A STUDY OF LANGUAGE RELATED FACTORS IMPEDING THE ENGLISH READING COMPREHENSION OF NAMIBIAN FIRST YEAR UNIVERSITY STUDENTS

A DISSERTATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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ABSTRACT

This study was motivated by the pervasive difficulties which Namibian learners and students experience in reading and understanding English texts, and which impact negatively on the academic progress of these learners and students. The research was aimed at identifying specific language-related properties of English texts which might impede the English reading comprehension of students in Namibia entering university, as well as possible elements in the language background of these students which might contribute to the challenges they face in processing English texts.

Although a great deal of research has been done on second language reading, relatively little of this research focuses on non-English speaking readers in Southern Africa, particularly in Namibia. The main thrust of the research, therefore, was to identify and explore the views and theories of as many researchers as possible in the field of second language reading in general, and of reading in English as a second language in particular, and to investigate the extent to which these views and theories pertain to native speakers of languages used in Namibia.

The first component of this study, namely secondary research in the form of an extensive review of available literature related to reading and reading comprehension, yielded a vast array of language-related factors thought to influence second language reading comprehension and the processing of English texts by second language readers. In the empirical component of the study, for the purpose of determining the relevance in the Namibian context of the language factors identified

in the secondary research, a study was conducted involving 86 students enrolled for Foundations of English Language Studies, a first year English course in the Faculty of Humanities and Social Sciences at the University of Namibia. The empirical research was conducted in three phases. In Phase 1 of the study, qualitative data was generated through a questionnaire exploring the language background and experience of participants. In Phase 2 of the study, since vocabulary was prominently highlighted in the literature as a significant factor in reading comprehension, participants completed a vocabulary test. In addition, on the basis of linguistic properties most prominently identified in the literature as influencing English reading comprehension, ten linguistic properties were selected as being potential sources of English reading comprehension difficulty for students in Namibia. A set of twelve English texts was then selected and analysed, using Coh-Metrix 2.1, a text analysis software programme which is sensitive to properties such as cohesion relations, world-knowledge and language and discourse characteristics, and statistics were generated with regard to the ten properties identified for this study. The twelve selected texts were also manually analysed to check for other possible linguistic impediments to reading comprehension not identified in the computer analysis. Study participants were encouraged to engage with the twelve selected texts by completing a short comprehension exercise, the results of which yielded a general impression of the accessibility of the texts, and of potential problem areas to be investigated further in focus group interviews.

In Phase 3 of the study, structured focus group interviews incorporating think-aloud protocols were conducted to explore the views of the students themselves with regard

to underlying causes of difficulty in reading English texts. A comparison was then made of potential sources of difficulty reflected in the Coh-Metrix 2.1 measurements and the manual analysis with difficulties perceived by participants themselves. Data from both the questionnaires and the interviews were also analysed for evidence of the possible influence on English reading comprehension of the language background and reading practices of the readers.

While the results of this study confirmed the significant role played in English reading comprehension by a number of linguistic properties discussed in the literature, there was also evidence that these did not adequately account for comprehension difficulties among tertiary students in Namibia, and that there was a need to explore less obvious sources of difficulty which may be of specific relevance to speakers of other languages used in Namibia, and may thus offer an important and novel avenue for further research.

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DEDICATION

I dedicate this dissertation to my late mother, Marie Webb.

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LIST OF ABBREVIATIONS/ACRONYMS

APA	American Psychological Association
BICS	Basic interpersonal communication skills
CALP	Cognitive academic language proficiency
CELEX	Centre for Lexical Information
COBUILD	Collins Birmingham University International Language Database
DRP	Degrees of Reading Power
EFL	English as a foreign language
ESL	English as a second language
ETSIP	Education and Training Sector Improvement Programme
FELS	Foundations of English Language Studies
FHSS	Faculty of Humanities and Social Sciences
FRE	Flesch Reading Ease
L1	First language
L2	Second Language
LSA	Latent semantic analysis
MA	Metalinguistic awareness
MBESC	Ministry of Basic Education, Sport and Culture
NIED	National Institute for Educational Development
NRC	National Research Council
PanSALB	Pan South Africa Language Board
PBD	Principal branching direction
PCECT	Presidential Commission on Education Culture and Training

SPSS	Statistical Package for the Social Sciences
SWAPO	South West Africa People's Organisation
TASA	Touchstone Applied Science Associates, Inc.
UCLE	English for General Communication
ULEG	English for Communication and Study Skills
UNAM	University of Namibia
UNESCO	United Nations Educational, Scientific and Cultural Organisation

ADDENDA

ADDENDUM A   Questionnaire for Students

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CHAPTER 1:   INTRODUCTION

The present study investigates language-related factors influencing the English reading comprehension of students enrolled in a first year English course at the University of Namibia (UNAM) and attempts to isolate factors that impede English reading comprehension. A mixed method approach is used, combining secondary research encompassing models and hypotheses presented by scholars in the field of applied linguistics, quantitative research based on the statistical processing and analysis of survey and test results, and qualitative research based on focus group interviews. The findings may serve as a point of departure for future revisions of English study materials, English teaching practices and assessment related to English reading comprehension.

This chapter will start with a brief overview of the background and context of the study, and of policy which shapes the development of English literacy in Namibia. A statement of the research problem is presented, followed by a discussion of the goals, significance and limitations of the study.

1.1   Background of the Study

1.1.1   The Namibian language context

Since English is the official language of Namibia, and is, in theory at least, the medium of instruction in secondary schools, the question can be raised as to why English in general, and English reading in particular, should pose a problem for

tertiary students. To answer this question, it is useful to have an understanding of the history underpinning the role of English in the country.

In Namibia, the issue of language is closely linked to political and historical elements, and an examination of these elements sheds light on several factors identified in the literature as playing a key role in English literacy, e.g. the motivation underpinning language choice among Namibians in general, and learners or students in particular. Knowledge of the historical background of Namibian language issues also provides better understanding regarding possible sources of difficulty in reading which are linked to language choice, and provides some insight into why students from different language groups in Namibia might have different problems arising from factors in their educational background. It furthermore helps to explain why the Namibian university students who were selected as participants in this study are not always typical of non-native readers of English in many other studies.

It should be kept in mind that since most of the students in this study were born around the time of Namibian Independence in 1990, their education was shaped by post-independence changes in educational policy and approaches in Namibia, and they thus have been significantly affected by a number of critical and far-reaching developments in this regard.

For the purposes of this chapter, the term 'mother-tongue' rather than 'first language' is used to refer to the language first learned by an individual, since

'mother-tongue' is the term used in many official documents concerning literacy and education. However, as will be discussed later, it is essential to establish precisely what is encompassed in these terms, especially in the multilingual context of Namibia.

Although the population of Namibia is relatively small (2.1 million) it comprises a wide diversity of languages and cultures. According to Tötemeyer (2009), only 14 of the languages found in Namibia are written languages with a standardised orthography, while there are about 16 oral languages for which no orthography exists.

By far the largest ethnic group in the country is the Oshiwambo speaking group, many of whom live in the rural areas in the north of the country. Seven different dialects of Oshiwambo are spoken in Namibia, but only two (Oshikwanyama and Oshindonga) have standard written forms and are taught as subjects in schools (Gordon, 2005).

The second largest group is the Nama/Damara (Khoekhoegowab) speakers, many of whom are unable to read or write their language. Next are those who speak Afrikaans, with Otjherero speakers being the fourth largest group. Apart from these groups, at least 21 other languages are to be found in the country, with English mother tongue speakers forming one of the smallest groups, being numbered in 2006 at only 10 200 (Lewis, 2009).

In Namibian schools, languages taught as a subject only up to Grade 10 include Khoekhoegowab, Oshikwanyama, Oshindonga, Rukwangali, Silozi, Otjiherero, Afrikaans L2 and English L2 (Wolfaardt, 2005), while languages taught up to Grade 12 level are as shown in Table 1 on page 14.

With regard to students in Namibia[1], such as participants in this study, two points made by Williams (1996) are particularly relevant. Firstly, as is the case in many other countries, particularly in Africa, children in Namibia and its neighbouring countries grow up in situations "where many languages are in use, differentiated according to domain or interlocutor, resulting in what Swain and Pearson refer to as 'bilingualism as a first language'" (cited in Williams , 1996). Secondly, with regard to L1 reading skills, it should be taken into account that many of these children have never read in their mother tongue because their languages have no written form.

It is this language diversity which has complicated the development of a language policy both for the country as a whole, and for education in particular, and it is against this background that problems in English reading comprehension will be examined.

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[1] Since a number of the study participants are not actually Namibian citizens, but are in Namibia for study purposes, the term 'students in Namibia' is used in preference to 'Namibian students'.

Table 1

Languages in Namibian Grade 12 Curriculum

ORDINARY LEVEL SUBJECTS	HIGHER LEVEL SUBJECTS
1. First Language Afrikaans	1. First Language Afrikaans
2. First Language English	2. First language English
3. First Language German	3. First Language German
4. First Language Khoekhoegowab	4. First Language Oshikwanyama
5. First Language Oshikwanyama	5. First Language Oshindonga
6. First Language Oshindonga	6. First Language Rukwangali
7. First Language Otjiherero	7. First Language Silozi
8. First Language Rukwangali	8. English as a Second Language
9. First Language Rumanyo	9. Foreign Language French HIGCSE
10. First Language Setswana	10. Foreign Language German
11. First Language Silozi	
12. First Language Thimbukushu	
13. Afrikaans Second Language	
14. English as a Second Language	
15. Foreign Language French IGCSE	
16. Foreign Language German	

Source: NIED Circular No 1/2005 Annexure 1

1.1.2   Establishment of English as the Official language

A consideration of events underlying the choice of English as Namibia's official

language also provides a measure of insight into language and literacy challenges in

the country.

Namibia has a history of being under the control of foreign powers up to the time of

independence in 1990, and the era of dominance by each of these foreign powers left

its mark on the language landscape of the country. From 1884 to 1918, Germany held colonial control, and when the Germans were forced to leave in 1918, the mandate for the administration of the country was given by the League of Nations to South Africa. In the decades following, with the rise to power of the Afrikaner Nationalist Party, Afrikaans became increasingly dominant, and spread rapidly as a lingua franca. According to Harlech-Jones (1990, p.75), Afrikaans reading material was the main vehicle for teaching literacy, since such materials were widely available in Namibia before independence, whereas materials in the vernacular languages were not. This lack of materials derailed the existing language policy which required that in black schools in the central area there should be mother tongue education throughout the primary phase.

In the northern areas, the language situation was somewhat different. Until the 1960s, these areas were under the influence of the Finnish Lutheran mission, which used only the vernaculars as mediums of instruction. It was only with the introduction of Bantu Education in the 1960s that the dominance of Afrikaans first spread to the northern areas, and this dominance continued throughout the country into the 1980s, when the situation changed once again, as the Owambo Authority made the decision to adopt English as the medium of instruction. Harlech-Jones (1990, p.81) argues that "the linguistic homogeneity of the northern areas, both socially and educationally, may well account in part for the fact that in 1981 the Administration of Owambo was the first ethnic authority to accomplish the quite radical change from Afrikaans to English medium". In spite of the decision by the Owambo Education Department in 1981 to switch to English medium, however,

vernaculars continued to be used as the medium of instruction in the junior primary phase.

With regard to other parts of the country, up to 1989, for various logistical and political reasons, black children in Namibia were taught through the medium of mother tongue in Grades 1, 2 and 3. During these years, either English or Afrikaans was introduced as a second language, and became the medium of instruction in Grade 4, with mother tongue being studied as a subject up to Grade 7. Those black children who had the opportunity to learn to read were therefore taught reading skills through the medium of mother tongue.

According to the report of the Presidential Commission on Education, Culture and Training (PCECT) (2000, p.109), before Namibian Independence in 1990, the South African Government had deliberately used language as a means of dividing the population into language groups, thus preventing them from uniting in opposition. After independence, however, the Namibian Government aimed at empowering the population for full participation in the democratic process through the introduction of a single official language, renewed status for mother tongues and the development of local languages. Since the government also wished Namibia to gain access to the international community, the decision was made to adopt English as the official language. In the words of former Prime Minister, Hage Geingob,

> [W]hen SWAPO decided during its struggle for independence to
> make English the Official Language of Namibia, and when the
> framers of the Constitution decided to choose English as the Official

Language, it was not an ad hoc decision. It was a considered
decision.

…

On Independence, we had to choose a language that would open up
the world to us. English was the obvious choice. After all, English is
the most widely spoken language, spoken by some six hundred
million people. There is no corner of the globe where you could not
get by if you knew English

> (as cited in Chamberlain, Diallo & John, 1981, p.12).

1.1.3   English as Medium of Instruction

The choice of English as the official language of Namibia necessitated the

development of a language policy defining, among other things, the role of English

in education. In 1991, after lengthy discussions in all regions of Namibia, a policy

was agreed on (MBESC, 2003). Among the criteria which were taken into

consideration were

- The fact that for pedagogical reasons it is ideal for learners to study through their
  mother tongue, particularly in the early years of schooling when basic skills of
  reading, writing and concept formation are acquired.
- The need for learners to be proficient enough in English, the official language, at
  the end of the seven-year primary school cycle in order to gain access to further
  education as well as to a language of wider communication.

In 1992, a specific Language Policy for schools was implemented, the goals of which

included the following (Chamberlain, 1993, p.5):

- Promotion of a learner's own language and cultural identity through the use of home-language (mother tongue) instruction, at least at the lower primary level.

- Proficiency in English, the official language, by the end of the seven-year primary cycle.

- English as the medium of instruction beyond the lower primary level.

Against this background, and in the light of the fact that students now entering university are products of the Language Policy described above, it would be reasonable to expect improved performance levels amongst learners who pass English in Grade 12. Judging by the concerns raised by several scholars with regard to the detrimental effects on educational progress of poor levels of English proficiency (Tötemeyer, 2009; Wolfaardt, 2004, 2005), however, this has not been the case, a situation which could be the result of a number of factors.

In the years following the implementation of the Language Policy, a number of obstacles to the effective application of the policy have become apparent, often resulting from practical problems and the reality experienced by educators in the field. These include factors such as the lack of qualified mother-tongue teachers, a belief amongst parents that there are greater benefits for children in being taught through the medium of English, and the perceived lack of status of the indigenous languages (Kangira, 2007). Tötemeyer (2009) argues that

> [t]he sudden transition from Afrikaans-medium to English-medium
> instruction in Namibian schools was problematic. Not only learners
> but also most teachers were struggling with English. Both groups

were suffering from anxiety about learning and teaching through the medium of English (Chamberlain, 1993; Melber, 1985. 15).

Many of the issues mentioned above are highlighted in a Language Policy Impact Report presented by Chamberlain in 1993. Writing about the Ondangwa region which is populated by Oshiwambo speakers, Chamberlain noted that learners were well-motivated both to learn English and to learn through English and that in Grades 1 to 3 in particular, learners who were good at their home language were also good at English. He also noted, however, that primary school learners were usually exposed to English only in the classroom. A further factor mentioned was the lack of confidence of primary grade teachers in using or teaching English due to the fact that they had not been trained in English (Chamberlain 1993, p.18). In the conclusion to this report, Chamberlain (1993, p.76) warned against "situations in which children are disadvantaged by being forced to learn through different media of instruction to the detriment of their home language and their understanding of the curriculum." The failure in many African countries of the abrupt immersion of children in a language unfamiliar to them, and the unrealistic expectation that these children would quickly become fluent in the new language, was again highlighted in 1999 by Namibian psychologist Dr Shaun Whittaker (as cited in Tötemeyer, 2009).
In 2000 the PCECT brought to light certain negative perceptions among informants (which included teachers), who felt that if learners were taught in the mother tongue up to Grade 4, their English language competence would be undermined, and that poor vocabulary, reading speaking and comprehension skills would result from the use of indigenous languages in the classroom.

The PCECT concluded that

> [the educational] environment [in Namibia] does not create a
> conducive atmosphere for effective English learning. The basic
> competencies are not established well enough to implement a second
> language as a medium of instruction on a formal basis in Grade 4. It
> is a proven fact that youngsters who have not accomplished the basic
> competencies in their own mother tongue are unable to think and
> argue in another language. There is a very big gap which learners
> cannot overcome when starting fully fledged with English in Grade 4
> for the first time. This causes poor results, frustration among learners
> and teachers, and an increase in the dropout rate. The emphasis on
> competence in English need not be detrimental to capacity in the
> mother tongue. (2000, p.39)

In 2000, at the Conference on Language and Development in Southern Africa,
problems being experienced with the Language Policy of Namibia were brought to
light, and the recommendation was made that the policy be revised. This led to the
publication and distribution in 2003 by the then Ministry of Basic Education and
Culture of a Discussion Document in which all recommendations made during the
conference were accepted except for the proposal that mother tongue instruction
should continue beyond Grade 3. This was rejected because of the financial
implications.

Resulting changes to the Language Policy for Schools included the following[2]:

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[2] Only those sections of the Language Policy relevant to this study have been
included here.

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1. Grades 1-3 will be taught either through the mother-tongue or a predominant local language. If parents or the school wish to use English as the medium of instruction in the Lower Primary phase, permission must be obtained from the Minister of Basic Education, Sport and Culture with well-grounded, convincing motivation.

2. Grade 4 will be a transitional year when the change to English as medium of instruction must take place.

3. In Grades 5-7 English will be the medium of instruction. In the Upper Primary phase the mother-tongue may only be used in a supportive role and continues to be taught as a subject.

4. Grades 8-12 will be taught through the medium of English, and the mother-tongue will continue to be taught as a subject.

5. Examinations: Grades 7, 10 and 12 national examinations will be taken through the medium of English, except for the mother-tongue that is taken as a subject.

6. English is a compulsory subject, starting from Grade 1, and continuing throughout the school system.

7. All learners must study two languages as subjects from Grade 1 onwards, one of which must be English. Where there are sufficient learners from the same language group to form a class, provision must be made for them to study their own mother tongue up to Grade 12.

(Namibia Ministry of Basic Education and Culture, 2003)

In the years following the implementation of this policy, a number of serious negative educational consequences have become apparent, and it seems likely that difficulty which students currently experience in reading English may be one of these consequences, especially when considered in the light of factors discussed in the literature, as will be mentioned later.

1.2   Statement of the Problem

Teachers of English at secondary and tertiary levels in Namibia consistently
complain about the poor performance of learners and students with regard to reading
in English. Evidence of the extent of this concern can be seen in the research topics
selected by two consecutive groups of education professionals registered for a
Masters' Degree in Literacy and Learning at the University of Namibia in 2009 and
2010, the majority of whom were practising English teachers. Learners' difficulties
in reading English in general, and in English comprehension in particular, featured
prominently in these research topics, the main focus being on investigating factors
which might be causing these difficulties.

Difficulties in reading English have significant implications for students entering
university. Reading is an integral part of academic life, and being able to decode
meaning in a variety of texts is a fundamental skill in academic study. Built on this
skill is the ability to identify, summarise, analyse, synthesise and evaluate
appropriate information as required in specific academic tasks. Applying these skills
in one's own mother-tongue is challenging in itself, and requires a well-developed
knowledge of the language. When the text is in a second or foreign language,
therefore, the challenge is compounded, since knowledge of the language of the text
becomes a significant factor.

For many university students in Namibia, this presents a major challenge, since
almost all reading material at tertiary level is written in English, which for the
majority of these students, although taken as L2 at school level, is in fact a third or

even fourth language. English proficiency thus becomes one of the critical factors underlying students' capacity for dealing with such reading material. However, even students whose English proficiency is relatively high often experience difficulty in English reading and comprehension. While they can usually decode most of the words in a text, they are often unable to extract meaning from the text, identify main points, summarise or make inferences and deductions. Furthermore, many students also seem to have difficulty discerning exactly what is required in answer to specific questions, so that although they may be able to locate the required information in a text, they sometimes cannot process the information in an appropriate way so as to answer the question which has been asked. Such difficulties will naturally affect not only their understanding of materials required for their studies, but also their responses in assessment tasks.

1.3   Goals of the Study

This study will investigate language-related factors which may impede the English reading comprehension of students enrolled in first-year English courses at the University of Namibia

The objectives of the study are, therefore:

• to investigate whether proficiency in English reading comprehension of students in Namibia is related to their language background, including factors such as their language repertoires

- to test the hypothesis that specific English language constructions and aspects of usage influence the English reading comprehension of students entering university in Namibia

1.4 Hypothesis of the Study

Competencies in English reading comprehension may be retarded by specific aspects of English language structure and usage, and by specific elements in a reader's language background.

1.5 Significance of the Study

By virtue of their academic status, lecturers and teachers, even those who are not first language (L1) speakers of English, are skilled in dealing with various English texts. They may therefore be unaware of many potential areas of difficulty for students, particularly with regard to less obvious aspects of English usage and construction. This study aims to develop awareness among lecturers, teachers, materials developers and other professionals in the field of education, of possible sources of difficulty for non-native English readers in reading and understanding English texts, with a view to contributing to the development of teaching methods, materials and assessment tasks aimed at overcoming such difficulties, and thus, ultimately, facilitating the academic progress of students and learners in Namibia.

The study also examines the argument that the teaching and assessment of reading comprehension should take into consideration the language background of the individual. Results of the study thus contribute information pertinent to the language

policy debate, and assist in the development of language programmes such as those being developed by the Ministry of Education and by the Education and Training Sector Improvement Programme (ETSIP).

1.6   Limitations of the Study

A limitation to be considered in this study is that all testing instruments have inherent inadequacies. Therefore, for purposes of validation, instruments designed for this study were submitted to a panel of language teaching experts for evaluation, and were piloted, evaluated and revised before being used in the study.

With regard to texts used in the study, since the focus of the study is on generic texts, only one passage of a literary nature, containing more specialised idiomatic or figurative language usage, was used. Furthermore, since the test was written by the entire FELS class, testing had to be carried out during the normal test time allocated for this class, and thus did not allow for all students in the class (including participants) to write tests on all 12 texts. The texts, with questions, were therefore grouped into four sets of three texts so that each student would complete only one set of tests; that is, a test on each of the three texts in a set.

The fact that the researcher has little or no knowledge of the L1's of the participants could be regarded as a limitation. However, since the study approaches the investigation of reading comprehension from the perspective of linguistic properties inherent in English texts themselves, and since information related to specific linguistic characteristics of languages used in Namibia is based on the works of

scholars specialising in these languages, proficiency in the L1's of the participants on the part of the researcher is not required.

1.7 Delimitations of the Study

The case study phase of the research focused only on students registered for Fundamentals of English Language Studies in the Faculty of Humanities and Social Sciences at the University of Namibia. However, this was considered to be justified since this university is the flagship tertiary institution of the country. Students from different language backgrounds can be found amongst this student body, thus effectively representing the language profile of students in Namibia in general.

Furthermore, research into L2 reading and comprehension encompasses such a vast field of theory and such diverse approaches that it is not possible to carry out an in-depth investigation of every aspect of the reading process in one study. This study was therefore limited to those linguistic properties of English which the researcher, after many years of experience in teaching English as a second language, hypothesised as playing a role in the English reading comprehension of students in Namibia.

CHAPTER 2:   THEORETICAL AND CONCEPTUAL FRAMEWORK

The main aim of this research was to carry out an in-depth investigation of various factors underpinning L2 reading comprehension, and to identify those factors which impede the English reading comprehension of students in Namibia enrolled for a first-year English course at tertiary level. While there are numerous studies investigating impediments to the reading comprehension of non-native English speakers, relatively few of these studies have focused on speakers of languages used in Southern Africa. Thus, while it was clearly essential to explore the most widely accepted views of scholars in this field, it was equally important to consider not only whether the views of leading scholars are applicable to speakers of Southern African languages, but also to consider whether impediments to English reading comprehension may exist which are specifically related to speakers of these languages and which may therefore not have come to light in existing studies. This study thus required the researcher to become familiar with the various schools of thought on this topic, as well as to explore as widely as possible the nature and role of linguistic properties which might be potential sources of English reading comprehension difficulty. This requirement necessitated an extensive search of the literature, not only on the reading process, but also dealing with analyses of various properties of English texts, including syntactic, lexical, cohesive and semantic properties amongst others. This secondary research thus constitutes the nucleus of the study itself, and is presented as such.

Although repetition is avoided as far as possible, the fact that this chapter examines a wide variety of hypotheses, theories and models which address reading comprehension from a number of different perspectives sometimes necessitates recurrent discussion, in the light of each of these perspectives, of certain linguistic features which play a significant role.

The challenges of dealing with an issue such as reading in an L2 are succinctly summarised by Alderson, one of the leading authorities in the field:

> The sheer volume of research on the topic belies any individual's ability to process, much less synthesise, everything that is written. Similarly, the number of different theories of reading is simply overwhelming: what it is, how it is acquired and taught, how reading in a second language differs from reading in a first language, how reading relates to other cognitive and perceptual abilities, how it interfaces with memory (Alderson, 2000, p. 2).

In the light of the overwhelming volume of literature related to L2 reading, this chapter will focus on the theories and approaches most widely acknowledged by authorities in the field. During the 1970's and 1980's, there was an escalation in research into reading in a second or foreign language, and extensive reference is therefore made to seminal works from this period which provide the basis for much of the more recent literature. In the words of pioneers in this field:

We ignore the achievements of our predecessors not only to our
individual detriment but greatly to the peril of our collective scientific
enterprise (Charles Hockett).[3]

Any new attempt at synthesis in linguistics must consider the origins
of our theories and terminology (J.R. Firth).[4]

2.1 The Nature of Reading

Varying definitions of reading are to be found in the literature. The most

straightforward definition of reading, and one which can be used as a starting point,

is that it is the process of perceiving a written text in order to understand its contents

(Alderson, 2000, p.13; Richards, Platt & Platt, 1992, p.306). Urquhart and Weir

(1998, p.22) define reading as "the process of receiving and interpreting information

encoded in language form via the medium of print".

Although a number of reading skills taxonomies have been proposed, Williams

(2008, p.588) contends that many items listed in these taxonomies are the product of

the reading process rather than being intrinsic elements thereof. For the purposes of

this study, however, it is useful to consider some of the elements in the proposed lists

of reading skills so as to identify areas in which reading comprehension might be

affected by specific linguistic properties of texts. For example, in Urquhart and

Weir's selection of typical taxonomies of reading skills (1998, p.90) presented in

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[3] Charles Hockett was an American linguist whose work followed in many respects that of Leonard
Bloomfield. Like Bloomfield he worked towards a coherent systematic set of tools and concepts for
linguistic analysis, as well as applying those concepts to detailed and explicit linguistic analyses,
primarily in the areas of phonology and morphology.

[4] John Rupert Firth was an English linguist who contributed to linguistic semantics and to prosodic
phonology and who was noted for his insistence on studying both sound and meaning in context

Table 2, the taxonomy constructed by Lunzer et al. features elements such as word meaning and words in context which are clearly dependent on vocabulary or word knowledge drawing inferences from single or multiple strings, which implies the need for syntactic knowledge, and interpretation of metaphor which requires the mapping of relevant concepts onto the literal meaning given in the text. Similarly, in the taxonomies proposed by Munby and Grabe, the majority of the skills listed are clearly underpinned by the ability to process various linguistic features of written text as discussed in other sections of this literature review.

Further aspects of reading discussed by Carroll are also related to the processing of linguistic properties of texts. Carroll lists eight components of the reading process, and suggests that in adult reading, these components "are so highly practised that they merge together, as it were, into one unified performance." For the purposes of this study, the most significant of these components would be the following, each being dependent on mastery of the one preceding it:

- knowing the language that is being read
- dissecting spoken words into component sounds
- recognising the correlation between certain sounds and their spelling so as to be able to process meaning

Table 2

Taxonomies of Reading Skills

Munby (1978):	Lunzer et al (1979):
- Recognising the script of a language	- Word meaning
- Deducing the meaning and use of unfamiliar lexical items	- Words in context
- Understanding explicitly stated information	- Literal comprehension
- Understanding information when not explicitly stated	- Drawing inferences from single strings
- Understanding conceptual meaning	- Drawing inferences from multiple strings
- Understanding the communicative value of sentences	- Interpretation of metaphor
- Understanding the relations within the sentence	- Finding salient or main ideas
- Understanding relations between parts of text through lexical cohesion devices	- Forming judgements
- Interpreting text by going outside it	**Grabe (1991)**
- Recognising indicators in discourse	- Automatic recognition skills
- Identifying the main point of information in discourse	- Vocabulary and structural knowledge
- Distinguishing the main idea from supporting detail	- Formal discourse structure knowledge
- Extracting salient points to summarise (the text, an idea)	- Content/world background knowledge
- Selective extraction of relevant points from a text	- Synthesis and evaluation skills/strategies
- Basic reference skills	- Metacognitive knowledge and skills monitoring
- Skimming	
- Scanning to locate specifically required information	
- Transcoding information to diagrammatic display	

(Cited in Urquhart & Weir, 1998, p.90)

- discerning patterns of probable correspondence between letters

  and sounds

- recognising the meaning of printed words from whatever cues are

  available (e.g. context)

- decoding a printed message into its spoken equivalent

- being able to reason and think about what is read within the

  limits of personal talent and experience.

(1976, p.12)

It is also suggested by several scholars that reading comprehension processes are related not only to the issue of reading skills, but also to strategies used in different types of reading, or in reading for different purposes, as illustrated in the following matrix of reading types presented by Urquhart and Weir (1998, p.123), as shown in Table 3. This aspect of reading is significant to this study in that as students, participants in the study are required to process texts in a variety of different situations and for several different purposes, and may consequently encounter different linguistic challenges related to the type of reading.

Grabe (2009, p.14) highlights the complexity of the nature of reading, and supports the notion that a comprehensive definition of reading should take into account the different purposes and the varying processes involved in the reading process. He suggests that such a definition of reading should encompass what fluent readers do when they read, what processes they use, and how these processes work together to build a general notion of reading. Grabe (cited in Alderson 2000, p.13) proposes six

components contributing to fluent reading, namely automatic recognition skills, vocabulary and structural knowledge, formal discourse structure knowledge, content/world background knowledge, synthesis and evaluation skills or strategies, and monitoring of metacognitive knowledge and skills.

Table 3

Matrix of Reading Types

	Global	**Local**
Expeditious	A. Skimming quickly to establish discourse topic and main ideas. Search reading to locate quickly and understand information relevant to predetermined needs.	B. Scanning to locate specific information; symbol or group of symbols; names, dates, figures or words.
Careful	C. Reading carefully to establish accurate comprehension of the explicitly stated main ideas the author wishes to convey; propositional inferencing.	D. Understanding syntactic structure of sentence and clause. Understanding lexical and/or grammatical cohesion. Understanding lexis/deducing meaning of lexical items from morphology and context. proposed by Weir (1993) and Pugh (1978).

From Urquhart and Weir (1998, p.123).

Discussing the nature of reading, Alderson (2000, p.12) points out that in the literature on reading research, two fundamental components of reading are commonly recognised, namely decoding (i.e. word recognition) and comprehension as you suggested[5] which includes "parsing sentences, understanding sentences in discourse, building a discourse structure, and then integrating this understanding with what one already knows." This is supported by Koda (2005, p.4) who says that "[c]omprehension occurs when the reader extracts and integrates various information from the text and combines it with what is already known", while Grabe (2009, p. 15) states that "Reading is centrally a *comprehending process*. We read to understand what the writer intended to convey in writing, though we also do more. One reason to point out that reading assumes comprehension is to be clear that all cognitive processing involved in reading is related to this fundamental goal". Samuels and Kamil (1988, p.206) define comprehension as the process of bringing meaning to a text rather than that of getting meaning from the text.

Also discussing understanding, Alderson (2000, p.7) describes several levels of understanding: "a literal understanding of the text, an understanding of meanings that are not directly stated in the text, or an understanding of the main implications of the text". He mentions Gray's distinction between reading 'the lines' (literal meaning), reading 'between the lines' (inferred meaning), and reading 'beyond the lines' (critical evaluation). This notion is echoed by Kintsch and Yarbrough (1982), as

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[5] For the purposes of this study, the terms 'comprehension' and 'understanding' will be taken as having the same meaning, i.e. the act or fact of grasping the meaning, nature, or importance of words or text, or of perceiving the intended meaning of words or text (oxforddictionaries.com).

cited in Alderson (2000, p.7), whose different levels of comprehension include the ability to comprehend the words but not the meaning of a sentence, or the sentences but not the organisation of a text.

During reading, both conscious and automatic mental activity occurs (Alderson, 2000, p.15). Conscious activities include, for example, focusing on specific information or deciding on strategies for figuring out meaning. Automatic activities, on the other hand, include processes such as word recognition and visualisation.

Williams, who defines reading as "a process of perceiving and understanding written language", points out that this definition does not encompass social and cognitive aspects. He argues that since language knowledge is fundamental to low level processing, it is an integral part of reading (1996, p.183).

2.2   Elements of the Reading Process

The literature on reading contains discussion of a wide variety of reading models suggested by various researchers in the field. These models and various approaches will be discussed in more detail in a later section; however, in order to avoid unnecessary repetition, certain fundamental constructs which are common to many of them, such as the role of working memory, metalinguistic awareness and background knowledge, as highlighted in the previous section, will be examined first.

2.2.1   The Role of Working Memory and Long-term Memory

Memory, the mental capacity to store information, is usually divided into long-term memory and short-term memory, also referred to as working memory[6]. Long-term memory stores permanent records of an individual's experiences and knowledge, although information may not be stored in the same form in which it is received (Grabe, 2009, p. 32; Richards et al., 1992, p. 226). While long-term memory is a fundamental component of the reading process, Grabe contends that working memory is a key element in reading comprehension, and that it is an essential component in interaction between higher-level and lower-level cognitive processes (2009, p.32), a notion which is strongly supported by other researchers.

In Van Dijk and Kintsch's model of discourse processing, large amounts of knowledge as well as cognitive information such as beliefs, opinions, and attitudes play a crucial role, and the model presupposes a permanent flow of knowledge between long-term memory and working memory in order to support specific comprehension strategies (Van Dijk & Kintsch, 1983, p.13). Van Dijk and Kintsch also highlight the importance of working memory (pp.165-166,167), and emphasise its central role in discourse processing (Van Dijk & Kintsch, 1983, p.352), arguing that it has both storage functions and processing functions which compete for the limited capacity. Van Dijk and Kintsch further claim that interference with working memory retention has a negative effect on retention of discourse (1983, p.353), a factor which may be significant for L2 speakers who are required to process both the language and the information aspects of the discourse, especially in the light of

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[6] Since short term-memory is also referred to by many sources as *working memory*, for purposes of consistency, the latter term will be used in this study, except in the case of direct quotations.

Smith's (1978, p.36) argument that "if we are too concerned with the print on the page in front of us, we will probably forget what we are reading as we read it." Van Dijk and Kintsch (1983, p.354) also point out, however, the lack of certainty as to what information it is that is stored in working memory, though there is evidence to suggest that a linguistic surface structure, probably phonologically coded, is retained.

