S8) and two control group subjects (C2 & C3). P5 was unfamiliar to one subject in each of the groups, namely S8 and C3.

3.5.2 Spontaneous Proverb Interpretation Task

→ As is depicted in Figure 9, in general and across all the proverbs presented, the experimental group produced more concrete and fewer correct partial abstract and complete abstract responses than did the control group. The peak at the correct partial abstract response in the experimental group can be attributed to three of the individuals (S4, S5 & S6) scoring well on P3 and P5. No one proverb contributed to the slightly improved response with an abstract component for this group. P1 and P3 received the most incorrect concrete responses.

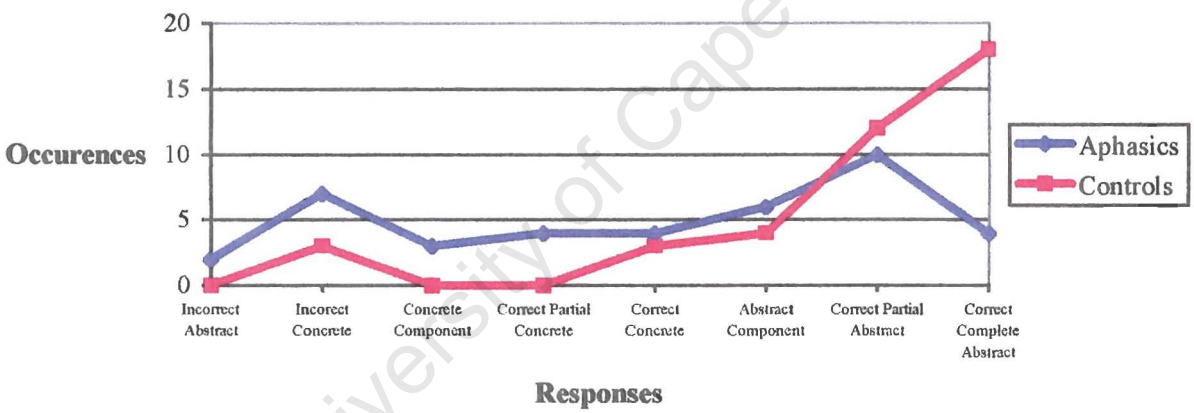

Figure 9. Distribution of Spontaneous Proverbs Responses

In the control group all proverbs contributed equally to the correct partial abstract and correct complete abstract responses. No one proverb produced the incorrect concrete responses with two controls, C2 (P3 & P4) and C7 (P5) producing these responses. Both groups produced a relatively similar number of correct concrete responses with no one proverb contributing towards this response.

→ Interesting trends can be noted when considering the experimental and control groups' responses in relation to their familiarity with the proverbs as discussed in Section 5.1.1. Although P1, P2 and P3 were familiar to the experimental group they did not all receive favourable responses. For P1 only three experimental subjects produced responses with

some abstract representation. The remainder of the responses were concrete in nature. P2 and P3 generally produced responses with abstract representation with only three occurrences of concrete productions for each proverb.

→ P4 and P5 were the only two proverbs, which were rated as unfamiliar for S7, S8, C2 and C3. As only two individuals from each group were involved in this analysis no conclusive statements can be made with regards to their pattern of responses. However, the following observations were made. For the experimental group unfamiliar proverbs generally resulted in a partial concrete or incorrect concrete response. In the control group C2 was unfamiliar with P4 and could not attempt to derive a meaning. For both unfamiliar proverbs C3 produced complete abstract responses.

3.5.3 Multiple Choice Proverb Task

In accordance with Ulatowska et al (1998) two points were ascribed to each correct proverb chosen (maximum score of ten). The mean scores for the experimental and control groups were 6.7 and 6.5 respectively thus revealing no marked differences between groups in performance on this task.

→ As is depicted in Figure 10, P3 received the most correct responses in both groups (S = 87.5% and C = 100%) followed by P2 and P4 (75% for both groups and proverbs). 62.5% and 50% of the time P5 was scored as correct for the experimental and control groups respectively. P1 performed the worst with the experimental subjects getting it correct 37.5% of the time and the control group only 25% of the time. It can also be commented on that there was no pattern to the experimental subjects' responses in relation to the controls.

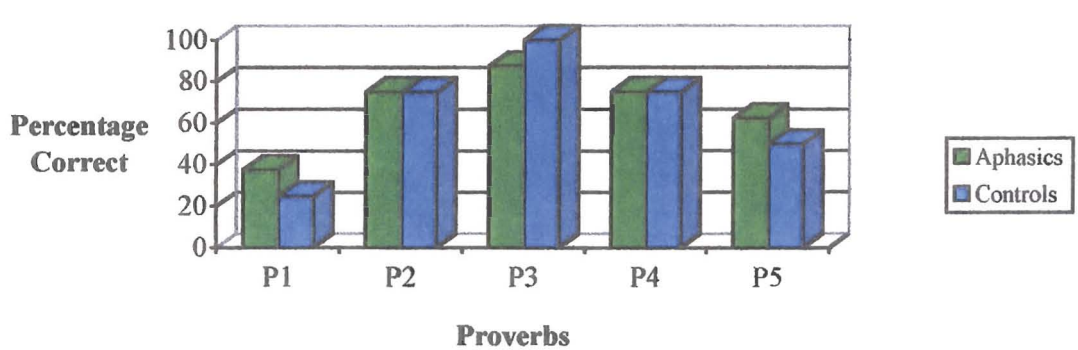

Figure 10. Percentage of Correct Responses per Proverb

→ When considering the familiarity of the proverbs and how subjects faired on this task. P3 ('Blood is thicker than water') was the only proverb that the majority of subjects got correct. There was only one incorrect instance where S7 chose the response of 'Blood is washed off with water'. Considering that P1 ('Don't judge a book by its cover') was familiar to all participants in the study it is interesting to note that it received the most incorrect responses. For all of the experimental subjects scoring incorrectly and for two of the controls, the response of 'You should read a story before judging it' was provided. The other two controls scoring incorrectly provided the response of 'You can't buy a book that covers everything'.

Like P1, P2 was familiar to everybody and as depicted in Figure 10, 75% of both the experimental and control groups chose it correctly. All subjects who chose the incorrect answer responded with 'When the cat leaves, the mice can enjoy themselves', a literal interpretation of the proverb.

P4 and P5 were the only two proverbs that were unfamiliar to some individuals (see Section 5.1.1). Of the experimental and control subjects to which P4 ('Don't cry over spilled milk') was unfamiliar S7 and C3 chose the correct response and S8 and C2 the literal meaning of 'You should not cry when you spill milk'. Of the individuals familiar with P4 only S5 and C6 provided the incorrect meaning ('You should not cry when you spill milk' and 'Don't spill milk when you are sad' respectively). Both subjects to whom P5 ('You reap what you sow') was unfamiliar (C3 & S8) also chose the incorrect response for the multiple-choice task. S8 chose the literal meaning of 'If you plant something it will grow well' and C3 the abstract meaning of 'It is never too late to learn'. Some individuals familiar with P5 (S1, S3, C2, C6 and C8) all chose the incorrect response of 'It is never too late to learn'.

→ When comparing the experimental and control group's responses on spontaneous proverbs and multiple choice tasks the following points were noted:

Experimental Group

Generally, if an incorrect multiple choice response was given the corresponding spontaneous proverb was rated as having concrete representation, i.e. they were either correct concrete, correct partial concrete or incorrect concrete responses. On only two

occasions were responses with a concrete component and an incorrect abstract response given.

Control Group

In comparison to the experimental group, when the multiple-choice response was incorrect the majority of the controls responded with correct partial abstract responses or correct complete abstract responses. On two occasions C2 and C8 had an abstract component to their spontaneous proverb. On only one occasion did C2 produce an incorrect concrete response to the spontaneous proverb task.

This section presented the results of the analyses conducted in this study. The following section will comprise a discussion pertaining to these results.

4 Discussion

In this section a discussion pertaining to the results presented in Section 3 will be undertaken. A discussion of the findings concerning the characteristics of discourse performance of both the experimental and control groups, the task effects and the appropriacy of the test battery will be presented. In addition, the findings from this study will be compared with past research.

4.1 Discourse Performance across Experimental and Control Groups

All three measures of assessment used in this study inherently assessed different aspects of the narratives. One needs to consider whether these measures can discriminate between experimental subjects and normal controls, thus highlighting the communicative difficulties experienced and compensation strategies adopted by the experimental group.

4.1.1 Narrative Length and Propositional Unit/Word Count Ratio

Calculating the length of narratives, the number of propositional units as well as a propositional unit/word count ratio did not differentiate between the experimental subjects with mild to mild-moderate aphasia and the matched controls. It suggested that differences did exist but there was a great deal of variation for all measures within both groups, with some experimental subjects responding as 'normals' and visa versa. Yorkston & Beukelman (1980) and Nicholas & Brookshire (1995) reported similar findings. It was stated that persons with mild and high moderate aphasia did not differ from controls in the amount of information that they conveyed. Therefore, persons with mild to moderate aphasia should be assessed on additional measures in order to differentiate their performance to control subjects (Yorkston & Beukelman, 1980).

4.1.2 Quality Analysis

Quality analysis was an effective way to differentiate between experimental and control individuals. The findings in this study support those of Ulatowska et al (1998) on the tasks of the 'Personal Experience' and 'Fable' story retell narratives, but not on the other tasks. The overall difference between groups in the quality of all the narratives, except one, was statistically significant. This is important to note as it highlights aphasic individuals' overall communicative effectiveness. In order to determine which aspects of a narrative require attention in therapy or have contributed to a poor impression of quality, one is required to

consider the various features fundamental to the overall impression of quality. Ulatowska et al (1998) provided a comprehensive framework to assess these features. The features of global structure (narratives), temporal sequencing, completeness (fable), reference, suspense (narratives), accuracy (fable), coherence and clarity can be viewed as the underpinnings of quality in a narrative. Although the experimental group performed poorer than the controls on all of these features assessed, those of coherence and clarity best differentiated the two groups across narrative tasks.

Coherence refers to the well formedness of text and characterises the conceptual organisational aspects of discourse at a suprasentential level (Ulatowska et al, 1981; Glosser & Desler, 1990). Furthermore, it relates to the plausibility, conventionality and the flow of discourse (Ulatowska et al, 1981). It is felt that the use of unnecessary or long pauses and empty fillers interrupts the flow of a narrative, which in turn disturbs the coherence of that narrative. A patient's ability to produce coherent text depends on that individual's ability to maintain thematic unity throughout the discourse (Ulatowska et al, 1981). This study revealed that across all narrative tasks there were differences in the coherence of the experimental subjects and the controls. These differences were statistically significant on the 'WAB', 'Easter Morning' and 'Personal Experience' narrative tasks. Poor coherence in the experimental group can be related to their significant use of repetition of sounds, words and phrases (without emphasis) particularly on the 'Easter Morning' and 'Personal Experience' narrative tasks. They also made greater use of pauses across all narratives and 'uhms and ehs' fillers. The difference in coherence on the 'WAB' picture description can also be attributed to the nature of output. The experimental group tended to produce short telegrammatic sentences and named what was happening in the picture. In contrast, the controls attempted to tell a story pertaining to the picture.

The findings in this research differed from those of Glosser & Desler (1990) who found that there was no significant difference between their experimental subjects and controls in the ratings of coherence. This could be related to the type of task used to elicit the narrative. Their study used an interview situation where the subjects were asked to describe their families and a work experience from his/her past (Glosser & Desler, 1990). Two of the tasks resulting in a difference in coherence in this study rely on picture stimuli and the relating of a personal narrative. The very nature of the personal narrative also differed to that of Glosser & Desler (1990) in that the subjects in this study had to relay a frightening experience rather than a work experience. This has the benefit of potentially adding a greater emotive component and a more

'story-like' nature. It indicates the importance of considering the stimuli when interpreting research results.

Clarity refers to the linguistic devices that produce coherence (Ulatowska et al, 1981). This feature significantly differentiated the experimental and control groups across all narrative tasks. These results support Ulatowska et al (1981) and Ulatowska et al (1983a) studies which reported similar results on tasks such as memorable experience, picture description, story retell and procedural discourse. The experimental groups' output (in this study) was characterised by word finding difficulties for nouns and phonological paraphasias. Attempts at correction and compensations for these errors in addition to the presence of significantly more repetition of sounds, words and phrases and the use of 'uhms and ehs', pauses and ritual utterances than the controls, all affected the clarity of their narratives. Of interest in this study is that the experimental subjects who performed poorly on the 'Apple Theft' and 'Fable' story retell tasks (also had the lowest scores on the WAB), had improved clarity on the 'Personal Experience' narratives.

In general the experimental group in this study preserved their referencing abilities but still performed slightly poorer than the controls. Although differences in the use of referencing did exist between the experimental and the control groups, they were only significantly different on the 'Fable' story retell task. The fact that the experimental group had greater difficulty on this task than any other could be due to them not being able to rely on real world knowledge. The experimental subjects in Chapman and Ulatowska's study (1989) had less difficulty in processing reference when the information was consistent with real world knowledge.

In this research study, the remainder of the features analysed revealed that the experimental and control groups did not perform very differently. When considering global structure it became evident that the narrative 'superstructure', i.e. the ability to create a setting, provide a complicating action etc, was maintained in the experimental group. This supports past research in that many persons with aphasia, despite deficits at the single word and sentence levels, have been able to produce adequate discourse structures across narrative tasks (Ulatowska et al, 1983a and Ulatowska, Allard, Reyes, Ford & Chapman, 1992; Caplan, 1996). For all the other features assessed by means of quality analysis, differences were observed between groups on all narrative tasks but none of these differences were statistically significant. Temporal sequencing abilities which reveal whether individuals can place events in the correct chronological order

were intact for both groups across the majority of the narrative tasks but more so on the tasks of the 'Apple Theft' and 'Personal Experience' narratives. These findings support those of Ulatowska et al (1981) and Ulatowska et al (1998) in that the persons with aphasia in their study also maintained proper chronological organisation in their personal narratives. When considering the feature of suspense it was observed that the experimental groups' narratives held less suspense than the controls, but not significantly so. That the ability to portray suspense is relatively intact in the experimental group indicates that they preserved their pragmatic abilities.

These findings highlight that in general the experimental groups' global structure (narrative), temporal sequence, suspense, completeness and accuracy remains relatively intact in persons with mild to moderate aphasia. As Holland (1982) states, aphasics demonstrate more communicative success than they do communicative failure (cited in Ulatowska et al, 1992).

The final two features to consider are those of completeness and accuracy of information for the task of 'Fable' story retell. Story retelling is a common way to test recall of information from spoken discourse (Ernest-Baron, Brookshire & Nicholas, 1987). As can be deduced from the results, the experimental group performed slightly poorer than the controls but not significantly so. Similar findings were found in Ernest-Baron et al's study (1987). Ulatowska et al (1981) and Ernest-Baron et al (1987) also reported that persons with mild to moderate aphasia produce retell narratives that are similar to controls but are shorter and simpler. Similar patterns are not observed in patients with more severe aphasia. Results from this study support this observation in that more impaired individuals with aphasia could not recall all information and often their information content was inaccurate.

Prompting of the experimental group in this study did not facilitate the completeness or accuracy of the retell. However, when subjects in the control group were prompted they could provide more complete and accurate retells of the 'Fable'. Little research has been undertaken to establish the effects of repetition of stimuli in the performance on story retell for the experimental group. The findings in this study support those of Ernest-Baron et al (1987) who state that successive presentation of material enhances comprehension and retention in normal listeners but does not do so in experimental subjects.

4.1.3 Analysis of Evaluation

The use of evaluation is imperative in any narrative. Narratives wanting of evaluation are lacking in interest and are not worth telling (Ulatowska et al, 1981). Labov's (1977) analysis of evaluation proved to be a useful way to determine differences between experimental and control group individuals in their use of certain evaluative devices. It also enabled one to observe the presence of certain adaptation features.

4.1.3.1 Overall use of Evaluation

The findings in this research study support those of Ulatowska et al (1983a) in that the experimental group used reduced amounts of evaluation on all narrative tasks except for that of 'Personal Experience'. It is expected that the use of evaluation would be greater for the narrative of 'Personal Experience' as the patients motivation for telling the story and their attitudes toward the actions and participants in the story would play a positive role (Ulatowska et al, 1983a).

As for quality analysis, only focusing on the overall use of evaluation is not going to give the clinician insight into what devices his/her patients are using. One is therefore required to consider all four of the categories incorporated in Labov's (1977) framework. This research suggests that the evaluative category of intensifiers best highlighted the differences in the experimental groups' use of evaluation to that of controls. The evaluative categories of comparators, correlatives and explicatives did not receive much focus from either group.

4.1.3.2 Use of Intensifiers

Of all evaluative categories encompassed by Labov's framework (1977), that of intensifiers was used the most by both experimental and control groups. These findings support those of Ulatowska et al (1983a). This category also proved to be the most effective in differentiating between the experimental and control groups with the experimental group using fewer intensifiers than the controls. Of clinical interest is that the experimental group made more use of ritual utterances and gesture than any other intensifier whereas the controls used expressive phonology and ritual utterances the most. That both groups used ritual utterances to a fair degree suggests that this device may be a normal feature of this populations' narrative structure. This is to be further discussed in Section 4.2.3. The experimental group did however use them more across all narratives and significantly so on the 'Fable' story retell. The occurrence of this

can be related to the experimental group having increased difficulty in expressing themselves and they thus use more ritual utterances (which are thought to be accepted in their population group) as compensatory strategies to 'fill the silences' whilst they prepare their next utterance. Although the extensive use of this device can detract from the coherence of a narrative, in most instances it serves as an effective way to maintain a listener's attention and to keep the person with aphasia involved in the communicative interaction.

Another clinically important observation is that the experimental groups' use of gesture, as with ritual utterances, generally coincided with their communicative difficulties. S2 in particular used the most gesture at times when he had difficulties with word finding and phonological paraphasias. This has clinical significance as it reveals that persons with mild to moderate aphasia attempt to facilitate their output in order to avoid communicative breakdown thus indicating adequate compensatory strategies and preserved pragmatic abilities. The preservation of pragmatic abilities in persons with mild to moderate aphasia has been reported by Ulatowska et al, 1992). The controls were seen to make slightly more use of gesture than the experimental group but used it to support their verbal output rather than to replace it. The experimental group did make effective use of expressive phonology but to a significantly smaller degree on most of the narrative tasks than did the controls. Unlike Ulatowska et al (1998), repetition for emphasis was not used extensively in both the experimental and control groups across all narrative tasks. Its use was highlighted more in the 'Personal Experience' narrative task and will be considered in Section 4.2.3.

4.1.3.3 Use of Comparators

Following the category of intensifiers, this category of evaluation did not serve to adequately distinguish the experimental group from the control group despite the experimental group producing fewer comparators than the controls. Ulatowska et al (1981) also found that the experimental group used fewer comparators in relation to the controls. All of the evaluative devices in this category, excepting imperatives (marginally) and questions, were more prevalent in the control groups' output. The differences between groups were only significant for negatives and superlatives on the 'Personal Experience' task. The fact that the experimental group showed an indication of performing poorer in this evaluative category could be related to the complex syntactic devices, i.e. comparators, modals, future verbs, quasimodals and negatives, that are assessed in this category (Ulatowska et al, 1981). Ulatowska and her

colleagues state that persons with aphasia may perform poorer in their use of evaluation in this category for various reasons. Either because (a) the form of the output is not as important as the information produced, (b) the language used is more complex language or (c) a combination of both (a) and (b) (Ulatowska et al, 1981).