The limited capacity of working memory is also mentioned by many other researchers. Grabe (2009, p.32) points out that working memory "has limited storage, limited linkages to long-term memory, and limited abilities to carry out multiple processes simultaneously, or nearly simultaneously", and that information is retained in working memory for one or two seconds only, although the information can remain active for longer. Analysing the role of working memory in reading, Grabe (2009, p.33) posits that it temporarily stores information that has been activated for comprehension processing. This includes information that the reader can consciously examine and reflect upon, more automatic processes such as word recognition and fluent syntactic processing, and various automatic processing routines that can be applied to this information, such as activating phonological information, recognising morphemes attached to base word forms, attending to word order information.

Discussing storage of data in the mind during the reading process, Field (2003, p.18) explains that information currently being processed is stored in the working memory, while knowledge is stored in the long-term memory As a single word is read, the sensory image of the form of the word is temporarily stored in the working memory, while the reader seeks to identify the word by making a search of the lexical

information stored in the long-term memory. Since the working memory has a limited capacity, it retains only the specific information required for an immediate purpose. Such information must be rapidly transformed into pieces of abstract information which can be transferred to the long-term memory so as to avoid congestion of the working memory.

The role of memory is also mentioned by Downing (1995) who points out that in many languages, a referent is usually encoded by a lexical noun when first appearing in a text, followed thereafter by pronouns or zero anaphora, but that if there has been an extended interval after the first appearance of the referent, a lexical noun may once again be used. Downing suggests that this may be due to the fact that "human beings seem to be able to keep information in consciousness for only a short time without rehearsing it; if the referent has been absent from the stage for a while, it is likely that it is no longer in the focus of the reader/hearer's consciousness, necessitating re-mention with the semantically richer form" (1995, p.12).

2.2.2   Metalinguistic Awareness and Metacognition

A further important consideration with regard to proficiency in reading comprehension, and one which is a component in many approaches and models discussed by researchers, especially with regard to English L2 speakers and to individuals who speak more than one language (Alderson 2000, p.41, Alanen, Dufva, Sajavaara, Mäntylä , Aro & Miettinen, 2006, Koda, 2005; Mora n.d.), is the role of metalinguistic awareness and metalinguistic knowledge. Metalinguistic knowledge is defined as knowledge of the forms, structure and other aspects of a language which

an individual acquires by reflecting on and analysing the language (Richards et al., 1992), or in simpler terms, metalinguistic knowledge involves knowing what one knows about a language, as opposed to simply knowing the language, while metalinguistic awareness (MA) is defined as:

> [a]n awareness or bringing into explicit consciousness of linguistic form and structure in order to consider how they relate to and produce the underlying meaning of utterances. MA is also termed metalinguistic ability. The construct describes the ability to make language forms objective and explicit and to attend to them in and for themselves. MA is the ability to view and analyse language as a "thing," language as a "process," and language as a "system." MA in bilingual learners is the ability to objectively function outside one language system and to objectify languages' rules, structures and functions. Code-switching and translation are examples of bilinguals' MA. (Mora, n.d)

The role of MA in reading comprehension, specifically with regard to attentional processing, is highlighted by Grabe (2009, p.53), who defines it as "expanding the use of linguistic information at a metacognitive level. In this way, linguistic knowledge of various types is analysed intentionally to support reading tasks, particularly when the reader is encountering significant comprehension difficulties." Grabe (2009) cites Nagy's (2007) Metalinguistic Hypothesis which posits that the development of academic reading abilities is underpinned by metalinguistic awareness at several levels, including:

1. Awareness of word-learning skills (e.g., using context, using word part information, and building new definitions)

2. Awareness of syntactic structuring (e.g., recognising syntactic categories for new words, using syntactic information as context information, enhancing fluency, and disambiguating lexical meanings and discourse organisation)

3. Awareness of discourse organisation (recognising genre clues, determining main ideas, recognising discourse patterns in the text) (p.53)

The notion that knowledge of word part information is a significant element in MA is also discussed by Koda (2005, p.77), who argues that "word knowledge includes an understanding of the relative frequency of a word in speech and print, syntactic and semantic constraints on its usage, its underlying form and possible derivations, various associations with other words, and so on", and that in order to access lexical information, a reader must be able to recognise the significance of changes in a word's form and function according to usage in a particular context.

2.2.3 Background knowledge

While a reader's background knowledge is widely recognised as a significant factor underpinning reading comprehension, it has not always been regarded as such with regard to L2 reading. In the traditional view of second language reading comprehension, as described by Carrell and Eisterhold (1988, p.73), the emphasis is on the target language itself rather than on the reader, with each word, sentence or passage of text being accepted as 'having' a meaning in itself, independent of speaker, writer, listener or reader. Nonetheless, the role of background knowledge in L1 reading comprehension has long been recognised by researchers, and as pointed out by Williams (1996, p.183), the effects of background knowledge have been

frequently demonstrated in L2 reading (e.g. Alderson & Urquhart, 1988; Koda, 2005; Steffensen & Joag Dev, 1984).

Discussing factors underpinning the reading process, Smith (1978, p.77) argues that each reader has a mental theory regarding the nature of the world, and that this theory, which underpins the reader's perception and understanding of the world, as well as his or her hopes, fear, motives, expectancies, reasoning and creativity, is the individual's sole resource for interpreting events in the world.

Elaborating on the nature of background knowledge, Smith (1978, pp. 13-14) discusses the role of visual and nonvisual information in reading comprehension, arguing that 'visual information disappears when the lights go out, nonvisual information is in your head already, behind the eyes…both are required for reading...There is a reciprocal relationship between the two…the more nonvisual information you have when you read, the less visual information you need … the less nonvisual information …the more visual information you need'. Smith posits that this reciprocal relationship is fundamental in reading comprehension, since the brain's capacity to process visual information is limited (Smith, 1978, p.14), and that prior knowledge of word usage in English will facilitate processing by reducing the number of alternatives and consequently the amount of information required for identification of words:

> Smith (1971) claims that non-visual information transcends the text,
> and includes the reader's experience with the reading process,
> knowledge of the context of the text, familiarity with the structures

and patterns of the language and of specific text types, as well as generalised knowledge of the world and specific subject matter knowledge.

<div align="right">(Alderson, 2000, p.17)</div>

Smith (1978, p.30) uses the term 'tunnel vision' to describe what happens when a reader's brain is overloaded with visual information, arguing that the availability of a lot of nonvisual information allows the reader to process longer lines of type at one glance, whereas the less nonvisual information the reader has, the less type he or she sees at one time, with the brain becoming overloaded with the processing of visual information. He adds that "It is not difficult to give adults tunnel vision…by asking them to read something that they do not understand very well".

The role of background knowledge in reading comprehension is also highlighted by Urquhart and Weir (1998, p.87), who suggest that where teacher and students come from a wide range of backgrounds and cultures, there may a potential problem arising from varying comprehensions, and by Celce-Murcia and Olshtain (2000, p.129) and Van Dijk and Kintsch (1983, p.11), who argue that in order to make connections between a writer's ideas and his or her own background, a reader needs general knowledge of the world. According to Urquhart and Weir (1998, p.113), it is generally agreed among reading theorists that background knowledge and different interpretations of the same text are of fundamental importance in reading comprehension. This notion is supported by Gawron, (2008, pp.1-2) who argues that "the variety of word meanings is the variety of human experience" and that "words

are hard to define, not so much because they invoke fine content specific distinctions, but because they invoke vast amounts of background information."

Koda (2005, p.137) posits that in addition to background knowledge, a further critical factor in text comprehension is a well-grounded content-specific conceptual base on the part of the reader, and that what the reader extracts from a particular given text can, to a large extent, be predicted by the reader's knowledge of this content. Koda (2005, p.141) further argues that adult L2 readers, although they may have limited L2 knowledge, nonetheless, as adults, possess substantial conceptual knowledge, since "it is possible to assume a fully developed mother tongue language system which is mapped onto and realises a speaker's cognitive competence" (Johnson, 2002, p.15). Adult L2 readers might thus sometimes rely on background knowledge rather than on textual information during text processing, thus becoming more susceptible to misunderstanding and misinterpretation.

With regard to the notion that readers draw on specific areas of their knowledge as a framework for processing text, Van Dijk and Kintsch's (1983) model of discourse processing proposes that one of the most important types of knowledge is causal relations (Van Dijk & Kintsch, 1983, p.46):

> Causal relations exist between states and events in the physical world.
> Knowledge about them is often crucial for interpreting a text
> (Norman & Rumelhart, 1975; Schank, 1975; Schank & Abelson,
> 1977; Warren, Nicholas, & Trabasso, 1979). Typically, a text leaves
> some crucial causal relationship implicit, and readers have to supply

this missing link from their own knowledge. As it turns out, people

are often not very good at this task, and arrive at misrepresentations

that grossly distort the actual causal relations in the system (Stevens,

Collins, & Goldin, 1979; Graesser, 1981).

The role of background knowledge is particularly emphasised in models based on

schema theory which posits that a text does not, in itself, carry meaning, but rather

directs readers towards retrieving or constructing meaning from their own knowledge

(Carrell and Eisterhold 1988, p.76). This knowledge encompasses knowledge of

orthographic conventions, as well as background knowledge going beyond the

situational context existing in the text (Williams, 2008, p.590). According to

Alderson (2000, p.17) schema-theoretic models, as they are called, posit the filtering

of information contained in a text through the activation of networks of information

stored in the brain (schemata). Alderson's view is that readers' understanding of texts

is influenced by the nature of their knowledge, and that during the reading process,

readers integrate new information from the text with their knowledge, or what

Alderson terms 'pre-existing schemata' (2000, p. 33).

Some researchers posit that there are various types of schemata. Carrell (1988, p.104)

for example, describes formal schemata, referring to background knowledge of the

formal rhetorical organisational structure of the text, and content schemata which

include knowledge of the world and background knowledge of the content area of the

text.

Koda describes various versions of schema theory (2005, p.137). One version holds that irrelevant information is filtered out when knowledge activation is regulated by schemata and other structured knowledge serving as cognitive control mechanisms, so that the reader is predisposed to interpret input in a particular way. Variations in text interpretation among readers from different backgrounds would thus be the result of this form of conceptualisation based on previous knowledge. Van Dijk and Kintsch (1983, p.47) describe schemata as packets of knowledge which cut across content, and which may contain subsets which can also function independently. Each schema performs a variety of functions such as providing a basis for interpreting the text by combining the semantic units provided by the text with the 'conceptual skeleton' derived from the schema (Van Dijk & Kintsch, 1983, p.48), and stimulating top-down processing such as dealing with missing information.

Also related to background knowledge, mental-model theories go beyond schema theory to include perceptions of task demands and task performances, and research in this field explores how people perform tasks and solve problems. Mental-model theories include the notion that the mind constructs psychological representations of real, hypothetical, or imaginary situations as a result of perception, imagination and knowledge, and the comprehension of discourse (Johnson-Laird, 2009), and propose different explanations for information elaboration arising from knowledge-activation patterns. One such model is proposed by Kintsch (cited in Koda, 2005, p.137), who argues that knowledge activation is "an uncontrolled, bottom-up process, determined only by the strength of the associations between items in long-term memory and the text". In this model, therefore, schemata do not override information explicit in the

text, with the result that inappropriate information stored in long-term memory is initially activated by text input, although it is quickly deactivated if it is does not fit the syntactic, semantic, pragmatic or other constraints imposed by the rest of the text.

Also related to the issue of background knowledge are the various levels of communication discussed by Katan (1999, p.34), including metamessage, context, frames and prototypes. According to Bateson (1972, p.247), an utterance can have meaning at different levels. It can have a message, but it can also have one or more metamessages. In other words, there is the obvious meaning of the words and at the same time the communication contains metamessages regarding the attitudes, feelings, and perceptions of the person giving the message. Bateson (1972, p.247) argues that the larger context of a given message may change the mode of that message (e.g. place it in the category of humour, metaphor etc.), or the setting may make the message inappropriate, or the message may be out of tune with the larger context.

Closely related to the notion of metamessage is the term 'frame', as discussed by Bateson (as cited in Katan,1999, p.35), who distinguishes between 'context' and 'frame' thus: " 'frame' is an internal psychological state and makes up part of our map of the world, whereas context is an external representation of reality." Gawron (2008, p.4) defines a frame as "the conceptual background against which the relevant word senses are defined", arguing that frames "provide context for elements of interpretation; their primary role in an account of text understanding is to explain how our text interpretations can (validly) leap far beyond what the text literally

says." Frame semantics, therefore, is based on the assumption that a word is usually defined against a background concept, and that there will be a set of words belonging to the same conceptual background (Gawron, 2008, p.8). For example, words such as *court*, *judge*, *jury*, *lawyer* would usually be defined against a conceptual background of a criminal trial.

According to Tannen and Wallet (1987, p.206), the term 'frame' represents the notion of structures of expectation, which are culturally determined (as cited in Katan, 1999, p.35). Petruck (2001, p.2) likewise highlights the importance of cultural context in defining and understanding words. This view accords with Minsky's theory (as cited in Cerula, 2002, p.116) that a frame encompasses two characteristics: those that are always applicable in a given situation, and those (which he terms 'terminal slots') which change in value according to what the situation dictates. An example of this might be the frame for 'house'; characteristics which are always true are that the house will have a floor, walls and a roof, but the terminal slots contained in the frame may change, for example, according to traditional methods of construction. For students who grew up in a rural environment, for example, the frame for house might be a structure typical of homesteads in the rural regions in the north of Namibia.

It has also been posited by some scholars, including Fillmore (1982/2006) that individuals develop systems of linguistic choices associated with prototypical instances of a frame, thus forming special linguistic frames, termed "formats", which

enable the brain to "successfully interpret incoming text, language and 'second hand' experience" (Cerula, 2002, p.117).

The notion of frameworks for processing texts and accessing meaning is also encompassed in discussions of frame semantics. Fillmore (1982/2006, p.373) argues that because of the way concepts encompassed in a frame are related to each other, understanding of any one of these concepts requires understanding of the complete structure into which that concept fits, and that introduction of one of the concepts into a text automatically makes all of the others available.

Furthermore, Fillmore argues that frame semantics not only presents a specific way of viewing word meanings, but also offers a characterising principle on which to base the creation of new words and phrases, the addition of new meaning to words, and the construction of the overall meaning of a text through combining the meaning of elements in the text.

Frame semantics as related to lexical properties of texts will be discussed in more detail later in this section.

The term 'prototype' is also related to frame. In contrast to the classical approach of defining a concept according to strict defining features, cognitive psychologist Eleanor Rosch proposed the Prototype Theory in the 1970s as a more flexible approach (Cerula, 2002, p.115) to explaining "how people categorise information, and how they deal cognitively with their perceptions of the world 'out there' "

(Johnson, 2002, p.12). According to this theory, a category is defined by some prototypical member, and other members are judged by the extent of their similarity or dissimilarity to this member. Katan (1999, p.36) argues that "for communication to take place there will have to be some form of matching between the event in reality and the internal representation which would include the prototype in a frame", while Hudson (1996, pp.75-8) believes that prototype theory accounts more easily for how people learn to use linguistic concepts according to the kinds of instances they encounter. The example which Hudson uses as illustration is that of a baby learning the concept of 'a place for sleeping in'; while the prototype is the baby's own cot, the concept will depend on cultural expectations, or what other people in a particular social group expect the baby to do (p.76).

Knowledge of the use of language in social contexts and the ways in which people produce and comprehend meanings through language may also differ from one language community to another, and may also impact the processing of text. Since successful reading comprehension requires an understanding of the communicative value of sentences, readers need to recognise how the interpretation and use of utterances depends on world knowledge, and how the structure of sentences is influenced by the relationship between the speaker or writer, and the listener or reader (Richards et al., 1992) and how language is used to communicate in different social contexts (Btoosh & Taweel, 2010; Davies & Elder, 2006). Similarly, Colilli (2006, p.639) cites Eco's (1997) view that a text written for a particular "community of readers" will be read not according to the intentions of the author, but rather according to what Eco refers to as the "social treasury" of the community,

encompassing (in addition to the grammatical rules of a language) "the cultural conventions that the language has produced and the very history of the previous interpretations of many texts", including the text that the reader is in the course of reading.

Increasing recognition in recent work on language, thought and action of the importance of factors such as those discussed above is summarised by Fauconnier and Turner (1998/2006) as follows:

> Under the old view, there were word meanings, syntactic structures, sentence meanings (typically truth-conditional), discourse and pragmatic principles, and then, at a higher level, figures of speech like metaphor and metonym, scripts and scenarios, rhetoric, forms of inductive and deductive reasoning, argumentation, narrative structure etc. A recurrent finding in recent work has been that key notions, principle and instruments of analysis cut across all these divisions …
>
> (p.303)

In the light of the views outlined above, it is clear that for L2 readers, differences in language background, culture and world knowledge play a significant role in interpretation of text.

2.3   Approaches to Reading Research

As mentioned earlier, the literature on reading presents several different views on what exactly the term 'reading' encompasses, and describes a number of models of

the reading process, ranging from earlier, more traditional, bottom-up or top-down models to later models which focus on an interactive approach.

2.3.1 Models of Reading

Models of reading discussed in the literature fall into three main categories, namely, bottom-up models, top-down models and interactive models.

2.3.1.1 Bottom-up vs. Top-down Models

The major distinction between the bottom-up and the top-down approaches is that the bottom-up approach emphasises text-based variables such as vocabulary, syntax, and grammatical structure while the top-down approach focuses on reader-based variables such as the reader's background knowledge, cognitive development, strategy use, interest, and purpose (Lally, 1998, as cited in Goh & Hashim, 2006, p.40).

In bottom-up models, reading is a data driven process (Field, 2003, p. 23; Williams, 2008, p.589) consisting of a number of sub-processes which occur independently of each other and are built on preceding sub-processes. The reader recognises graphic stimuli, decodes them to sound, recognises words and decodes meanings (Alderson 2000, p.16). Carrell (1988, p.101) describes bottom-up processing as 'decoding individual linguistic units (e.g. phonemes, graphemes, words) and building textual meaning from the smallest units to the largest, and then modifying pre-existing background knowledge and current predictions on the basis of information encountered in the text', while according to Urquhart and Weir (1998, p.42), in

bottom-up processing, the reader accepts the author as the authority, and processes the text word for word.

Top-down processing, on the other hand, is knowledge driven since it involves using higher-level information to support lower-level processes such as word recognition (Field 2003, p. 23; Williams, 2008, p.589). In top-down models, built on theories proposed by Smith (1978) and Goodman (1988), emphasis is on the contribution of the reader and the knowledge that he or she brings to the text (Urquhart & Weir, 1998, p.42). Although this view, usually referred to as the psycholinguistic model, has had considerable impact in the field of reading research, Grabe (1988, p.57) points out that questions have been raised with regard to how the model applies to L2 readers, thus highlighting the importance of further research in this regard.

According to Carrell and Eisterhold (1988, p.77), an important aspect in considering top-down and bottom-up processing is that both should be occurring at all levels simultaneously; bottom-up processing allows readers to detect novel information, or information which seems to be inappropriate to their on-going hypotheses about the content or structure of the text, while top-down processing guides readers in resolving ambiguities or choosing between alternatives when incoming data suggests more than one possible interpretation.

Celce-Murcia and Olshtain (2000, pp.121-122) argue that since interpretation of text requires both top-down processing involving a global interpretation process, and bottom-up processing which relies on both

semantic and syntactic information, L2 readers need skill in both types of processing.