Of clinical interest is that apart from negatives and modals, there was minimal use of the remaining evaluative devices in this category for both groups. This could be related to the nature of the task and the clinical situation. However, until such time that investigations of Cape Coloured English can state that these complex syntactic devices are or are not part of the wider use of English in these communities, we cannot rule out the possibility that the lack of these devices in this research project are not merely a product of the form of English used by this community. Research to verify this assumption is sorely lacking.

4.1.3.4 Use of Correlatives and Explicatives

These two evaluative categories proved the least beneficial in determining group differences in this study. Of all the evaluative categories they were the least used in both groups. A superficial difference existed between groups in their use of correlatives. The experimental group used marginally more explicatives than the control group. The only correlative to be used with any frequency in both groups was that of progressive participles with infrequent occurrences of all other evaluative devices. For the category of explicatives there was increased variance in the use of this device with only a few experimental subjects and controls using them across the Discourse Test Battery tasks (Ulatowska et al, 1998).

4.2 Adaptation Features

4.2.1 Aphasic and General Discourse Adaptation Features

The presence of aphasic errors contributed considerably towards the disturbance in the coherence and clarity of the experimental groups' narrative productions. These errors are better assessed in narrative discourse as this situation best emulates a natural speaking situation (Glosser & Desler, 1990; Larfeuil & Le Dorze, 1997). The experimental group in this study produced phonological and semantic paraphasias and word finding difficulties on nouns and verbs. The most consistent errors were those of word finding on nouns and phonological paraphasias.

As Larfeuil & Le Dorze (1997) state, one must not only detect the errors in aphasics' output but also investigate the strategies that they use to compensate for these errors. Some such strategies adopted by the experimental group in this study have been commented on in Section 4.1.3.2. Apart from these expected errors the experimental group also made use of the general discourse adaptation features of repetition for no emphasis, false starts, pauses, 'uhms and ehs' and ritual utterances. The introduction of an increased use in these features can indicate a searching for words in aphasics' production of narratives (Laakso & Klippi, 1999). These researchers report, and as was found in this study, that although these features occur in normal individuals, they are present with a greater frequency in experimental subjects (Laakso & Klippi, 1999). The reason for this is that they are used to signal the repair of their utterances. Other strategies used by the experimental group to repair breakdown were those of circumlocution and gesture (refer to Section 4.1.3.2 for further discussion). Thus although the experimental groups' output is characterised by errors and an increased use of 'empty' speech, they are still able to convey their narrative and at times most effectively. This emphasises the significance of using discourse analysis to evaluate individuals with aphasia's expressive output rather than standardised measures. Tasks such as the 'Personal Experience' narrative would be the most beneficial as they generally elicit the longest narrative samples.

4.2.2 Dialectal Features

As was stated in Section 3.4.3, there are distinctive linguistic features that can be identified in the English of Cape Coloureds (Lass, 1995; McCormick, 1995; Malan, 1996). As is evidenced, there are many morpho-syntactic features that are not part of standard English but do form part of SACE. These features were maintained in the mild to moderate experimental subjects in this study. Lexical features also differ between SACE and Standard English. One of the interesting features noted is the influence of Afrikaans on the syntax of English. McCormick (1995) refers to this as calques, i.e. word-for-word translations between the two languages. She proposed that this develops as a result of Afrikaans speaking parents raising their children as English speaking. In so doing they use calques when talking to their children. The extent of the influence of Afrikaans on English is as yet not fully determined (McCormick, 1995). In general, the English lexicon has absorbed relatively little Afrikaans, but the syntax may well have been affected by contact with Afrikaans (McCormick, 1995). As is highlighted in Appendix C and D all the subjects in this study had been exposed to English and Afrikaans

from a very young age with many having Afrikaans parents. The influence of this could be seen in the influence of Afrikaans syntax on English syntax.

Other lexical features that existed were those of code-mixing and code-switching. Unlike the abundant borrowing of English in all word classes of vernacular Afrikaans, the lexicon of local non-standard English is relatively unaffected by Afrikaans (McCormick, 1989 cited in Malan, 1996). McCormick determined that the majority of borrowed Afrikaans words in English were confined to the categories of '...fillers (or discourse markers) with no directly translatable English equivalent...slang expressions...and words borrowed for their particular emotional colouring' (McCormick, 1989 cited in Malan, 1996, p140). The findings in this study support these observations. Of interest is that of the words borrowed from Afrikaans in Cape Coloured English, many are also borrowed in the English used by most Caucasian South Africans.

It is imperative that clinicians from other linguistic communities working with Cape Coloured individuals are sensitive to and informed of these linguistic features so that they do not spend unnecessary time trying to remediate these features when time could be better spent working on patients' real communicative difficulties. Another important duty of the clinician is to obtain a precise history of the patient's language history as well as their use of both English and Afrikaans in their home, work and social environments.

4.2.3 Ethnic Discourse Markers

As can be gathered from this research and past literature, the use of ethnic discourse markers adds an element of richness to narratives (Ulatowska et al, 1998). Both groups in this study made use of repetition for emphasis, ritual utterances, direct speech and conversational historical present tense in order to do this. For all of these features, they were noted more on the task of the 'Personal Experience' narrative. The high incidence of their use on this task further supports this narrative task as being one of the most comprehensive tasks in this test battery in reflecting the discourse features of this cultural group. This supports Ulatowska et al's study (1998). One must recognise the use of these devices as ethnic discourse markers. These results provide a platform from which additional research can be based in order to characterise these features further in this cultural group.

This research study found that of these ethnic discourse markers, the experimental group used those of direct speech and ritual utterances in a compensatory manner. Although the use of direct speech in past research has been relatively rare, Berko-Gleason, Goodglass, Obler, Hyde & Weintraub (1980) and Ulatowska et al (1983a) found that the persons with aphasia in their studies made more use of direct speech than did their controls. This study supports previous research. The experimental group generally used this device more than the controls. One experimental subject, in particular used a large amount of direct speech in her 'Personal Experience' narrative (see Appendix E). The increased use of direct speech in persons with aphasia is explained by Ulatowska et al (1983a) as a means of avoiding the use of complex embedded sentences. The use of direct speech is thus an effective compensatory strategy in that communicative breakdown is avoided and the pragmatics of the interaction is preserved. Furthermore, its presence adds to the quality of the narrative and the use of evaluation in the narrative.

Another ethnic discourse marker that is used effectively as a compensatory strategy by the experimental group in this study, is that of ritual utterances. Certain ritual utterances have been highlighted in this study as being distinct features of Cape Coloured English. That the experimental group had an increased use of these on the 'Personal Experience' task, as discussed in Section 4.1.3.2, is clinically significant. It was noted that when the experimental subjects were experiencing word finding difficulties they would use ritual utterances to maintain the flow of verbal output whilst they searched for the target word. The increased use of ritual utterances as a compensatory strategy can be viewed as a culturally appropriate manner for persons with mild to moderate aphasia to compensate for their communicative difficulties.

Other devices used extensively by both groups to add emotional strength to their personal narratives were those of repetition for emphasis and conversational historical present tense. Repetition for emphasis has been noted as an ethnic discourse feature of African Americans (Ulatowska et al, 1998). This device has the potential to contribute to the overall cohesion of a discourse as well as to the evaluation of information (Ulatowska et al, 1998). Although there was not considerable use of this device on the tasks of the 'WAB' picture description, 'Composite Pictures', 'Apple Theft' story sequence and the 'Fable' story retell narratives for either group in this study, both the experimental and control groups used this feature with greater frequency in their 'Personal Experience' narrative. This finding supports Ulatowska et al's study (1998). It indicates that this device is an ethnic discourse marker for this cultural

group and it is interesting to note that the ability to use this mechanism is preserved in persons with mild to moderate aphasia, indicating intact pragmatic abilities. The use of conversational historical present tense, as for the other ethnic discourse markers, was more prevalent on the task of the 'Personal Experience' and was well represented in both the experimental and control groups.

4.3 Task Effects

As has been discussed thus far, the analysis of quality and evaluation appear to be the most beneficial means of distinguishing between the experimental and control groups. However, the ability to do so is often dependent on the task used to obtain the discourse sample. In addition to this, clinicians require an assessment tool that is going to tap what they wish to assess and at the same time is efficient in its application.

It must be remembered that different forms of discourse place different structural, cognitive and linguistic demands on the patient (Shadden, 1997). In addition, performance will also be influenced by the attributes of the stimuli, the memory demands and complexity of the task and shared reference (Shadden, 1997). Self-generated stories (composite picture and picture sequence stories) place fewer demands on memory load but require the patient to generate story elements and their own structure (Doyle et al, 1998; Ulatowska et al, 1998). Story retell (fable) however, demands that the patient retains various story elements in their temporal order and then he/she must be able to retrieve them and reformulate them linguistically (Doyle et al, 1998). Thus the stimuli used to elicit a narrative as well as the cognitive and linguistic demands of the task might have an influence on the quality and use of evaluation (Doyle et al, 1998).

As the analysis of quality and analysis of evaluation inherently assess different aspects of communication, this discussion will consider the task effects for each method of assessment. In doing so the researcher will hypothesise which tasks are more effective in assessing what is required. All five tasks in the Ulatowska et al (1998) Discourse Test Battery as well as the 'WAB' picture description (Kertez, 1982) have been considered. Those that were seen to contribute the most to each assessment tool are presented below. The 'WAB' picture description task was included as a means of comparison, as the majority of clinics in this Province use this stimulus the most when assessing discourse in individuals with aphasia.