2.3.1.2   Interactive Models

Aspects from both top-down and bottom-up models are encompassed in a more recent approach to reading, namely, the interactive approach. In the literature, two different interpretations of the interactive approach are presented. One interpretation focuses on reading as a process in which "the reading activates a range of knowledge in the reader's mind that he or she uses, and that, in turn, may be refined and extended by the new information supplied by the text" (Grabe, 1988, p.56), while the other focuses on how lower-level and higher-level processes work together interactively as parts of the reading process. According to Grabe (1988, p.58), "in interactive models, the issue is not the relation of the reader to the text but the processing relations among various component skills in reading." This approach is illustrated in Figure 1.

```
graphic features---------------------------
letters,------------------------------------
words--------------------------------------
phrases------------------------------------
sentences----------------------------------            READING
local cohesion-----------------------------
paragraph structuring---------------------
topic of discourse------------------------
inferencing world knowledge.
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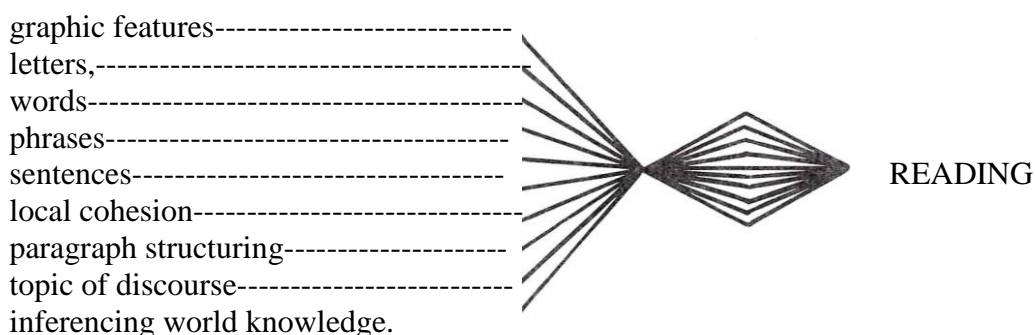
Figure 1. A simplified interactive parallel processing sketch
(Grabe 1988, p.58)

While there are several models of the reading process based on the interactive approach, one of the most widely cited models within applied linguistics is Stanovich's compensatory interactive model (1980) which integrates concepts from several different sources (Samuels & Kamil, 1988). Williams (1996) summarises these concepts as follows:

> Stanovich's model ... incorporates cognitive and social aspects for which there is ample research evidence, namely schema theory (Anderson and Pearson, 1988), and 'reading as a psycholinguistic guessing game' (Goodman, 1967) as well as the view that reading involves sight recognition of words, whether it be automatic and based on graphic information (Carr and Levy, 1990; Hoover and Tunmer, 1992; Perfetti, 1985; Stanovich, 1980; van Dijk & Kintsch, 1983) or achieved through phonological coding (Gough and Tunmer, 1986). Reading comprehension, in the above model [Stanovich's model], results from an interaction of bottom-up processing (receiving orthographic information from the page) with various knowledge schemata (cf Eskey, 1988). The latter include knowledge of orthographic conventions, and of language itself as well as cultural or academic 'background knowledge'. (p.183)

According to Grabe (1988, p.63), issues in L2 reading are encompassed more fully in Stanovich's model, as well as in Perfetti's verbal efficiency model which argues that "reading comprehension should not be equated with thinking and its concomitant general inferential problem-solving strategies, but more narrowly with processes specific to reading" and that "processes of lexical access, proposition integration, and text model building form the core of [the] verbal efficiency model, with lexical access receiving primary emphasis."

Against this background of models of reading and reading research, the next section will focus more specifically on the role of language in L2 reading. Various interpretations of terms such as *first language*, *second language* and *mother tongue* will be explored, as will views on the possible effects of bilingualism and of various levels and types of language proficiency on reading comprehension.

2.4   Language as a Factor in L2 Reading Comprehension

An essential aspect in examining reading comprehension is the extent to which an individual's reading proficiency is influenced by the various languages in his or her language repertoire. In the Namibian context, an individuals' language repertoire usually includes at least one or two (and often more) languages in addition to the mother tongue, so that a distinction between mother tongue, first language (L1) and second language (L2) becomes important for this study.

Although it is obvious that the term L2 refers to a language acquired and/or learned by an individual in addition to the language which he or she learned first, the precise nature of languages described by the terms L1 and L2, as well as by other commonly used terms such as 'mother-tongue' and 'native language', is not so clear cut, as will be discussed in the following sections.

2.4.1   Status of Local Languages

Much of the literature pertaining to reading focuses on studies done outside Africa, and the majority of the studies in the literature refer to minority language groups,

whereas in the Southern African situation in general, and in Namibia in particular, L2 speakers of English are in the majority. However, Batibo (2001, p.124) points out that although some African language are spoken by large numbers of people, they perform a lower function than higher status languages, and can therefore be referred to as minority languages. For the purpose of this paper, this interpretation will be applied where appropriate.

2.4.2   Definition of Mother Tongue

When examining the educational and cultural context in which an individual acquires and applies reading skills, it is important to establish which language has the strongest cultural and linguistic influence. Since it is generally accepted that an individual is moulded primarily in the culture of his or her mother tongue, it is necessary to consider what is meant by the term 'mother tongue'. The literature reflects differing definitions of the term which may vary according to different situations. According to both Skutnabb-Kangas (1988, pp.16-17) and UNESCO (2003, p.15), definitions of the term 'mother tongue' may encompass the language/s that an individual learns first, the language/s an individual identifies with, or which others perceive as the individual's native tongue, the language/s the individual 'knows best', and the language/s he or she uses most. UNESCO also states that " 'mother tongue' may also be referred to as 'primary' or 'first language'" (p.15). It is interesting that the definitions suggested by both Skutnabb-Kangas and UNESCO, in using the plural alternative (language/s), imply that an individual may have more than one mother tongue.

The issue is further complicated by the fact that a native speaker may use variants of his or her language, so that the language to which a child is first exposed and the formal school version of this same language may not be entirely the same (UNESCO 2003, p.15).

The Pan South Africa Language Board (PanSALB) implicitly acknowledges that a child's mother tongue is not necessarily the language he knows best. In its recommendations on the policy for language in education in South Africa, it states that "[t]he focus of the Foundation Phase must lie with the *development of literacy in the first language*. By this we mean particular attention to the systematic development of reading and writing in the language (or languages) that the child knows best." (PanSALB 2001) [emphasis in the original]. Since this is the interpretation which best suits the Namibian context, it is the one which will be adopted in this study. In exploring factors affecting reading comprehension, this study will address aspects of culture and background knowledge from the perspective of the L1 being the language whose culture the individual identifies with, while for linguistic aspects, the L1 will be taken as the language the individual knows best[7], keeping in mind that these two perspectives are not necessarily the same, and in some cases may even conflict.

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[7] Although the term 'the language the child knows best' is widely used in the literature, few sources explain precisely what is meant by this. For the purposes of this study, the term will be taken as referring to the language in which an individual has the most highly developed competence, and which he or she is most comfortable using.

2.4.3 Bilingualism

An important characteristic of the participants in this study is the fact that they all, without exception, speak two or more languages or dialects to some degree or another. Desai (1994) describes the complexity of the linguistic situation in Africa, and quotes Fardon and Furniss (1994) as saying that "Multilingualism is the African Lingua Franca [which] is a multilayered and partially connected language chain that offers a choice of varieties and registers in the speaker's immediate environment". This is supported by Nurse (2006, p.679) who describes how in most African countries, "young people are born into one language community, are formally educated in a second language, and may acquire a third language later".

Since the linguistic and cultural background of individuals is a significant element in the reading process, and one which may be influenced by different patterns of bilingualism or multilingualism, the language skills of students in Namibia should be considered in the light of the various types of bilingualism described in the literature. In this regard, an issue which comes under discussion is that of conversational or surface fluency, which involves the ability to converse on simple everyday topics and is acquired relatively quickly, versus academic language competence which may take five to seven years or longer to acquire. This distinction was suggested by Skutnabb-Kangas and Toukomaa in 1976 (cited in Baker 1996, p.11) and is supported by Cummins' description in 1979 of basic interpersonal communicative skills (BICS) and cognitive academic language (CALP) (Cummins, 2008, p.71). This distinction highlights the fact that students who appear to be fluent in English may nonetheless

perform poorly on English academic tasks (Cummins, 2008, p.72), a factor which is significant to this study, since reading is an integral part of most academic tasks.

2.4.4 English in Namibia: Second Language or Foreign Language?

Many sources in the literature discuss reading with specific reference to English as a Second Language (referred to in the literature either as L2 or ESL) or English as a Foreign Language (referred to as FL or EFL) readers. It is therefore important in the context of this study to determine whether non-native readers of English in Namibia can be classified as second language or foreign language readers, or whether they should be placed in a separate category.

According to Richards et al. (1992, p.142), in different countries, different meanings of the terms ESL and EFL are applied. In North America, for example, the terms ESL and EFL are both used to describe individuals who learn a language (usually in a formal situation such as a classroom) for the purpose of communicating with foreigners or for reading printed materials in that language. In the literature, however, discussions focusing on EFL generally refer to individuals learning English in countries where English is not a language of majority (Cautrell, 2010), one of the main distinctions between ESL and EFL being the purposes for which English is learned, as outlined above.

On the other hand, in British usage, a distinction is made between foreign language and second language. According to this distinction, a foreign language is a language which is taught as a school subject but which is not used as a medium of instruction

in schools nor as a language of communication within a country. This clearly does not apply to Namibia since English is the country's official medium of instruction in schools from Grade 4 on. In contrast, a second language is a language which is not a native language in a country but which is widely used as a medium of communication (e.g. in education and government) and which is usually used alongside another language or languages, which closely reflects the situation in Namibia.

In the literature, the term ESL is typically used in both Britain and North America to refer to non-English speakers who learn to speak English while living in Anglophone countries such as Canada, Australia, and the United States. However, the term ESL is also sometimes used to speak of people who live in a country where English is the official language, but where the vast majority of the population speak another native tongue, with the result that English is the second (or third or fourth in many cases) language learned by the individual (Nutt, 2009), as is the case in Namibia.

A further characteristic of ESL students, as discussed by Nutt (2009), which also applies to students in Namibia such as the participants in this study, is that their first-language literacy skills may vary widely, since some may have had very little schooling in their L1s. Furthermore, in addition to the need for 'survival English', many of these ESL students will continue their tertiary education through the medium of English and will thus need to use English for academic tasks such as writing research papers or giving presentations.

In the light of the arguments above, learners of English in Namibia would generally be classified as ESL (or L2) learners. However, in examining language related constraints in reading English, the issue of level of proficiency is an important consideration. Non-native users of English may sometimes achieve proficiency almost equivalent to native users; however, since language proficiency encompasses speaking, understanding, reading and writing a particular language, it should be kept in mind that an individual who has high proficiency in one of these skills may not necessarily be proficient in all of the others; therefore, non-native speakers of English may, for example, speak the language with a reasonable degree of fluency yet have difficulty reading it. For this reason, constraints pertinent to less efficient readers (such as EFL readers) have also been included for discussion in this study.

An important point to be noted here concerns the terms to be used in this paper to describe various categories of non-native readers of English. Although the researcher recognises the importance of consistency, a consideration of the multifaceted nature of English usage and proficiency will show that no 'catch-all' term exists which denotes readers for whom English is not their L1while at the same time encompassing distinctions in aspects such as proficiency, usage, context and so forth. In the literature, there is considerable variation among scholars with regard to the use of the terms L2 and ESL. In the context of some discussions, these terms are not always interchangeable since the term L2 may be used to refer to factors which are pertinent to second-language reading in general, regardless of language, while the term ESL may be used in discussions of factors which apply to English alone. For the purposes of academic integrity, therefore, the researcher will adhere in this literature review to the terms preferred by individual scholars in specific contexts.

Furthermore, where an issue being discussed may apply to L2, ESL and EFL readers alike, the term *non-native* will be used.

2.4.5   Relationship between Language Proficiency and Reading Proficiency

In the Namibian context, the relationship between the language and reading proficiency of students should be considered against the background of the language policy as well as the reality of its application as described in Section 1.1.3. This relationship has a significant influence on how and when children in southern African countries acquire L1 and L2 reading skills which, according to the literature, can have a significant effect on reading comprehension. Furthermore, although many studies have been carried out to investigate difficulties in both L1 and L2 reading, it should be kept in mind that, as Williams (2008, p.584) points out, many individuals in Africa either first learn to read in their chronological L2, or they only learn to read in the L2. This is particularly true of students in Namibia, such as the participants in this study.

Research on L2 reading skills indicates that an important issue in the development of reading skills is that of the potential benefit to L2 reading and writing skills which arises from increased development of L1 skills. According to Hornberger (2003, p.21) studies by Rosier and Holm, Reyes, Genesee, Moll, Diaz, Zutell and Allen provide evidence of such benefits, with theoretical support provided by Cummins' linguistic interdependence hypothesis and Lambert's theory of additive and subtractive bilingualism. Hornberger (2003, p.21) argues that results from such studies support Thonis's (1981) claims that "hasty, premature introduction to the

second writing system may result in two weak sets of [reading/writing] skills"

(p.178).

A study by Faltis, researching the transfer of decoding skills from L1 to L2 in

beginning reading, indicated that learners' proficiency in the L2 plays a fundamental

role in the transfer process, supporting the notion that highly developed reading and

writing skills in the L1 do not compensate for lack of knowledge of the L2

(Hornberger, 2003, p.21). As to whether the reverse is true, that weak L2 reading

proficiency is a result of inadequate L1 reading, Alderson (2000, p.24) points out that

there is little support in the literature for this notion.

Discussing whether L1 reading skills can be transferred to reading in an L2,

Alderson (1984, p.26; 2000, p.39) posits a language threshold which L2 readers need

to cross before L1 reading skills can be transferred. However, in the context of this

study, it would be of limited value to attempt to address this question since a number

of languages spoken in Namibia have a mainly oral tradition (Tötemeyer, 2009) and

limited written material, and the possibility thus exists that there may be participants

who did not first learn to read in their L1. Grabe (1988, p.57) argues that one cannot

be sure whether L2 students read in their L1, nor can one be sure about how, why

and what they might read. One clearly cannot assume, therefore, that L2 readers of

English have well-developed L1 reading skills which can be transferred.

With regard to students who might nonetheless have well-developed L1 reading

skills, Alderson (1984, p.10) presents evidence both for and against the argument that

these reading skills can be transferred to L2 reading. On the one hand it can be argued that one cannot assume that proficient L1 readers will apply the same successful reading strategies in an L2, since there is the question of whether processing during reading is different for different languages, and whether reading strategies are language specific. According to this view:

> if the strategies are language-specific, it follows that to the extent that the languages concerned are markedly different in their structures, so too will be the strategies required to read texts written in the respective languages … However, a good knowledge of the linguistic structure of the foreign language would then be expected to lead to good reading in the foreign language, regardless of the first-language ability. (Alderson 1984, p.10-11)

On the other hand, Alderson cites evidence presented by Ulijn (1978) which suggests that contrasting structures and aspects of linguistic contrast between first language and second or foreign language are not likely to cause comprehension difficulties or slower reading rates:

> Ulijn and Kempen (1976) conclude that:
> Under normal conditions reading comprehension is little dependent on a syntactic analysis of the text's sentences. It follows that second language reading comprehension is possible without mastery of the contrasting parts of the second language's syntax. Usually, the reader's conceptual knowledge will compensate for the lack of knowledge about linguistic contrasts between L1 and L2.
> (cited in Alderson 1984, p.12).

Alderson (1984, pp.12-13) cites Ulijn and Kempen (1976) as claiming that conceptual knowledge underlies what they suggest are the two major processes of comprehension. One of these is sentence parsing and inference, the other being reconstruction of the complete message from the partial message contained in the text. Ulijn and Kempen (1976) contend that this conceptual knowledge includes both the reader's "knowledge of the text's subject area" (p.495) and knowledge of word meanings, particularly content words rather than function words. In their view, it is not inadequate knowledge of grammar which underlies poor reading comprehension in a language other than the L1, but rather lack of conceptual knowledge.

Cue-usage on the part of L2 readers has also been found to differ according to their L2 proficiency. Studies by McDonald and by Kilborn and Ito (as cited in Koda, 2005, p.113) indicate that while L1-based tendencies in text processing were observed at all proficiency levels, advanced L2 learners increasingly moved toward cues typically used by native-language readers of the target language, thus suggesting a systematic developmental shift from using L1 cues to using L2 or target language cues..

The issue of the impact on reading of typologically diverse languages is discussed further in Section 2.8.

Linked to the issue of the transfer of L1 reading skills is a further question which has been raised in research on reading in an L2, namely whether reading difficulties in

the L2 are rooted in a reading problem or a language problem. Alderson (2000, p.23) suggests that while both factors play a role, when the L2 proficiency of learners is low, the problem is more likely to be a language problem. Williams (1996) concurs that both language problems and reading problems contribute to L2 reading difficulties, though the role of each differs according to different contexts.

2.4.6 Use of L1 in L2 Reading Comprehension

Strategies for using both the L1 and the L2 during the L2 reading process have been found to play a significant role in reading comprehension in a number of ways.

With regard to individual L2 readers, the use of translation from the L1 as a cognitive strategy in L2 reading, and the role of the language of thought are highlighted in a study by Goh and Hashim (2006), the results of which indicate that L2 readers frequently rely on translation in the process of comprehending:

> It was interesting how the students switched back and forth between the semantic level and syntactic level of the text that posed many difficulties and challenges before them. As they tentatively assigned L1 meanings to L2 words that seemed to block their comprehension, they also checked their comprehension at the sentence level, frequently using the L1 in doing so (Goh & Hashim, 2006, p.43).

On the other hand, a study by Parry (1994) of the reading strategies of a group of Nigerian students who spoke at least three languages, usually including their own and one other local language, indicated that this type of multilingual repertoire affected students' interpretive strategies in two ways:

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First, it meant that they did not use translation as a technique for reading English, for the topics of their academic reading were ones they rarely had occasion to speak about in any of their other languages. Second, because they spent so much of their time talking in their second (or third or fourth) language with people who were using an L2 themselves, they did not expect linguistic accuracy. That being the case, it did not make sense for them to look closely at the linguistic forms used when a problem of comprehension came up; elucidation was far more likely to come from considering the general tenor of the discourse and relating it to the context of situation.

(Parry, 1996, p.681-682)

Also relevant to this study is Banda's (2003) study of literacy practices among ESL students which included an investigation of the simultaneous use of the L1 and the L2 for academic purposes. One of the negative consequences pointed out by Banda, and one which has potential implications for reading comprehension, is that if a question is translated into the L1, learners 'think' in the L1 and then try to translate concepts into the L2, a process which often results in miscommunication. Banda found that students not only had difficulties discussing academic work in their L1, but also confused concepts by merely swapping labels between the L1 and the L2, not being aware that the meaning of particular labels may not be the same in the L1 and L2. Banda argues that a further problem is that definitions gleaned from dictionaries do not always convey essential sociolinguistic and applied linguistic concepts (Banda, 2003, p.10).

This is supported by Prince (1996, as cited in Jahangard et al., 2010) who argues that even if an L2 reader knows the translations for specific words, this does not necessarily mean that he/she will be able to access the appropriate meaning in an L2 context.

On the other hand, according to Koda (2005, p.250), lexical processing during L2 reading comprehension may be facilitated by the use of cognates, i.e. orthographically and semantically similar lexical items, and thus the extent to which the L1 and the L2 share cognates (or do not share them, as the case may be) may constitute a significant factor underlying performance in reading comprehension.

2.5   Culture-Related Factors Influencing L2 Reading Comprehension

With regard to L2 reading comprehension, an important element, as discussed in Section 2.2.3, is background knowledge, including cultural background, many facets of which are discussed in the literature. This section will explore definitions of culture, followed by discussions of factors impacting comprehension such as culture-specific background knowledge, cultural environment, and the role of culture in aspects such as the development of literacy skills.

2.5.1   Definition of Culture

According to Halliday (1977, as cited in Colilli, 2006, p.630), text is "the primary channel of the transmission of culture". The complexity of pinpointing exactly what the term 'culture' encompasses is aptly reflected in the following quotation, as cited in Katan (1999, p.16):

> Whenever I hear the word 'culture' ... I release the safety-catch of my
> pistol (Hanns Johst in *Schlageter;* a quotation often attributed to
> Goering).

Since the term 'culture' may be interpreted differently in different fields of study, and is furthermore sometimes misunderstood and misused, the interpretation used in this paper will first be clarified.

In 1976, Hall (cited in Katan, 1999, p.29) developed the iceberg analogy of culture, namely that if the culture of a society were to be perceived as an iceberg, some aspects (such as laws, customs, rituals, gestures, ways of dressing, food and drink and methods of greeting) would be visible above the water, but a larger, more powerful portion (including beliefs, values and thought patterns) would be hidden beneath the surface.

Furthermore, Hall's Triad of Culture includes what he terms Informal Culture, referring to culture which is acquired rather than taught or learned, or in other words, is 'out-of awareness'(i.e. unconscious):

> It is this out-of-awareness level that we respond to emotionally and
> identify with. It is the "not what-he-said but how-he-said it" level. In
> terms of Speech Act theory it is the illocutionary force of a
> proposition that we respond to, rather than the locution. As Hall
> suggests, we react out-of-awareness at this informal level - and not at
> the technical level. Margherita Ulrych (1992, p.254) also points out,
> in her publication on translation, that it is at the level of connotative

meaning that we judge and react to words. These are "the culturally or socially determined value judgements that are implicit in the semantics of a word" (Katan, 1999, p.30).

Trompenaar (1993, as cited in Katan, 1999, p.26) posits three layers of culture, namely, the outer layer which encompasses artefacts and products, the middle layer which differentiates between norms relating to social rules of conduct, and values, and the core, which is not visible but 'implicit', suggesting that "[t]his is the heart of culture, and the most inaccessible. It contains basic assumptions about life which will have been handed down unconsciously from generation to generation. These unquestioned assumptions may have little to do with the present, but they have much to do with long-forgotten survival responses to the environment".

Further definitions of the term 'culture' in the literature are numerous, as illustrated by the following definitions offered by a number of scholars:

- Culture includes language, thought (the ways in which people perceive, interpret, and understand the world around them), spirituality and interaction (including the give-and-take of socialization, negotiation, protocol, and conventions) (Roshan Cultural Heritage Institute)[8].

- Culture encompasses the knowledge and values shared by a society, as well as the attitudes and behaviour that are characteristic of a particular social group or organization (Princeton University)[9].

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[8] (www.roshan-institute.org/templates/System/details.asp?id=39783&PID=474552)
[9] (wordnetweb.princeton.edu/perl/webwn)

- Culture is a shared, learned, symbolic system of values, beliefs and attitudes that shapes and influences perception and behaviour. Culture, language and thought are based on symbols and symbolic meanings (Eastern Oregon University)[10].

- Culture is a body of learned behaviours common to a given human society; it shapes behaviour and consciousness within a human society from generation to generation, and includes systems of meaning, of which language is primary (Miraglia, Law & Collins,1999)[11]

For the purposes of this study, many of the perceptions of culture mentioned in the above definitions are relevant since a number of them might play a role in various facets of reading comprehension, depending on the context, purpose or nature of a reading activity. This is particularly true of L2 reading, and is especially pertinent in view of the multilingual nature of Namibian society and the complex issues surrounding the application of the Language Policy (as described in Section 1.1.3 above). It is therefore important to consider several significant elements in the cultural and linguistic background of students participating in this study.

2.5.2   Culture and Cognition

An important facet of cultural background is the influence of the social and cultural context in which a child grows up. Clearly, children are influenced and moulded by factors in their environment. Vygotsky (1978) proposed a phenomenon known as the Zone of Proximal Development, describing it as "the distance between the actual development level as determined by independent problem solving and the level of

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[10] (http://www2.eou.edu/~kdahl/cultdef.html)
[11] Miraglia, E., Law, R., and Collins, P. (1999). *A Baseline Definition of Culture.* (www.wsu.edu/gened/learn-modules/top_culture/culture-definition.html)

potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (as cited in Riddle, 1999, para. 3). Vygotsky claimed that tools such as speech and writing develop from a culture, and are initially used by children for the social function of communication needs. Bruner (1985, p.32) cites Vygotsky as arguing that in a world which is symbolic and consists of "conceptually organised, rule-bound belief systems about what exists, about how to get goals, about what is to be valued", young people learn from more advanced members of their society how to understand this world, and how to use their language as an instrument of thought, a process referred to as mediated learning (Brown & Ferrara, 1985, p.278).

In discussing the importance of this mediated learning, Brown and Ferrara (1985) cite Feuerstein who argues that due to various social and economic pressures, this process of mediated learning often does not occur in families whose members are socially, economically or educationally disadvantaged. Feuerstein makes a distinction between cultural deprivation, which refers to individuals who are deprived of mediated learning experiences within their own culture, and cultural difference, which applies to individuals who may manifest certain deficient cognitive functions which they are expected to overcome rather quickly or with less mediational effort (Tzuriel, 2000, p.394).

According to Scribner (1985, p.124), Vygotsky claimed that the child's acquisition of speech and other sign systems, as well as the development of certain higher order psychological functions, is regulated by social and cultural processes. Scribner,

(1985, p.141-142) further discusses the issue of cultural change and development, pointing out that adults, who are helping children achieve competency in cultural means such as language systems, might themselves be experiencing cultural shift and acquiring new skills, sometimes at a slower rate than that of the children they are presumed to be guiding.

Characteristics of the speech communities in which children grow up are also significant with regard to the development of literacy skills, including reading. Wertsch and Addison Stone (1985) present Vygotsky's view that the child masters social (external) sign forms through the development of internal mental functioning, and that the concepts used in this process are provided by the child's speech community, so that "the socially evolved meaning system of a speech community will be an important determinant of the form of internal intrapsychological functioning". John-Steiner (1985, p.351) relates this to early schooling in a second language by arguing that children between the ages of seven and eight are particularly vulnerable since they are beginning to experience differentiation of social, private and inner speech which is dependent on communication activities taking place between child and caregiver. She cites Wells (1981) as saying that "The way in which meaning is negotiated between generations in the preschool period affects the acquisition of reading" (cited in John-Steiner 1985, p.351). Furthermore, she presents Vygotsky's theory that acquisition of literacy itself influences linguistic-cognitive development, since it involves "the conscious realisation of one's linguistic processes" (John-Steiner 1985, p.352) and concludes that education through the

medium of a second language may interfere with a child's conceptual development (1985, p.357).

With regard to the role of a child's environment in the development of reading and other literacy skills, a further important factor to be considered is that in many cultures in the African context, the role of the community in which the child is raised might centre around oral tradition. Bloch (2000, p.193) points out how African children come to school with a rich heritage of oral language and literature, but that usually little or no attempt is made to nurture or build on this foundation. Arguably, therefore, these children do not reap the benefits of links between home and school literacy practices, particularly with regard to written texts.

Cultural factors obviously play a fundamental role in bilingual or multilingual contexts, and are considered by several researchers to influence the thinking processes of the individual. The possible role of bilingualism in thinking processes is mentioned by Baker (1996, p.7) who cites Skutnabb-Kangas' suggestion that in addition to the basic skills of listening, speaking, reading and writing, thinking could be regarded as a fifth language competence, and that an individual's ability to use more than one language as a thinking tool might constitute yet another dimension of bilingualism, referred to by Cummins (cited in Baker 1996, p.7) as cognitive competence.

Thought is obviously an integral element of the reading process, and the notion that language and thought are interdependent is addressed by several researchers. For

example, the question of whether one's thoughts are influenced by the language which one speaks is raised by Skutnab-Kangas (1981, p.4), while the relationship between language and thought is explored by Barton (2007, p.85) who argues that "[l]anguage is a symbolic system linking what goes on inside our heads with what goes on outside. It mediates between self and society. It is a form of representation, a way of representing the world to ourselves and to others" and concludes that "the function of language, then, is not just to communicate knowledge; language partly creates the knowledge."

The Sapir-Whorf Hypothesis also addresses the question of the link between language and thought. Although the strong version of this hypothesis, stating that language determines the way language users think, has largely been rejected in current research, the weaker version, namely that language has a tendency to influence thought, has more supporters (Katan, 1999, p.74). According to Reddick (cited in Katan, 1999, p.75), "we cannot foreground reality in discourse unless we have unmediated access to it, and we never do. Our perceptions are always mediated by our assumptions, our beliefs, and, in fact, by the language we speak." With regard to how language influences perception, Sapir's approach differed from that of Whorf (Katan,1999, p.75). Sapir proposed that the lexicon of a language formed the basis for cultural perception, and that a particular label in one language might carry a different psycho-cultural implication for a speaker of another language (Katan, 1999, p.75). This can be illustrated by examples of terms which in the political context of Southern Africa may carry offensive connotations, such as *boy*, *maid*, *boss*, *madam* etc.

In the light of new research over the past decade, several scholars, e.g. Boroditsky (2010), Deutscher (2010), Ross (2010), support the notion that language may influence the thoughts of the individual, and new perspectives on the issue have been presented. According to Deutscher , "if different languages influence our minds in different ways, this is not because of what our language *allows* us to think but rather because of what it habitually *obliges* us to think *about"*[italics in the original : CM]. Specific areas in which evidence supporting this notion has been identified include grammatical gender, spatial orientation, time, colour, causality and measurement of quantity.

Some scholars suggest that the grammars of some languages oblige a speaker (or writer) to specify particular aspects, for example, gender or tense (Deutscher, 2010; Shitemi, 2009, p.9). Deutscher (2010) argues that the language used by an individual may constrain that individual to specify particular types of information, thus forcing him or her to pay heed to particular details in the world, as well as to particular aspects of experience which speakers of another language may not consider significant, and that this generates "habits of *mind* that go beyond language itself, affecting your experiences, perceptions, associations, feelings, memories and orientation in the world".

With regard to gender, Deutscher (2010) suggests that the feelings and associations of speakers can be influenced by gender connotations imposed by a gendered mother tongue. He describes studies which indicate, for

example, that in some cases gender is expressed in noun and verb

morphology or, as in some Bantu languages, the language might incorporate

grammatical gender, e.g. concordial agreement dictated by noun class forms

(Shitemi, 2009, p.10).

Spatial orientation is another widely discussed aspect regarding differences between

languages. A seminal work on this issue is that of Svorou (1994). Discussing the

expression of spatial relation in various languages, Svorou (1994, p.209) concludes

that in some languages, spatial terms may be used by speakers to convey not only

spatial relations, but also temporal and social relations, thus reflecting different ways

in which experience may be selectively perceived, retained and associated. Svorou

adds that such differences in the expression of spatial relations suggest that "the way

language reflects experience is not by partitioning it in discrete conceptual domains

such as space, time, causality, etc., reflected by the forms of languages and their

uses, but rather by encoding the most frequently occurring spatio-temporal situations

together with their functional and social implications" (1994, p.209).

A number of differences in the expression of spatial relations in various languages

have been discussed in the literature. While all languages are said to have absolute

spatial orientation, the cardinal directions or fixed bearings on which these are based

may differ, e.g. north, east, where the sun comes up, towards the mountains,

downriver, towards the ocean etc.. In addition, many languages have relative spatial

orientation based either on positions relative to the human body, usually the

speaker's, or relative to someone or something else (e.g. to the right of the Oak tree)

(Boroditsky, 2010; Deutscher, 2010; Ross, 2010, p.116-117; Slobin, 2003, p.14). According to Boroditsky (2010), in some language communities, terms like "left" and "right" are not used, but are replaced by terms of absolute cardinal directions (north, south, east, west); e.g. a speaker might say something like, "There's an ant on your southwest leg."

Since it is presumed that space is experienced by all individuals in the same way and is therefore independent of culture or environment, spatial orientation is regarded as an important arena in which to test linguistic relativity. Ross (2010) cites findings by Pederson et al. (1998) which, according to them, indicate a clear, reliable correlation between a community's use of linguistic coding and the way an individual in that community forms concepts of, and memorises, spatial orientation for non-linguistic purposes. Ross (2010, p.117) argues that "because we find linguistic relativity effects in a domain that seems basic to human experience and is directly linked to universally shared perceptual mechanisms, it is likely that similar correlations between language and thought will be found in other domains as well".

Another important aspect of this approach involves lexical and conceptual gaps (Katan, 1999, p.81). It may happen that a particular language lacks a specific concept (Katan, 1999, p.81), a factor which could obviously hamper understanding or deduction of meaning. For example, students not familiar with British cultural references may have difficulty in mapping meaning into the word *knight*, or in accessing schema related to an expression such as *he's cooked his goose*. Such terms or expressions are related to the social and political history of a particular culture

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which Katan (1999, p.10) contends form the "backbone of a culture's cognitive environment". Similarly, Wierzbicka (as cited in Ross, 2010, p.133) argues that not all terms in one language necessarily have matching terms in another language. She further argues that language variations in concepts reveal information about the cultures themselves, and that lexical differences "may not only reflect but also encourage different, culture specific modes of thinking and feeling." Wierzbicka illustrates this notion using the word 'friend' as an example, pointing out that in English, this word has very different connotations from what it has in Polish (cited in Ross, 2010, p.133).

2.5.3 Culture and Reading Comprehension

The role of culture-related factors in reading comprehension is an aspect which is widely discussed in the literature on L2 reading comprehension, which presents a number of different perspectives on the issue. Chandler (as cited in Colilli, 2006, p.632) argues that "a text can be characterised as a network of signs constructed in adherence to codes and subcodes in which we find ingrained cultural practices, beliefs and values." Urquhart and Weir (1998, p.34) warn that the question of cultural relationships is one of a number of variables distinguishing individual L2 readers from each other, the others being L1 literacy, language repertoire, and L1 script, and they suggest that these variables should be kept in mind in discussions of L2 reading.

The issue of cultural background and perceptions is often linked to schema theory (see Section 2.2.3, p.36). Carrell and Eisterhold (1988) argue that if a schema is

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related to a particular culture, it may not be available to ESL readers and that "implicit cultural content knowledge presupposed by a text and a reader's own cultural background knowledge of content interact to make texts whose content is based on one's own culture easier to read and understand than syntactically and rhetorically equivalent texts based on a less familiar, distant culture". They further posit that culture-specific values of reader and writer may differ, which can lead to miscomprehension, as may 'culturally loaded terms' (Carrell and Eisterhold 1988, p.83). Urquhart and Weir (1998, p.33) also argue that cultural relationships are a significant factor in L2 reading, and that L2 readers of English who have a Western European background are more likely to have shared knowledge with writers of English texts than are readers from other cultures.

This notion is supported by Kramsch (1993, as cited in Katan 1999, p.20) who argues that:

> language students cannot be expected to fully understand another set
> of institutions or even authentic material such as newspaper articles
> because the students (almost literally) cannot see past their own
> culture … culture is a reality that is social, political and ideological,
> and … the difficulty of understanding cultural codes stems from the
> difficulty of viewing the world from another perspective, not of
> grasping another lexical or grammatical code.

Baleeta (2005, p.306), discussing the poor performance in reading of a group of Ugandan A level students, similarly suggests that even if the topic is familiar to them, readers who lack the appropriate schema required for processing a particular text will experience difficulty.

With regard to comprehension, Urquhart and Weir (1998, p.87) define what they term 'ideal comprehension' as recovery of the author's meaning. They argue, however, that capturing the author's meaning in its entirety is not only not possible, but also not enough, the reason being that "texts are dependent on presuppositions stemming from their authors' own particular world view," and that "it then becomes the duty of the critical reader, by spotting such ideological presuppositions, to evaluate a text in its cultural context" (Urquhart & Weir,1998, p.88).

Approaches which take into account the socio-cultural background of readers highlight various other cultural elements which can play a significant role during the L2 reading process. Steffensen and Joag-Dev (1984, p.48) argue that students from different cultures will bring different systems of background knowledge to the comprehension process. Seeing background knowledge as encompassing world knowledge, Alderson (2000) argues that world knowledge typically refers to an individual's own world and may be limited, while other people's worlds work differently, and he adds that "to the extent that those other people are conventionally said to share a culture, then cultural knowledge is also crucial to text understanding", as evidenced by studies which have consistently demonstrated the effects of cultural differences on reading recall, test scores and reading miscues (Alderson, 2000, p.45). Alderson points out, however, that knowledge of content or culture should be distinguished from knowledge of vocabulary (2000, p.45).

From the above, it is clear that cross-cultural understanding is sometimes a significant factor in the processing of texts. One aspect of culture which plays a

fundamental role in cross-cultural understanding is that of culture-related values and beliefs (Katan, 1999, p.58; Koda, 2005, p.62). Applying this to reading, one may say that a reader is predisposed to interpret a text from the perspective of the beliefs and values of his or her culture. Katan (1999, p.72) cites Malinowski as claiming that language can only be understood with reference to culture, and that beliefs and traditions encoded in texts related to one culture may not be understandable to an individual from a different culture. Discussing the role of a cultural framework in neuroliguistic programming, Katan (1999, p.73) cites O'Connor and Seymour as stating that "we learn what things mean from our culture and individual upbringing".

Gee (2000) posits 'social' aspects of the human mind as playing an important role in research on reading. He argues that the human mind is a "powerful pattern recogniser" which processes midlevel, flexibly transformable general patterns extracted from experience, and that these patterns "construct experience as meaningful in certain ways and not others. They are always, in fact, adapted (contextualised) to experience in practice (activity)". He terms such patterns "situated meanings". Describing cultural models of reading, Gee (2000) illustrates the notion of situated meaning with the example of two students reading the same poem, but giving two different interpretations, one student's interpretation being constructed according to her individual experience of everyday life, while the other student's interpretation is based on more universal emotions and themes.

According to Gee (2000):

thinking and using language is an active matter of assembling the situated meanings that you need for action in the world. This assembly is always relative to your socioculturally defined experiences in the world and, more or less, is routinised ("normed") by the sociocultural groups to which you belong and with which you share practices.

The pattern recognition facility of the mind is also mentioned by Katan (1999, p.90). In discussing filters affecting perceptions of reality, Katan includes expectations and mental images, and gives examples showing that individuals pay more attention to expected patterns even when there is conflicting visible evidence. Furthermore, Katan mentions the strategy of closure, by which any gaps in what is perceived are automatically and unconsciously filled with internal representations (1999, p.91).

Parry's (1994) study examining the interaction between a group of Northern Nigerian students and a selection of texts yielded evidence to support the notion that the cultural perspective of a reader influences the reader's interpretation of a text, and that if the ideas underlying a text do not match the reader's expectations, comprehension will be impeded. Gambrell, Morrow, Neumann and Pressley (1999, p.16) similarly argue that "readers and writers develop meaning as a result of co-constructed understandings within particular socio-cultural contexts", while Celce-Murcia and Olshtain (2000, p. 128) suggest that a mismatch between the reader's view of the world and the view that seems to be presented in the text may interfere with comprehension, as may a reader's preconceived expectations.

Cultural strategies are also included in discourse strategies described by Van Dijk and Kintsch (1983, p.81) who argue that such strategies involve the "effective

selection of cultural information that is relevant to the comprehension of the discourse". Van Dijk and Kintsch argue that differentiation in discourse strategies may be required either when reader and writer belong to different cultures, or when their background is in the same culture but from different periods, and that a reader will need to process not only his or her knowledge or beliefs about the writer's culture, but also potential differences in the two cultures:

> … not only on a trivial level may the language itself be different, but also surface structure, style, coherence conditions, themes, discourse types, meanings and pragmatic and interactional functions are influenced by cultural background. Marked (i.e. different culture) cultural strategies typically involve partial understanding. Most hearers or readers will only have limited knowledge about the other culture, so that sometimes guesses have to be made about precise word-meaning, coherence conditions, implicit beliefs, and pragmatic or interactional functions of the discourse. Another example is the derivation of macro-structures (themes from the discourse). These are sensitive to what in a certain culture is believed to be important, relevant, interesting, or otherwise prominent information in discourse.