4.3.1 Narrative Length and Propositional Unit

No definite task effects existed for narrative length but in general both groups produced longer narratives on the 'Personal Experience' narrative. The experimental group did however produce slightly longer narratives, which would have been related to their use of empty fillers, false starts and repetitions without emphasis. In terms of the number of propositional units produced, both the experimental and control groups used the most on the 'Personal Experience' narrative followed by the 'Fable' story retell and 'Apple Theft' sequence tasks. No task effects were noted for Propositional Unit/Word count ratios due to the variance in results within and between the experimental and the control groups.

4.3.2 Quality Analysis

No one task affected all of the features assessed by this evaluation tool. When wanting to obtain an overall view on the quality of a patient's discourse abilities it would appear that 'Personal Experience', 'Apple Theft' picture sequence, 'Composite Picture' stories and 'Fable' story retell tasks served this purpose well. However, of these tasks not all of them differentiated between the experimental and control groups' performance for all or most of the features comprising quality. The relaying of a personal experience and retelling of a fable best differentiated the experimental group from the controls for the majority of features assessed. The 'Fable' story retell task moreover assessed the accuracy and completeness of information provided. The 'Apple Theft' story sequence also differentiated between the two groups on the features of clarity and coherence as well as highlighting the difficulties that the experimental group had in referencing. Temporal sequencing created minimal difficulties for the experimental group on the 'Composite Picture' tasks which could have been related to the nature of the stimuli. Generally though, as previously discussed, this ability is relatively preserved in persons with mild to moderate aphasia. The 'Composite Picture' tasks and the 'WAB' picture description task only differentiated the two groups on the measures of clarity and coherence.

4.3.3 Analysis of Evaluation

When considering the overall use of evaluation across narrative tasks the 'WAB' picture description and the 'Fable' story retell tasks significantly differentiated the experimental group from the control group. When focusing on the individual evaluative categories, as presented in Section 3.3.2.1 and discussed in Section 4.1.3.2, intensifiers were used the most in both the

experimental and control groups. The 'WAB' picture description and the 'Fable' story retell tasks significantly differentiated between the groups in their use of the intensifiers of expressive phonology on both tasks and the use of ritual utterances on the task of the 'Fable' story retell. Furthermore, the narrative task of 'Personal Experience' produced the greatest use of intensifiers for both the experimental and control groups with the latter using a greater quantity. It revealed good evidence of the presence of gesture, expressive phonology (trend towards a significant difference), repetition for emphasis and ritual utterances for both groups. In addition to these tasks, the 'Apple Theft' story sequence task rendered greater evidence in the use of quantifiers and the use of gesture in the experimental group. Apart from the device of expressive phonology the tasks of the 'WAB' picture description and 'Composite Picture' stories were limited in their usefulness in assessing the experimental and control groups use of intensifiers.

It is apparent from Section 3.3.2.2 that the use of comparators was most evident for the experimental group on the task of 'Counting Money' and for the controls on the 'Fable' story retell task. Following this, the relaying of a personal experience also produced a favorable amount of comparators for both groups. Both experimental and control groups, on the 'Personal Experience' narrative task, used negatives, imperatives, future verbs, modals and superlatives. The 'Fable' story retell task also rendered the use of modals, future verbs and superlatives for both groups. On this task the experimental group used the least amount of modals and the most amount of negatives. In all instances the controls made greater use of the devices than did the experimental group. Although differences existed between groups on all narrative tasks and for all features, a significant difference only existed for the devices of negatives and superlatives on the 'Personal Experience' task. Task effects for the evaluative categories of correlatives and explicatives were difficult to determine due to the variability within and between groups in the use of these devices.

4.3.4 Appropriacy of Tasks Used

As can be deduced from the discussion thus far, the tasks of 'Personal Experience' and 'Fable' story retell appeared to be the most effective. Both highlighted the differences between the experimental and control groups but in this study the 'Fable' appeared to be more proficient in doing so. This task, as previously noted, does not only rely on the linguistic abilities of individuals but also on their metalinguistic abilities. The advantage of using this task is that it

gives the clinician insight into patients' cognitive mechanisms and their abilities to manipulate complex concepts. The 'Personal Experience' narrative task can give clinicians greater insight into what patients' communicative capabilities are as well as an opportunity to observe their aphasic errors, their use of evaluation and the clarity and coherence of their narratives. In addition to this, one would have ample opportunity to observe dialectal features and ethnic discourse markers in their output, which would have been restricted in narratives of shorter lengths. This does not preclude the usefulness of the other stimuli proposed by Ulatowska et al (1998).

In this study it was evident that the 'WAB' picture description produced some of the shortest narratives and provided limited information with regards to the quality of the narrative or the use of evaluative devices. Similar findings were noted by Ulatowska et al (1998). The only times that the experimental group differed significantly from the control group were for the features of coherence and clarity in the assessment of quality and in the use of the evaluative device of expressive phonology. Although the 'WAB' produced a significant difference in the use of evaluation between the groups, both groups also used the least evaluation on this task. The inherent differences that contributed towards this finding are that the experimental group resorted to short simple sentences and naming what was in the picture. The controls on the other hand attempted to create a story. For both groups it lacked suspense and temporal sequencing abilities. It was also devoid of intensifiers, comparators and explicatives for both groups.

Both composite pictures utilised in the Discourse Test Battery (Ulatowska et al, 1998) were found to be culturally appropriate for this subject group. This was determined by the content of the subjects' narratives and informal discussions with the experimental and control subjects post assessment. Although the ethnicity of the people in the pictures was not representative of the population tested, none of subjects, except one, commented on this fact. It was commented that the people in the 'Counting Money' narrative were from some 'African' culture. This researcher and the raters used in inter-rater ability did not feel that these stimuli in anyway hindered the production of narratives for this population group. Most of the experimental and control group subjects identified with the situations portrayed in the pictures rather than the ethnicity of the characters in the pictures. The 'Easter Morning' narrative had most referring to a 'lazy husband' and 'drunkenness'. The 'Counting Money' narrative generally raised issues pertaining to financial difficulties. Both of these issues are prevalent in the socio-economic

climate wherefrom many of these patients come. Nevertheless, in order to be more culturally sensitive, similar pictures incorporating representation of their ethnic group would be recommended.

In terms of the 'Composite Picture' stimuli abilities to differentiate between the experimental and control group, significant differences existed between the two groups in the overall quality of their narratives. The groups' performances were further differentiated on the features of coherence and clarity respectively. The features of global structure and reference were relatively well preserved in the experimental group. The use of evaluation was reduced for both groups on these tasks. These two pictures would appear to be more useful than the 'WAB' picture description. The difference between the stimuli could be explained in that the 'WAB' picture description relies on a line drawing depicting several unrelated activities, whereas the other two are composite pictures of a singular activity. It would appear that both the experimental and control groups found it easier to produce a story based on these two pictures. Narrative length did not vary considerably between these tasks and the 'WAB' task.

The 'Apple Theft' story sequence task was culturally appropriate and differentiated between the experimental and control groups in the quality of the narratives produced with the feature of clarity revealing the most significant difference. Of interest, is that referencing difficulties were best identified in this task. It also revealed an adequate use of intensifiers and some comparators in the analysis of evaluation. Apart from the 'Personal Experience' and 'Fable' story retell narrative tasks, this researcher feels that this task would also be beneficial for clinicians assessing persons with mild to moderate aphasia. However, if time constraints restrict clinicians in their ability to use all three narratives, this researcher suggests that a personal narrative and a story retell narrative are obtained from a patient, the latter placing increased cognitive demands on the patient.

4.4 Generalisation and Abstractness of Information

The ability to generalise information and to transform it into an abstract representation requires more than basic cognitive processes. Whilst providing the main idea places some cognitive demand on an individual it still requires the manipulation of the critical elements in the discourse and the ability to generalise that information. Van Dijk (1980, cited in Wegner, Brookshire & Nicholas, 1984) claims that individuals search for the main idea whilst they are

producing a narrative in order to keep the text globally coherent. Providing a lesson and interpreting proverbs looked beyond this in that both required the individual to go beyond literal thought processes. The highest level of comprehension of the information contained in a narrative is required when providing the lesson to that narrative (Ulatowska et al, 1983b). Ulatowska et al (1981) and Ulatowska et al (1983b) state that in order to relay the lesson of a narrative, several steps are required. An individual is required to; isolate the complicating action and resolution of that narrative, extract the main gist, evaluate it in terms of ones' pragmatic knowledge and value system and interpret the meaning. Then, on the basis of these different types of information, infer its true significance and generalise that meaning to a broader context of events (Ulatowska et al, 1981 and Ulatowska et al, 1983b).

The interpretation of proverbs once again provides a different insight into the cognitive thought processes of an individual and their ability to abstract information. They require the condensation 'of many complex cognitive, linguistic and logic-symbolic operations (Ulatowska et al, 2000, p 227). Apart from these abilities, one also requires the ability to 'manipulate metaphoric analogies which have been transmitted to our culture as ready-made interpretive models' (Ulatowska et al, 2000: p228). The individual needs to be able to recognise the literal and figurative meaning and then to transform the literal information into an abstract interpretation. Following this they are then required to paraphrase the proverb into a figurative meaning (Ulatowska et al, 2000).

It is evident from this research project that the experimental group, and occasionally even the controls often had difficulties providing the main idea and lesson of narratives as well as interpreting proverbs. With regards to providing the main idea of a narrative, the experimental and control groups performed equally with both groups providing appropriate yet generally concrete responses. That both groups performed in similar manners has been noted in past research (Ernest et al, 1987). In this study, the inability of the experimental and control groups to give generalised responses was not related to their level of education. It could however, as Ulatowska et al (2000) claim, be related to normal individual differences in their abilities to respond to complex tasks.