>
> (Van Dijk & Kintsch, 1983, p.81)

2.5.3.1   Culture and Literacy

Although the main focus of this research is reading comprehension, it is also useful to consider the role of language, thought and culture in the context of literacy in general, reading being a component skill in literacy. In contrast to what he describes as the autonomous model of literacy which, as mentioned earlier, sees text as being independent of the reader, Street (1984) proposes an ideological model of literacy which takes into account the social context of texts and readers, seeing reading as a

sociocultural practice. Genesee (1994, p.130) claims that the core of the definition of literacy is "meaning or the construction of meaning", with reading being a process in which the reader's past experiences, including his language and cultural background, play a role in his interpretation of symbols which represent language. Gee (cited in Masny & Ghahremani-Ghajar, 1999) suggests that literacy incorporates ways of talking, reading, writing, valuing, that is, ways of 'being in the world'.

Likewise arguing for a socio-cognitive perspective, which sees language as incorporating social practices, Langer (1987, p.2) supports the notion of a cultural basis for literacy, suggesting that it involves the higher intellectual skills appropriate to the culture, and is learned by children during interaction with their families and their communities.

Langer (1987, p.5) further argues that the failure of literacy programmes is sometimes caused by the fact that the uses of literacy as taught in these programmes have no basis in the culture of the learners, and that the acquisition of literacy involves skills and concepts related to the specific literacy events and practices inherent within the social, political and intellectual forces constituting a society.

Also discussing the relationship between language and thought, Langer argues that signs are part of culture, and therefore when people learn to interpret signs[12], they identify with a culture as part of their learning. She says that cultures and subcultures

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[12] Sign -"in linguistics, the words and other expressions of a language which signify, that is, 'stand for', other things… Some linguists … include a third item in the process of signification, that is, an abstract CONCEPT of the thing for which the sign stands" (Richards et al. 1997, p.334).

provide the context for the functional value of literacy behaviours, which might

therefore reflect different *modes* of thinking and reasoning learning (Langer, 1987,

p.5).

Analysing the reason why many students whose English proficiency is low

experience failure in acquiring English literacy, Langer cites the argument of Heath

and McDermott that during interaction with the teacher, these students are required

to interpret a variety of new concepts and ideas in the same way as the teacher does.

This often differs from what they have learned in their first language and culture, in

which they might have experienced different ways of learning, and which are often

ignored (Langer 1987, p.13). The National Research Council, U.S (NRC) (1997,

p.55) cites research work by Langer et al. and Teale et al. which describes significant

variability within ethnic or language groups, suggesting that children are socialised

to cultural meanings of literacy which may give rise to expectations conflicting with

school literacy practices.

2.5.3.2   Culture and Rhetoric

Further literature related to cultural context highlights other factors which may play a

significant role in the development of reading-related skills. Kaplan (1966), for

instance, outlines cultural thought patterns which influence writing techniques,

pointing out, for example, that while English texts usually follow a linear pattern,

this may not be true of texts in other cultures. The role of rhetorical organisation is

also addressed by Urquhart (1984) and by Carrell (1988, p.104), according to whom

the effects of formal schemata on ESL reading comprehension were confirmed in

studies carried out by Ostler and Kaplan (1982). Carrell cites her own findings (1984) which indicate that the rhetorical organisation of English texts affects the reading comprehension of ESL readers from different L1 backgrounds.

This issue is also addressed by Hornberger (2003, p.20) who discusses research on contrastive rhetoric which shows that learning of a second language and its discourse patterns is affected by the discourse patterns of the first language. She cites the findings of Söter, Indrasuta and Leap which support this notion, as does the NRC (1997, p.52) which highlights "limited access to word meanings in English and novel rhetorical structures" as sources of difficulty experienced by L2 learners in reading.

An examination of the various theories and models of reading summarised in Section 2.3 suggests several aspects fundamental to the question of language-related factors affecting reading comprehension. These encompass both reader-based aspects and text-based aspects. Reader-based aspects include factors such as metalinguistic and metacognitive skills, background knowledge and culture, and skills and strategies employed by readers in the process of accessing meaning, while text-based aspects at a 'macro' level, include discourse analysis, text organisation, rhetorical organisation, and text-based aspects at a 'micro' level include elements such as morphology, syntax, etc.

Against the background of the factors discussed above, the next section will discuss a number of factors which play a significant role in the L2 reading process in general, and in the reading comprehension of L2 readers in particular. The discussion will

start with reader-based aspects such as the role of the L1 in L2 reading, modes of text processing by L2 readers, and cultural background, and will then move on to text-based variables such as discoursal, semantic, lexical and syntactic attributes.

2.6 Reader-Related Factors Influencing L2 Reading Comprehension

In addition to issues related to language and culture, reading comprehension may be influenced by a number of other factors pertaining to qualities or characteristics which readers themselves bring to the reading process, such as mode of text processing, topic interest and lexical access. The next section will include a discussion of these elements.

2.6.1 Mode of Text Processing

Following the notion of reading as an interactive process, as discussed in Section 2.3.1.2 above, Carrell (1988, p.101) examines two modes of text processing, namely, text-based and knowledge-based processing, positing what she calls the 'bi-directionality' of these two modes and arguing that ESL readers may experience problems in reading comprehension if they attempt to compensate for weakness in one mode by depending on the other mode. Carrell cites evidence which indicates that in some cases ESL readers rely more on bottom-up or text-based processing, not making full use of contextual or knowledge based information, while in other cases, the opposite is true, when ESL readers rely more heavily on top-down process (1988, p.102).

Carrell suggests several possible reasons why ESL readers may resort to over-reliance on one type of processing. Firstly, she argues that a reader may lack schemata required for processing of a specific text, whether these be formal schemata or content schemata, and that in this case:

> [e]ither they will over-rely on text-based processes, and try to construct the meaning totally from the textual input (a virtual impossibility, because no text contains all the information necessary for its comprehension), or they will substitute the closest schema they possess and will try to relate the incoming textual information to that schema, resulting in schema interference. In either case, comprehension and recall suffer.
>
> (Carrell 1988, p.105)

Secondly, Carrell proposes that even when the appropriate schema is available to ESL readers, it may not be activated due to inadequacy of textual cues, and readers will resort to text-based processing (Carrell,1988, p.106; Carrell & Eisterhold 1988, p.77).

This is supported by Parry (2005) whose study of the impact of cultural differences on the reading comprehension of a group of Nigerian students indicated that misunderstanding may arise from different perceptions of what is involved in reading and of how written texts should be interpreted. Referring to Street's Autonomous Model of literacy, which holds that meaning in a text is independent of whatever the reader might bring to it and can be accessed through closer examination of the words contained in the text, Parry (2005, p.322) suggests that readers using this approach

would rely on bottom-up processing and would focus on what she calls 'low-level indicators'. Nigerian students in Parry's study often failed to process these low-level indicators, and experienced difficulty arising from ambiguity and looseness in the use and understanding of particular words.

This aspect is also mentioned by Alderson (2000, p.58) who cites the view of Segalowitz et al. (1991) that one possible reason why even advanced L2 readers do not read as easily or quickly in their L2 as in their L1 is the fact that in the L2, they have weaker processing skills with regard to lower mechanisms that may be required for basic word recognition (1991, p.20). In the L2, these lower-level processes are less automatised than in the L1, and thus make higher demands on resources needed for the higher level processes such as linking propositions, making inferences, solving ambiguities and integrating new information with existing knowledge. An important caveat which Alderson (2000, p.22) issues and which is significant for this study is that a distinction should be made between reading ability and other cognitive abilities such as the ability to think critically, since it is possible to find good readers who may not necessarily be good thinkers. Many reading tests aim to assess 'higher-order' as well as 'lower-order' reading skills, a task which may be fraught with difficulties, especially in the case of L2 readers who may indeed be able to think critically, but may lack the language proficiency to express their thoughts accurately.

2.6.2 Topic interest

Also thought to play a role in reading comprehension is the issue of topic interest and familiarity. It seems obvious that individuals read more attentively when reading texts covering topics of interest to them, and will in all probability read more extensively on such topics, thus becoming increasingly familiar with that particular content. The notion that topic interest and familiarity facilitate text comprehension is borne out by a study by LeLoup (cited in Koda, 2005, p.147), which also yielded evidence of gender-based differences resulting in variations in prior knowledge among male and female L2 readers of English. Another study by Carrell and Wise (as cited in Koda, 2005, p.148) indicated that while male students performed better in comprehension of texts involving topics of interest to them, female students scored higher on texts of low topical interest.

Topic familiarity was also found to be a significant factor in a study conducted by Alderson and Urquhart (as cited in Koda, 2005, p.148) which indicated that tertiary students perform far better in reading comprehension when reading texts in their areas of specialisation, and that limitations resulting from lack of L2 proficiency can often can be offset in the reading of domain-relevant texts.

2.6.3 Lexical Access

Further reader-related factors affecting reading comprehension include word recognition and word knowledge, an important facet of which is automaticity (Alderson, 2000, p.75). With regard to language processing, cognitive psychology distinguishes between controlled processing which requires conscious effort and

attention on the part of the reader, thus taxing working memory, and automatic

processing which involves performing a task without awareness of attention, thus

making more use of long-term memory (Richards et al. 1992, p.28). Alderson argues

that "difficulty in processing letters is related to automaticity of word identification,

and … speed of word recognition affects speed and efficiency of reading" (2000,

p.75).

An additional crucial factor in reading is clearly knowledge of the language of a text,

an important element of which is vocabulary. Ruddell (1976) stresses the critical role

that a limited vocabulary plays in reading comprehension, while according to

Alderson (2000, p.35) and Koda (2005, p.49), knowledge of vocabulary correlates

closely with performance in reading comprehension, and for adequate

comprehension, a reader needs to know 95% of the words in a text. Williams (2008,

p.583) points out that this has implications for the advice often given to L2 readers to

figure out the meaning of unknown words from the context, since research indicates

that readers will only be able to do so if they know approximately 95% of the other

words in the text,

While vocabulary in general is acknowledged to be a significant factor for L2

readers, it has been suggested that specific areas of vocabulary may cause particular

difficulty. Alderson (2000, p. 69), posits that specific areas of difficulty are idiomatic

expressions, as identified by Williams and Dallas (1984) (cited in Alderson, 2000,

p.69), and homonyms, for which readers seem to focus on one meaning, without

discerning that the meaning may not be appropriate to a particular context. For

example, the expression *It's a sign of the times* may cause confusion not only because it is idiomatic, but also because both *sign* and *times* are usually used in contexts different from this one. Cooper (1984, p.135) furthermore claims that weak vocabulary, particularly with regard to poor understanding of the semantic relationships between words and the meanings of common sentence connectors, may constitute a severe impediment to reading comprehension, giving as illustration the following example of a multiple choice question where some readers chose an incorrect response as a result of failure to grasp the meaning relationships signified by the explicit sentence connector (*however*):

In ancient times, when man needed more food, he cleared and planted new land which had never been planted before. Today, however, . . .

a. great areas of forest are being cleared to make room for food and other crops.

b. new land is very scarce and even where large areas of unused land exist, they are very difficult to develop.

c. countries like Malaysia also have large-scale programmes for clearing the land to make room for food production.

Another potential source of difficulty suggested by Smith (1978, p.72) is the fact that in English, as in most languages, many words have multiple meanings, and one cannot determine the grammatical function of these words if they are considered in isolation. In Smith's view, the problem of multiple meanings is especially significant when it comes to prepositions, and he argues that "these words are just about untranslatable from one language to another, unless you understand at least the

phrase in which they occur". The issue of language differences in the use of prepositions is discussed further in Section 2.8.

The importance of understanding meaning is also emphasised by Donaldson (1978, p.101) whose statement that a child will extract meaning from a text more easily if the text is coherent and contains a balance between words the child knows already and words he is unfamiliar with can equally be applied to L2 readers. Oakhill and Cain (1997, pp. 187-188) argue that reading fluency, and hence reading comprehension, may be disrupted by uncommon words since lexical access is slower, or the reader may have to resort to using context to determine the meaning of a word. This may result in the reader forgetting part of what has been read, or in cognitive capacity being used for this processing so that little is left for comprehension. They disagree, however with the notion that adequate vocabulary knowledge contributes to efficient comprehension, contending that even where vocabulary is familiar, there can still be comprehension difficulties (Oakhill & Cain,1997, pp. 187-188). They conclude that "vocabulary deficits will not automatically lead to comprehension difficulties and vice versa".

Also related to word access is the recognition by many researchers that contextual constraints play a significant role with regard to constructing meaning from texts. In order to determine context-appropriate word meaning, a reader needs to integrate both lexical and contextual information (Koda, 2005, p.34), a process which is not always necessarily successful on the part of L2 readers.

In addition to making use of contextual information to facilitate comprehension, other strategies are also available to L2 readers. Koda, (2005, p.59) argues that adult L2 learners, being cognitively mature, already possess considerable conceptual knowledge which they can draw on in decoding unfamiliar lexical labels. This strategy, however, may also impede comprehension inasmuch as L2 readers, when faced with a text containing a large proportion of unfamiliar words, may rely on background knowledge activated by the few familiar words in the text rather than considering contextual information. In doing so, they may construct meaning which is inaccurate. This may be particularly problematic when there are cultural differences in the way that languages portray reality, so that in many cases, word for word lexical correspondence across languages is not exact (Koda, 2005, p.60).

Transfer of meaning from the L1 to the L2 is also discussed by Johnson who cites Gass' proposal that lexical items have 'core meanings', and that ". . . meanings which were closer to the 'core', that is, were more basic in meaning, were more likely to be transferred than those which were furthest from the core." (Gass 1984, as cited in Johnson, 2002, p.15). Hatch (1983) similarly posits that "The more similar the languages appear to be, the more likely the learner is to extend the transfer; the more distant, the more conservative the transfer will be" (as cited in Johnson, 2002, p.15). This notion is supported by Koda (2005, p.116).

Word recognition and lexical access are also highlighted by Urquhart and Weir (1998, p.124) who suggest that in line with the interactive models of the reading process, processing both at these levels, as well as at the level of integration of

textual information and resolution of ambiguity, is important. They caution, however, that there is also evidence that it is not possible to differentiate between reading components, and that although there is agreement that word recognition can be distinguished from reading comprehension, the existence of different comprehension skills has been disputed (Urquhart & Weir, 1998, p.125).

Another aspect which is highlighted by several researchers as a factor influencing the reading process is phonological awareness (also sometimes referred to as phonemic awareness and phonic awareness). Although Ruddell's (1976) research on the relationship between language and reading acquisition focuses on children, a number of the factors which he discusses can as well be considered with regard to the reading of L2 adults. In examining the relationship between language experience and the reading process, Ruddell (1976, p.23) suggests that since L2 speakers may have difficulty with certain sound contrasts between the L1 and the L2, they may experience meaning confusion when reading in English due to variations in the phonological systems of the two languages in situations where they are unable to use context cues to deduce meaning. This may be particularly true in cases where the L1 has strong sound spelling correspondence (termed as 'orthographically shallow') in contrast with English which has weak sound-spelling correspondence (i.e. is 'orthographically deep'), as defined by Williams (2008, p.578). According to Williams (2008, p. 579), some scholars argue that in 'decoding' words, a reader must be able to match the phonological representation of the word to an item in his or her mental lexicon.

Also discussing the role of phonological processing, Koda (2005, p.33) argues that in the learning of new words or the recognition of unfamiliar words, conversion of visual input into phonological form contributes to retention of a representation in working memory, and that when graphic symbols are converted into speech sounds, access to oral vocabulary and hence to lexical information stored in long-term memory, is facilitated. Koda supports the notion that the nature of sound-symbol correlation is an important phonological consideration, arguing that in a language such as English in which both spelling and sound-symbol correspondence are irregular, the phonological decoding necessary for accessing lexical information may be disrupted (2005, p.37).

Arguably, then, if the reader cannot make the appropriate sound-spelling connection, or if he or she attributes an inappropriate sound to a particular spelling, it will be more difficult for that reader to locate a matching lexical item. For example, an L2 reader may be familiar with the auditory form of a word such as *grotesque*, yet may decode the word as /ˈɡrəʊteskjuː/, and hence be unable to make the appropriate semantic connection. Similarly, in a language such as Oshiwambo, where confusion between /l/ and /r/ is not uncommon, a sentence such as *Please correct your assignment* may be misinterpreted as *Please collect your assignment*. A study by Nassaji (2003, p.266) found significant correlations between reading comprehension and word-level processes including word recognition graphophonic processes, i.e. the sound relationship between the orthography (symbols) and phonology (sounds) of a language.

Alderson, however, while supporting the suggestion that the irregular sound-letter correspondence in English makes English more difficult to read than those languages whose sound-letter correspondences are regular, points out that there is still some question as to whether readers access words via sound, or whether they access the lexicon directly (2000, pp.75-76).

Alderson (2000, p.19) also suggests that less proficient readers may be slower in recognising words accurately. This would be especially true of L2 readers who are faced with additional graphic and lexical challenges. He cites Vellutino and Scanlon's (1987) view that reading difficulties are "a linguistic problem involving a failure to recognise how particular structures encode information, and not a problem of insufficient background knowledge or insufficient top-down strategies" (2000, p.20).

The fundamental importance in comprehension of linguistic knowledge at the word level is supported by other scholars. Koda (2005, p.56) cites Gass' (1999) view that lexical processing during comprehension is heavily dependent on understanding of a word's morphosyntactic properties or syntactic function as a tool for distinguishing grammatical categorisation in phrase construction, which mediates in the processing of the meaning of unfamiliar words. For example, in a sentences such as *Due to the capricious weather, the excursion was postponed*, the word *capricious* can be identified as a modifier both by its *–ious* suffix and by its position between the determiner the and the noun phrase *weather*. The association between a postponed

excursion and the weather then suggests the meaning of *capricious* as indicating that the weather was in some way not suitable for an excursion.

Nassaji (2003, p.261) likewise argues the importance of efficient lower-level word recognition processes as an integral component of L2 reading comprehension at all levels of L2 reading proficiency, but suggests (p.271) that for effective processing of text, knowing the meanings of words or having a good knowledge of L2 grammar alone may be insufficient, since the ability to process words and their relationships is also essential.

Although a number of factors influencing reading comprehension have been discussed here, one should at the same time note Alderson's warning that analysis of potential areas of difficulty cannot be based on common-sense assumptions, and that it is difficult to identify specific text variables which consistently cause difficulty. Alderson argues that "[c]learly at some level the syntax and lexis of texts will contribute to text … difficulty, but the interaction among syntactic, lexical, discourse and topic variables is such that no one variable can be shown to be paramount" (2000, p. 70).

So far, discussion has focused on the qualities and characteristics which an individual reader brings to the task of L2 reading. This discussion has, of necessity, touched on a number of textual attributes affecting reading comprehension, and which require specific knowledge or skills on the part of the reader. In the next section, focus shifts to the text itself, revisiting from a more analytical viewpoint some of the attributes

already discussed, as well as incorporating additional facets of textual characteristics which affect the accessibility or readability of English texts.

2.7 The Effect of Text Properties on Processing for Comprehension

Clearly, reading comprehension is linked to text readability, or in other words, the extent to which a text can be easily read and understood, which may depend on a variety of factors. With regard to the issue of the difficulty or readability of a text, Urquhart and Weir (1998, p.146) argue that the main factors to be considered are the linguistic, organisational, propositional and discoursal attributes of the text, relative to individual variation regarding parameters such as background knowledge, purpose(s) for reading, and so forth, as well as word frequency and sentence length, while Crossley et al. (2008) argue that deeper levels of text processing also involve propositional density and syntactic complexity. In the following sections, the effect of text properties on readability, and hence on readers' comprehension, will be discussed.

2.7.1 Discoursal Attributes

According to the literature discoursal attributes play a fundamental role in text processing. Discourse processing includes understanding of how elements in a text relate to each other to constitute larger meaningful units, the relationship between utterances in a discourse, and how the use of devices such as articles, pronouns and tenses affects the structure of the discourse. Discourse can thus be examined at both a global or macro level, and at a local or micro level, though the two levels are closely linked and often interdependent.

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2.7.1.1 Global and Local Structures

At the global level, Van Dijk and Kintsch (1983, pp.4-6) describe several basic assumptions underlying information processing, including presuppositional assumption, i.e. that understanding involves not only the processing and interpretation of external data, but also the activation and use of internal, cognitive information, and strategic assumptions, that is, that events and utterances will be observed and understood as parts of a more complex situation or social context. In discourse processing, as in other types of information processing, both internal and external information is used for the purpose of interpreting the discourse, and the language user forms a representation of a text which interacts with his or her representation of the social context, and then matches his or her interpretation with a representation of the assumptions about the meaning which the creator of the text intended to convey (Van Dijk & Kintsch, 1983, p.7). Van Dijk and Kintsch further argue that the interaction underpinning discourse is itself part of a social situation, for which presuppositions must include general norms and values, attitudes, and conventions about the participants (1983, pp.7-8). This is illustrated in the following sentences:

Rain clouds were gathering. We were delighted.

Readers living in an area where rain often causes suffering or disaster would in all likelihood fail to see the connection between delight and the prospect of rain, and would therefore find the above text to be incoherent, whereas readers living in a country where rain is scarce would instinctively make the connection.

Van Dijk and Kintsch (1983, p.91) further suggest that discourse comprises conventionalised schematic structures (such as, for example, specific structures used in narrative discourse) which necessitate schematic strategies on the part of the reader. They argue that individuals belonging to a particular culture know the global organisation of a variety of discourse types in that culture, and that some very specialised types of discourse, such as forms, public documents or legal discourse, may require comprehension strategies which are unfamiliar to many readers.

Relationships between ideas have also been posited as playing a role in discourse processing. Celce-Murcia and Olshtain (2000, p.128) suggest that comprehension is disrupted in cases where L2 readers fail to understand the connotations of certain key words which signal the relationship between ideas, e.g. connectives. Koda posits that for successful comprehension, a reader must not only understand the meaning and function of the connectives, but must also understand the clauses which are to be connected, arguing that "if what is to be connected, and in what way, is not clear to the reader, the relational information, however explicit, is unlikely to be incorporated in on-going sentence interpretation" (2005, p.109).

The distinction between global and local facets of discourse processing is supported by Urquhart and Weir (1998, p.123) who discuss global comprehension, which can be related to Kintsch and van Dijk's macrostructure (Van Dijk & Kintsch, 1983, p.107), and local comprehension which involves the decoding of what Kintsch and van Dijk (1978, as cited in Van Dijk & Kintsch, 1983, p.107) call micropropositions, or processing at a micro-level. However, the interdependence of global and local strategies of discourse comprehension is highlighted by Van Dijk and Kintsch (1983,

p.p.88-89) who posit a hierarchical ordering, with syntactic strategies at the lowest level, followed by semantic strategies, and then pragmatic strategies, so that understanding at each level is built on understanding produced by strategies at a higher level. The meanings of clauses and sentences and the meanings and functions of relations between sentences may be accessed through local semantic strategies while global strategies involve discerning the global meanings of portions of the discourse or of the discourse as a whole, and the two kinds of strategies, local and global, must interact. In other words, knowing what a discourse is about globally requires understanding of at least some information from the local (sentence) level, and similarly, understanding of the precise meaning and function of individual sentences and the relationship between them requires a grasp of the global meaning or theme of a discourse.

The distinction between a macropragmatic approach and a microanalytic approach to analysing grammar and discourse is also made by Celce-Murcia and Olshtain (2000, p.54).The macropragmatic approach, which is more applicable to top-down processing, focuses on relating the macrostructure of a speech event or genre to microstructural elements of a text such as tense, aspect patterns or active and passive voice. The microanalytic approach, on the other hand, is more applicable to bottom-up processing since it focuses on the role and distribution of grammatical constructions and discourse markers. It is the contention of Celce-Murcia and Olshtain (2000, p.25) that sentence-level grammatical rules cannot be assumed to be "context-free" but must be analysed in relation to authentic discourse and communicative contexts.

A further source of difficulty identified by Celce-Murcia and Olshtain (2000, p. 128) is that readers may not understand both global and local connections inferred in the text, and may thus not be able to discern the writer's intentions, or the reader may not possess the prior or shared knowledge, or world knowledge, which, because it is assumed by the writer, is not retrievable from the text. In cases where new information is separated from old information in the text, the distinction is indicated by linguistic cohesive devices which the reader must recognise and understand in order to determine the writer's intention and activate the relevant schema. Furthermore, in order to recognise the internal connections within the text, the readers must be able to interpret other important grammatical such as reference markers, the sequence of tenses, conjunctions, the article system, and so forth.

The issue of coherence and cohesion is discussed in more detail in Section 2.7.1.2.

With regard to local strategies, Van Dijk and Kintsch (1983, p.90) argue that sentence comprehension involves the strategic construction of propositions, that is, cognitive representations of facts, or information that is expressed in a statement, as opposed to the way it is expressed, and that these propositions "have a fixed schema, depending on the kind of dominant predicate involved, featuring the various participants and their modifiers. Propositions organise lower level conceptual information, that is, the atomic propositions that underlie meaningful words and phrases." Relations between sentences involve conditional relations between propositions, and should follow some principles of ordering. Furthermore, since it is neither semantically nor pragmatically necessary in a discourse to describe all

properties of an item, various types of selection principles may be applied, resulting in descriptions which may be, to some degree, partial or abstract (Van Dijk & Kintsch, 1983, p.90). Understanding of discourse therefore involves correctly establishing relationships between sentences, as well as interpreting the selection and ordering as used in the discourse.

A further discoursal attribute factor affecting the readability of a text, and one which relates to the role of working memory, as discussed in Section 2.2.1 above, is the organisation of the statements, or propositions making up the text (Urquhart & Weir, 1998, p.161), and the possibility exists that the more propositions there are in a sentence, the more difficult processing becomes, even if sentence length is the same (Van Dijk & Kintsch, 1983, p.39), since more propositions require more bridging inferences, and may therefore make higher demands on working memory. Van Dijk and Kintsch's 1978 model of discourse processing holds that readability is affected by the number of bridging inferences required to construct a coherence graph and the number of memory reinstatements that occur in processing it. Van Dijk and Kintsch (1983, p.45) argue that when the textual input on a given cycle is unrelated to the propositions still held in the short-term buffer of the working memory, a text proposition must be found that shares an argument with the current input, and it must be reinstated in the working memory so as to provide a coherence link between the new input and what was read before. Unsuccessful reinstatement searches are assumed to give rise to the need for a bridging inference, and since both reinstatement searches and inferences are assumed to be operations which consume resources, they are likely to contribute to difficulty in reading. As a consequence, the

larger a reader's working memory capacity, the fewer occasions there will be for reinstatements (Van Dijk & Kintsch, 1983, p.46).

Koda likewise points out the critical role of working memory in the formation of bridging inferences, arguing that "because working memory affords the work space for mental computation and temporary storage of segmental information, the simultaneous presence of to-be-linked propositions in working memory is a critical condition for inference generation" (2005, p.133). This seems to allow for speculation that for L2 readers, if the working memory is occupied with basic language processing, there will be less space for reinstatement and inferencing.

Two further aspects of inferencing mentioned by Koda are firstly, that inference processing may also be affected by the physical distance between the concepts to be linked, and secondly that sentences containing unexpected elements are retained longer in working memory, therefore assisting in inference generation even when elements to be linked are not in close proximity to one another (Koda, 2005, p.133).

Also at the local or micro level, local schemata include verb frames which organise concepts, in that they assign them to certain case roles, as agents, patients, instruments, and so forth (Van Dijk & Kintsch, 1983, p.308) and these frames may be organised in higher order structures. For example, the fact that a verb is transitive implies that it has an agent and a patient, and this knowledge can be applied generally; it does not have to be stored with knowledge of each specific transitive

verb (Van Dijk & Kintsch, 1983, p.309). Verbs and verb frames will be discussed in more depth in Section 2.8.

2.7.1.2   Coherence and Cohesion

The issue of global and local structure also applies to coherence and cohesion which, as mentioned above, are also recognised as key elements affecting reading comprehension.

In discussing coherence and cohesion, scholars focus on specific interpretations of coherence and cohesion. As a basic definition, however, the term *coherence*, when used in discourse analysis, refers to the semantic relationships linking the sentences in a particular text (or utterances in a discourse), or in a longer text, to content being organised in a way that enables a reader to makes sense of it; *cohesion*, on the other hand, involves the grammatical and/or lexical relationships between the different parts of a sentence, or between the different sentences in a text. (Richards &Schmidt, 2010).

According to both Grabe (1988, p.58) and Celce-Murcia and Olshtain (2000, p.131), recognition and understanding of the cohesion of a text is an important component in reading comprehension. Since a seminal work in the field of cohesion is that of Halliday and Hasan (1976), the following discussion will refer to this work in some detail.

During the reading process, as propositions are being formed, a reader forms hypotheses about coherence links, based on partial information, so that a coherent structure has already been generated on completion of the information, and, having interpreted the first noun phrase of a sentence, a reader, for example, may already have formed a coherence hypothesis (Van Dijk & Kintsch, 1983, p.152). One may posit, then, that if L2 readers have difficulty processing the first noun phrase, they may have trouble forming a correct hypothesis.

The role of the background knowledge required for the processing of a text is once again highlighted here. Coherence strategies require several types of information, including not only surface structural or semantic information, but also epistemic (knowledge based), pragmatic information, or knowledge and beliefs about the communicative situation and the sociocultural context, thus mixing the local coherence strategies with global coherence strategies, with strategies for the use of knowledge, and with pragmatic and other communicative strategies (Van Dijk & Kintsch, 1983, p.152, 159).

According to Van Dijk and Kintsch (1983, p.159), the bottom-up and top-down interaction also applies to local coherence strategies which utilise various types of information such as:

- syntactic information about word order and syntactic categories
- semantic information about relations between concepts and co-referential identity

- epistemic information from specific frames or schemata of world knowledge

- knowledge about relations between actions and their motivations

- knowledge about normal rules and strategies of story telling and about discourse ordering in general

Van Dijk and Kintsch (1983, p.152) posit several global constraints or metastrategies affecting strategies of local coherence. With regard to L2 speakers, two of these global constraints may be particularly significant. The first of these is 'situation normalcy', meaning that "if there is no evidence to the contrary, assume that all normal conditions obtain" (Van Dijk & Kintsch, 1983, p.152), which gives rise to the question of whether an L2 reader will know what is considered 'normal' by the writer. The second global constraint is 'referential normalcy', meaning that "if no contextual or textual signals have been given, assume that coherence should be established relative to our own possible world" (Van Dijk & Kintsch, 1983, p.152) which suggests that there may be variations according to the culture of both reader and writer. Yet another global constraint or metastrategy affecting strategies of local coherence, as proposed by Van Dijk and Kintsch (1983, p.152), is the constraint of 'grammatical normalcy', meaning that "the reader may expect that the text will express the coherence relations by a number of signals (pronouns, definite articles, demonstratives, connectives etc." (Van Dijk & Kintsch, 1983, p.153).

Celce-Murcia and Olshtain (2000, p.58) define coherence as "the unity in discourse through which individual sentences in discourse relate to each other logically", and

discuss various elements of a text which contribute to coherence. Discussing discourse features that might cause problems, Celce-Murcia and Olshtain (2000, p.131) highlight the necessity of maintaining reference to ensure cohesion and coherence throughout a text, and point out the reliance of a reader on grammatical features such as the pronoun system, the article system, or demonstratives, that provide indications of reference. The types of cohesive devices which may potentially make texts more difficult for L2 readers to understand are discussed by several researchers such as Alderson (2000), Berman (1984), Celce-Murcia and Olshtain (2000), Cohen et al.(1988), Cooper (1984), Devine (1988), Eskey (1988), Grabe (2009), Steffensen (1988),Urquhart and Weir (1998), Van Dijk and Kintsch (1983).

Like coherence, cohesion is an important attribute of text that influences comprehension. Graesser et al. (2004) make a definite distinction between coherence and cohesion. They define coherence as a characteristic of a reader's mental representation of the text content, while cohesion is "an objective property of the explicit language and text" encompassing "explicit features, words, phrases, or sentences that guide the reader in interpreting the substantive ideas in the text, in connecting ideas with other ideas, and in connecting ideas to higher level global units (e.g., topics and themes)" (p. 193).

Since cohesion encompasses a number of elements which are of particular relevance to this study, it will be dealt with in some detail.

Discussing the relationship between cohesion and comprehension, Halliday and Hasan (1976, p.299) argue that cohesion provides continuity which enables the listener (or reader) to fill in missing information which is not contained in a text but is required for interpreting that text. A reader forms a coherent representation of a text by following the cues of various cohesive devices, and constructing coherence relations according to the skills or knowledge which he or she brings to the text (Graesser et al. 2004, p.193).

Halliday and Hasan (1976, p.4) define cohesion as referring to "relations of meaning which exist within the text, and which define it as a text", arguing that cohesion involves interdependence of elements of a text, so that interpretation of one element in a text depends on recourse to another, presupposed, element in the text.

Halliday and Hasan further posit that language comprises three levels of coding, namely, meaning in the semantic system, grammar and vocabulary in the lexicogrammatical system, and expression in the phonological and orthographic systems, or in other words, "meaning is put into wording, and wording into sound or writing" (1976, p.5). They argue that in the same way that both vocabulary and grammar contribute to meaning, both also contribute to cohesion, and that the concept of cohesion therefore encompasses both grammatical and lexical cohesion, and that some forms of cohesion are realised through the grammar and others through the vocabulary (1976, p.6).

Based on the notion that cohesion enables a reader or listener to establish relations of meaning within a text and to supply the missing pieces, Halliday and Hasan (1976) argue that a major problem related to understanding in all text processing is that of knowing how missing information is filled in by the listener (or reader) who assigns meanings and interprets the communication received, but in doing so forms, to a large extent, his or her own interpretation so as to fill in the semantic gaps existing in many sentences, clauses and words (pp. 299-300).

Celce-Murcia and Olshtain (2000, pp.203-204) also address the issue of missing cohesive or referential ties, arguing that these may also make processing more difficult since they can result in ambiguity. Furthermore, Katan (1999, p.105) argues that difficulty in understanding a text might result from an unspecified referential index , where 'referential' describes the relationship between linguistic expressions and the things, actions, events and qualities that they stand for (Richards et al. 1992, p.310) and the index is the point of reference. For various reasons related to style, cohesion or culture, deletion in surface structure might lead to the index being omitted, with the result that the reader will require a knowledge of the context if he or she is to understand the reference (Katan,1999, p.105). Katan illustrates this with the example *We are not amused*, pointing out that understanding this reference requires the culture-bound, exophoric knowledge that it refers to Queen Victoria.

Information required by a listener or reader can also be provided by cohesive elements such as situational and more remote textual information (Halliday & Hasan, 1976, p.303). Halliday and Hasan (1976) posit that what makes it possible for a

reader or listener to go through the decoding process is the fact that a text is systematically related to its environment, an essential component in this relationship being its continuity with what has preceded it, which is a necessary element in the interpretation of text. According to Halliday and Hasan, in the same way that grammatical structures such as sentences, clauses and so forth provide textual continuity at the grammatical level, cohesion provides continuity at the text level. They argue that "cohesive relations are realised through the lexicogrammar, by the selection of structures, and of lexical items in structural roles" and that "the cohesive relations themselves are relations in meaning, and the continuity which they bring about is a semantic continuity". The processing of text by a listener or a reader is thus influenced by cohesive patterns which not only signal the presence and extent of text, but also enable the individual to interpret the text, as well as determining how this is done (p.303).

A further aspect of cohesion which may play a significant role in L2 readers' ability to comprehend texts is the effect which various types of reference have on meaning. Halliday and Hasan (1976), provide extensive discussion of the types of reference which contribute to cohesion.

One such cohesive device is anaphoric reference, or the presupposition of something that has been mentioned previously in a text. For example, in the sentence *John finds maths easy, but I don't understand it*, the word 'it' refers back to 'maths', which is termed the *antecedent* of 'it'. Furthermore, certain types of verbs may also be anaphoric; for example, in *I like maths and so does he*, 'does' is anaphoric and

substitutes for 'like' (Richards et al. 1992, p. 17). This type of reference is a potential source of difficulty, especially if the presupposed item occurs in an earlier sentence rather than in the same sentence, or if it refers to an entire notion or subject discussed earlier in a longer text (Halliday & Hasan, 1976, p.14; Van Dijk & Kintsch, 1983 p.165). Personal pronouns are anaphoric (Halliday & Hasan, 1976, p.55), as are the selective nominal demonstratives: *this, these, that, those*. Halliday and Hasan highlight the importance of readers' ability to identify the referent in the relevant section of text when interpreting such elements (Halliday & Hasan, 1976, p.59). This issue is also highlighted by Koda (2005, pp.130-131) who argues that referential resolution involves more complex processes than simply identifying the antecedents to which an anaphoric reference applies, positing that "successful resolution necessitates, among other things, sensitivity to semantic and syntactic constraints, particularly when lexically attenuated forms are used as co-references." Koda gives the following examples as illustration:

(1) *Nancy ran into Jane and Nancy complained about a neighbour*. The semantic constraints of this sentence allow for only one interpretation of meaning.

(2) *Nancy ran into Jane and complained about a neighbour*. The elliptical form used in this sentence (i.e. omission of the pronoun) imposes syntactic constraints indicating that only Nancy could be the complainer.

(3) *Nancy ran into Jane and she complained about a neighbour.* This sentence is less constrained both syntactically and semantically, allowing either Nancy or Jane to be the referent of the pronoun *she.*

What Halliday and Hasan (1976) describe as cohesive chains may also be potential sources of difficulty in comprehending texts. Cohesive chains are chains in which the cohesive element, e.g. the pronoun *he*, *it* or *one*, may form part of a sequence spanning several sentences, so that the reader must go back several sentences to locate the original element. The same may apply in the case of cohesive devices such as conjunctions, or expressions such as *but, so, in that case, later on* (Halliday & Hasan, 1976, p.16). Lexical cohesion may also involve devices which refer to an element mentioned earlier in the text, but it differs from cohesive chains in that it leaps over a number of elements to pick up the presupposed element (Halliday & Hasan, 1976, p.17).

While anaphoric reference presupposes something that has been mentioned previously in a text, it may also happen that the presupposed item occurs later in the text, so that the reference points forward, as illustrated in the following examples:

In *When I bought it, the food was fresh*, the word 'it' refers forward to 'food'.
In *The issues to be dealt with are as follows: one, there is …* , the first clause refers forward to the issues to be dealt with.

In *Here is the plan. First, you will ...* , the first sentence refers forward to the actions to be taken..

This type of reference is referred to by Halliday and Hasan (1976, p.17) as cataphoric reference.

In addition to anaphoric and cataphoric reference, Halliday and Hasan (1976, p.18) also describe situations where the key element which provides information necessary for interpreting the text is not found in the text itself, that is, endophoric, but rather in the context or situation which the readers have to construct for themselves, that is, exophoric. For example, in *Do you know that man*, where the speaker is pointing to a particular man, 'that' is exophoric. However, this type of reference, since it is situational, is likely to be less common in written texts.

The following figure from Halliday and Hasan (1976, p.33) illustrates the various types of reference mentioned above:

```
                          Reference
        _____|_____
     [situational]                              [textual]
      exophoric                                endophoric
                               _____|_____
                          [to preceding text]      [to following text]
                                anaphora                 cataphora
```
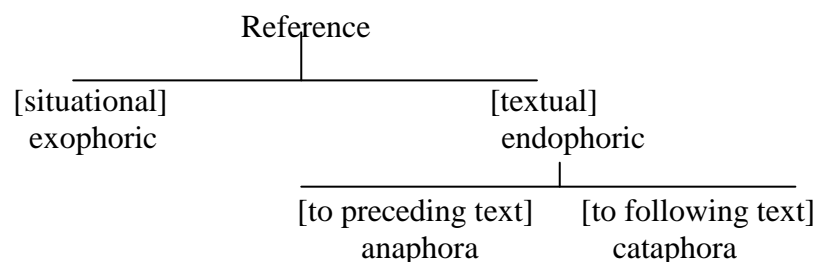
Figure 2. Various types of reference

As mentioned above, one type of cohesive device which plays an important role in text processing is pronouns. Van Dijk and Kintsch (1983), like Halliday and Hasan

(1976), address the issue of constraints inherent in pronoun comprehension, highlighting the difference between deictic pronouns which refer to individuals directly and do not require textual information, and textual pronouns which occur in constructions with their antecedents and may be *sentential* or *sequential.* They argue that the fact that textual pronouns must agree in gender and number with their antecedents facilitates identification of possible antecedents (Van Dijk & Kintsch 1983 p.162). They also stress that "'finding an antecedent' is *not* the same thing as understanding a pronoun, but only part of that understanding" (Van Dijk & Kintsch, 1983, p.164). Discussing cognitive principles underpinning the processing of pronouns, Van Dijk and Kintsch posit that it is affected by the limited information capacity of working memory, which contains only immediately preceding clauses or sentences and a current macroproposition (1983, p.163). They point out that although there may be strategic operations which allow for immediate, provisional interpretation of a pronoun, final interpretation depends on processing of the entire clause or sentence containing the pronoun, and, in some cases, may even depend on the processing of sentences occurring later in the text. This applies also to determining a co-reference link with the antecedents. "These also occur in sentences, and only if the two sentences are coherent semantically can pronoun interpretation be completed" (Van Dijk & Kintsch, 1983, p.164).

Texts which contain a high incidence of any of the types of reference discussed above will clearly present significant challenges to L2 readers.

2.7.1.3 Syntactic and Semantic Attributes

In discussing the distinction between global and local discoursal attributes, Section 2.7.1.1 touched briefly on the issue of the role of linguistic knowledge and linguistic competence in discourse processing. In this section, local discoursal attributes will be examined in more detail.

It should be noted here that in the discussions which follow, the theories put forward by various scholars often combine elements from a variety of different linguistic areas (for example, syntax and semantics) so that a separate analysis of each individual area becomes impossible, and a certain degree of overlap or repetition becomes inevitable. However, as far as possible, the different theories and approaches themselves have been addressed separately.

In addition to cohesive devices as discussed in the previous section, a number of other syntactic properties have been posited as contributing to difficulties in reading comprehension, and the role of syntax in L2 reading and comprehension, especially with regard to language processing, is an issue which is the subject of considerable debate in the literature.

The extent of early debate on this issue is illustrated by the number of scholars cited by Urquhart and Weir (1998, p.133):

> It does seem improbable that students would be able to work out the main ideas of a text without some baseline competence in the microlinguistic skills, without understanding some of the relations

within at least some sentences of that text (Alderson & Urquhart, 1984; Alderson &Lukmani, 1989; Carrell, 1991; Clarke, 1980/1988; Devine et al., 1987; Eskey, 1988; Grabe, 1991, p.391; Stanovich, 1980; Storey, 1995; Weir et al., 1990). However, the degree to which the reader needs these lower order abilities is not yet clear and may prove difficult to quantify (Weir et al., 1990, p.508). An interactive or interactive-compensatory view of reading (Rumelhart, 1977; Stanovich, 1980) would seem to imply that readers can make differential use of a range of components which we might loosely label 'specifically language related' and 'reason related' (Grabe, 1991; Williams & Moran, 1989).

A great deal of attention is given to the role of grammar in discourse processing by Van Dijk and Kintsch (1983) who discuss a number of grammatical elements. Since many of these elements are of relevance to text analyses carried out in this study, they are presented in some detail here.

Van Dijk and Kintsch (1983, p.11) distinguish between two types of discourse processing, namely strategic processes and rule-governed processes. Strategic processing involves the formation of working hypotheses about the meaning of a portion of text, based on characteristics of both the text and the language user, which may or may not be confirmed as processing continues. Strategies for understanding discourse include elements such as word and clause comprehension, and gist inferring, and are part of an individual's general knowledge. Such strategies need to be so well learned that they become automatized, and when new types of discourse are encountered, new strategies must be developed (Van Dijk & Kintsch, 1983, p.11).

Rule-governed processes, on the other hand, are long and complex, since they involve parsing sentences according to rules of structure, but these processes are often successful if the rules are correctly applied.

Parsing strategies, as discussed by Van Dijk and Kintsch (1983, pp.29-32), include processes such as:

- recognising that an article signals a noun phrase (NP);

  e.g. *He is in the running*. The definite article 'the' signals that *running* is a NP (gerund);

- recognising that a relative pronoun signals a new clause;

  e.g. *That is the girl whose book I borrowed*. The relative pronoun 'whose' relates the book to the girl.

- trying to attach each word to the constituent that came before it;

  e.g. *The dog bit the fox that was rabid.*

- using semantic constraints to determine syntactic function;

  e.g. *The mouse chased the cat*. Since common experience suggests that it is more likely that the cat chased the mouse, the correct interpretation here is clarified by syntactic function which determines that *mouse* is in subject position (Van Dijk & Kintsch, 1983, p.11).

- selecting the grammatical subject of an initial sentence as the preferred referent for a pronoun which occurs in a subsequent sentence;

  e.g. In the following sentences, 3 is easier to understand if it follows 1 than if it follows 2:

  1 *Modern advertising does not, as a rule, seek to demonstrate the superior quality of the product.*

2   *The superior quality of the product is not, as a rule, what modern advertising*

   seeks to demonstrate.

3   *It plays up to the desire of Americans…*

(Van Dijk & Kintsch, 1983, p.11)

Van Dijk and Kintsch's (1983) discourse processing model holds that in sentence

parsing, top-down, predictive, hypothesis testing works together with bottom-up,

stimulus driven, analysis. Top-down processing is induced by certain strategies

through which the reader makes predictions (e.g. where there is a verb there should

be corresponding arguments; where there is a content word with a conjunction at the

beginning of a clause (such as *Mary and),* there should be another content word of

the same kind as the first one *(Bill).* "Thus, an interactive processing model with top-

down and bottom-up components is just as appropriate for the parsing level as it was

for the word identification level of comprehension" (Van Dijk & Kintsch,1983,

p.30).

As suggested by the above discussion of discourse processing, linguistic competence,

that is, implicit, internalised knowledge of the rules of the language of a text, is

clearly a significant factor in reading comprehension, and is highlighted by Urquhart

and Weir (1988, p.15) who posit that, in the reading process, linguistic competence

plays a more significant role than other competence areas, and that in skimming or

scanning to determine the main ideas or to search for particular information in a text,

or in reading carefully for accurate comprehension, readers require a certain level of

competence in the microlinguistic skills such as understanding syntactic structure

and cohesion, and being able to deduce meaning from morphology and context (1988, p.133). The required level of competence in these skills is referred to by Alderson (1984) as the 'threshold' level. Alderson (2000, p.36) argues, however, that although early approaches to L2 reading assumed that knowledge of lexical, syntactic and rhetorical features was required, this was not supported by research findings. He suggests that it seems possible, rather, that knowledge of the lexis of a text, together with more general and specific content knowledge, may compensate for lack of linguistic knowledge. He adds, however, that there is nonetheless evidence that knowledge of particular syntactic structures, or the ability to process them, is a significant factor in L2 reading.

Linguistic knowledge also encompasses the ability to see relationships between key elements in a sentence. As mentioned in the section on coherence and cohesion, this is an important element in text processing, and as well as involving the processing of cohesive ties, it is also related to syntax. Gibbons (cited in Ruddell 1976, p.29) found that the ability to see relationships between parts of a sentence was fundamental to the ability to understand the sentence as well as to total reading achievement. Looking at reading comprehension from a psycholinguistic perspective, Ruddell posits two areas of primary concern, namely relational meaning, focusing on the deep structure and surface structure of sentences, and lexical meaning involving factors such as semantics and connotative dimensions of word meaning (Ruddell 1976, p.458). Alderson refers to studies in this area which have come to be known as 'garden-path studies', and which were based on the prediction that:

sentences which induce readers to make one syntactic parse and then confound it will be harder to process than sentences for which a syntactic structure can be unambiguously assigned.

Sentences like 2 below are garden-path versions of sentence 1 and an unambiguous, non-garden-path version of sentence 2 is illustrated by sentence 3:

1   *The experienced soldiers warned about the dangers before the midnight raid.*
2   *The experienced soldiers warned about the dangers conducted the midnight raid.*
3   *The experienced soldiers who were told about the dangers conducted the midnight raid.*

(Alderson, 2000, p.68)

Many of the issues discussed above are also discussed by Berman with regard to the effect of syntax' on the reading process (1984, p.139). Although Berman focuses on EFL readers, her argument may also be considered with regard to ESL readers, namely that these readers should be taught to understand not only the meaning of words, but also the relationship between words within a given text, since syntactic decoding is necessarily dependent on semantic factors. She posits that syntactic factors such as the unravelling of parts of sentences and correct perception of their grammatical and rhetorical interrelations are important components of reading fluency in general (Berman, 1984, p.139; Koda, 2005, p.110). Berman (1984, p.139) further claims that successful EFL readers must rely to some extent on syntactic devices to decipher text meaning, and she discusses several linguistic variables that could make text more difficult for EFL readers to process. One of these is the

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constituent structure, e.g. what the parts of a sentence are, what constitutes the main and subordinate clauses, what their predicate and arguments are in propositional terms, the subject-verb-object ordering of surface syntax, the NVN actor-action-patient semantic relations. Berman posits that difficulties in sentence processing might occur where a reader's expectations in SVO ordering are disrupted; for example, where the more basic ordering of semantic and syntactic relations conflicts with the surface form of sentences, such as in passive constructions, or where material is preposed before the subject, or where the main clause follows one or more adverbial clauses (1984, pp.140-141).

Berman (1984, p.140) cites Davies' (1973) example in the following sentence: *So widespread had the habit of reading the Bible in English become that official steps were taken to combat it:* In order to decipher the relationship between the parts of the sentence above, a reader needs to recognise that the first phrase represents a syntactic re-ordering of the more common structure, which would be *the habit of reading the Bible in English had become so widespread that … .* Furthermore, the reader needs to recognise that in this context:

- *so … that* signals the notion of consequences;
- the word *official* functions as a modifier of the noun *steps*, and not as the head of a NP;
- the passive verb phrase *were taken* implies the existence of an agent(s) that took steps;

- the antecedent of *it* is the whole NP *the habit of reading the Bible in English*, rather than any specific part of this NP, or any other nominal in the sentence as a whole.

Structural complexity and ambiguity are also highlighted by Koda (2005, p.107) as being factors which impede comprehension in that they tax working memory. Since embedded clauses interrupt the syntactic parsing of the main clause, they require the initial NP to be retained in working memory while the embedded clause is processed, and as mentioned earlier, this may tax working memory, especially for non-native readers who simultaneously need to process the unfamiliar language.

Another potential source of difficulty proposed by Berman is what she calls 'heaviness', which refers to constructions in which the basic NV(N) structure is extended and contains many sub-parts of embedding or modification, making it difficult for readers to identify the basic constituents of a sentence. In addition, violation of the basic NVN or 'kernel' structure through a process such as nominalisation may also contribute to making a test 'heavy' (Berman, 1984, p.141). By way of illustration, Berman (1984, p.141) cites the following example given by Smith (1971):

To understand the research that has provided information about many aspects of vision relevant to the reading process, it is necessary to acquire some familiarity with a venerable piece of psychological instrumentation and with a rather precise way of talking about very small units of time.

Readers of the sentence above either misinterpreted or completely misunderstood the core propositional relation, which is, simply put, 'It is necessary to do something in order to do something else'.

The importance of syntactic and semantic decoding in reading comprehension is supported by Cooper (1984) who compares what he terms 'unpractised' readers with 'practised' readers, the latter being readers for whom English is not their L1 but who have been largely educated in the medium of English, and may therefore be regarded as competent to cope with academic English texts. Tests conducted by Cooper (1984) explored the relationship between linguistic competence and reading comprehension, focusing on knowledge of affixes, ability to determine word meaning through context, discernment of semantic relationships such as particularisation, contrast, affirmation, addition and reason, as well as the lexical relationships of hyponymy, synonymy or antonymy. Cooper found that scores in these tests correlated highly with scores on general comprehension, and that practised readers were able to use the whole context to decode the meaning of unfamiliar words through their understanding of semantic relationships created by subordinators, sentence connectors and lexis (1984, p.128). In further testing focusing on syntactic meaning, syntactic features such as passivisation, aspect, complementation, conditional clauses, cleft constructions, tense, modality and non-finite clauses, Cooper (1984, p.129) found that for both practised and unpractised readers, understanding was impeded by the last three factors, namely tense, modality and non-finite participial clauses, and that hypothetical conditions were problematic for unpractised readers. With regard to the ability of readers to understand the meaning relationships between

sentences, both where the relationship is made explicit by a sentence connector and where it is not realised by such a connector, Cooper concluded that the ability to understand meaning relationships above the sentence level through an understanding of sentence connectors, as well as other cohesive relationships (as discussed earlier in this paper) correlated highly with performance on general comprehension (1984, p.132), which highlights the significance of this understanding of intersentential relationships.

Linked to this is the issue of relationships between sentences in a text as expressed through the use of conjunctions. Halliday and Hasan (1976, p.238) suggest that conjunctions may be classified according to a general scheme of four categories (additive, adversative, causal, and temporal), giving the following examples as illustration:

For the whole day he climbed up the steep mountainside, almost without stopping …

a.   ***And*** *in all that time he met no one.*   (additive)

b.   ***Yet*** *he was hardly aware of being tired.*   (adversative)

c.   ***So*** *by night time the valley was far below him.* (causal)

d.   ***Then****, as dusk fell, he sat down to rest.*   (temporal)

Halliday and Hasan (1976) highlight the fact that the meaning conveyed by a conjunction may be interpreted differently depending on all the different relations that must be conjoined.

The effect of conjunction and of conjunctive devices on reading comprehension is also discussed by other researchers (McNamara et al., 2010, Urquhart & Weir, 1998), who suggest that since such devices signal the relationships between elements in the text, they should make the text easier to process. Cohen et al. (1997, as cited in Urquhart & Weir, 1998, p.74), however, found that in reading longer texts, readers for whom English is not their L1 were more likely to fail to discern the relationships signalled by conjunctives. Furthermore, since the interpretation of cohesive devices is likely to vary between readers (Urquhart & Weir, 1998, p.75), readers' individual interpretation may clearly result in differences in comprehension of a text.

In addition, further complexities could arise in the use of what Halliday and Hasan term continuatives, meaning expressions which are used as cohesive items, though this is not their usual function, and which do not express a particular conjunctive relation, for example, *now, of course, well, anyway, surely, after all* (1976, pp.267 - 268).

A further element used in L1 English and one which may not be clear to L2 readers is discussed by Celce-Murcia and Olshtain (2000, p.59) who describe the use of marked constructions to achieve certain rhetorical effects. Examples of such constructions in English are *wh-clefts,* also known as pseudo-clefts, which according to Kim (cited in Celce-Murcia & Olshtain) are mainly used to allow for a separate clause in a sentence which allows the speaker to address a previous utterance (e.g. *A rest is <u>wh</u>at I need*). "Within this general view of *wh*-clefts, Kim distinguished those *wh*-clefts that are informational and mark the gist of the talk (i.e., that restate, sum

up, or refocus the topic) from those that are interactional and respond to a problem (a challenge from the interlocutor or a perceived misunderstanding / miscommunication)." (Celce-Murcia & Olshtain, 2000, p.59)

Another syntactic feature suggested as being a source of difficulty for ESL readers of English is the fact that a single grammatical morpheme, such as *that*, *it* or *there*, may perform various functions, thus causing functional ambiguity (Berman, 1984, p.143). The issue of ambiguity is also mentioned by Smith (1978, pp.70-71). In addressing the relationship between word-knowledge and syntax, Smith argues that meaning encompasses more than just words, and that comprehension entails more than simply putting together the meanings of individual words, as illustrated by the example of the difference in meaning between *a Maltese cross* vs. *a cross Maltese.* Nor does it depend simply on the order in which the words occur, since *Man the boats* and *Man is gregarious* have the same word order but differ in meaning (Smith, 1978, pp.70-71).

In addition to structural and functional ambiguity as discussed above, Katan, who posits ambiguity and vagueness as features of language which can impede cross-cultural communication (1999, p.95), analyses further elements of English discourse which could contribute to ambiguity. Katan (1999, p.92) cites the Meta-model proposed by Bandler and Grinder (1975) which suggests that humans simplify what they perceive, interpret and communicate by generalising, distorting and deleting what is real.

One of the simplification strategies featured in the Meta-model as described above is generalisation. A generalisation occurs when one example is taken as representative of a number of different possibilities (O'Connor & Semour, 1990, cited in Katan 1999, p.96), and this is linked to the notion of schema, since an individual tends to decipher meaning by relating something that is experienced to other, similar instances in his or her experience (Katan 1999, p.96). Among the signs of generalisation which Katan identifies are universal quantifiers such as *all, always, each*, which do not allow for any exception (1999, p.96). Applying this to the issue of reading in English as an L2, it is arguable that the subtleties of such linguistic features may not be clear to an L2 reader.

Similarly, the use of deletion, another simplification strategy described in Halliday and Hasan (1976) and discussed by several other scholars (Berman, 1984, p.142; Katan, 1999, p.98; Koda, 2005, p.110), may hinder the understanding of a non-native speaker (or reader). Examples of deletion devices mentioned by Berman (1984, p.142) are, amongst others, gapping (e.g. in *John took his car and Tom his truck,* 'took' is deleted), lack of relative pronouns in English relative clauses (e.g. In *The man I saw was old,* 'whom' is deleted), *wh + be* deletion in post-nominal modifiers (e.g. In *The car being washed is mine,* 'which is' is deleted'). According to Katan, deletion can also occur on a syntactic, or lexico-grammatical, level and on a semantic level (1999, p.98), and can lead to misunderstanding or lack of understanding if it results in a surface representation which no longer explicitly portrays the speaker's (or writer's) model of the world (1999, p.101).

A further source of difficulty is a form of deletion which takes for granted that the performative in an utterance is understood and can therefore be left out. This could hinder understanding for a non-native speaker, since these omissions are often made on the basis of culture-bound rules (Katan 1999, p.108). For example, an utterance such as *Impolite behaviour is unacceptable* raises the question of 'According to whom?' In other words, knowledge of the performative (i.e. all members of this particular society) is presupposed and the performative is therefore deleted. To a non-native speaker, however, the performative may not be clear. The above utterance further illustrates the issue of value judgements as described by Katan (1999, p.109), since it also involves potential cultural differences in an understanding of what type of behaviour is viewed as impolite.

Halliday and Hasan's (p.231) extensive analysis of ellipsis, substitution and reference provides further insight into this issue. Where substitution involves the replacement of one item by another (Halliday & Hasan, 1976, p.88), ellipsis is simply 'substitution by zero', meaning that something is left unsaid, but is nonetheless understood (p.142) since it presupposes some preceding item, which then serves as the source of the missing information; for example, the sentence *Hardly anyone left the country before the war* presupposes knowledge of whether 'the country' refers to a 'non-urban area' or to a specific country on the map (p.143). Nominalisation, or the use of a verb, an adjective, or an adverb as the head of a noun phrase, is another source of potential difficulty in accessing meaning. Celce-Murcia

and Olshtain (2000, pp.129 - 130) contend that nominalisation[13], which is very common in English writing, can produce complex noun phrases containing dense information which may be difficult to process. This may make it difficult for an L2 reader to recognise or locate the head noun during bottom-up processing, and misinterpretation of the position of a head noun might interfere with comprehension.

One example of the complex constructions mentioned above is sentences in which the subject of an adjectival or relative clause has been deleted. Celce-Murcia and Olshtain (2000) describe a study designed to assess the ability of a group of intermediate-level EFL students to interpret adjectival modifiers in English, in which the students were asked to translate the following clauses into their L1.

1 *Science-based technology has been described as the principal tool….*
2 *Leaders selected democratically reflect voters' choices.*

Celce-Murcia and Olshtain (2000, p.130) report that in translating example 1, students incorrectly identified the word 'science' as the head noun of the construction, while the second example was misinterpreted by most students to mean that all leaders are elected democratically and reflect voters' choices. Such misunderstanding could prove greatly misleading in the reading of a passage containing such a construction.

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[13] "In English, nominalization is a grammatical process that enables the writer to compact a great deal of information into one noun phrase. This density of information and the complexity of the resulting structure greatly affect the processing of the written text. The complexity of any given English noun phrase may be due to multiple modifiers such as one finds in complex compounds, relative clauses with deleted relative pronouns, and various other compound modifiers in prenominal position." (Celce-Murcia & Olshtain, 2000, pp.129 - 130)

The way in which old and new information is structured in a discourse may also have an effect on comprehension (Krifka, 2006). Katan (1999, p.115) argues that since thematic organisation is important in English, and since given information (theme) normally comes at the beginning of a clause, thus relating the continuation of the text to what has gone before, distortion may occur if the normal theme/rheme[14] pattern is influenced by presupposition (see Section 2.7.2), i.e. if information is deleted from the theme because of a presupposition that is shared by both speaker/writer and listener/reader. For example, the sentence *The Minister has suggested adopting a new education policy* presupposes knowledge of an existing education policy. Beaver (2001, p.7) cites Frege's (1892) definition of presuppositions as "special conditions that must be met in order for a linguistic expression to have a denotation", and argues (p.8) that in some cases, without the background of specific presupposed knowledge, a sentence containing a particular noun phrase would have a sense, but no reference.

A number of scholars discuss the role of presupposition in communication and describe syntactic, semantic and prosodic elements which initiate it. It is beyond the scope of this study to discuss the many theories related to presupposition; however, the relationship between presuppositions and textual properties as posited in many of these theories is illustrated by the following suggestions from Torsello (1987, as cited in Katan, 1999, p.115) and Beaver (2001, pp.10-12) with regard to some possible options for evoking presupposition and thus influencing a reader's understanding of a particular communication.

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[14] *Theme* is the starting point of the clause, realised by whatever element comes first, and *rheme* is the rest of the message, which provides the additional information added to the starting point and which is available for subsequent development in the text.

- definite noun phrases (including proper names and possessives)

- cohesive elements (reference, substitution, ellipsis)

- embedded clauses (e.g. the fact clause, the defining relative clause, *this* - and *that* -clauses)

- nominalised processes

- *wh*-questions

- sentence-initial subordinate clauses

- the specifying genitive

- some uses of the simple past

- lexical indicators: *clearly*, *obviously*

- rising tones

- factive verbs and NPs presupposing truth of the propositional complement (e.g. *regret*, *know*, *the fact that X* and *the knowledge that X*)

- clefts (e.g. an *it*-cleft)

- intonation (destressed or unstressed material is sometimes thought to induce a presupposition)

- modifiers such as the verbs *stop* and *continue*, and adverbs such as *still*

- iterative adverbs (such as *too* and *again*)

If understanding depends on presupposition, and if a reader does not possess the presupposed knowledge which should be evoked by the above factors, the presence of such factors in a text will clearly hinder comprehension for that reader.

In summary, it is also important to consider that different types of reading tasks may draw more heavily on some linguistic features than on others. Table 4 shows examples of linguistic features which may influence elements of the reading process as listed in Urquhart and Weir's summary of reading taxonomies (1998, p.p.90-91) as presented in Chapter 2, Section 2.1. It should be noted, however, that the language features listed in Table 4 are merely examples, and that the list is by no means exhaustive.

Against the background of the vast and complex nature of the syntactic properties which potentially influence the processing of text, as described in this section, the importance of exploring reading comprehension difficulties underpinned by these properties becomes clear. However, it is also clear that the syntactic attributes of a text cannot be considered in isolation, since they are interdependent with lexical and semantic attributes as discussed in the next section.

2.7.1.4   Lexical Attributes

Since the principal aim in reading comprehension is the extraction of meaning from a text, an essential element is clearly the decoding of meaning at word level, or in other words, processing of the lexical and semantic properties of the words in the text. This processing may encompass several factors, including morphological complexity, changes in meaning, and the principles that govern the relationship between sentences or words and their meanings, as discussed in Section 2.6.3.

Table 4

Relationship between Reading Skills and Linguistic Features Influencing
Comprehension

Reading skills	Related linguistic features
Understanding information when not explicitly stated	Referential devices; anaphoric, cataphoric and exophoric reference; pragmatic knowledge.
Understanding the relations within the sentence	Syntax, pronouns (personal, relative, deictic).
Understanding relations between parts of text	Lexical cohesion devices; discourse structure.
Recognising indicators in discourse	Connectives; focus particles; indefinite pronouns.
Identifying the main point of information in discourse	Discourse structure; sentence structure; information structure;
Vocabulary and structural knowledge	Syntactic and semantic constraints on word usage; underlying form and possible derivations of word; various associations with other words; changes in a word's form and function according to usage in a particular context.
Formal discourse structure knowledge	Topic/comment; rheme theme; genre clues; discourse patterns.

In addition to these factors, word frequency is another important element which

affects a reader's ability to process text (Crossley et al., 2008, p.488). This might

involve the frequency rating in English of various types of words as measured

according to word frequency lists such as the General Service Word List, the British National Corpus Word List or Coxhead's Academic Word List, as well as the frequency with which certain words occur in a particular text. The aspect of frequency rating relates to the element of automaticity mentioned in Section 2.6.3, since words with a high frequency rating are likely to be more familiar and therefore more automatically processed; with regard to the frequency with which certain types of words occur, there are a number of word categories which may represent a source of difficulty if they are not correctly understood, e.g. causal particles and connectives. An analysis of the relative frequency of words used in a particular text thus becomes useful in assessing the readability of that text.

2.8   Languages in Contrast: Effects on Text Processing

The discussion so far has focused principally on various linguistic properties of the English language in particular. However, a number of researchers have also approached the question of the processing of text by non-native speakers or readers against a background of contrastive linguistics, with the debate focusing on whether specific features such as style, structure, syntax etc., if they differ between the L1 and the L2, might affect comprehension. There has been considerable debate in the literature regarding the validity of arguments based on the linguistic relativity hypothesis (Swoyer, 2003). According to Ross (2010, p.115), however, this hypothesis should not be regarded as a "carbon-copy of the Sapir-Whorf Hypothesis", since researchers in this field argue that language influences rather than determines perceptions of reality, and interest in the field has revived and has become closely associated with cognitive linguistics (Ross, 2010, p.114). Linguists

who support this renewed interest include widely cited scholars such as Levinson, Gumpera, Lucy, Ochs, Foley, Slobin and Lakoff. Empirical investigation is on-going, and certain aspects of linguistic relativity and contrastive linguistics are worth noting for the purposes of this study.

The issue of whether language affects how people perceive the world has already been addressed in Section 2.5.2. In the following section, the discussion will focus on how the structure of the language itself might influence understanding.

Differences between languages may involve various types of structure. Firstly, as mentioned in Section 2.7.2, Berman (1984) argues that the ordering of the principal elements in a sentence may be an issue. As is the case in English, the most common (i.e. the most neutral or unmarked) word order pattern in Bantu languages is SVO; however, in these languages all the following combinations also exist: SVO. SOV. VSO, VOS and OSV (Miti, 2006, p.26). According to Miti (2006):

> [i]n sentences where topicalisation[15] is prevalent such as in those containing object markers, all the six logically possible arrangements appear to be acceptable. Word order is not confined to the sentence. Within the noun phrase, for example, word order affects the relative arrangement of adjectives (A), nouns (N), genitives (G) and relative clauses (Rel) (p.26).

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[15] Emphasising the topic or focus of a sentence by placing it at the beginning of the sentence, as is often done in English. E.g. Excuses are not what I want to hear now!

A number of other variations in word order are also an important consideration in text processing in an L2. Alderson (1984, p.9) discusses the notion that poor L2 reading might be due to differences between strategies for reading in the L1 and reading in the L2, citing Cowan's view that strategies for processing text are language specific, and that knowledge of the structure of the language of a text will influence the expectancies which a reader derives from syntactic clues. Thus, for example, an English reader who expects subject-verb-object ordering may be confused when reading a sentence in a language which sometimes uses object-verb-subject ordering (Alderson, 2000, p.9).

Topic-comment structure also differs from language to language regarding the role it plays in the presentation of information in different languages, the topic of the sentence being the thing (or person) the sentence is about, while the comment is what is said about the topic (Krifka, 2006). Whereas in English the topic is often related to the subject of a clause, in some other languages topic is a basic grammatical category, while in yet others, topic is indicated by word order, e.g. a constituent is marked as a topic through being placed at the front of the clause (Liddicoat & Curnow, 2008, p.47). Comprehension or processing difficulties in English may also be caused by the absence of a first position subject, or when topic and comment in a sentence are reversed, as often seems to be the case in texts written for English media such as magazines and newspapers.

Information structure in sentences presents another area of potential difficulty in text processing. Scholars in the field of contrastive linguistics point out that there seem to

be significant differences in the way information is presented in different languages, particularly in situations where languages from different phyla are commonly used, as is the case in Africa in general and Namibia in particular, where language phyla include both Indo-European and Bantu languages. In different languages, encoding of information may be done in different ways involving elements such as information structure, word order and focus, and therefore the order in which old and new information is structured in English may affect comprehension. With regard to old and new information, Downing (1995, p.13) posits that since a sentence contains a pre-existing information structure comprising old and new information which forms a foundation to which further incoming information is added, the language processor (or reader) needs to be able to judge which information is old and which is new. In English, for example, 'given' information is usually put in the subject position in a clause, while 'new' information is usually allocated to object position (Liddicoat & Curnow, 2008, p.45). Where this differs from the order in a reader's L1, misunderstanding may result.

In addition, where English makes use of definite and indefinite articles (as well as personal pronouns, clitics and person inflection and demonstratives) to signal given and new information respectively (Krifka, 2006), other syntactic structures are used in other languages. For example, in Khoekhoegowab, according to Haacke (2006, p. 106), the salient information is foregrounded to the beginning of the sentence (i.e. rheme first). Haacke describes Khoekhoegowab (an SOV language) as a discourse-oriented language in which surface word order is determined (subject to certain grammatical constraints) not by the grammatical function of sentence constituents,

but rather by "information packaging devices", and which resorts primarily to syntactic means rather than morphological markers to mark focus (p.114). In Otjiherero, ordinary focus follows specific syntactic rules, is marked by a strong respiratory accent, and is always in final position, while emphasis is a matter of intonation and sometimes of specific morphemes (Mohlig & Kavari, 2008, p.p.280-281). Liddicoat & Curnow also point out the role of cultural context in this respect, since an individual's knowledge of the world allows him or her to discern that certain information is, in a sense, given information since it is based on other knowledge from outside the discourse, that is, it is not new to the reader (2008, p.47).

It seems to follow, then, that if a reader is conditioned to locating salient information according to the protocols of his or her L1, where the L1 protocols differ from those of English, the reader may be predisposed to identify the wrong information as being salient in a particular context.

Liddicoat & Curnow's (2008) description of languages includes further discussion of the effect on meaning of differences in the syntax of various languages. For example, according to Liddicoat & Curnow (2008, p.45) the three basic sentences types found in language, namely declarative, interrogative and imperative, are formed differently in different languages through changes in word order, special verb forms, intonation or special particles. L1 influence on a reader's perceptions of the meaning of a particular English sentence may therefore lead to misunderstanding or, in the case of questions, to inappropriate responses such as are often given by students carrying out English reading comprehension tasks. Liddicoat & Curnow further point out that

since syntax is a fundamental element structuring the ways in which information is presented in sentences, and since this structure is context-dependent, language should be studied not only at the level of isolated sentences, but also with regard to sequence of sentences (2008, p.45). According to Downing (1995, p.10), it is not only the bounds of textual substructures which are determined by word order variations; the textual status of individual constituents of the clause may also be indicated by such variations. For example, the positioning of a particular noun phrase before the predicate in a language which is essentially verb-initial may convey information about the role of the referent of that particular noun phrase in a particular textual context.

Studies in contrastive linguistics also explore the issue of the ways in which the relationship between semantics and syntax differ in different languages. According to Liddicoat & Curnow (2008, p.48) such differences may encompass lexical semantics dealing with the meaning of words, and grammatical semantics relating to the ways in which morpheme meanings are combined by grammar to form the meaning of utterances in different languages. Differences in lexical semantics arise from the fact that the meanings of many words are language specific, and that "the natural world is not divided up the same between different languages" (2008, p.49), while differences in grammatical semantics involve the meaning of grammatical morphemes and how systems of grammatical meaning differ across languages, e.g. how they show tense (2008, p.50). In addition, there is also the issue of how these meanings combine to form sentences. For example, although the clause *the dog chased the cat* has the same morphemes as *the cat chased the dog*, the meaning is different. In English this

issue is resolved through the concept of constructions. That is, English speakers have a general schema or template, such as NP – verb – NP, by which meaning is assigned, the first noun having the most active role, and the second having the more passive role, while a different schema would be applied to a passive sentence (2008, p.50).

Harold (as cited in Downing, 1995, p.3) also discusses ways in which syntactic organising principles may be used for pragmatic purposes such as establishing a social or affective stance. According to Harold, in VSO languages, 'predictability' (the extent to which the listener/reader can predict the presence and role of a particular concept) may be chosen as a syntactic organising principle; this means that while verbs are usually placed in the initial position, indefinites and pragmatically marked NPs may also sometimes be permitted in initial position to signify their unpredictability. Other types of language may choose 'availability' (the ease with which a listener/reader can access a concept) as an organising principle. In this case, indefinite noun phrases, because they are not available, are assigned to slots late in the clause.

This use of syntactic organising principles for pragmatic purposes is also described by Ross (2010, p.117).

In the light of this argument, it seems likely that L2 readers of English accustomed to the organising principles and pragmatic cues of their L1 may misunderstand or lack insight into the pragmatic purpose behind certain constructions in English.