When providing a lesson for the 'Apple Theft' and 'Fable' story retell narratives, both the experimental and control groups faired better on the 'Apple Theft' task than the 'Fable' story retell task. This difference is to be expected as the 'Fable' story retell task relies on memory

and more complex cognitive processes than the 'Apple Theft' task. The latter task received appropriate and generalised responses from both the experimental and the control group subjects. For the 'Fable' task lesson, the experimental group generally produced inappropriate and concrete responses. The control groups' responses were also generally inappropriate but they were able to generalise them. That the experimental group could not generalise this complex task is not thought to be related to their lack of linguistic ability, but rather to a reduction in their ability to abstract information, as detailed above.

The exercise of spontaneous proverb interpretation, as in the 'Fable' story retell task, revealed differences in the experimental and control groups abilities to generalise and abstract information. Although both groups provided concrete and abstract responses, the experimental subjects produced fewer responses with an abstract component than did the controls. This may further support the difficulties that experimental subjects have in abstracting information. Of interest is that for a fair amount of the concrete responses provided by the experimental group, these proverbs were familiar to the subjects. These findings are in contradiction to Ulatowska et al (2000) who state that the familiarity of a proverb should facilitate the process of understanding its figurative meaning. Their study revealed that experimental subjects produced abstract responses for familiar proverbs and concrete ones on unfamiliar proverbs (Ulatowska et al, 2000). That the experimental group in this study responded in a contrary manner, may be due to impairments in their working memory capacity, their cognitive processing abilities or their linguistic limitations.

The responses based on unfamiliar proverbs mirrored those results obtained by Ulatowska et al (2000) in that the experimental group provided concrete responses. The controls however, managed to produce abstract responses. This result, although in keeping with previous findings, is tentative as it is based on a small sample size, as most of the proverbs were familiar to the controls. However, similar finding were noted in the responses given for the multiple choice proverb task. The familiarity of the proverb did not secure the choice of the correct response for both the experimental and the control group. In general, when an incorrect answer was provided, it was a literal interpretation of the proverb. Another interesting finding on this task is that for certain proverbs the experimental group produced more correct responses than the controls or performed in a similar manner. That this task does not differentiate the two groups and that the controls performed poorly as well highlights the variability in performance in normals. It is proposed that the very nature of this task could also have influenced these

results, as the use of multiple choice is not thought to be a common means of assessment in this education system. Furthermore, educational backgrounds could also have had an influence on the performance of this task.

In addition, the proverbs included in the Discourse Test Battery (Ulatowska et al, 1998) may not be appropriate for this cultural group. Some of the proverbs did not receive optimal responses on both proverb tasks particularly 'Don't judge a book by its cover' and 'You reap what you sow'. Only one proverb, 'Blood is thicker than water' received good responses for both groups examined. The use of proverbs in an assessment tool is acknowledged for its capacity to assess experimental subjects' abilities to generalise and abstract information. Nevertheless, further research is required to establish the use of proverbs in the Cape Coloured community, the exposure to proverbs in the education system as well as to determine culturally salient proverbs.

5 Conclusions and Implications

5.1 Conclusions

This study set out to characterise the discourse performance of English speaking Coloured persons with aphasia and matched controls. The characteristics that were investigated for each narrative included the length of the narratives and the presence of propositional units, the quality of the narratives and the use of evaluation. Apart from investigating the macrostructure of discourse analysis, this study further considered the aphasic adaptation features present in the experimental group in order to determine their communicative difficulties. In addition to this, general adaptation features, dialectal features, and ethnic discourse markers were characterised for English speaking Coloureds. Moreover, this study investigated whether the Discourse Test Battery (Ulatowska et al, 1998) differentiated between experimental subjects and normal controls. As limited research into the task effects of narrative discourse exists (Doyle et al, 1998), it was further determined which tasks best differentiated the two groups and would possibly give clinicians the most information about their patients communicative competence.

The narrative tasks of 'Composite Picture' stories, 'Apple Theft' picture sequence and 'Personal Experience' rely on the employment of narrative imagination and require subjects to join sentences to form a story (Ulatowska et al, 1998). In accordance with Ulatowska et al (1998) this study went beyond this and further examined tasks that required subjects to rely on their working memory, their ability to generalise information and their ability to use more complex and metaphoric language. In order to investigate this, proverbs, main ideas and lessons as well as the 'Fable' story retell task were studied.

The findings of this research study indicated that despite variance within each group, the experimental and control subjects did differ in their length of narratives, amount of propositional units, quality of narratives and use of evaluation with the control group generally performing better than the experimental group. However, not all of these differences were significant.

The assessment measures of quality analysis and analysis of evaluation proved the most successful in determining the differences between the experimental and control groups. The experimental group generally produced narratives of significantly poorer overall quality than did the controls

across all narrative tasks. The only individual features to differ significantly between groups were those of coherence and clarity across the majority of narrative tasks and that of referencing on the task of the 'Fable' story retell. In general, the experimental group maintained adequate global structure and temporal sequencing and referencing abilities. The feature of suspense was also relatively maintained. These findings support studies by Ulatowska et al (1983a); Ulatowska et al (1992); Ulatowska et al (1998) and reports by Shadden (1997).

From the results presented in this study it can be concluded that both the experimental and control group individuals made greater use of the evaluative category of intensifiers than any other evaluative category. This category also highlighted the greatest difference between the experimental and control groups in their use of these evaluative devices. Within this category, the experimental group was found to make the most use of ritual utterances, gestures and expressive phonology than any of the other intensifiers on the task of the 'Personal Experience' narrative. The control group used the same devices but used expressive phonology significantly more and gestures slightly more than the experimental group did. The experimental group however, used more ritual utterances than did the controls. This, and the manner in which they used gesture (to facilitate communication rather than to emphasise it), was viewed as a culturally appropriate compensation strategy employed by the experimental group in order to facilitate communication and to maintain verbal flow. This has important clinical implications. Determining reliable task effects for correlatives (including the evaluative devices within this category) and explicatives was not possible due to the limited use of these devices across subjects. This would suggest that the category of intensifiers would be the most beneficial to apply to our patients' narratives, followed by that of comparators.

Requesting the main idea from the experimental and control groups revealed the ability to manipulate critical elements in discourse and to generalise information, but did not differentiate the experimental group from the control group. Both were able to generalise information and provided mainly concrete and appropriate main ideas to their narratives. This has been noted in previous research (Ulatowska et al, 2000). More complex cognitive tasks, such as providing a lesson or interpreting proverbs, did differentiate the experimental group from the control group. The experimental group in general produced more responses with concrete representation than they did abstract representation. Of interest is that unfamiliar proverbs were interpreted in a concrete

manner by the experimental group but in an abstract manner by the controls. Although these differences were noted they are not conclusive due to the small sample size used in this study and the variation in performance within both groups.

The above findings are important when considering the patient group investigated. Persons with mild to moderate aphasia are often discharged from therapy based on their performance on standardised test batteries. This does not give one sufficient insight into how these persons are coping in their own environments. Narrative discourse analysis is thus useful as it goes beyond the single word and sentence level and investigates communication in a more natural manner. It is only through this means of analysis that the clinician can witness the aphasics' errors as well as their adaptations. The importance of this needs to be stressed as clinicians are treating younger patients presenting with aphasia. These individuals are usually still employed and their communicative difficulties are often masked or not detected when assessed on standardised tests. Discourse analysis as well as assessing their ability to abstract and generalise information, detects these difficulties. Thus these patients, instead of being discharged from therapy too early, may be drawn back into therapy where more focused intervention can be undertaken.

Although this study concludes that the Discourse Test Battery (Ulatowska et al, 1998) is effective in distinguishing between persons with mild to moderate aphasia and normal individuals, it is not always time efficient in busy clinics to implement the entire battery. It is acknowledged that the use of the complete battery would best serve our patients, as it would give a comprehensive representative impression of the patient's linguistic, pragmatic and cognitive abilities across an array of tasks. Investigations of the task effects of these narratives, revealed that the tasks of the 'Personal Experience' narrative, the 'Fable' story retell, and to a lesser degree the 'Apple Theft' story sequence, would best determine the overall quality of our patients' narratives as well as their use of evaluative devices. All three of these narratives were also sensitive to the features of clarity, coherence and referencing and the use of intensifiers. They would also tap any errors in temporal sequencing that may be experienced by persons with more moderate to moderate-severe aphasia.

The Cape Coloured community in the Western Cape has a distinct form of English as a result of a diverse and complex linguistic history. The benefits of using a Discourse Test Battery rather than standardised tests with such a community is that adaptation features, dialectal features and ethnic

discourse markers are more evident in narrative discourse analysis. This study revealed a number of dialectal features common to SACE and presented proposed ethnic discourse markers. In Speech Therapy Clinics serving this ethnic group no normative data exists with regards to these aspects of SACE and their impact on rehabilitation. These findings are thus important, as when assessing patients or implementing therapy, one needs to be aware of the dialectal features and ethnic discourse markers highlighted by this research. Many dialectal features have in the past been treated by clinicians due to a lack of insight into these features. Clinicians need to be made aware of these features so that valuable time is not lost on needless intervention. Ethnic discourse markers are also essential as many experimental subjects use them, namely ritual utterances and direct speech, as a means of coping with their word finding difficulties. As these are features that are acceptable in their cultural group and that persons with mild to moderate aphasia generally have preserved pragmatic abilities, they can be encouraged to a degree as compensatory strategies in order to facilitate communication.