The article system is a further linguistic feature which may be a source of difficulty for readers whose L1 has no articles. The difficulty presented by the definite article is that in itself, it has no content, so that in order to fulfil its function of identifying a specific, identifiable individual or item, it depends on information which is recoverable elsewhere, either within the text or in the situation or context (Halliday & Hasan, 1976, pp. 70 – 74). The notion that the article system may be a source of miscomprehension is arguably a familiar one to teachers in the field of teaching English as an L2. Alderson (1984, pp.9-11) mentions the issue of L1 interference in L2 reading, and although there is some disagreement as to whether this is a significant factor in comprehension, the fact that two of the languages spoken by large groups of people in Namibia, namely Oshiwambo and Otjiherero, do not have articles[16] (Möhlig & Kavari, 2008, p.82) may account for the commonly observed difficulty experienced by students in Namibia in the use of and understanding of definite and indefinite articles. Having a different article system in their L1, L2 readers may not be sensitive to the effect on meaning resulting from the use of a definite as opposed to an indefinite article, or the omission of an article (Johnson, 2002, p.20).

The omission of the article may also lead to difficulty in expressions such as *few* vs. *a few*, *a* or *little* vs. *a little*. For example, *A few people attended the meeting* places focus on the fact that there were in fact some people at the meeting, whereas *Few*

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[16] In Oshiwambo and Otjiherero, nouns consist of nominal class prefixes which indicate number and determine the syntactic relationship with other constituents of a sentence (Möhlig & Kavari, 2008, p.82).

people attended the meeting draws attention to the lack of people. Similarly, *I have a little money* has a more positive connotation than *I have little money*.

A second example of the effect of complex constructions on text processing by L2 readers is the issue of modifiers. Adjectives, for example, may present a challenge to L1 speakers of Bantu languages. According to Miti (2006, p.263), very few true adjectives are found in these languages, and "a number of constructions in this language family which are rendered into English by adjectives are not adjectives in the true sense". Furthermore, unlike in English, in which adjectives are usually placed in front of the noun, Bantu languages do not place the head noun in final position. In Oshiwambo, for example, adjectives, if any, usually follow the head noun (Petrus Mbenzi, personal communication, November, 2010). Thus, in a phrase such as *informal observed behaviour*, it might be difficult for an Oshiwambo speaking reader to identify 'behaviour' as the head noun; he or she might mistake 'observed' for a verb, and conclude that 'informal' must therefore be the subject. Similarly, in the phrase *school board meeting*, in which all three words appear to be nouns, it would not be clear which of the three is the head noun, and significant misunderstanding could result. Furthermore, a phrase such as *life changing, extensively modified approaches*, might not only create difficulty in locating the head noun, but because of its length, might also require slower processing (Celce-Murcia & Olshtain, 2000, pp.130) and thus make comprehension more difficult.

Comparatives and superlatives may also be interpreted differently by readers from different language backgrounds (Katan, 1999, p.111) since both these linguistic

forms imply measurement against some type of yardstick, which may differ from culture to culture. For example, a reference to an individual's 'best' clothes may evoke very different images according to various societal mores and conditions.

The morphology of nouns presents another area of contrast between languages. Firstly, while English does not have noun classes as such, other than singular and plural, Bantu languages may have between 15 and 21 noun classes. In contrast to English, nouns in Bantu languages consist of a stem and a prefix, and many have an augment (or preprefix) which has various pragmatic and syntactic functions (Nurse, 2006, p.682). Furthermore, Bantu languages have at least six noun genders. It seems possible, therefore, that speakers of Bantu languages may sometimes have difficulty processing the meaning of English nouns which lack these properties.

Also related to differences between the L1 and the L2 of a reader is the question of verbs and verb tenses. Nurse (2006, p.683) describes Bantu languages as "verby", stating that "the verb is not only the organisational centre of the sentence but encodes more information than any other word class, information that in, for example, English, requires several words." According to Nurse & Philippson (2003, p.9), the verb structure in Bantu languages is agglutinating, and in some languages may include as many as 20 morphemes. The complexity of Bantu verbs structures is reflected in the following description by Nurse: "Always, or nearly always encoded in the inflected verb are subject, tense, aspect, mood, valency, and negation" (2006, p.683). The contrast between such verb structures and verb structures of English may arguably influence processing of English texts by Bantu L1 readers.

Differences between languages in the expression of modality present another potential source of difficulty in comprehension. Celce-Murcia and Olshtain (2000, p. 58) identify the use of the modality, tense and aspect as a source of coherence in English discourse, while Kosur (2010) proposes that modality can be defined as "the grammaticalised expression of the subjective attitudes and opinions of the speaker including possibility, probability, necessity, obligation, permissibility, ability, desire, and contingency" and that "different modalities express what is, what would be, what should be, and what may be." Kosur warns, however, that although modality can be expressed in all languages by means of either grammatical mood or a modal system, there is considerable debate among scholars as over a definition of modality which can be applied to all languages. This debate, in itself, suggests that interpretation of the expressions of modality in different languages may be a source of miscomprehension.

Modality as a factor in cross-cultural communication is also discussed by Katan (1999, p.101) who distinguishes between extrinsic modality which encompasses the possibility, probability or certainty that a proposition is true (e.g. *it can't be raining!*), and intrinsic modality, through which an individual influences or controls self and others (e.g. *I/you can't go out dressed like that*) according to their culture-bound model of the world. He further divides intrinsic modality into necessity and possibility, both of which "set the individual and culture-bound limits of choice, either by implying (limiting) beliefs about the world or by what is considered possible". For example, 'can' and 'cannot' are often used in English to express personal beliefs which may not necessarily be shared by a speaker from another

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culture (Katan, 1999, p.103), such as in the statement *They can't kill snakes.* Reading such a statement, an L2 reader, rather than seeing this as a cultural taboo, might conceivably interpret it as meaning that the individuals concerned do not have the ability to kill snakes. A further example is the distinction between 'must' and 'should' which appears to be unclear to many L2 speakers/readers, as evidenced by the use of 'must' for recommendations in documents such as reports; e.g. *The government must provide more jobs* rather than *The government should … .* Celce-Murcia and Olshtain (2000, p. 58) also give as illustration of potential source of difficulty the systematic use of the historical present tense and its variation with the simple past tense, i.e. *used to* vs. *would*, and the use of *going to* vs. *will*.

Certain tenses of English verbs may also present a potential source of difficulty for L2 readers, particularly with regard to the implications of particular aspects. Johnson (2002, p.18) points out, for example, the distinction between the perfect aspect and simple forms of the verb phrase. For example, both the present perfect and the simple past are related to a time in the past, but the perfect aspect reflects the relevance of a past action to a present situation, whereas the simple form does not do so, as illustrated in the following examples given by Johnson:

    (a) *How long have you lived in London?*

    (b) *How long did you live in London?*

In sentence a), the use of the present perfect tense indicates a presupposition that the person being addressed still lives in London, while the use of the simple past in sentence b) places the living in London at some time in the indefinite past.

According to Johnson, a similar confusion may arise between the past perfect tense and the simple past tense, as in the following sentences, as in:

> (a) *When our guests finally arrived, we had eaten all the food* .
>
> (b) *When our guests finally arrived, we ate all the food*.

or between the future perfect tense and the future simple, as in:

> (a) *We will have finished when you get there*.
>
> (b) *We will finish when you get there*.

It may not always be clear to L2 readers that the past perfect and future perfect tenses express the relationship in time of one event to another, or that perfect tenses may express the sequence of events in cases where other time markers such as 'before' or 'after' are not used (Johnson, 2002, p.19).

The distinction sometimes expressed through the choice of a gerund rather than an infinitive verb (Johnson, 2002, pp.20-21) may also cause confusion. For example, *she likes to sing* is very similar to *she likes singing*, whereas *he stopped smoking* has

a very different meaning from *he stopped to smoke* (i.e. *he stopped in order to smoke*).

The issue of verbs is explored more deeply by other scholars in the field of language typology and contrastive linguistics. Talmy (cited in Slobin, 2003; Ross, 2010; Turner, 2000) proposed the idea that languages fall into two types according to how verb phrases describe the manner of motion or the path of motion. In what Talmy would designate 'satellite-framed' languages (S-languages), verbs typically express manner of motion, with path being expressed through the use of particles such as *in* or *out* (e.g. *The dog ran into the house*), while in 'verb-framed' languages (V-languages), verbs directly encode motion path (e.g. *enter*), with manner of motion being left out, or expressed in a complement of manner (e.g. *The dog entered the house by running*). Although languages of both types have verbs of manner, V-languages tend to have fewer such verbs, while S-languages such as English have many. Thus, while speakers of a satellite-framed language such as English may elaborate path when describing motion, speakers of verb-framed languages reading English may focus their attention on situation, and ignore expressions of path. Furthermore, many manner verbs may be used to provide expressive imagery and subtle distinctions which are often absent in V-languages or to provide evaluations of the person who is moving (Slobin, 2003, p.6). Slobin argues that the manner-verb lexicon is commonly used metaphorically "to add an evaluative dimension to descriptions of various sorts of non-literal motion and change of state". To illustrate this evaluative perspective, he suggests the following examples (Slobin, 2003, p.11):

1. two countries may be reported as "shambling into a confrontation"

2. a political campaign "stumbles on roadblocks"

3. prices can "drift," "soar," "lurch," or "plunge"

Verb-framing is also posited as having an effect on mental imagery. Section 2.5.2 above described Whorf's approach to analysing language, an approach which focused on the underlying patterns of language, or more specifically, the grammar, and language as a system, and Whorf's theories regarding the culture/language interface which were based on the form and function of language tense systems (Katan 1999, p.84). More recently, however, the theory of language relativity has been explored on different levels, namely, the typological/grammatical and on the lexical/semantic levels (Kramsch, 2008, p.244).

At the grammatical level, the potential influence of verb typology on the way individuals think is highlighted by Slobin (as cited in Kramsch, 2008, p.224). Although Slobin refers to speakers, his comments may apply equally to written texts. Slobin suggests that although it cannot be proved that an individual's world view is determined by his or her language, it is nonetheless possible to show that in communicating, speakers must necessarily heed "those dimensions of experience that are enshrined in the grammatical categories of the language they speak". Slobin (as cited in Kramsch, 2008, p.224) gives as illustration the example of the contrast between languages in expressing the English sentence *The man is sick*; by employing specific grammatical structures, a Siouan would specify whether the man is moving or at rest, while a Kwakiutl speaker would indicate whether the man is visible or

non-visible to the speaker, and a Spanish speaker would focus on whether the man is temporarily or chronically sick.

In support of the notion that language may influence mental imagery, Slobin (2003, pp.12 – 13) cites the results of an experiment confirming the impression that there are major differences in mental imagery between speakers of S- and V-languages. English and Spanish speakers were given passages to read taken from Spanish novels "in which manner verbs were not used, but in which the author had provided information about the nature of the terrain and the protagonist's inner state, allowing for inferences of manner", and were later asked to report mental imagery for the protagonist's manner of movement. In line with Slobin's predictions, almost all English speakers reported mental imagery for the manner in which the protagonist moved, using manner verbs such as *stagger, stumble, trudge*, in contrast with the majority of Spanish speaking readers from Mexico, Chile, and Spain who reported little or no imagery of the manner of the protagonist's movement, but had clear images of the muddy, stony path and the physical surroundings of the scene, having experienced the passages as "a series of static images or still pictures ("more like photographs")".
Clearly, in some contexts, the distinction in meaning expressed in different languages by verb frames could result in misunderstanding or misinterpretation on the part of the L2 reader.

Other aspects of the role of language typology in reading comprehension have also been examined by researchers. Discussing cross-linguistic variations in sentence

processing, Koda (2005, p.103) points out that although scholars generally agree that all languages share particular processing mechanisms, there is a marked difference of opinion as to which components are universal and which are language specific. Koda cites Inoue and Fodor's view, namely that universal performance mechanisms allow for online error correction and hence correction of any misinterpretation arising from such errors, even in typologically diverse languages, such as head-initial English and head-final Japanese, despite their contrasting syntactic features. Koda contrasts this view with the opposing view that the major aspects of parsing are language-specific, and that any account of sentence processing must therefore accommodate the structural peculiarities of a particular language (Cuetos & Mitchell; Weinberg; Mazuka; as cited in Koda 2005, p.104). One such structural difference is exemplified by Mazuka and Itoh who posit that "in head-final Japanese, parsing decisions remain tentative until the final word of the sentence is processed, whereas in head-initial English, the parser makes some early commitment about its structural interpretation" (as cited in Koda, 2005, p.104).

A mismatch between the Principal Branching Directions (PBDs) of the L1 and the L2 may also hinder the L2 reading process in that it slows down reading speed and decreases the reading comprehension rate, as indicated in a study by Maleki (2006). English is a Right Branching Direction (also referred to as head initial) language which means that in English, relative clauses appear to the right of the head noun, while in Left Branching Direction languages, relative clauses premodify the head (Chang, 2004). Readers whose L1 is left-branching, therefore, may arguably find it more difficult to process English sentences containing, for example, relative clauses.

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This supports findings from a study by Juffs (as cited in Koda, 2005, p.116) in which reaction-times differed considerably between readers with typologically similar and dissimilar L1 backgrounds, thus suggesting that L1-L2 typological distance is a strong predictor of syntactic-processing efficiency. Koda cites Juffs' conclusion that "adult ESL learners are influenced by typological properties of their L1s that are linked to L1 parsing strategies when processing English as an L2". With regard to cross-linguistic processing, Gass (cited in Koda, 2005, p.114) concludes that when confronted with processing conflicts, L2 readers may resort to finding solutions based on the workings of their L1, and when L1 and L2 syntactic incongruities preclude such a strategy, these readers attempt to find resolution in fundamental universal principles.

Relational constructions should also be mentioned as an important element in text processing since they play an important role in spacial and temporal descriptions. Such constructions are referred to in the literature as adpositions, and include both the preposition (which precedes a noun phrases) and the postposition (which forms a constituent with a preceding NP adjacent to it) (Dryer, 2005). Most English adpositions are prepositions, but other languages have postpositions or both, and may also include other types of adposition (Hagège, 2010, p.1; Ross, 2010, p.120), and intralinguistic and cross-linguistic variation is observed in both the morphosyntax and semantics of these relational constructions (Svorou, 2007, p.729).

With regard to language differences, anaphoric and cataphoric reference, as discussed in Section 2.7.1.2, is a potentially significant factor in considering possible underlying reasons why L2 learners and students sometimes display confusion with

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regard to pronouns and pronominal references, especially when they are gender related. In contrast to English, pronominal reference in Bantu languages can also be expressed through elements which are incorporated into the verb, often called clitics, concords, prefixes or subject/object markers (Mohlig & Kavari, 2008, p.112; Hyman, 2003, p.269); thus, if L2 readers rely on these elements to facilitate comprehension, they may experience some difficulty in processing English pronominalisation. The issue of pronouns encompasses differences in what is obligatory or typical in different languages, since some languages have no gendered pronouns, while others are sensitive to gender (Slobin, 2003, p.2). Furthermore, in some languages, specific pronouns indicate degrees of status or intimacy, which English, using the universal 'you' does not reflect (Slobin, 2003, p.3).

Tone is yet another aspect of language differences which should also be considered with regard to readers in this study. In view of the fact that 95% of Bantu languages are tonal (Nurse, 2006, p.682), and since tone in these languages has a lexical significance, this aspect might be considered a factor in text processing. According to Nurse (2006, p.682), not only is tone linked to certain tenses or groups of tenses, but it may also signify specific sentence structures, distinguishing, for example, between statements and questions, positive and negative expressions, main and subordinate clauses (including relative clauses) and also between segmentally identical third person and second person singular subject prefixes.

Tonal languages use pitch to signal a difference in meaning between words, and differ from stress or non-tonal languages like English where pitch does not have

those same functions. In a stress language, tone can be used to convey an attitude or change a statement into a question, but tone alone does not change the meaning of individual words. However, in tonal languages such as Oshiwambo and Otjiherero, the function of tone is different; by using a different tone for one word, the meaning of that word can be dramatically changed (P. Mbenzi, personal communication, 23 March, 2011; J. Kavari personal communication, 25 March, 2011). Scholars in the field of Bantu languages also discuss the role of tone in expressing features such as tense and number in Bantu languages (Kavari & Marten, 2009; Marten, 2006), while Hyman's (2012) further contends that tonal morphology "can do everything that non-tonal morphology can do – and then some!", and can thus obscure morphology/syntax boundaries. Hyman (2012) argues that high and low tones can at least distinguish morphemes (lexical, grammatical) at the word level, realize metrical prominence (word, phrase, utterance), mark prosodic domain boundaries (word, phrase, utterance), and distinguish utterance types (declarative, interrogative etc.).

In the light of these discussions, it may be worth exploring the possibility that readers who are accustomed to decoding tone in their L1 might not be skilled in recognising the semantic or lexical significance of certain morphemes in English texts. For an L2 reader accustomed to interpreting meaning through tone, reading English may clearly present challenges.

Contrastive linguistics embodies a wide field of study, and empirical investigation of the effect on reading comprehension of many of the cross-linguistic variations discussed above is beyond the scope of this study. Nonetheless, those differences

which most affect the processing of English meaning should be noted for consideration where appropriate.

2.9 Constraints in Testing of Reading Comprehension

An important consideration for the purposes of this study was the construction of a reading comprehension test which would effectively highlight specific language related obstacles to understanding on the part of the reader, and to this end, various possible methods were investigated. It must be emphasised here that the objective of the comprehension test was to assess the effect of linguistic properties of a text on a reader's ability to extract meaning from that text, and that this should not be confused with the objective of measuring the reading proficiency of the readers themselves. This aspect necessarily played a role not only in the selection of the texts, but also in the selection of the types of questions to be used.

The literature discusses several strategies for testing reading comprehension, including the use of questions requiring constructed responses, multiple-choice questions, cloze tests, true/false questions, and summary tasks. However, the discussion also reveals the complexity of constructing a test to measure specific constructs, since test-takers' answers can be influenced by many factors which can affect the nature of the results produced by the test. In testing reading comprehension, therefore, careful consideration must be given to the factors contributing to this complexity, as pointed out by Spolsky (cited in Celce-Murcia & Olshtain, 2000, p.204). Spolsky suggests that differences in discourse

types and genres present a number of sources of miscomprehension, and that at

discourse level, potential sources of difficulty in measuring comprehension may

be the texts selected for the test, the questions constructed for the test, responses

to the test questions, and/or interpretation and scoring of these responses.

The issue of challenges in testing for reading comprehension is also addressed by

Shohamy (2001, p.131). Discussing what she refers to as 'critical testing', since it is

subsumed under 'critical pedagogy', Shohamy points out what she regards as the

main features of such testing. Firstly, Shohamy argues that language testing is not

neutral since it is "a product and agent of cultural, social, political, educational and

ideological agendas that shape the lives of individual participants, teachers and

learners". She further suggests that since the knowledge of a test constructor is

incomplete, additional sources should be used if a more accurate and valid

description and interpretation of knowledge is to be obtained. With regard to

interpretation of language test scores, Shohamy argues that one should consider

whether these scores "are prescriptive, final or absolute, and the extent to which they

are open to discussion, negotiations and multiple interpretations".

Each of these issues, as well as several others, will now be addressed more

specifically.

2.9.1   Testing Situation

One factor which has been found to play a role in the testing of reading

comprehension is the fact that procedures used by readers for processing texts in

testing situations are different from those used in non-testing situations (Fillmore, 1984, cited in Celce-Murcia & Olshtain, 2000, p.204). The example is given of how readers refer to test questions to direct them towards specific information. This was found to be a significant factor during the testing phase of this study, as will be explained in more detail in Section 4.6.13.5.

2.9.2 Subject Matter

According to Celce-Murcia and Olshtain (2000, p.204), there are controversial views as to the effect of subject matter on the scores of individuals taking reading tests, an effect highlighted by Douglas and Selinker's investigation of this issue which indicated that performance can vary according to topic, and that language proficiency and cognition can be affected by familiarity with the content of a text (as cited in Celce-Murcia & Olshtain, 2000, p.204).

Steffenson and Joag Dev (1984, p.51) cite Burt and Daly's view that "in order not to confound linguistic proficiency and knowledge of the world, the content of a language measure. . . must not be outside the experience of the students being tested, nor inconsistent with their cultural customs and values".

2.9.3 Effect of Different Question Types and Test Types

A critical aspect in testing reading comprehension is question type. Shohamy (1984) and Gordon (1987), (as cited in Celce-Murcia & Olshtain, 2000, p.204), investigated the effect of different question types on text processing and found that scores differed significantly according to which question type was used,

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since test-takers used different strategies in each case. Since the objective of the reading comprehension test in this study was to assess the effect of linguistic properties of texts on understanding, it was important to evaluate various types of questions with regard to what construct each type of question could most effectively measure, as well as the advantages and disadvantages of each type.

2.9.3.1 Questions Requiring Constructed Responses

Since constructed responses make demands on linguistic production skills, the most obvious disadvantage in an L2 situation is that there will in all probability be cases where a test-taker may well be able to extract the appropriate meaning from a text, and may know what answer is required by a question, but may not have the necessary linguistic resources to compose an adequate answer. This issue is addressed by Koda (2005, p.248) who posits that skills in language production are often not as well developed as skills in comprehension, and that while appropriate responses to questions may be a reliable indicator of comprehension competence, inappropriate responses do not necessarily indicate lack of comprehension inasmuch as they may be a result of lack of competence in language production.

An alternative to questions requiring constructed responses is to use fixed choice/selected-response items such as multiple choice and true-false choice, which can be objectively scored and have a high reliability for a specific time period (Miller et al., 2009, p.37). The disadvantages of selected-response items, however, is that they are more geared to testing factual knowledge rather than higher-order skills, and encourage test-takers to focus on discrete facts and

procedural skills rather than building their own understanding and knowledge (Miller et al., 2009, p.37).

A further negative aspect of fixed choice/selected-response items is pointed out by Shohamy (2001, p.24) who describes them as 'objective' (inverted commas in the original) since they are underpinned by the assumption that they require one correct answer based on one interpretation or perception of the truth. Shohamy (2001, p.24) argues that fixed choice responses imply that " 'truth' is absolute and determined in advance by the tester who writes the test, while the test taker needs to find out what the truth is", and therefore does not allow for the test taker to offer alternative interpretations of this truth. In cases where there may be several possible interpretations of a text, such an approach to the testing of reading comprehension would thus clearly present problems.

Whichever format is used in a reading comprehension test, there are a number of more general factors which should also be considered with regard to the validity of the test. These include ambiguous statements which may lead to misinterpretation or misunderstanding, and which in some cases may even cause more problems for more proficient readers than for weaker readers. In addition, questions testing factual recall are easier to construct than are those testing higher-order thinking processes, and therefore there is sometimes overemphasis on the former at the expense of the latter. Care should also be taken to ensure that test items do in fact measure the targeted outcomes, and that they do not inadvertently provide clues to the correct answer, or encourage an identifiable pattern of answers (Miller et al., 2009, p.97).

Against this background, the following three types of fixed choice/selected-response formats were considered for use in the reading comprehension test in this study.

2.9.3.2   Multiple-Choice Items

The view that different strategies are applied in the processing of various types of questions was found to be particularly applicable to multiple-choice questions.

Several advantages of multiple-choice format are highlighted by Miller et al.(2009, p.203) who argue that multiple-choice items are considered to be effective in measuring various types of knowledge and complex learning outcomes, and less susceptible to ambiguity and vagueness than other types of short-answer questions. Multiple-choice items also allow for cases where possible answers may not necessarily be either true or false, but may require a distinction between varying degrees of appropriateness. Yet another important characteristic of multiple-choice items is that incorrect responses may provide insight into possible sources of misunderstanding.

Although highly favoured for its particular strengths, the multiple-choice format also has several disadvantages. One important factor to be taken into account when one is considering using a multiple choice format is the difficulty of constructing plausible incorrect answers as distracters. This is pointed out by Miller et al. (2009, p.204) who argue that this is especially problematic where students' vocabulary and

knowledge in certain areas is limited. Arguably, this would apply to L2 students such as participants in this study, so that in the construction of multiple choice items for L2 test-takers, it would be more difficult to formulate plausible distracters that provide diagnostic information about misunderstandings and incorrect information, especially those pertaining to linguistic elements.

The question of what is actually measured by multiple-choice questions is also highlighted by Urquhart and Weir (1998, p.138) who argue that "evidence from short-answer and multiple-choice formats indicates that the items in reading comprehension tests which focus on microlinguistic elements such as lexis or cohesion do not necessarily contribute to the overall measurement of reading in ways similar to items which test more global comprehension".

Also discussing multiple-choice questions, Perkins (cited in Celce-Murcia & Olshtain, 2000, p.204) points out that the value of the popular question 'What is the main idea of the essay/paragraph/text?' has been brought into question by research evidence that readers bring different networks of knowledge structures to the reading task and may therefore build different propositional networks for texts, thus challenging the notion of "one-text, one-meaning interpretation of a text". Koda (2005, p.239) further points out that well-constructed distracters may influence stored information which a reader has extracted from the text, arguing that "the presence of a plausible distracter is a strong predictor of question difficulty [and that] conceptual intrusion of this sort can cause learners to revise their text memory, biasing subsequent task performance".

The views expressed above, while pointing out the advantages of multiple choice questions, also highlight the fact that a number of aspects of this type of testing should be carefully assessed according to the aim and purpose of the test.

2.9.3.3 Cloze Tests

Cloze testing, in which words are deleted from a text at a predetermined rate after allowing a few sentences of introduction is another testing strategy discussed by many researchers. Some researchers favour this method as a reliable and valid measure of readability and reading comprehension (Urquhart & Weir, 1998, p.156), while others express doubts concerning its validity as a device for testing global comprehension of a text since it appears to measure knowledge of syntax and lexis at sentence level and comprehension of the immediate local environment rather than comprehension in general (Crossley et al., 2008; Koda, 2005; Urquhart & Weir, 1998).

The major shortcoming of cloze testing, as posited by Urquhart and Weir (1998, p.157) is that since it requires mainly bottom-up processing, it focuses on local comprehension at the micro linguistic level, and on individual words rather than on global understanding of a text, and therefore gives little indication of a reader's understanding of the text as a whole. Koda (2005, p.240) furthermore argues that it is often not possible to identify reasons why some blanks are not filled in since there are many potential causes such as failure to understand a text segment, lack of productive vocabulary, or lack of morphosyntactic knowledge resulting in semantically appropriate but syntactically inappropriate

responses. In addition, according to Koda, operations required in the cloze

procedure are disparate from those used in the normal reading process; for

example, in the filling in of blank spaces, "the periodically occurring empty

slots must be retained in short-term memory until the meaning of the local

sentential context is established" (Koda, 2005, p.240). In theory, therefore,

rather than providing accurate assessment of normal reading capabilities, cloze

tests reflect proficiency in more task-specific skills.

Bernard's argument related to testing of comprehension is that cloze testing is

"profoundly inadequate" (1991, as cited in Urquhart and Weir, 1998, p. 157). This

position is supported by a number of other scholars.

2.9.3.4   Short Answer Questions

While the short-answer test item is one of the easiest to construct, it is mainly used to

measure the recall of memorised information. The advantage of this type of item is

that test-takers cannot so easily get by with partial knowledge, and there is less

possibility that they might be able to guess the correct answer. The disadvantages, on

the other hand, are that these items are not appropriate for measuring higher level

skills, and in addition, it is difficult to construct questions requiring short answers in

such a way as to exclude answers of varying degrees of correctness (Miller et al.,

2009, p. 175).

2.9.3.5   True/False Questions

True/false questions are efficient in that they allow for the answering of many questions in a relatively short space of time, as would be required in this study. One disadvantage of true/false items, however, is the danger that many correct answers may simply be the result of guessing, and that if test-takers guess answers, they have a more than 50% chance of guessing correctly. Furthermore, it is not always possible to make statements which are absolutely true or false about constructs to be tested (Miller et al., 2009, p.183).

2.9.4   Subjectivity of Tester

Arguably, a further consideration affecting the testing of reading comprehension is the fact that testers may inadvertently phrase questions in a way that reflect their own perceptions of the text, which may, in turn influence the answers given by test takers.

The discussion outlined above provided the basis for a number of constraints which required careful consideration during the construction of the reading comprehension test for this study. A further important element for consideration, that of the selection of appropriate texts to be used in the test, necessitated an investigation of various means of assessing the levels of readability, as will be outlined in the next section.

2.10 Measures of Text Readability

Among the most well known and widely used measures of text readability are the Flesch Reading Ease and the Flesch-Kincaid Grade Level formulas, which assess text difficulty mainly on the basis of word length (the number of either letters or syllables in a word) and sentence length. However, according to Crossley et al. (2007, p.18), these formulas have been criticised by researchers in the field of discourse analysis as being weak indicators of comprehensibility which they argue cannot be measured in terms of sentence and word length since it depends also on global factors such as the presentation of ideas, local discourse information, and background information.

Traditional readability formulas also fail to account for the multiple components, encompassed in psycholinguistic models of reading, which underlie a reader's skill in making links between features of the text and his or her own mental representations. Crossley et al. (2008, p.477) cite the views of a number of scholars (Gernsbacher, McNamara et al., Koda, Oust & Carpenter, Perfetti, Rayner & Pollatsek) that in a psycholinguistically based assessment of text comprehensibility, an explanation of a reader's interaction with a text should see comprehension as a multi-level process encompassing more than just surface readability features, and that measures of text cohesion should be included, as well as measures related to decoding, syntactic parsing, and meaning construction. They furthermore suggest that an effective readability measure should take into account the constraints of working memory in terms of propositional density and complexity

Particularly relevant to this study is the fact that researchers were not satisfied with traditional readability formulas when applied with regard to L2 readers, and several studies were conducted to examine the relationship between these readability formulas and evaluations of readability and text difficulty from an L2 perspective. Both Carrell (1987) and Brown (1998), as cited in Crossley (2008), emphasise the need for a more accurate L2 readability measure which would account for reader-based variables or for text-based factors such as syntactic complexity, rhetorical organisation, propositional density and word redundancy (Crossley et al., 2008, p.478).

Reflecting the notion that understanding cohesive devices is necessary for developing information processing and reading comprehension skills in L2 reading, Graesser et al.(2004) propose that a more effective measure of text readability would be one that probes deeper, more global levels of understanding through analysis of cohesive devices. There is considerable support for this view among scholars in the fields of L2 reading, linguistics and discourse processing, as evident in the number of citations in Crossley et al. (2008) which include Cohen, Glasman, Rosenbaum-Cohen, Ferrara and Fine, Cowan, Mackay, De Beaugrande and Dressler, Halliday, Halliday and Hasan, Hoey, Graesser, McNamara and Louwerse, Louwerse, McNamara, Kintsch, Butler-Songer, and Kintsch, and van Dijk and Kintsch.

Based on the approach discussed above, a new readability measure focusing on cohesion has been developed. Introducing this new measure, Graesser et al. posit that "there are explicit features, words, phrases, or sentences that guide the reader in

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interpreting the substantive ideas in the text, in connecting ideas with other ideas, and in connecting ideas to higher level global units (e.g., topics and themes). These cohesive devices cue the reader on how to form a coherent representation" (2004, p.193).

The readability measure introduced by Graesser et al. is Coh-Metrix (Graesser, McNamara, Louwerse, & Cai, 2004; McNamara, Louwerse & Graesser, 2002). Coh-Metrix 2.1 analyses features of language and cohesion in detail, as well as matching textual information to the background knowledge of the reader, as will be described in the following section.

2.10.1   Coh-Metrix

Coh-Metrix is a computer tool designed to analyse texts in terms of more than 50 types of cohesion relations and more than 200 measures of language, text, and readability, using lexicons, part-of-speech classifiers, syntactic parsers, templates, corpora, latent semantic analysis, and other components that are widely used in computational linguistics. Coh-Metrix is thus suggested to be an improved means of measuring English text readability for L2 readers since it analyses texts according to text-based processes and cohesion features fundamental to cognitive reading processes such as decoding, syntactic parsing, and meaning construction (Crossley et al., 2008, p.476).

According to McNamara et al. (2002), as cited in Crossley et al.(2007, p.19), Coh-Metrix is an improvement over conventional readability measures because, as mentioned earlier, in addition to providing a detailed analysis of language and

cohesion features, by analysing text difficulty at various levels of language, discourse, and conceptual analysis, it also provides a means for educators to match textual information to the background knowledge of the reader. According to Crossley and McNamara (2010, p.988), readers with a limited knowledge base may lack the resources to form inferences to bridge conceptual gaps in a text, and may therefore rely on explicit cohesive devices such as word overlap, resolved anaphors, causal cohesion, connectives and so forth. On the other hand, readers with a wider knowledge base are induced by cohesion gaps to fill these gaps by generating appropriate inferences, and such readers therefore process low-cohesion texts more successfully. "When successful inferences are generated, the coherence of the mental representation can increase due to connections between the new information and their prior knowledge" (McNamara, 2001; McNamara & McDaniel, 2004; O'Reilly & McNamara, 2007 as cited in Crossley & McNamara, 2010, p.988).

A study was conducted by Crossley et al. (2008) to investigate whether text readability can be more accurately assessed through analysis of certain Coh-Metrix variables. The study focused on variables relating to lexical frequency, syntactic similarity, and content word overlap, since these were hypothesised to correspond to processes of decoding, syntactic parsing, and meaning construction, three operations which are distinguished by many psycholinguistic models of reading and comprehension (Crossley et al., 2008, p.481). Results indicated that Coh-Metrix yielded a more accurate prediction of reading difficulty than did traditional readability measures (Crossley et al., 2008, p.487).

2.10.2   Coh-Metrix Indices

The version of Coh-Metrix used in this study is Coh-Metrix 2.1, since it is readily available online. The following descriptions, as given in the explanatory document on the Coh-Metrix website (Graesser et al., 2006), clarify the nature of the linguistic variables and text properties which will be analysed in this study. Since this is specialised terminology, it is necessary to resort to quoting more often than usual to avoid distortion.

2.10.2.1   General Word and Text Information

The general word and text information includes incidence scores on word and text units (i.e., number of occurrences per 1000 words). It also includes the mean values of characteristics of content words, such as frequency of usage in the English language and concreteness.

2.10.2.2   Word frequency

In Coh-Metrix the measures of word frequency are based on four corpus-based standards, the primary frequency counts coming from CELEX, the database from the Dutch Centre for Lexical Information which consists of frequencies taken from the early 1991 version of the 17.9-million-word COBUILD corpus, all but approximately one million of which are taken from written corpora. Other sources include the written frequency count from the Kuˇcera–Francis norms (Francis & Kuˇcera, 1982, as cited in Graesser et al., 2004, p.5), the written frequency count from the norms of Thorndike and Lorge (1944, as cited in Graesser et al., 2004, p.5) and the frequency count of spoken English analysed by Brown (1984, as cited in

Graesser et al., 2004, p.5). Although both raw and logarithm values are computed for each of these, the logarithm of word frequency rather than raw word frequency has been found to correlate with word processing time (Graesser et al., 2004, p.5).

2.10.2.3 Latent Semantic Analysis (LSA) space

A Semantic Space, according to http://lsa.colorado.edu/spaces.html (2010), is "a mathematical representation of a large body of text. Every term, every text, and every novel combination of terms has a high dimensional vector representation". Using the Coh-Metrix tool:

> the user has the option of choosing from five Latent Semantic Analysis (LSA) spaces : College Level, Science, Narrative, Encyclopedia, and Physics. The LSA space determines the world knowledge or conceptual domain that is used for LSA comparisons. The College Level space is based on the TASA (Touchstone Applied Science Associates, Inc.) corpus that has text files covering novels, newspaper articles, and other information. Science, Narrative, Encyclopedia and Physics spaces are based on large corpora of documents from these genres. The choice of LSA space can have important consequences for LSA scores. Users who do not feel confident about their choice are advised to select the College Level LSA space (Graesser et al., 2006).

2.10.2.4 Syntax Indices

Syntax indices indicate assessment of properties such as syntactic complexity, syntactic composition, and the frequency of particular syntactic classes or constituents in a text. Syntactic composition may cause difficulty if sentences are

structurally dense or syntactically ambiguous, or if they have many embedded

constituents, or are ungrammatical.

Measurement of syntactic complexity includes the number of noun-phrase (NP)

constituents or number of verb-phrase (VP) constituents per 1000 words, as well as

the mean number of modifiers such as adjectives, adverbs, or determiners in each

noun-phrase. Other properties which are measured in this area are the mean number

of higher level constituents per sentence and the incidence of verb-phrases, as well as

the number of words preceding the main verb of the main clause in the sentences of a

text, since sentences that have many words before the main verb may overload

working memory.

2.10.2.5   Pronouns

The number of personal pronouns per 1000 words is assessed, as well as the ratio of

words classified as pronouns to the incidence of noun-phrases in a text, since a high

density of pronouns can create referential cohesion problems and ambiguity if it is

not clear to the reader what or who the pronouns refer to.

2.10.2.6   Connectives

According to Halliday and Hasan (1976), particular types of cohesion relations in

text are signalled by connectives, and McNamara, Kintsch, E., Songer and Kintsch,

W., (1996), as cited in Graesser et al. (2004), add that "the insertion of connectives is

known to have a substantial impact on comprehension and memory for text."

Connectives may signal either positive or negative relations, or additive, temporal, logical, and causal relations, as discussed in Chapter 2, Section 2.5.6.1:

> Connectives are classified on two dimensions in Coh-Metrix 2.1. On one dimension, the extension of the situation described by the text is determined. Positive connectives extend events, whereas negative connectives cease to extend the expected events (Louwerse, 2002; Sanders, Spooren & Noordman, 1992). Negative relations are synonymous with adversative relations, as defined in Halliday and Hasan (1976).
>
> (Graesser et al., 2006)

2.10.2.7 Logical Operators

Logical operators are used to express logical reasoning. A high density of Boolean operators such as *and*, *or*, *not*, *if*, or *then*) and a small number of other similar cognate terms may make texts difficult to process.

2.10.2.8 Sentence Syntax Similarity

These indices compare the syntactic tree structures of sentences to assess syntactic similarity between two sentences.

2.10.2.9 Referential and Semantic Indices

Referential cohesion is discussed in detail in Chapter 2, Section 2.5.6.2. In addition, a further dimension of this factor described by Graesser et al. (2006) may also play an important role in the context of this study:

However, the early theory was eventually expanded to allow referential overlap between a {noun | pronoun | noun-phrase} N and a referential proposition that has a similar morphological stem as a noun in N. For example, consider the two sentences *When water is heated, it boils and eventually evaporates. When the heat is reduced, it turns back into a liquid form.* The *heat* in the second sentence co-refers to the proposition *Water is heated*; *heat* and *heated* share the same morphological stem heat, even though one is a noun and the other is a verb.

2.10.2.10 Situation Model Dimensions

According to Van Dijk and Kintsch (1983, p.6), discourse processing involves the construction by the reader of a mental representation, or situational model, of the discourse based on both internal and external types of information. Such a situational model may encompass at least five situational dimensions all of which may be indicated in a text by means of connectives, particles, nouns and verbs (Graesser et al., 2006). The dimensions analysed by Coh-Metrix 2.1 are as follows:

- **Causal dimension**

With regard to causation, a text may refer to events and actions which are causally related, and causal cohesion may be reflected through causal verbs, or through causal particles such as conjunctions, transitional adverbs, or through connectives such as *since, so that, because*, and *consequently.* Since cohesion may be disrupted if a text contains few causal particles but many causal verbs, Coh-Metrix 2.1 measures both the incidence and the ratio of causal verbs and causal particles in a text.

- **Intentional dimension**

"Intentional cohesion relations are appropriate when the text refers to animate protagonists who perform actions in pursuit of goals, as in the case of simple stories and other forms of narrative" (Singer & Halldorson, 1996; Van den Broek & Trabasso, 1996, as cited in Graesser et al., 2006). Coh-Metrix 2.1 estimates the incidence of intentional actions and events by counting the number of main verbs that are intentional, and that are performed by animate subject nouns as well as the ratio of intentional particles (e.g., *in order to, so that, for the purpose of, by means of, by, wanted to*) to the incidence of causal content, the incidence of intentional actions, events, and particles (per thousand words), and the ratio of intentional particles to intentional actions/events.

- **Temporal dimension**

Actions and events in a text may be expressed in different tenses (past, present, future) and different aspects (e.g., in progress, completed, vs. static). Temporal cohesion is measured by the repetition scores when analysing the sequence of verbs that are classified in a particular tense and aspect. The repetition score for tense is averaged with the repetition score for aspect.

- **Spatial dimension**

This dimension reflects the extent to which the text has spatial content such as location nouns and prepositions, as well as motion actions and prepositions, and it also reflects the extent to which sentences are related by spatial particles or relations. "Location prepositions (in, by, near), deictic references (here, there), and other

particles play a role in relating the nouns in space. Motion verbs (go, run, drive) are related by particles that refer to spatial and deictic indexes (from, to, through, by, between, here, there)" (Graesser et al. 2006).

Since the aim of this study was to investigate linguistic properties which may impede the processing of English texts by tertiary students in Namibia, it was necessary to identify a readability measure which would analyse those linguistic properties identified most prominently in the literature as being potential sources of difficulty. Coh-Metrix 2.1 was found to offer a comprehensive analysis of linguistic properties affecting readability, and was thus selected for use in this study.

2.11 Conclusion

The importance of understanding how L2 readers engage with text, as well as the importance of the role played by the linguistic properties of the text itself is closely related to and supported by two main theoretical areas. The first of these, which is widely supported by scholars in the field, is the theory that reading is an interactive process, with the focus thus on reading as a process to which both text and reader contribute in the production of meaning.

The second area is the area of functional grammar, as put forward by Halliday (1994). Halliday posited a broad social semiotic approach to language called systemic linguistics, which views language as "a network of systems, or interrelated sets of options for making meaning" (1994, p.15), and is concerned with meaning in

systems of communication, in contrast to formal grammar in which the focus is on word classes rather than on patterns of language and how they express meaning.

These theories underpin a significant component of this study's emphasis on the relationship between text and reader. Understanding how this relationship is influenced by characteristics of both reader and text is an essential factor in opening up a dialogue on implementing solutions to the challenges faced by students in Namibia with regard to reading English texts.

This chapter has therefore presented a detailed examination of the literature which deals with a wide variety of factors which may potentially affect the English reading comprehension of L2 readers, a number of which are particularly relevant to tertiary students in Namibia, such as participants in this study, and therefore provide a theoretical basis for exploring language-related difficulties experienced by these students in English reading comprehension.

Firstly, since processing of meaning in a text is influenced by knowledge of linguistic form and structure in a language, as discussed in Section 2.2.2, it follows that the less knowledge readers have in this area, the more difficult comprehension will be. Therefore, students in Namibia who, for various reasons, do not have a strong grounding in the form and structure of English, may find English reading comprehension challenging. Despite the language policy stipulation that English be used as the medium of instruction at secondary school level, this is often not the case, with many subjects, including English Language, being taught in the L1, and many

teachers lacking the proficiency in English which would enable them to develop learners' and students' English skills, thus enhancing comprehension.

Furthermore, as highlighted by several leading scholars, language factors related to various aspects of culture play a significant role in text processing. Although English is the official language of Namibia, the majority of inhabitants, who represent a wide variety of languages and cultures, have had limited exposure to the mores, values and customs of English L1 communities and the different cultural perspectives or world views encompassed in those communities, and may therefore be influenced by widely differing perceptions when reading English texts.

With regard to elements related to English texts themselves, a number of different properties have been suggested as playing a role in facilitating or impeding reading comprehension. In addition to vocabulary, various complex syntactic and morphological structures are posited as being difficult to process for L2 readers, and therefore, it follows, for students in Namibia. Moreover, since contrastive linguistics indicates a number of significant underlying differences between English and the languages spoken by students in Namibia, such as sentence structure, information structure and verb framing, such factors must also be taken into consideration as potential sources of difficulty in decoding the meaning of written English texts.

Although the discussion in this chapter is far from being exhaustive, it provides a substantial basis for the next phase of the study in which specific texts will be analysed, and their comprehensibility for L2 readers evaluated according to

particular linguistic properties selected on the basis of their potential significance in

English reading comprehension as outlined in the literature reviewed in this chapter.

CHAPTER 3:   METHODOLGY

This chapter will discuss the research theory underpinning the empirical phases of
the study, and explain the relevance of both quantitative and qualitative approaches
in addressing the research hypothesis. Based on this research theory, the choice of
specific methods employed in each phase of the research will be presented, and the
research methods used in the study will be outlined. The discussion will include a
description of the population, sample and research instruments.

3.1   Theoretical Background

Since all research is carried out against a theoretical background, this study must be
located within a particular research paradigm. Within the field of social and human
sciences, two broad paradigms are generally described, namely positivist and
interpretivist or ant-positivist (Cohen et al., 2007; Grix, 2004; Leedy & Ormond,
2001, Lodico et al, 2006; Swann & Pratt, 2003).

Positivism, which Grix (2004, p.79) sees as an epistemological approach – holds that
knowledge, or what is observed in human affairs, is part of a natural order and is
subject to objective investigation, influenced neither by human senses nor by social
contexts. Research conducted within the positivist paradigm focuses on methods of
natural science, and seeks to gain understanding of the social world through
identifying rules and laws which govern it, and through the generation of testable
hypotheses (Cohen et al., 2007; Grix, 2004; Lodico et al., 2006; Swann & Pratt,
2003). Several criticisms relevant to this study have been levelled at positivistic

social science, and these are mainly centred around the opinion that it fails to take human factors into account and ignores individual choice and intention (Cohen et al., 2007, pp. 18-19).

At the opposite end of the scale, the anti-positivist or interpretive approach is more subjective and focuses on human involvement in the nature and creation of knowledge, seeing knowledge as personal and unique, and regarding the social world as a product of the subjective experience of individuals (Cohen et al., 2007; Grix, 2004; Lodico et al, 2006; Swann & Pratt, 2003). As Cohen et al. (2007, p.21) put it, "To retain the integrity of the phenomena being investigated, efforts are made to get inside the person and to understand from within."

According to Grix (2004, p.82), though categorisation of research paradigms is not clear-cut, and approaches often overlap, each paradigm is underpinned by assumptions which are incompatible, and therefore cannot be combined. He argues, however, that the positivist and interpretivist approaches mark opposite ends of a continuum along which a third paradigm, postpositivism, can also be located, as illustrated below, and he further argues that "as we move from left to right (from positivist to interpretivist positions), we go from approaches attempting to 'explain' social reality to those seeking to 'interpret' or 'understand' it":

Explanation_____ Understanding

Positivist   Post-positivist   Interpretivist

↓   ↓

Empirical realism   Critical realism   Positivist and post-positivist
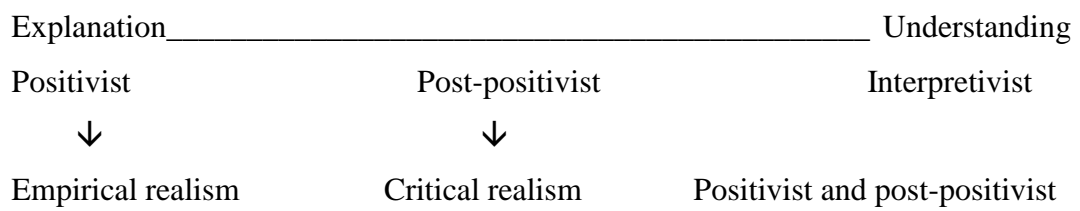
Figure 3.   The Key Research Paradigms (Grix 2004, p.78)

Analysing the post-positivist paradigm further, Grix discusses the realist perspective, suggesting that while positivism leans towards empirical realism, post-positivism leans towards critical realism, which he sees as a third, broad research paradigm which "combine[s] the 'how' (understanding - which is linked to interpretivism) and the 'why' (explanation - which is linked to positivism)" (Grix 2004, p.85).

An important aspect of critical realism highlighted by Grix is that in this paradigm, belief in 'causes' is not as clear-cut as is the case with positivism. Grix cites Sayer's argument that the explanation for the underlying cause of something is not necessarily related to the number of times it has been observed, but depends rather on identifying causal mechanisms, and determining how they work, whether they have been activated, and if so, the conditions under which activation occurs (Grix, 2004, p.87).

Since this study examines the role that various language-related factors may play in the process of L2 reading comprehension, it necessarily focuses on a number of complex, inter-related social, psychological and linguistic elements involving both readers and texts; since many of these elements cannot be directly or objectively measured or observed, a consideration of the key features of critical realism as

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outlined by Kerr (as cited in Grix, 2004, p85) confirms that the study can be located within the critical realism research paradigm. According to Kerr, there are two important differences between realism and positivism. In the first place, the realist conception of ontology encompasses several layers, working on the assumption of generative mechanisms which are complex, structural and not always directly observable; thus, explanatory schema should involve attempts to 'interpret' causal links from observable outcomes so as to generate a rich variety of explanatory variables and generative mechanisms. Secondly, the explanatory schema should include the notion of agents, and an understanding of the differential meanings which agents infer upon their actions by interpreting their own structural context so that the meanings which they attach to any given situation are likely to differ.

This is supported by Davis (2011), and by Olsen (2008), who advocates the use of both qualitative and quantitative data. Olsen cites Lawson's view that seeking the regularities in a set of data means ignoring the complexity of causality as well as the possibility of multiple causes which may co-exist simultaneously (2008, p.6). Olsen further cites Sayer's view that causality can include unique causal processes (2008, p.7).

Grix (2004) similarly supports the 'depth ontology' approach discussed above, arguing that "critical realists believe in a 'structured' or 'stratified' reality which requires a 'depth ontology' and the interpretation of causal links not always observable in order to offer a fuller explanation of an event, object, social relations, etc." (p.79).

Adopting a critical realist stance for this study has the following implications for methodology. According to Grix (2004, p.79), a fundamental characteristic of critical realism is that it allows for choice from a wide range of research methods, based on the nature of the research and the research questions. As mentioned above, the critical realist approach adopts aspects of both the positivist and post-positive paradigms, and therefore takes on both qualitative and quantitative research characteristics. A research question to be addressed in this study concerns the extent to which language-related factors affect the English reading comprehension of first year English students for whom English is an L2. In other words, it implies a causal relationship between causal mechanisms and observable assessment outcomes in reading comprehension. These outcomes can be tested through controlled, objective procedures in line with positivism.

On the other hand, this study also seeks to investigate the role in reading comprehension of factors such as cultural background, metalinguistic knowledge, capacity of working memory, and interaction between text and reader. Causal links between these factors and reading comprehension cannot be readily observed or measured through scientific measures, thus necessitating a different approach. The critical realist approach recognises that certain facets or characteristics of the construct under investigation may not be immediately observable, making it necessary to "look beyond the surface" (Grix, 2004, p.79).

A further view which is relevant to this study is that research can be open-ended and exploratory in nature since problems may have to be explored on a deeper level

rather than being evaluated according to superficial appearance, and this entails searching for the right way to formulate a problem (Ryan, 2006, p.19).

The notion that choice of research methods should be designed according to the questions being asked rather than by rigid adherence to specific research paradigms is supported by Kamil (2004, p.101) who argues that "progress in reading research is made by asking different questions (and thus using different methods) at different stages of knowledge about particular research areas".

Since focus group interviews comprise part of this study, the point of view expressed by Ryan (2006, p.20) is also relevant to the this study, namely that in post-positivist research, "truth is constructed through a dialogue; valid knowledge claims emerge as conflicting interpretations and action possibilities are discussed and negotiated among the members of a community". Ryan cites the argument presented by Richie and Rigano that in this type of research, rather than attempting to establish the truth of a particular premise, researchers discuss and interpret the issues raised during the interviews, as well as the participants' reactions, and that opening up "interpretive discussions" with participants allows for sharing of ideas rather than mere confirmation or contradiction of the researchers own ideas.

It is against the theoretical background described in this section that the methodology described in the following section was selected.

3.2   Research Design

3.2.1   Introduction

The objectives of this study were to identify specific English language constructions and aspects of usage which might impede the English reading comprehension of first year English students in Namibia. The study aimed to investigate whether proficiency in English reading comprehension of first year English students in Namibia is related to factors such as the extent and nature of exposure to English or specific linguistic properties of English texts, and further, to consider other language related factors which might play a role in the processing of English texts by L2 readers such as participants in the study. It was decided that the study would be based on both secondary research and empirical research. The aim of the secondary research was to identify which specific language related factors, among the many described in the literature, might be a particular source of difficulty in English reading comprehension for first year English students in Namibia, while the empirical research comprised an exploratory, cross-sectional study using a mixed method approach to ensure that data generated in the study could be triangulated, and would not simply be the product of one specific method of collection.

Dukes & Bjorklund, (n.d.) define a cross-sectional study as one which utilizes groups of participants who differ in the variable of interest (in this case, English reading comprehension), but share other characteristics (such as educational background and ethnicity). The defining characteristics of such a study are that it takes place at a single point in time, does not involve manipulating variables, and allows researchers to explore several issues simultaneously (Dukes & Bjorklund, n.d.). In the current study, the cross-sectional design was used in conjunction with a correlational study

comparing a number of variables which were posited to influence reading comprehension, and exploring possible relationships between these variables.

This design is in line with the critical realist paradigm described in Section 3.1 above, which allows for a mixed-method approach using both quantitative and qualitative research methods. This approach is supported by Cohen et al., (2007, p.47) who suggest that in educational research, a normative (positivist) approach using quantitative methods, and an interpretative approach, using qualitative methods, can be complementary, so that the most useful or effective feature of each approach can be adopted at appropriate stages of the study, a view also held by Johnson & Christensen (2000, p.48). Trochim (2006) argues that almost any kind of research question can be addressed through the use of both qualitative and quantitative research, and that "all qualitative data can be coded quantitatively [since] anything that is qualitative can be assigned meaningful numerical values. These values can then be manipulated to help us achieve greater insight into the meaning of the data and to help us examine specific hypotheses."

To encompass the mixed-method approach in gathering both quantitative and qualitative data, the empirical portion of the research was carried out in three phases, as follows:

Phase 1:   A questionnaire survey to elicit data concerning the language background and reading profiles of participants.

Phase 2:   A reading comprehension test to evaluate processing by participants

of specifically selected texts, as well as both computer-based and

manual analyses of pre-selected linguistic properties of these texts

Phase 3:   Focus group discussions to explore participants own perceptions

regarding sources of difficulty in processing English texts.

The sub-steps which were followed in each of these phases are described in greater

detail in the following section, which will also outline the rationale behind the

application in each phase of either quantitative or qualitative research methods to

elicit specific data as required by the study. This is in line with Ryan's argument that

according to the post-positivist research paradigm, the research questions being

asked or the issues being explored should determine the appropriateness of

quantitative or qualitative methods (Ryan, 2006, p.22).

3.2.1.1   Rationale for Quantitative Methodology

The choice of quantitative method to generate data for certain aspects of this study

was based on various arguments outlined in the literature. Firstly, although

quantitative methods are more commonly associated with a positivist research

approach and cannot look at individual cases in any detail, quantitative data may

sometimes be appropriate since they can:

- provide a broad familiarity with cases;
- examine patterns across many cases;
- show that a problem is numerically significant;
- often be used as the starting point for a qualitative study;

- provide readily available and unambiguous information.

(Ryan, 2006, p.21)

Furthermore, according to Leedy and Ormond (2001, p.102), quantitative research is useful in providing a context-free, detached view, is representative of a large sample, and makes use of standardised instruments, while Johnson and Christiansen (2004 p.411) point out that it is useful in isolating and defining categories at the beginning of a research study, determining the relationships between these categories.

Grix (2004, p.117) characterises quantitative research as consisting of three basic phases, namely, finding, operationalising and measuring variables for concepts in the study. He also highlights the fact that it focuses on eliciting measurements and analyses which can easily be replicated in other research studies.

In summary, the above justifications for the use of quantitative methods can be applied to each phase of this study. In Phase 1 (the questionnaire survey), both statistical and descriptive information on study participants was collected by means of a questionnaire and was analysed to generate statistics regarding participants' language background, exposure to English, reading proficiency and reading strategies. After completion of the comprehension and vocabulary tests in Phase 2, the performance of each participant in these tests was compared with background information elicited in Phase 1 to identify any possible correlation between language background and specific reading comprehension competencies.

Quantitative research methods were also applied in the second phase of this study to conduct a content analysis in which readability software was used to measure patterns or frequency of particular linguistic structures or properties in a set of specific texts so as to establish the potential level of difficulty of each text. Since the text analysis attempted to find quantitative correlates to text difficulty, this phase clearly also falls within the quantitative paradigm (Kamil, 2004, p.103).

Since the third phase of this study (focus group discussions) was designed to investigate whether the linguistic properties identified in the first phase as potential sources of difficulty in the study texts did in fact impede participants' comprehension of these texts, the quantitative data gathered by means of the methods described above formed the basis for the qualitative component of this study.

3.2.1.2   Rationale for Qualitative Methodology

The research design for the qualitative component of this study was underpinned by the following characteristics of the qualitative research method.

Qualitative research methods allow for in-depth investigation in search of a better, more meaningful understanding of complex issues through the collection and examination of data from several perspectives (Grix, 2004, p.119; Leedy et al., 2001, p.147, Ryan, 2006, p.19), and focuses on natural settings which are flexible and sensitive to social context (Grix, 2004, p.120; Johnson & Christiansen, 2004, p.411; Leedy et al., 2001, p.147). Furthermore, qualitative research takes into account historically or culturally significant phenomena, values participants' perspectives on

their worlds, and often relies on the words of individuals as its primary data (Ryan, 2006). Data is elicited through engagement with subjects who have first-hand experience, and encompasses a wide variety of experiences and hence diversity (Johnson & Christiansen, 2004, p.411).

The main objective of Phase 3 of this study was to gather data concerning participants' individual experiences in reading and comprehending English texts, and their perceptions as to what aspects of language structure and usage caused them particular difficulty. In-depth investigation was conducted through focus group discussions in which participants discussed their understanding of the texts used in the comprehension assessment, and commented on reasons for difficulty in understanding particular sections or aspects of these texts. These discussions generated qualitative data which could be triangulated with the quantitative data gathered in Phase 1 and Phase 2 of the study.

A qualitative approach also served in recognising the complexity of issues affecting L2 reading comprehension, a complexity evidenced by the wide scope of theories and models advanced by researchers in the literature outlined in Chapter 2.

It is also apparent from the literature that in the view of many researchers, attempts to study reading comprehension should take into account a number of social, cultural and contextual factors. Although the focus of this study is on the linguistic properties of texts, and the extent to which these linguistic properties impede the English reading comprehension of study subjects, the influence of social, cultural and

contextual factors on readers' engagement with texts is a crucial aspect. Since factors such as these cannot be measured or quantified, it was decided that qualitative methods would be employed in this study to assess whether the perceptions and experiences of participants affected their processing of the linguistic features of the texts.

3.2.2   Population

The population from which the sample was drawn for this study comprised students enrolled for Fundamentals of English Language Studies (FELS) in the Faculty of Humanities and Social Sciences at the University of Namibia[17] in 2010. Although this course is housed in the Faculty of Humanities and Social Sciences for students following Bachelor of Arts programmes, it also encompasses students from the Faculty of Education following Bachelor of Education programmes. There is therefore wide variation in major subjects being studied by participants.

3.2.3   Sample

In line with the requirement that the sampling procedure should take into account the purpose of the sampling and the parameters of the population, and that the sample should reflect all the characteristics of the total population (Leedy et al., 2001, p.211), purposive sampling was used for this study. In order for the findings of the study to be generalisable to the wider population of first year English students in Namibia, a criterion for selection of the sample was necessarily that they should be

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[17] Since FELS is a first year English course, students enrolled for this course, regardless of their academic year of study, will hereafter be referred to as first year English students

L1 speakers of one of the languages used in Namibia; that is, a Bantu language, a

Khoisan language, Afrikaans or German. After careful screening of students in the

FELS group according to this criterion, the sample outlined in Table 5 was selected.

Table 5

Profile of Students Selected for Sample

Gender	
Males	20
Females	66
Mother Tongue	
English	4
Afrikaans	7
Oshiwambo	53
Otjiherero	3
Khoekhoegowab	5
Silozi	3
Rugciriku	2
Nyanja	1
Rukwangali	2
German	1
Shona	2
Thimbukushu	1
Rumanyo	1
Shiyeyi	1
Total	86

(Note: Although gender was not highlighted in the literature as playing a

significant role in reading comprehension and was thus not a consideration in

the selection of the sample, gender statistics are also presented here so as to provide a more accurate profile of the sample.)

3.2.4   Research instruments

During the three phases of this research, five instruments were used, namely a questionnaire, a vocabulary test, a set of comprehension tests on 12 English reading texts, text analysis software and focus group interviews.

3.2.4.1   Phase 1: Questionnaire

One of the objectives of this study was to investigate whether proficiency in English reading comprehension of first year English students in Namibia is related to language background including factors such as the extent and nature of their exposure to English, and to explore participants' own perceptions with regard to their L1 and L2 language and reading proficiency. Data for this phase was collected by means of a questionnaire survey, since this is an effective and relatively quick method of gathering a large quantity of general data and opinions from the sample. The results of a questionnaire may also provide baseline data on which to base questions to be asked in the focus group interviews (Kelly, 2008).

Questions were modelled (with permission) on validated questionnaires used in studies by Hellekjaer (2005) and Wang (1996), and adapted for the Namibian context where necessary. Careful consideration was given to the type of information required for this study, and the purpose of each question, as well as to how responses in

completed questionnaires would be analysed (Kelly, 2008). Factors highlighted in Figure 4 were also taken into consideration.

avoid ambiguity/imprecision	avoid making assumptions	avoid respondents using their memory	avoid questions requiring knowledge
consider reading ability of respondents	*Issues to consider when wording questions*		avoid double questions
be careful with sensitive issue questions	avoid hypothetical questions	avoid presuming questions	avoid leading questions
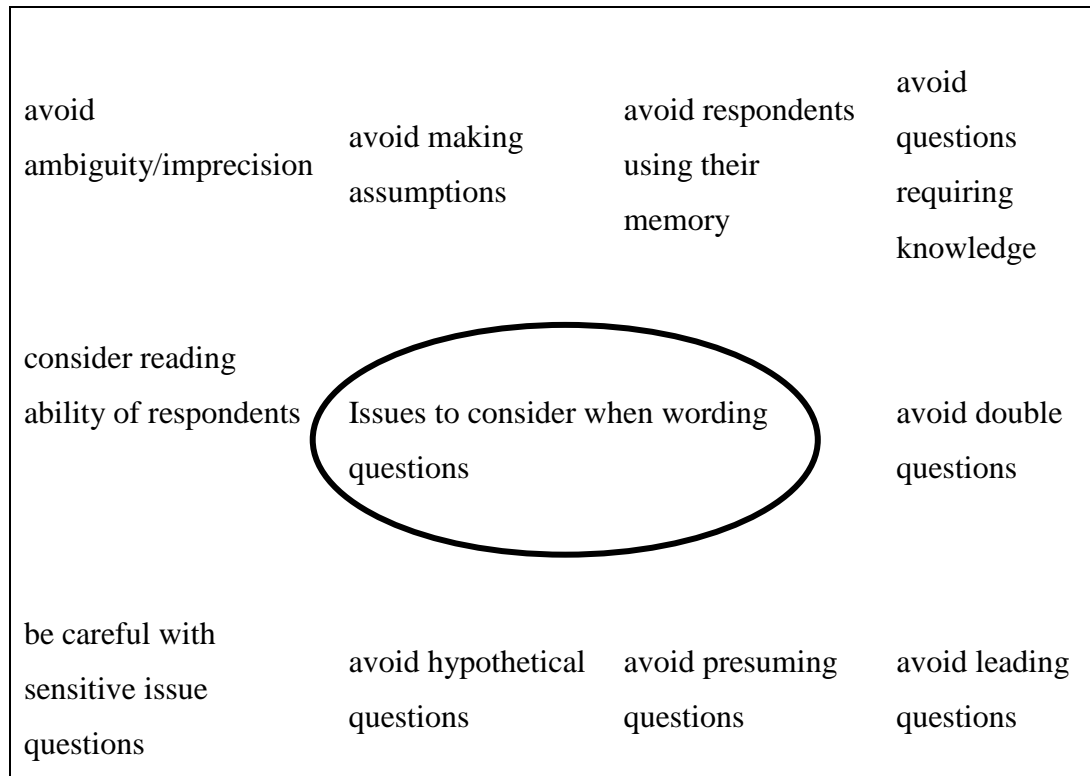
Figure 4. Issues to consider when formulating questions (Kelly, 2008)

The following recommendations offered in the literature were also considered:

- consider whether respondents will be able to understand the wording
- avoid the use of slang, culture-specific or technical words
- avoid words which might influence the respondents to answer in a particular way
- avoid double negatives

- where respondents must select responses from a checklist, ensure that the choices are mutually exclusive and that respondents do not have a clearly preferred response that is not among those offered
- ensure that questions are unambiguous

<div align="right">(Arsham, 2010; McNamara, 2005)</div>

As far as possible, questions were kept short, required only the ticking of answers, and were arranged in a logical sequence (Arsham, 2010). At the beginning of each section, an explanation was provided of the type of information being sought, so as to assist respondents in selecting appropriate responses.

Questions 1 - 5 in the first section of the questionnaire were designed to elicit demographic information including gender, age and levels of English achieved at school, and were aimed at achieving the secondary purpose of engaging respondents in the questionnaire (McNamara, 2005).

The second section of the questionnaire focused on languages spoken by the respondents themselves as well as in their families and in their environment, so as to provide information regarding respondents' language repertoire, the relative roles of their first language or mother tongue, and the extent of their exposure to English. Questions 6 – 12 comprised checklists for specifying languages used in specific contexts, while questions 13 and 14, regarding how well respondents understood English and their L1, required responses, on a Likert Scale ranging from "very well" (01) to "not at all" (04).

In the third section of the questionnaire, data was elicited concerning the reading proficiency, reading habits and reading strategies of participants in both their L1 and English, and included information on how respondents dealt with unfamiliar or culture-related words and concepts, and the extent to which their reading comprehension was affected by linguistic properties of texts. Questions in this section also dealt with perceptions of their own reading proficiency, both in English and the L1, at the word level, the sentence level and the global level, and incorporated both checklist responses and Likert scale responses from 01 at the negative end of the continuum (*slowly, very few, never* etc.) to 07 at the positive end (*quickly and easily, everything, a lot every day* etc.).

The final question in the questionnaire was open-ended, requesting any other comments on factors which might cause difficulty for respondents in reading English. The purpose of this question was to allow for the disclosure of aspects of reading comprehension possibly not accounted for in the questionnaire.

3.2.4.1.1 Piloting of Questionnaire

To ensure that the questionnaire would be effective, and to avoid the pitfalls outlined above, a pilot study was conducted. The questionnaire was administered to 30 senior students enrolled for Psycholinguistics in the Faculty of Humanities and Social Sciences at UNAM. Students were informed that they were participating in a pilot study, and the nature of the research and the purpose of the questionnaire was explained to them. They were specifically asked to comment on aspects of any question which was in any way unclear or misleading.

Results of the pilot study indicated that no significant changes were necessary.
However, guided by the comments of participants in the pilot study, the researcher
nonetheless amended the wording of several question so as to make them more easily
understandable. The final version of the questionnaire (see Addendum 1) was then
used in the study.

3.2.4.1.2 Administration of Questionnaire

Participants gathered as a group, and questionnaires were handed to them by the
researcher in person. An explanation was given of the purpose of the
questionnaire, and respondents were given an opportunity to ask questions or
ask for clarification if required. Questionnaires were then completed and handed
back to the researcher.

In order to preserve anonymity, respondents were allocated identification
numbers to be provided on the questionnaires. With regard to confidentiality,
respondents were assured that while an absolute guarantee was not possible,
every reasonable attempt would be made to keep answers private.

3.2.4.1.3 Data Analysis: Questionnaire

The findings in this phase of the study were processed using the statistical processing
programme Statistical Package for the Social Sciences (SPSS), version 18. Data was
entered into the SPSS programme as either nominal or ordinal values.

Nominal values were placed on a scale classifying respondents in categories such as gender, first language, or Grade 12 results, while data from Likert scale items were entered as ordinal data.

In this study testing for bivariate correlations (r) is frequently used. With quantitative variables this consists of calculating whether the two variables covary. For example, the self-assessment scores for reading in English could be expected to covary positively with the dependent variable for reading proficiency such as scores in the reading comprehension test.

Since data from the open-ended question could not be statistically analysed due to the qualitative nature of the responses, the researcher examined these responses manually, searching for themes and categories related to the research questions.

3.2.4.2   Phase 2: Vocabulary and Reading Comprehension Tests

The main objective of this phase of the study was to test the hypothesis that specific English language constructions and aspects of usage influence the English reading comprehension of Namibian first year English students. For this purpose, participants were given a vocabulary test, followed by a reading comprehension test based on 12 selected passages. The selected passages were subjected to both computer-based and manual analyses focusing on 10 predetermined linguistic properties posited as a potential source of difficulty in text processing.

Since the literature highlights vocabulary knowledge as a major component underpinning reading comprehension, it was decided that the vocabulary of participants be assessed prior to the comprehension test itself. Results of this test would provide an additional source of data which could be triangulated with the results of the comprehension test. The test chosen for this purpose was a version of Laufer & Nation's Levels Test (1999) which has been used by students all over the world, and which requires not only semantic understanding, but also some degree of morphosyntactic knowledge.

For the purpose of testing reading comprehension, a test was designed by the researcher, aimed at pinpointing elements and properties of English texts which might potentially impede the ability of readers to extract appropriate meaning from those texts. The construction of the reading comprehension test entailed the identification of specific texts which would be appropriate for this purpose, as well as an examination of various types of questions so as to determine what type of question would most effectively target participants' ability to process various linguistic properties of the selected texts. The discussion which follows therefore outlines the process of selecting texts for this study, taking into account various factors considered to be constraints in the setting of reading comprehension tests, as well as the merits of various question formats as described in Chapter 2, Section 2.9.3.

3.2.4.2.1 Development of Reading Comprehension Test