As previously stated, clinicians are resistant to implement discourse analysis, as there is limited guidance as to where to progress once the assessment is complete. Various researchers, as stipulated in Section 1, have proposed and researched the effectiveness of various methods of intervention at a discourse level. Although the nature of this study was not to determine types of discourse therapies, it was hoped that the results of this study would be able to direct clinicians to specific macro-linguistic areas that may need remediation. The introduction of discourse analysis and therapy does not mean that traditional therapies focusing on micro-linguistics are to be discarded (Ulatowska & Self, 1996). All aspects of micro-linguistics, macro-linguistics, cognition and communicative competence should be considered in planning therapy intervention. However, the rehabilitation of persons with aphasia is not served by only working on linguistic structures and grammars, but also by the development of compensatory strategies. An advantage of implementing discourse analysis is that the clinician can identify the compensatory strategies/adaptations that the patient is using to overcome communication difficulties. These can then be further supported in therapy.

It can thus be concluded that the Discourse Test Battery (Ulatowska et al, 1998) is a useful way of evaluating persons with mild to moderate aphasia. More importantly, it is found to be culturally appropriate for the English speaking Cape Coloured community. As previously mentioned,

although the individuals in the picture stimuli were not from the same ethnic group as the subjects in this study, subjects identified with the activities represented in the stimuli rather than the ethnic groups. It was thus determined that the tasks were socio-politically appropriate.

A possible limitation in this study was an ethnic interlocutor difference. Future research using interlocutors from similar ethnic backgrounds should be considered.

5.2 Theoretical and Clinical Implications

Numerous theoretical and clinical implications arose from this study. Theoretically this study provided knowledge regarding the communicative deficits in persons with mild to moderate aphasia at a macro-linguistic level. It has moreover revealed the dialectal features characteristic of English speaking Cape Colored individuals which are important considerations when implementing therapy or analysing linguistic competencies. This study has revealed more about the use of ethnic discourse markers and the experimental subjects' use of them as a means of compensating for communicative breakdown. It further indicated that the Discourse Test Battery (Ulatowska et al, 1998) is culturally appropriate for the English speaking Cape Coloured population.

The primary clinical implication of this study is that the Discourse Test Battery (Ulatowska et al, 1998) provides a comprehensive account of the communicative competence in narrative discourse of persons with mild to moderate aphasia. It taps into both micro-linguistic and macro-linguistic errors which may have been missed had only standardised tests been relied upon. This research further emphasizes that the narrative tasks of 'Personal Experience' and 'Fable' story retell are the most beneficial tasks in this assessment tool for determining patients' communicative abilities. It also highlights those areas which clinicians should and should not be focusing on in therapy, i.e. dialectal features. In addition to this, by analysing the use of evaluation in persons with aphasia, important information is gathered with regards to their adaptation features and has positive implications for the use of these as compensatory strategies. It is hoped that the findings of this study may contribute towards more research into the use and appropriacy of this test battery in different cultural environments. In so doing, the profession will be closer to an assessment tool that evaluates language in a more naturalistic manner and at the same time is free of cultural bias.

5.3 Future Research

- Narrative discourse analysis is the most frequently used method of assessing language in a more natural manner. Conversational discourse analysis can provide clinicians with further insight into communicative effectiveness between persons with aphasia and a listener as well as the repair strategies used when breakdown in communication occurs. Although it was stated that this method of assessment was problematic in terms of reliability, it is starting to gain more attention as it specifically focuses on how aphasia impacts on the conversational success of individuals and their conversational partners in real life social situations (Damico et al, 1999). Furthermore, in observing a conversational interaction between an aphasic and someone who is known to the patient and from the same cultural background, clinicians may gain greater insight into the dialectal features and ethnic discourse markers of that cultural group.
- The results in this study need to be expanded on by applying the Discourse Test Battery (Ulatowska et al, 1998) to a larger sample size. In so doing the knowledge base on the discourse performance of persons with mild to moderate aphasia and the dialectal and ethnic discourse features of the English speaking Cape Coloured population would be enhanced.
- Research is also required to characterise the discourse performance of persons with more severe aphasia on the Discourse Test Battery (Ulatowska et al, 1998).
- In order to overcome one of the highlighted weaknesses of this current study, research is required with interlocutors from the same ethnic background.
- Research is required to establish the use and appropriacy of proverbs in the Cape Coloured community.
- Finally, in a country with multilingual diversity it is not sufficient only to determine the appropriacy of this test on the Cape Colored community. Studies are thus required on other ethnic groups as well as other neurogenic populations, such as closed head injury.

'Discourse-based analysis and therapy hold the promise of ... enhancing the development of compensatory strategies in everyday contexts for aphasia patients, regardless of their linguistic or cultural backgrounds.'

(Penn & Beecham, 1992: p22)

6 References

Armstrong, E.M. (1991). The Potential of Cohesion Analysis in the Analysis and Treatment of Aphasic Discourse. *Clinical Linguistics and Phonetics;* **5(1)**: 39-51

Berko-Gleason, E., Goodglass, H., Obler, L., Green, E., Hyde, M.R. & Weintraub, S. (1980). Narrative Strategies of Aphasic and Normal Speaking Subjects. *Journal of Speech and Hearing Research;* **23**: 370-382

Boles, L. (1998). Conversational Discourse Analysis as a Method for Evaluating Progress in Aphasia: A Case Report. *Journal of Communication Disorders;* **31 (3)**: 261-274

Boles, L., & Bombard, T. (1998). Conversational Discourse Analysis: Appropriate and Useful Sample Sizes. *Aphasiology;* **12 (7/8)**: 547-560

Brenneise-Sarshad, R., Nicholas, L.E. & Brookshire, R.H. (1991). Effects of Apparent Listener Knowledge and Picture Stimuli on Aphasic and Non-Brain-Damaged Speakers' Narrative Discourse. *Journal of Speech and Hearing Research;* **34 (1)**: 168-176

Buthelezi, Q. (1995). South African Black English: Lexical and Syntactic Characteristics. In: Mesthrie, R. (Ed), *Language and Social History*: David Philip Publishers, Cape Town

Caplan, D. (1996). *Language: Structure, Processing and Disorders.* MIT Press, London.

Chapman, S.B. & Ulatowska, H.K. (1989). Discourse in Aphasia: Integration Deficits in Processing Reference. *Brain and Language;* **36**: 651-668

Chapman, S.B. & Ulatowska, H.K., Franklin, L.R., Shobe, A.F., Thompson, J.L. & McIntire, D.D. (1997). Proverb Interpretations in Fluent Aphasia and Alzheimer's Disease: Implications Beyond Abstract Thinking. *Aphasiology*; **11**: 337-350

Correia, L. Brookshire, R.H. & Nicholas, L.E. (1990). Aphasic and Non-Brain-Damaged Adults' Descriptions of Aphasia Test Pictures and Gender-Biased Pictures. *Journal of Speech and Hearing Disorders;* **55 (4)**: 713-720

Crystal, D. (1995). The Cambridge Encyclopaedia of The English Language. Cambridge University Press, Cambridge.

Cucchiarini, C. (1995). Assessing Transcription Agreement: Methodological Aspects. *Clinical Linguistics and Phonetics;* **March:** 130-153

Damico, Oelschlaeger & Simons-Mackies (1999). Qualitative Methods in Aphasia Research: Conversation Analysis. *Aphasiology;* **(9-11)**: 667-679

Doyle, P.J., McNeil, M.R., Spencer, K.A., Jackson Goda, A., Cottrell, K. and Lustig, A.P. (1998). The Effects of Concurrent Picture Presentations on Retelling of Orally Presented Stories by Adults with Aphasia. *Aphasiology;* **12 (7/8)**: 561-574

Ernest-Baron, C.R., Brookshire, R.H. & Nicholas, L.E. (1987). Story Structure and Retelling of Narratives by Aphasic and Non-brain-damaged Adults. *Journal of Speech and Hearing Research;* **30**: 44-49

Ferguson, A. (1996). Describing Competence in Aphasic/Normal Conversation. *Clinical Linguistics and Phonetics;* **10 (1)**: 55-63

Fritz, V. & Penn, C. (1992). *Stroke: Caring and Coping.* The Natal Witness Printing and Publishing Company, Natal

Grosjean, F. (1989). Neurolinguists, Beware! The Bilingual is Not Two Monolinguals in One Person. *Brain and Language*; **36**: 16-22

Glosser, G. & Desler, T. (1990). Patterns of Discourse Production among Neurological Patients with Fluent Language Disorders. *Brain and Language*; **40**: 67-88

Honda, R., Mitachi, M. & Watamori, T.S. (1998). Production of Discourse in High-Functioning Individuals with Aphasia – With Reference to Performance on the Japanese CADL. *Aphasiology;* **38 (6)**, 475-493

Kaschula, R.H. & Anthonissen, C. (1995). Communicating Across Cultures in South Africa: Towards a Critical Language Awareness. Witwatersrand University Press, Johannesberg

Kertesz, A. (1982). *Western Aphasia Battery*. Grune & Stratton, New York

Laakso, M. & Klippi, A. (1999). A Closer Look at the 'Hint and Guess' Sequences in Aphasic Conversation. *Aphasiology;* **13(4/5)**: 345-363

Labov, W. (1977). *Language in the Inner City: Studies in the Black English Vernacular.* Blackwell Press, Oxford

Langton Hewer, R. & Wade, D.T. (1996). *The Stroke Recovery Plan: A practical guide to getting better at home.* Vermilion, London

Lanham, L.W. (1978). An Outline History of the Languages of Southern Africa. In: Lanham, L.W., & Prinsloo, K.P. *Language and Communication Studies in South Africa.* Oxford University Press, Cape Town

Lass, R. (1995). South African English. In: Mesthrie, R. (Ed), *Language and Social History.* David Philip Publishers, Cape Town

Larfeuil, C. & Le Dorze, G. (1997). An Analysis of the Word-finding Difficulties and of the Content of the Discourse of Recent and Chronic Aphasic Speakers. *Aphasiology;* **11 (8)**: 783-812

Lock, S. & Armstrong, L. (1997). Cohesion Analysis of the Expository Discourse of Normal, Fluent Aphasic and Demented Adults: A Role in Differential Diagnosis? *Clinical Linguistics and Phonetics;* **11 (4)**: 299-317

Louw-Potgieter, J. (1991). Language and Identity. In: Foster, D. & Louw-Potgieter, J. (Eds), *Social Psychology in South Africa.* Lexicon Publishers, Johannesburg

Lyons, J.G., Cariski, D., Keisler, L., Rosenbek, J., Levine, R., Kumpula, J., Ryff, C., Coyne, S., & Levin, J. (1997). Communication Partners Enhancing Participation in Life and Communication for Adults with Aphasia in Natural Settings. *Aphasiology;* **12**: 693-708

Malan, K. (1996). Cape Flats English. In: de Klerk, V (Ed), *Focus on South Africa.* John Benjamins Publishing Co, Amsterdam

McCormick, K. (1995). Code-switching, Code-mixing and Convergence in Cape Town. In: Mesthrie, R. (Ed), *Language and Social History.* David Philip Publishers, Cape Town

Nicholas, L.E. & Brookshire, R.H. (1995). Presence, Completeness, and Accuracy of Main Concepts in the Connected Speech of Non-Brain-Damaged Adults with Aphasia. *Journal of Speech and Hearing Research;* **38 (1)**: 145-156

Orkin, F.M. (1998). *The People of South Africa, Population Census. Report No. 03-01-11. 2nd Edition.* Pritone Statistics South Africa Publishers

Paradis, M. (1987). *The Assessment of Bilingual Aphasia.* Lawrence Erlbaum Associates Publishers, London

Penn, C. (1992). Management of Communication Problems. In: Fritz, V. & Penn, C. (Eds), *Stroke: Caring and Coping.* The Natal Witness Printing and Publishing Company, Natal

Penn, C. & Beecham, R. (1992). Discourse Therapy in Multilingual Aphasia: A Case Study. *Clinical Linguistics and Phonetics;* **6 (1&2)**: 11-25

Penn, C., Jones, D., & Joffe, V. (1997). Hierarchical Discourse Therapy: a Method for the Mild Patient. *Aphasiology;* **11(6)**: 601-632

Perkins, L., Crisp, J & Walshaw, D. (1999). Exploring Conversation Analysis as an Assessment Tool for Aphasia: The Issue of Reliability. *Aphasiology;* **13 (4/5)**: 259-281

Reagan, T.G. (1995). Language Planning and Language Policy in South Africa: A Perspective on the Future. In: Mesthrie, R. (Ed), *Language and Social History.* David Philip Publishers, Cape Town

Romaine, S. (1997). *Bilingualism.* Second Edition. Oxford: Blackwell Publishers

Rosenbek, J.C., LaPointe, L.L. & Wertz, R.T. (1989). Aphasia: A Clinical Approach. College-Hill Press, Boston, USA

Shadden, B.B. (1997). Discourse Behaviours in Older Adults. *Seminars in Speech and Language;* **18 (2)**: 143-158

Strong, C. & Shaver, J. (1991). Stability of Cohesion in the Spoken Narrative of Language Impaired and Normally Developing School-aged Children. *Journal of Speech and Hearing Research*; **34**: 95-111

Ulatowska, H.K., Allard, L., Reyes, B.A., Ford, J. & Chapman, S. (1992). Short Report. Conversational Discourse in Aphasia. *Aphasiology;* **6 (3)**: 325-331

Ulatowska, H.K., Doyle, A.W., Stern, R.F. & Macaluso-Haynes, S. (1983b). Production of Procedural Discourse in Aphasia. *Brain and Language;* **18**: 315-341

Ulatowska, H.K., Freedman-Stern, R., Weiss Doyel, A. & Macaluso-Haynes, S. (1983a). Production of Narrative Discourse in Aphasia. *Brain and Language*; **19**: 317-334

Ulatowska, H.K., Hill, C., Thompson, J., Parsons, S. & Wertz, R. (1998). *Discourse Productions in African-Americans with Aphasia.* Presentation at the 8th International Aphasia Rehabilitation Conference, Kwa Maritane, Pilansberg National Park, South Africa

Ulatowska, H.K, North, A.J., & Macaluso-Haynes, S. (1981). Production of Narrative and Procedural Discourse in Aphasia. *Brain and Language*; **13:** 345-371

Ulatowska, H.K., Sadowska, M., Kadzielawa, D., Kordys, J. & Rymarczyk, K. (2000). Linguistic and Cognitive Aspects of Proverb Processing in Aphasia. *Aphasiology*; **14 (3)**: 227-250.

Ulatowska, H.K. & Self, J.S. (1996). Clinical Forum: Is Ethnography Assessment a Reality in Aphasia? *Aphasiology*; **10**: 494-496

Wallace, G.L. (1998). Neurogenic Disorders in Adult and Paediatric Populations. In: Battle, D.E. (Ed), *Communication Disorders in Multicultural Populations, Second Edition.* Butterworth-Heinemann Publishers, Boston

Wegner, M.L., Brookshire, R.H. & Nicholas, L.E. (1984). Comprehension of Main Ideas and Details in Coherent and Noncoherent Discourse by Aphasic and Nonaphasic Listeners. *Brain and Language;* **21**: 37-51

Wilkinson, R. (1999). Sequentiality as a Problem and Resource for Intersubjectivity in Aphasic Conversation: Analysis and Implications for Therapy. *Aphasiology;* **33 (4/5)**: 327-343

Yorkston, K.M. & Beukelman, D.R. (1980). An Analysis of Connected Speech Samples of Aphasic and Normal Speakers. *Journal of Speech and Hearing Disorders;* **45 (1)**: 27-36

7 Appendices

List of Appendices

Appendix A

Subject Consent Form

I ..... understand the purposes of the study to be undertaken and agree that my data may be used for research and teaching purposes. If I choose to withdraw from the study at any time and my decision will not influence my receiving therapy now or in the future. I furthermore give the researcher consent to have access to my medical records for the purposes of gaining information pertaining to my stroke.

Name: _____

Signature: _____

Family Members Signature (when appropriate): _____

Appendix B

Language History Questionnaire

1. Where were you born?
2. Have you ever lived in another country where English was spoken?
3. What was the name of this country?
4. How long did you live there?
5. How old were you when you learned to speak English?
6. As a child, what language did you speak the most at home?
7. As a child, did you speak any other language at home and if so, what were they?
8. What language did your father speak?
   English Afrikaans Other
9. Did he speak any other languages?
   English Afrikaans Other
10. What language did your father speak the most to you at home?
    English Afrikaans Other
11. What language did your mother speak?
    English Afrikaans Other
12. Did she speak any other languages?
    English Afrikaans Other
13. What language did your mother speak the most to you at home?
    English Afrikaans Other
14. Did anybody else take care of you as a child?
15. What was his/her native language?
16. Did he/she speak any other languages?
17. What language did he/she speak the most to you at home?
18. Did he/she speak any other languages at home?
19. What language did you speak the most to your friends as a child?
    English Afrikaans Other
20. How many years of education did you have?

21. When you started school, what was the language of instruction?

    English Afrikaans Other

22. At that time, did you take any subjects in another language?

    English Afrikaans Other

23. What language did most of the other students speak at the school?

    English Afrikaans Other

24. Did you change to a school with another language of instruction after that?

25. If 'No' go to question 29

    If 'Yes', what was the language of instruction?

    English Afrikaans Other

26. After how many years did you switch to this new language of instruction?

27. AT that time, did you take any subjects in another language?

    English Afrikaans Other

28. What language did most of the other students speak at the school?

    English Afrikaans Other

29. After your education was completed, what was your occupation?

30. Prior to your illness what languages were you able to speak?

    English Afrikaans Other

31. Before your illness, was your spoken English …

    Not good Good Very fluent

32. Before your illness did you speak English at home?

33. Before your illness did you speak at work?

34. Before your illness did you speak English with you friends?

35. In your daily life, before your illness, did you speak English …

    every day every week every month every year less than once a year

36. Did you ever learn to read English?

37. How old were you when you learned to read English?

38. Before your illness was your English reading …

    Not good Good Very fluent

39. In your daily life, before your illness, did you read English …

    every day every week every month every year less than once a year

40. Did you ever learn to write English?

41. How old were you when you learned to write English?

42. Before your illness was your English writing…

Not good Good Very fluent

43. In your daily life, before your illness, did you write English …

every day every week every month every year less than once a year

Adapted from Paradis (1987)

Appendix C

Language History for Experimental Subjects

	S1	S2	S3	S4	S5	S6	S7	S8
Place of birth	Cape Town	Cape Town	Cape Town	Cape Town	Durban	Cape Town	Cape Town	Cape Town
Lived in other country	No	No	No	No	move to CT at 2yrs	No	No	No
Age of English onset	from birth	< 6 years	< 6 years	from birth	from birth	from birth	from birth	from birth
Language (Lg) at home	English	Eng/Afrik	English	English	English	English	English	Eng/Afrik
Other lg at home	Afrikaans	Eng/Afrik	Afrikaans	Afrik/Ar	Afikaans	Afrikaans	Afrikaans	Eng/Afrik
Father's L1	English	Afrikaans	Afrikaans	English	English	Afikaans	Afrikaans	Afrikaans
Fathers L2	Afrikaans	English	English	Arabic	Afikaans	English	English	English
Father spoke to child	English	English	English	English	English	English	English	English
Mother's L1	Afrikaans	Afrikaans	English	English	English	English	English	Afrikaans
Mother's L2	English	English	Afrikaans	Arabic	Afikaans	Afrikaans	None	English
Mother spoke to child	English	Afrikaans	English	English	English	English	English	English
Carers L1	Afrikaans	N/A	N/A	N/A	N/A	N/A	English	English
Carers L2	English	N/A	N/A	N/A	N/A	N/A	Afrikaans	Afrikaans
Carers lg to child	English	N/A	N/A	N/A	N/A	N/A	English	English
Lg spoken to friends	Eng/Afrik	Eng/Afrik	English	English	English	English	English	Eng/Afrik
Lg of school	English	English	English	English	English	English	English	English
Subjects in other lg	Afrikaans	Afrikaans	Afrikaans	Afr/Arabic	Afikaans	Afrikaans	Afrikaans	Afrikaans
Lg of other children at school	Eng/Afrik	English	Eng/Afrik	English	English	Eng/Afrik	Eng/Afrik	Eng/Afrik
Change school to other Lg	No	No	No	No	No	No	No	No
PRIOR TO CVA								
Lgs able to speak	Eng/Afrik	Eng/Afrik	Eng/Afrik	Eng/Afr/Ar	Eng/Afrik	Eng/Afrik	Eng/Afrik	Eng/Afrik
Proficiency in spoken English	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent
Use English at home	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Use English at work	Yes+Afrik	Yes+Afrik	Yes+Afrik	Yes+Afrik	Yes+Afrik	Yes+Afrik	Yes	Yes+Afrik
Use English with friends	Yes+Afrik	Yes+Afrik	Yes+Afrik	Yes	Yes	Yes+Afrik	Yes+Afrik	Yes
How often speak English	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily
Ability to read English	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age of learning to read English	School	School	School	School	School	School	School	School
Was reading good	Very good	Very good	Very good	Very good	Good	Good	Very good	Good
How often read English	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily
Ability to write in English	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age of learning to write English	School	School	School	School	School	School	School	School
How often write English	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily

Note:

- 'From birth' denotes that the subject was exposed to English as their L1.
- S4 spoke Arabic as a means of religious instruction and prayer. (Arabic = Ar)

Appendix D

Language History for Control Subjects

	C1	C2	C3	C4	C5	C6	C7	C8
Place of birth	Cape Town	Cape Town	Cape Town	Jo'Burg	Cape Town	Cape Town	Cape Town	Cape Town
Lived in other country	No	No	No	No	No	No	No	No
				India, 3yrs				
Age of English onset	from birth	from birth	from birth	from birth	3yrs	from birth	from birth	5yrs
Language (Lg) at home	Eng/Afrik	English	Eng/Afrik	English	English	English	English	Afrik/Eng
Other lg at home	Afrik/Eng	None	Afrik/Eng	Ar/Afrik	Afrikaans	Afrikaans	None	Eng/Afrik
Father's L1	Afrikaans	English	English	English	Afrikaans	English	English	Afrikaans
Fathers L2	None	Afrikaans	Afrikaans	Ar/Afrik	English	Afrikaans	Afrikaans	English
Father spoke to child	Afrikaans	English	English	English	Afrikaans	English	English	English
Mother's L1	Afrikaans	English	English	English	Afrikaans	English	English	Afrikaans
Mother's L2	English	Afrikaans	Afrikaans	Ar/Afrik	English	Afrikaans	Afrikaans	English
Mother spoke to child	English	English	English	English	English	English	English	Afrikaans
Carers L1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Afrikaans
Carers L2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	English
Carers lg to child	N/A	N/A	N/A	N/A	N/A	N/A	N/A	English
Lg spoken to friends	Afrikaans	English	<6yrs Afrik	English	English	English	English	English
			>6yrs Eng					
Lg of school	English	English	English	English	English	English	English	English
Subjects in other lg	Afrikaans	Afrikaans	Afrikaans	Ar/Afrik	Afrikaans	Afrikaans	Afrikaans	Afrikaans
Lg of other children at school	English	English	English	English	Afrikaans	Eng/Afrik	Eng/Afrik	Eng/Afrik
Change school to other Lg	No	No	No	No	Yes+Eng	No	No	No
					Gr2			
Lgs able to speak	Eng/Afrik	Eng/Afrik	Eng/Afrik	Eng/Ar/Afrik	Eng/Afrik	Eng/Afrik	Eng/Afrik	Eng/Afrik
Proficiency in spoken English	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent	Very fluent
Use English at home	Yes	Yes	Yes+Afrik	Yes	Yes	Yes	Yes	Yes
Use English at work	Yes+Afrik	Yes+Afrik	Yes+Afrik	Yes	Yes+Afrik	Yes+Afrik	Yes+Afrik	Yes+Afrik
Use English with friends	Yes+Afrik	Yes	Yes+Afrik	Yes	Yes+Afrik	Yes+Afrik	Yes	Yes+Afrik
How often speak English	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily
Ability to read English	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age of learning to read English	School	School	School	School	School	School	School	School
Was reading good	Very good	Very good	Very good	Good	Good	Very Good	Very good	Very Good
How often read English	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily
Ability to write in English	Very good	Very good	Very good	Very good	Very good	Very good	Very good	Very good
Age of learning to write English	School	School	School	School	School	School	School	School
How often write English	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily

Note:

- 'From birth' denotes that the subject was exposed to English as their L1.
- S4 spoke Arabic as a means of religious instruction and prayer. (Arabic = Ar)

Appendix E

Transcripts from the Experimental and Control Groups' Narratives.

C1 'Easter Morning' Narrative

I can see the picture that um __ of a family. And I can see that mummy with the kids is busy on their way to Church. But the whole thing that I saw there was Daddy was sitting in his pajamas in the chair reading. And daddy didn't look happy. It's like daddy was not actually prepared to join the family to attend the Church service. And, well what actually happened there I don't know but the picture shows me that the rest of the family was actually really wanted to be in ___ uh or the service and Church, wherever they did go. But for me something strikes me that something went wrong. Daddy was not. Daddy look very upset. Daddy did, the face shows me, that daddy wasn't happy. So well, that's all that I can say of the story.

C4 'Counting Money' Narrative

I think my granddad is just came home from work _ and now he's gave his money to the old lady and they working things out. This must go to the rent. That must go put in the bank. This is going for food. And that other money must buy Victor some clothes and shoes and whatever (laughing). Well that he he (*seker*) came from work or he won the lottery and __. But he must buy Victor some clothes hey really, 'cos Victor haven't got clothes. And there must be food, Victor like to eat (laughing). So that is the main thing they working out there.

C3 'Apple Theft' Picture Sequence Narrative

These two boys, they saw a hole in the fence and they saw a apple tree. And they went into, they crawled through the fence, and they started picking up apples from the tree. And they filled up a bag and the owner of the place came there and he started chasing them. They took the bag. They got through the fence and the took the bag. And while they pulling the bag, the bag burst open and all the apples fell back into the yard and they got nothing out of it.

S3 'Fable' Story Retell

It's umm, it's about a farmer in connection with it. Umm ___ he he was rich and umm he wanted umm his sons just to be like him and in connection with it. When he die, when he when he died and umm. ___ I think he he told them about the the the treasure you know, in connection, in in the in the vvvineyard. And umm when he died, then the the sons dug up the soil. He wanted they wanted to __ find the tre the treasure and um they couldn't find the the the treasure. But the fruits ___ that eh the where the vineyard bared likely, um, it was, how can I say, it's it was delicious and it was a suc success. And the the the story is that you you you have to, how can I say, don't thi _ think about the treasure. Think about the the the the fruits that that the tree or the vineyard will bare you know.

S6 'Personal Experience' Narrative

It was one day when I came from work and I was playing with my grandchild and then, we was listening to music. And then I went out of the room and uhm __. I went to call my mother. And as I was calling mother, I just called twice, I called her "mama". I call "mama, mama" and I want her to come see the child dancing _____. And then after that I just found myself laying in the passage where my head banged against the wall and I was laying in the passage. And then uhmm, my mother came and she sponged me with vinegar ___ and I was a little bit unconscious. I was laying on the floor and she came and she sponged me with vinegar on my whole body and after awhile I came by. Then I was laying on the floor there and she told me, 'cos I'm fat, she can't pick me up. I had to crawl back into the room. And I crawled back into the room and then I, I sat a little bit on the floor. And then she said I must get to the bed and I went to the bed and she, she helped me onto the bed because I couldn't lift myself because I was lame on the one side. And uhm ___ and then when I get on the bed I was so frightened 'cos I did didn't know what's going to happen to me and I started crying crying. And and that stayed that frightening __ stayed in me all the time while I was laying on the bed. /mmmm/ That was such a fr, when I realised I got a stroke and I was laying on the floor. That was very frightening.

S8 Extract from 'Personal Experience' Narrative

Once I was very scared ___ with my daughter … I thought to myself, why must I ____ I mean why must I ssukkel with them __ to bring them up? Why? ____ I said "Another few years __ you'll be out of your eh __ school, went to go work". I said to her, you know, "Jade, but why you talking me like that?" I said you know, "I can't give you a hiding like I used to." _____ I said to her "For instance, for instance, la lastni las yesterday, __ Cindy went out with friends. Came home. it's 12 o'clock last night. I have to sit up, the others went to bed. I have to sit up to wait for her to come __ open the door for her." I se I, I said to my, she said, "Mommy look, eh eh it's holidays." I said, "eh __ Right enough it's holidays. Did you hear what happened with kids __ down the road? Just pa uh, a few houses away from us". _____ I said to her, "Things happen." ____ I said, " You hear they been killed and that". I said, "Here I waiting for you to come home". I said, "Not a good idea". I said, " You can tell your friends __ 9 o'clock I'll be at home". __ "Mu, Mummy, " she said, "Mummy __ but we been to Polkadot …… I said to her last night, "I don't know why, I heard a car coming through". ____ "No, because they walk with me." ____ I said to her ___ "Where did they drop you?" "Down the road". She's fif sixteen years old. Down the road! I said to Cindy, "Ye, there can just happen something with you. The peoples are sleeping. ___ People can't hear you shou shouting or screaming. They keep a thing round your mouth." _____ She "Yes mommy, well just want to be old fashioned that's all".