The review of literature makes it clear that the number and scope of factors thought to play a role in reading comprehension is so wide and so diverse that it would not be feasible to encompass all of them in any one text. For the purpose of this study, therefore, several English texts were selected which varied as much as possible with regard to aspects such as content matter, potential familiarity to participants, complexity of syntax, cohesion and vocabulary. Furthermore, only authentic texts were included, an authentic text being a text "created to fulfil a social purpose in the language community for which it was intended" (Crossley et al., 2007, p. 17). According to this definition, authentic texts include English novels, poems, newspaper and magazine articles, handbooks and manuals.

As a preliminary guide in identifying appropriate texts for this study, an informal survey was carried out among 80 first year students enrolled for FELS in the FHSS at UNAM in 2009. This indication of reading preferences is included here since it provides useful insight into the perceptions of first year tertiary students with regard to which particular texts they find easy to read and/or interesting. These perceptions were also taken into consideration during the text selection process.
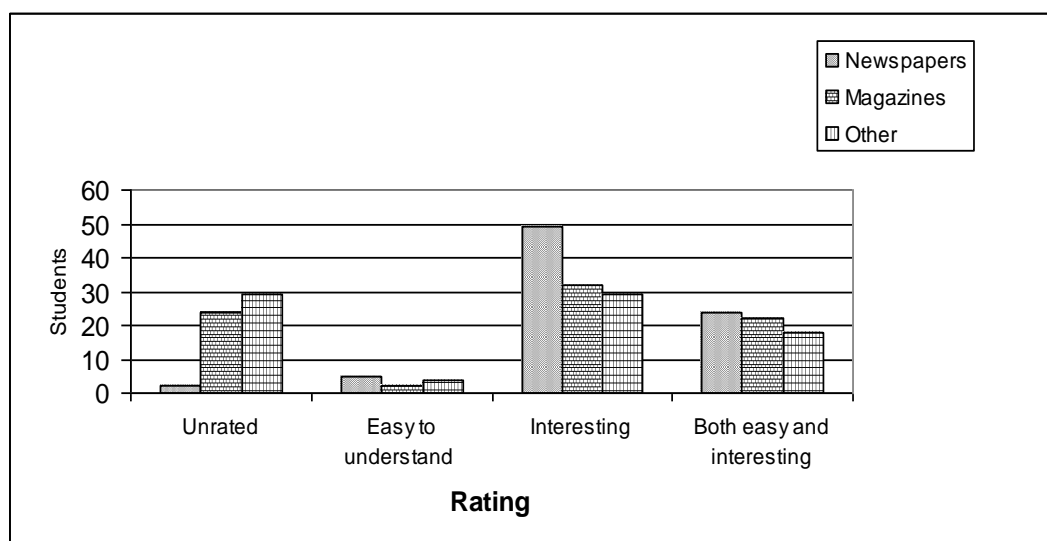
Figure 5. Preferences in reading material of first year FELS students 2009.

On the basis of both the informal survey and of a priori knowledge regarding the nature of texts which first year English students are required to read, six texts were selected by the researcher (see Table 6). In addition, as a preliminary guide in determining the potential level of difficulty of the texts, the Flesch-Kincaid Readability test, as described in Chapter 2, Section 2.10 of this study, was applied, keeping in mind the fact that these normative levels were obtained from L1 readers of English. According to this test, the higher the Flesch Reading Ease (FRE) score, the easier the text is to process. The results are indicated in Table 6.

As already mentioned, to pursue the study objective of determining language related factors which might impede English reading comprehension, it was necessary to construct an appropriate instrument which would allow study participants to engage with the selected texts. Although the purpose of this instrument was not to test the

reading comprehension abilities of the participants themselves, it was nonetheless aimed at providing an indication of the extent to which participants were able to understand each text, as well as pinpointing potential areas of difficulty to be explored more thoroughly in the focus group interviews. In the construction of the instrument, therefore, certain constraints had to be taken into consideration. These constraints are discussed in detail in Chapter 2, Section 2.9.

Table 6

Characteristics and Readability Rating of Selected Texts

Text		Reason for choice	Word count	Flesch reading ease
1	*Intelligence* by Isaac Asimov	Neutral content, generically familiar topic and vocabulary.	334	63.0
2	Extract from *The Great Gatsby* by F. Scott Fitzgerald.	Intensive use of metaphor and imagery; requires specific background and cultural knowledge.	384	61.0
3	*Is Manliness Optional?* by Harvey Mansfield	Culturally oriented; several complex structures.	393	53.6
4	*Stupid in Namibia*[18] by Frederico Links, Insight, February 2010	Familiar content but contains challenging vocabulary and sentence structure.	356	28.1
5	Extract from *Ideas in Action*, by S.E. Bonner	Complex syntax; subject specific vocabulary;	339	24.5

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[18] Although the original title of this text is *Stupid in Namibia*, the researcher wished to avoid potential offence to participants which might be caused by the word 'stupid', and therefore, for the purposes of the comprehension test, the title was adapted to read 'Education in Namibia'. This adapted title is used hereafter in this study.

		background knowledge required.		
6	*Zambia's Lukando wins M-Net Face of Africa '10* from The Namibian, 9 February, 2010	Familiar content, but contains challenging vocabulary and sentence structure. Interest may be gender-based.	357	24.2

In considering the most effective format for the reading comprehension test, the researcher took into account the fact that the objective of the test was not to evaluate the reading comprehension proficiency of the test-takers themselves, but rather to evaluate the accessibility of meaning in the texts. To allow for sufficient data encompassing as many different linguistic properties as possible, it was necessary to include as large a sample of different texts as possible within the constraints of time and without over-taxing the test-takers.

Furthermore, it was important that responses should not be constrained by language related limitations such as difficulty in constructing responses, as discussed in Chapter 2, Section 2.9.3.1. It should also be kept in mind that the reading comprehension test was not aimed at providing a definitive measure of accessibility of meaning in the texts since it would be followed by focus group discussions during which a more in-depth investigation of participants' perceptions of the texts would be carried out.

After careful consideration of the factors discussed in Chapter 2, Section 2.9, the researcher concluded that true/false questions would be the most appropriate format since they would allow for a larger number of texts to be processed within a specific time period, and would give at least an initial impression of the extent to which the texts were understood. In addition to the true/false questions, one multiple choice question was asked, focusing on the main gist of the text so as to assess global understanding of each text.

As far as possible questions were structured in such a way that the meaning to be extracted for the purpose of answering each question was dependent on linguistic properties common to all texts, such as syntax and lexis. However, this proved to be difficult since not all texts contained the targeted properties.

3.2.4.2.2 Piloting of Reading Comprehension Test

With the permission of the Director of the Language Centre at UNAM, a pilot study was conducted among 100 first year students enrolled at the Language Centre, 35 in English for Communication and Study Skills (ULEG), and 65 in English for General Communication (UCLE). These groups were selected on the basis of their having characteristics similar to those of the target group of study participants (Delport, 2005), namely that they were enrolled in an English course at first year level and included L1 speakers of a variety of languages used in Namibia.

Before administration of the test, students were informed that they were participating in a pilot study, and the purpose of the study was explained to them. They were also

requested, as an additional source of information, to underline any phrases which they found difficult to understand or process. The test comprised the six texts described in Section 3.2.4.2.1, followed by true/false and multiple choice questions as discussed in Chapter 2, Section 2.9.2 (see Addendum 2). To ensure scorer reliability, all pilot tests were marked by the researcher.

The request that students underline difficult phrases produced no significant data regarding linguistic properties, since very few students had underlined any text, and those who had had clearly focused on vocabulary rather than on other linguistic constructs. This is to be expected, since L2 students at first year level are generally unlikely to perceive sources of difficulty at a microlinguistic level. The researcher therefore had to rely solely on the responses to the questions for evidence of difficulties arising as a result of particular linguistic properties of the texts. Figure 6 shows a comparison of the scores of test-takers with regard to the six texts used in the pilot test, thus giving a preliminary indication of the relative difficulty of each text as processed by participants in this pilot study.

Figure 6 indicates *Intelligence*, with a mean score of 50%, as presenting the least challenge in processing, as predicted by the FRE score of 63.0, *while Face of Africa*, with a mean score of 36%, appeared to present the most difficulty, again as predicted by the FRE score of 24.2.
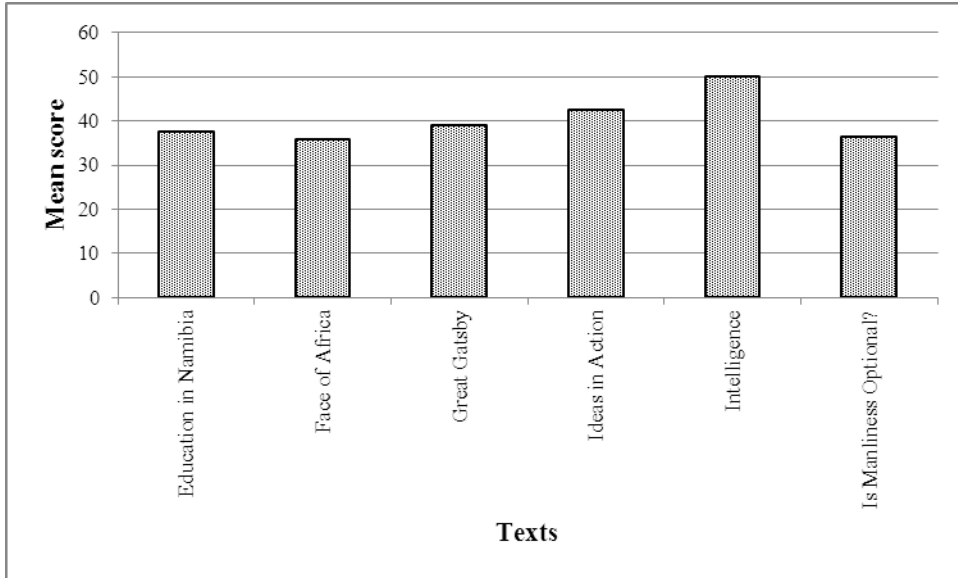
Figure 6. Results of pilot test per text.

Whereas Figure 6 illustrated overall performance in the pilot reading comprehension test, Figure 7 provides a comparison of performance of test takers with regard to global understanding of each text.
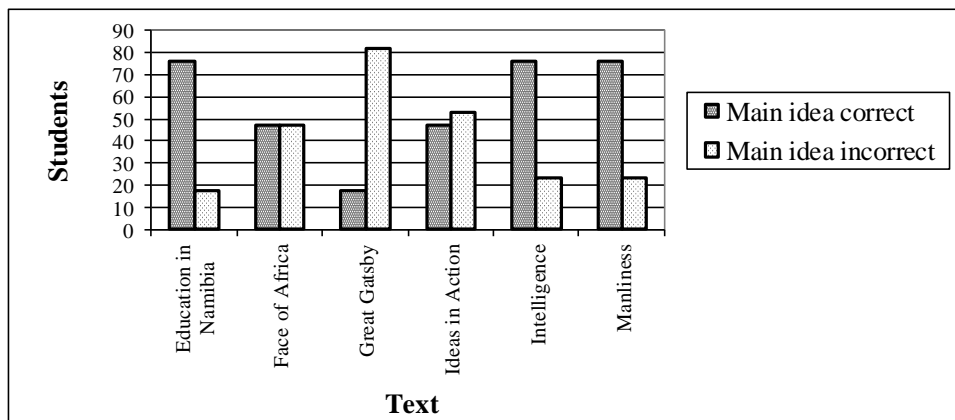
Figure 7. Comparison of performance in global understanding per individual text.

Interestingly, Figure 7 indicates that scores regarding the main idea of a text did not necessarily correspond with scores in the True/false section of the tests. For example, while the average score for true/false questions on *Education in Namibia* ranked fourth out of six, scores in understanding of the main idea ranked highest of all the texts. Since this was a pilot study, it was not possible for the researcher to further investigate this phenomenon. However, it was noted for possible consideration in the test for the main study.

As can be seen from the above figures, results from the pilot test were inconclusive with regard to specific factors impeding reading comprehension. In addition, the low scores achieved by a small group of students for the T/F items in all but Text 4 were possibly due to weak English proficiency, as indicated in the discussion in Section 2.4.4, and are therefore did not represent a significant factor.

With regard to the relative difficulty of the texts, Text 1 (*Intelligence*) appears to have been the most neutral text, with most students grasping the main idea, and the majority scoring above 60% for the T/F items.

Text 2 (Extract from *The Great Gatsby*), rated by the FRE as being the second easiest to read, paradoxically produced among the weakest results, especially with regard to understanding of the main idea, but in an L2 context this is not surprising since this text was heavily loaded with culture-related references and metaphor.

Text 3 (*Is Manliness Optional?*), rated as being slightly more difficult than Text 1, yielded results similar to those for Text 1, in spite of the fact that the subject matter related heavily to Western values, an aspect which could potentially have caused some misunderstanding.

Text 4 (*Education in Namibia*), rated together with Texts 5 (*Face of Africa*) and 6 (*Ideas in Action*) as being more difficult, yielded mixed results, but the main idea seems to have been clear to most students, possibly because the subject matter was familiar to them.

The rating of Texts 5 and 6 as fairly difficult is borne out by the higher number of students who did not grasp the main idea, and to a lesser extent by the scores for the T/F items. The average score for Text 6 was paradoxically the second highest of all average scores for the passages, which was unexpected considering the fact that the vocabulary and terminology used in the passage are somewhat specialised.

The results obtained in this pilot study, although inconclusive, were valuable in providing a guide as to the most effective way to approach the next step in this research. The pilot study highlighted the fact that although a written comprehension test may provide evidence of reading comprehension difficulties, it cannot accurately pinpoint specific textual properties underlying these difficulties, and that the focus group interviews would therefore be essential for the purpose of obtaining more in-depth data with regard to readers' processing of the texts.

In addition, the pilot study confirmed the difficulty and complexity of identifying and isolating specific text properties and their effect on understanding of texts. For this reason, the researcher deemed it necessary to make use of an analysis which would measure specific linguistic properties affecting readability, as discussed in Chapter 2, Section 2.10. Furthermore, in the light of the vast number of linguistic properties which, according to the literature, may affect comprehension of texts, the researcher decided to select specific linguistic properties for analysis, these properties to be selected according to their potential for creating difficulties for L1 speakers of languages spoken in Namibia in particular. The targeted features and the rationale behind their selection are discussed in the next section.

3.2.4.2.3   Modification of Comprehension Test

Based on conclusions drawn after the piloting of the comprehension test, three major adjustments were made with regard to the reading comprehension test, namely the number of English texts to be used, the approach to analysing these texts, and the format of the comprehension questions

Following the pilot test, it became clear that a wider text base would yield richer results, and the researcher therefore decided to include six additional texts. Furthermore, since selection of the original six texts was based on material encountered in a Namibian context, it was felt that the additional texts should, if possible, provide a more international benchmark. Since the Coh-Metrix 2.1 website provides a selection of texts in the College Level LSA space (see Chapter 2, Section 2.10.2.2), six of these texts were selected in addition to the six texts used in the pilot

study. Care was taken to ensure that the subject matter was, as far as possible, potentially relevant to the experience and background of participants in this study. Although the Coh-Metrix 2.1 College Level LSA space is based on characteristics of L1 readers, it is arguably still applicable to Namibian tertiary students since the bulk of the English academic reading material to which students in Namibia are exposed is in fact English L1 material.

Since the time available for testing did not allow for participants to write tests on all 12 texts, the texts, with questions, were grouped into four sets of three texts so that each participant would complete only one set of tests; that is, a test on each of the three texts in a set. In order to provide an initial guide on which to base this grouping, each of the 12 selected texts was rated for reading ease according to the FRE indices so that each set of texts contained one text rated as comparatively easy (a), one rated as more difficult (b), and one rated as the most difficult of the three (c), as shown in Table 7.

Table 7

Composition of Text Sets for Reading Comprehension Test

Set 1	(a) Intelligence	Set 3	(a) Manliness
	(b) Extract from The Great Gatsby		(b) The Sentence
	(c) Modern living		(c) Ideas in Action
Set 2	(a) Education in Namibia	Set 4	(a) Teenage Drinking
	(b) Teaching Techniques		(b) Facial hair
	(c) Hunters and Gatherers		(c) Face of Africa

Since the findings generated by the pilot test indicated the necessity for a more intensive analysis of the linguistic properties of the texts to be used in the comprehension test, it was decided that Phase 2 of the research should be carried out in two steps, namely, a computer-generated analysis of the properties of the texts which would provide a more substantial basis for predicating potential areas of difficulty, followed by the reading comprehension test to be written by the study participants, which would allow for analysis and assessment of both the predicted difficulties and unforeseen difficulties arising as a result of particular linguistic properties of the texts.

Step 1 of Phase 2, as described above, required an appropriate computer tool with which to analyse the linguistic properties of the selected texts. For this purpose, it was necessary to find a metric for text difficulty that reduced sampling error insofar as possible (Kamil, 2004, p.103). Various alternatives for measuring text properties and text readability were thus explored, as described in Chapter 2, Section 2.10, and Coh-Metrix 2.1 was selected.

With regard to this research, since it was not practicable to investigate all 62 linguistic variables or text properties for which Coh-Metrix 2.1 generates indices, the researcher made a selection of specific variables from the Coh-Metrix 2.1 banks of indices based on a-priori assumptions reflected in the literature on L2 reading, and underpinned by reported grammar errors of L1 speakers of languages spoken in Namibia (Goverde, 2000). On this basis, ten sets of Coh-Metrix measures were selected for the initial analysis of the 12 texts. However, it should be noted here that

the results of this analysis were regarded only as a starting point on which to base further investigation of text properties by means of manual analysis by the researcher as well as through focus group interviews. The metrics which were selected for this phase of the study were as follows:

- Word and Text Information

  Basic Count

  Average syllables per word

  Average words per sentence

- Word frequency

- LSA, sentences, all combinations, mean

- Syntax indices

  Mean number of words before the main verb of main clause in sentences

- Sentence syntax similarity, all, across paragraphs

- Referential and semantic indices

  Incidence of personal pronouns

  Anaphoric reference, all distances

  Proportion of content words that overlap between adjacent sentences

- Incidence of all connectives

An explanation of each of these metrics is given in Chapter 2, Section 2.10.2.

In order to make use of the Coh-Metrix 2.1 text analysis software, the researcher was required to register on the Coh-Metrix website as a user, after which a user name and

password was provided. Having accessed the analysis tool, the researcher submitted the texts for analysis, according to the instructions provided on the website.

Following this, the text was entered in the box provided, and submitted for analysis. When a text is submitted to Coh-Metrix for analysis, values for 13 primary measures are returned, but a link is provided for viewing the values of more than 200 other measures of language, text and readability should these be required. The Coh-Metrix Data Viewer facility allows the user to specify specific measures required for data analysis.

For the purposes of this study, all data returned for each of the study texts was saved so that values pertaining to the ten selected properties could be extracted. These results will be discussed in detail in Chapter 4.

Following the selection of six additional texts and the analysis of all 12 texts, the issue of question format was addressed. Since questions in the True/False format had yielded inconclusive results in the pilot test, they were replaced with multiple choice questions which, while also allowing for many questions to be answered in a short space of time, also provided for more flexibility in exploring the effect which particular linguistic constructs may have on meaning in a text. In addition, potential misinterpretations could be represented in the distracters, and it was hoped that incorrect responses might provide useful insight into interpretation of linguistic constructs.

Finally, the modified comprehension test (see Addendum 3) was moderated by the Head of the English Section of the Department of Language and Literature Studies in the Faculty of Humanities and Social Sciences. No further changes were recommended, and the instrument was therefore used for the second phase of the research as described in the next section.

3.2.4.2.4   Administration of Reading Comprehension Test

To minimise the potential effect of stress often experienced by students in a test context, and to avoid the Hawthorne Effect[19] the comprehension test was administered to the entire FELS class of 180 students as part of their continuous assessment. Since it was essential to ensure that the four different sets of tests were evenly distributed, students' names on the class list were sorted alphabetically, and students were divided into eight groups according to surname, with 33 - 35 students in each group. Students in the class were informed that there were four sets of tests, and that texts had been selected in such a way that sets were, as nearly as possible, of equal difficulty. However, they were not told that the three texts in each set had been rated easy, less easy, or difficult according to the Flesch Reading Ease metric, the reason being that students were also asked to rate the texts themselves so as to provide a further dimension to the background of the study.

Students were asked to answer the ten multiple choice questions on each of the three passages in their particular set, and all students succeeded in completing the test

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[19] An effect which occurs when the fact of being included in a study may affect the behaviour of the participants in a study, and therefore affect the results of the study (Brown, 2002, p.10; Perry 2005, p.246).

within the allotted time span of 55 minutes. The test papers of all study participants were then marked by this researcher to ensure scorer reliability.

3.2.4.2.5 Data Analysis: Text Properties and Responses in Reading Comprehension Test

The 12 study texts were submitted to Coh-Metrix 2.1 for analysis as described in Section 3.2.4.2 .3 above. As in Phase 1, the Microsoft Excel spreadsheet programme was used to capture data from Coh-Metrix 2.1 regarding measurement of the ten selected linguistic properties in each of the study texts.

Microsoft Excel was also used to capture data reflecting participants' scores for each text in the reading comprehension test, and where applicable, to display this data graphically.

The researcher also carried out an intensive manual analysis of the study texts and of individual responses by participants to each question.

3.2.4.3 Phase 3: Focus Group Interviews

The purpose of the focus group discussions was to explore participants' perceptions as to linguistic properties of English texts which interfered with or impeded their understanding of those texts. Study participants were allocated to specific groups according to the text sets they had received in the reading comprehension test, and suitable times were then arranged for each group to meet.

On arrival at the interview venue, participants were provided with copies of the three texts on which they had written the reading comprehension test. However, since it was felt that the presence of the questions might distract the participants or influence their perceptions, the questions were not included in the copies provided at this stage of the study.

In order to reduce tension and encourage participation, it was made clear to participants at the start of each group interview, that they themselves were not being tested, but that the purpose of the discussion was rather to enlist their assistance in identifying potential characteristics of the texts which might impede reading comprehension. All interviews were semi-structured in that the researcher followed a similar pattern for stimulating discussion. Each group interview began with a probe into the meanings of potentially unfamiliar, confusing or difficult vocabulary contained in each of the three texts, so as to provide an indication of the extent to which word knowledge played a role in participants' understanding of the texts. Following this, the researcher initiated discussion by asking questions focused on the ten particular characteristics or properties identified for the purpose of this study, but allowed participants to comment freely on other characteristics of the texts while at the same time ensuring that the discussion did not go off track. Participants were encouraged to identify and discuss issues of vocabulary and content which interfered with their comprehension of the test items, and to describe strategies they used in attempting to overcome these obstacles.

Interviews were recorded and transcribed for later analysis. Group discussions also provided an opportunity to gain more in-depth information, where necessary, on issues addressed in the questionnaire, and those participants who required clarification of items in the questionnaire were given an opportunity to ask questions.

3.2.4.3.1 Data Analysis: Focus Group Interviews

Content analysis was carried out on data gathered during the focus group interviews. Transcripts of recorded interviews were examined by the researcher so as to identify themes, consistencies and differences. Ideas, perceptions and opinions put forward by participants were then organised into coherent categories related to particular linguistic properties of English texts and reading comprehension difficulties arising from these properties.

3.3 Reliability and Validity of Research

In this section, issues of reliability and validity concerning this study will be addressed. Since the research design for the study incorporated elements of both quantitative and qualitative techniques as described in Chapter 4, the criteria to be satisfied and the soundness of the research in the study will be examined against standards held to be important in both research paradigms.

According to Brown (2005, p.492), standards to be upheld in quantitative research include reliability, replicability, validity and generalizability. The reliability of instrument used in this study was determined through piloting of both the

questionnaire and the comprehension test. The issue of replicability was addressed through the provision of detailed and complete descriptions of the instruments used in the study, methods of scoring or measuring specific constructs, and methods of collecting and analyzing data. This detailed information would allow for other researchers to carry out another study following exactly the same procedures as were used in this study.

With regard to statistical conclusion validity, arguments for the validity of the calculations are based on the acceptable levels of strength and significance yielded by the bivariate correlation analysis. However, this study makes no claims with regard to causal relations.

Concerning external validity, namely the extent to which the results from the samples surveyed allow for generalization of the results to the reference population in general, a limitation of this research is that both the number of respondents surveyed and tested, and the number of texts analysed, are low in proportion to the reference populations. In the light of this limitation, no firm claims can thus be made regarding the validity of these findings beyond the samples in this study. Nonetheless, since the study was designed to approximate as nearly as possible to the conditions that would occur in the real world, and since the sample is representative of the population to which the researcher wishes to generalise, it can be argued that the results of this study provide valuable insight into the extent to which Namibian readers are affected by language related factors widely believed to affect English reading comprehension in other contexts.

Discussing the enhancement of qualitative research, Patton (1999), argues:

> Although many rigorous techniques exist for increasing the quality of
> data collected, at the heart of much controversy about qualitative
> findings are doubts about the nature of the analysis. Statistical
> analysis follows formulas and rules while, at the core, qualitative
> analysis is a creative process, depending on the insights and
> conceptual capabilities of the analyst. While creative approaches may
> extend more routine kinds of statistical analysis, qualitative analysis
> depends from the beginning on astute pattern recognition, a process
> epitomised in health research by the scientist working on one problem
> who suddenly notices a pattern related to a quite different problem.

In qualitative research, standards to be met may be regarded as approximately
analogous to those of quantitative research (Brown, 2005, p.492), namely
dependability, confirmability, credibility and transferability.

Ensuring dependability requires that the researcher account for any shifting
conditions directly related to the sample being studied, as well as any modifications
that have been made in the design of the study as it progressed. With regard to this
study, this requirement was addressed through the use of overlapping methods, such
as computer analysis and focus group discussions in analysing the effect on
comprehension of particular linguistic properties.

In addition, an audit trail was provided in the form of a transparent description of the
research steps taken from the start of a research project to the development and

reporting of findings. This audit trail included the following elements, as described

by Cohen and Crabtree (2006):

- **Data reconstruction and synthesis products** - including structure
    of categories (themes, definitions, and relationships), findings and
    conclusions and a final report including connections to existing
    literatures and an integration of concepts, relationships, and
    interpretations
- **Instrument development information** - including pilot forms,
    preliminary schedules, observation formats

A clear description was provided of the research design and data collection decisions

as well as the steps taken to manage, analyse and report data, as suggested by Cohen

and Crabtree (2006). This encompassed information about sampling as well as an

explanation of the role of different data sources. A rationale for these decisions was

also provided. With regard to data analysis, the requirement emphasised by

Malterud (2001), as cited in Cohen and Crabtree (2006), was also addressed, namely

that "it is not sufficient to explain how and why patterns were noticed... the reader

needs to know the principles and choices underlying pattern recognition and category

foundation."

The aspects described above further contribute towards fulfilling the requirement of

confirmability, namely that data on which the researcher's interpretations are based

are either fully revealed or made available so that other researchers would be able to

reject, confirm or modify the original interpretations, as well as replicability, and

transferability which require a detailed description of the research design, context

and conditions, so as to enable readers of the research report to make independent decisions as to whether the interpretations apply to another context with which such readers are familiar. To address the issue of credibility, both sources in the literature and thick description attested to the accuracy of definitions and characterizations of the participants and the study texts under investigation.

Finally internal validity was addressed through consultation with peers, and referential analysis, as well as triangulation. As proposed by Patton (1999), triangulation was achieved by combining different qualitative methods and including multiple perspectives, namely, secondary research, the questionnaire survey, the Coh-Metrix 2.1 text analysis and the focus group interviews. Verification and validation of the qualitative analysis was achieved through three types of triangulation: triangulation of methods to confirm the consistency of findings generated by the four methods of collection; triangulation of sources for the purpose of comparing and cross-checking the consistency of information derived by these different means; theory/perspective triangulation in which data was interpreted in the light of multiple perspectives or theories.

Since triangulation seldom leads to a single, totally consistent picture, the aim is to study and understand the nature of and reason for differences, since different kinds of data capture different things (Patton, 1999). The researcher therefore attempted to identify and understand the reasons for the differences. In this study, consistency in overall patterns of data from different sources, and reasonable explanations for

differences in data from divergent sources, contributed significantly to the overall credibility of findings.

3.4   Ethical Considerations

The researcher was guided by the American Psychological Association's (APA) ethical guidelines (2001, pp. 387 – 396). Participants were informed of the nature of the study to be conducted, and of what specific activities such participation would involve. They were also given the choice of participating or not participating, and were informed that should they agree to participate, they would have the right to withdraw from the study at any time. Written consent for the study was obtained from the Dean of the Faculty of Humanities and Social Sciences (See Addendum 4).

Strict confidentiality was observed with regard to the nature and quality of participants' performance. To preserve this confidentiality, no question that required participants' identities was included in the questionnaires, and completed questionnaires were identified by number only, as were reading comprehension answer sheets. With regard to the focus group interviews, anonymity was not always possible inasmuch as many participants were members of the FELS group taught by the researcher, the others being members of a group taught by a colleague. However, participants themselves expressed no objection to this circumstance which, in fact, possibly contributed to a less stressful, more open discussion.

3.5   Summary

This chapter provided a foundation for situating this study within the Critical Realist research paradigm. This was followed by a description of the research design and research instruments, as well as the procedures which were followed in constructing and piloting these research instruments, and in collecting and analysing the data. It was pointed out that since the primary aim of this study was to identify language-related text properties which might interfere with the English reading comprehension of first year English students for whom English is a L2, data collection focused mainly on factors related to potential sources of difficulty in the texts themselves, as reflected in participants' responses in a comprehension test on selected texts and in computer generated measures of specific linguistic properties of these texts. The chapter outlined how data concerning the language background of participants was gathered through questionnaires, while information regarding the views and perceptions of the participants themselves was collected during focus group interviews. It was furthermore explained that data from both the questionnaire and the focus group interviews was gathered for the purpose of triangulation with the data concerning linguistic properties of texts.

The chapter concluded with a brief discussion of ethical considerations that were taken into account when conducting this investigation. In the next chapter the results of the study will be presented.

CHAPTER 4   RESULTS OF THE STUDY

4.1 Introduction

The aim of this study was to identify specific factors of English language

construction and usage, as well as aspects of language background, which might

impede the English reading comprehension of tertiary students enrolled in a first year

English course at UNAM. In line with the mixed method approach outlined in

Chapter 3, the study comprised three phases of data collection, and since the term

'language related' may apply both to the languages used by the readers and the

language of texts, both reader-related factors and text-related factors were explored.

The results of each of the three phases were then analysed and triangulated against

the background of factors identified by means of extensive secondary research, as

presented in Chapter 2. The three phases of the study are summarised below.

4.1.1   Phase 1: Questionnaire for Background Data on Participants

In Phase 1, a questionnaire survey was conducted to gather data on the language

profiles of participants as well as on their reading proficiency, habits and strategies.

This data was then analysed for possible correlations between variables in these two

areas which might reflect their role in reading comprehension.

4.1.2   Phase 2: Vocabulary and Reading Comprehension Tests, and
Identification of Linguistic Properties

Phase 2 comprised a number of sub-steps:

1) Vocabulary Test

Firstly, since the secondary research indicated that vocabulary was a significant factor in reading comprehension, participants were given a vocabulary test so that possible correlations between language profiles, reading profiles and vocabulary scores could be investigated.

2) Reading Comprehension Test

Following the vocabulary test, an English reading comprehension test was administered. The purpose of this test was twofold: to provide participants' scores to be used in investigating the influence of language profile, reading profile and vocabulary knowledge on comprehension, and to investigate whether specifically identified linguistic properties of English texts influenced reading comprehension.

To achieve this purpose, 12 English texts were selected, and 10 linguistic properties were identified, based on the views explored in the secondary research regarding those properties most likely to impede reading comprehension. The 12 selected texts were subjected to a computer-based Coh-Metrix 2.1 measurement of the 10 selected linguistic properties, as well as to a manual analysis for the purpose of pinpointing other linguistic features which might possibly influence text processing but which might not be reflected in the Coh-Metrix 2.1 measures. Reading comprehension tests on each of the 12 texts were then constructed and administered to participants, as described in Chapter 3.

For the purpose of investigating the influence of language profile, reading profile and vocabulary knowledge on English reading comprehension, participants' reading

comprehension test scores were compared with questionnaire responses and vocabulary test scores, and possible correlations were explored (e.g. between comprehension test scores and mother-tongue, language used in home, reading profile etc.).

For the purpose of investigating whether specifically identified linguistic properties of English texts influenced reading comprehension, participants' comprehension test responses were first analysed to determine sources of difficulty. Linguistic properties thus identified were then compared with the results of the Coh-Metrix 2.1 and manual analyses of each text to determine whether the three sources of data corresponded in identifying potential sources of difficulty in participants' processing of the texts.

3) Focus Group Interviews

In Phase 3, the final phase, focus group interviews were conducted to explore perceptions of participants regarding factors which had influenced their processing of the texts. These perceptions were then compared with results of the text analyses and the reading comprehension test scores to determine the extent to which the three sets of data could be triangulated. Furthermore, focus group interviews allowed for the discussion of potential sources of difficulty in English reading comprehension which might not have been revealed in Phases 1 and 2.

Chapter 4 will present the results of all three phases of the study. However, since various facets of each phase of the study are interlinked with or dependent on

elements of the other phases, it is not practicable to isolate results according to specific phases. The results of the study are therefore presented as follows:

Section 1:

The first section presents the results of the questionnaire survey with regard to the relationship between the language repertoire[20], reading practices and perceived reading problems of participants.

Section 2:

In the second section, participants' scores in the vocabulary test and the English reading comprehension test are presented, followed by an analysis of the linguistic properties of the twelve texts selected for the study, and of participants' responses to questions on each text.

Section 3:

Section 3 presents a content analysis of the focus group interviews according to themes identified during these interviews.

4.2   Questionnaire Survey

4.2.1   Relationship between Language Repertoire and English Reading Proficiency

The rationale for including an examination of the language background of participants in this study is based on the multilingual nature of the context in which young Namibians acquire reading skills. The literature discusses a considerable array of factors hypothesised to underpin difficulties in L2 reading comprehension, many

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[20] Group of language varieties (e.g. first language, regional language, languages learned at school or in the community), used by the same speaker to different degrees of proficiency and for different uses.

of which are related to facets of bilingualism or multilingualism. A language profile of the study participants therefore provides an essential backdrop to this study.

4.2.1.1   Mother Tongue and Early L2

Since the literature on early literacy development indicates that the development of literacy skills is significantly influenced by the language/s which an individual learns in early childhood, the first factor analysed in the study was the languages which participants learned and used before starting school. Figure 8 indicates the number of respondents per language first spoken. For the purposes of this chapter, and irrespective of terminology applied in the literature review, the term 'mother tongue' will be used to refer to the language first spoken by an individual.
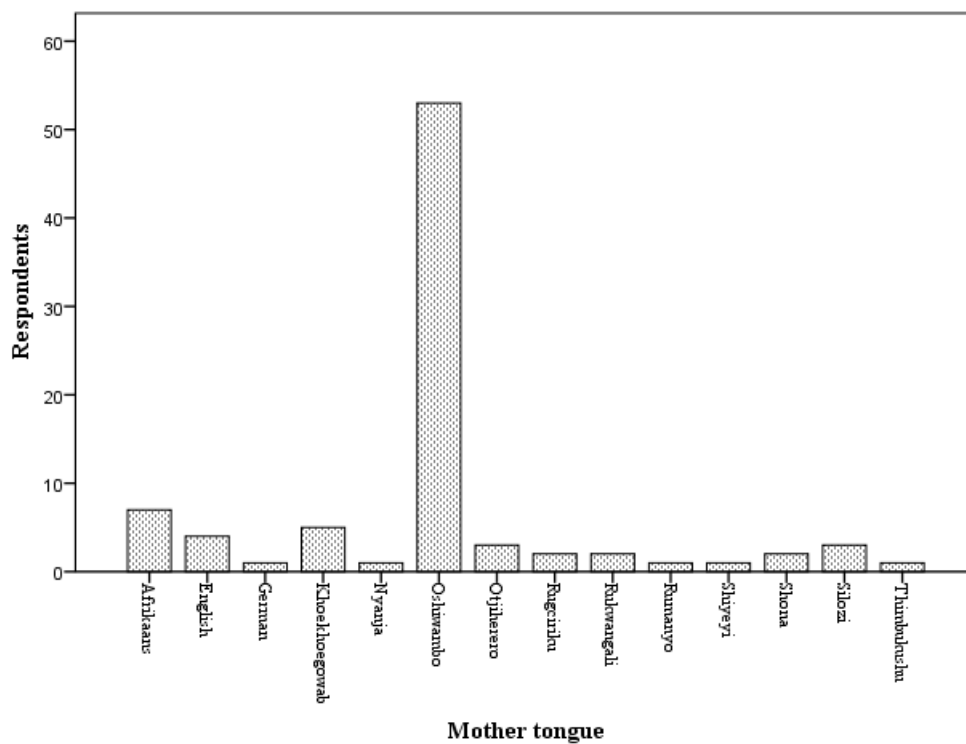
Figure 8. Number of respondents per mother tongue.

As might be expected in the Namibian multilingual context, a number of respondents indicated that they had been exposed to other languages in addition to their mother tongue before starting school. Table 8 shows the mother tongues of participants together with other languages (if any) which the participants may have acquired before starting school (from here on referred to as Early L2).[21]

Table 8

Mother Tongue and Early L2 of Respondents

| | | Early L2 | | | | | | | | | |
		None	English	Afrikaans	Oshiwambo	Otjiherero	Khoekhoegowab	Rusambyu	Ndebele	Njanja	Total
Mother tongue	English	2	0	0	1	0	0	0	0	1	4
	Afrikaans	5	0	0	0	1	1	0	0	0	7
	Oshiwambo	36	13	4	0	0	0	0	0	0	53
	Otjiherero	1	1	0	0	1	0	0	0	0	3
	Khoekhoegowab	1	1	3	0	0	0	0	0	0	5
	Silozi	2	1	0	0	0	0	0	0	0	3
	Rugciriku	0	2	0	0	0	0	0	0	0	2
	Nyanja	1	0	0	0	0	0	0	0	0	1
	Rukwangali	1	0	0	0	0	0	1	0	0	2
	German	1	0	0	0	0	0	0	0	0	1
	Shona	0	1	0	0	0	0	0	1	0	2
	Thimbukushu	0	0	1	0	0	0	0	0	0	1
	Rumanyo	1	0	0	0	0	0	0	0	0	1
	Shiyeyi	0	1	0	0	0	0	0	0	0	1
Total		51	20	8	1	2	1	1	1	1	86

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[21] Oshiwambo is taken here as including all dialects of the language such as Oshikwanyama or Oshindonga.

What is of interest with regard to this analysis is that a little more than half (59.3%) of respondents spoke only their mother tongue before starting school, whereas all other participants were exposed to at least one other language, and some even to two other languages, a factor which, according to several scholars (see Chapter 2, Section 2.5.3) may contribute to the development of cognitive competence, and may therefore arguably influence reading proficiency in both the L1 and the L2. It is also worth noting that although 20 respondents indicated that they had spoken English during early childhood, it is not possible to assess the standard of English to which they were exposed, and it therefore cannot be assumed that this exposure would necessarily facilitate English reading comprehension.

4.2.1.2 First language

In considering potential cross-linguistic effects on English reading comprehension, a question to be addressed would naturally involve perceptions of what is meant by the term 'first language' (or L1), as discussed in Chapter 2, Section 2.4.2 of the literature review. For the purposes of this study, the language which respondents felt most comfortable with (as opposed to the language which they learned first, i.e. the mother tongue) was regarded as the L1[22]. Table 9 summarises responses to questions exploring this issue.

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[22] While the researcher recognises that there may be differences in degrees of proficiency in a language depending on whether one is referring to reading, writing or speaking, such differentiation is beyond the scope of this study. Therefore, being comfortable in using a particular language is here taken as describing an individual's perception as to which language s/he uses most confidently and proficiently in most contexts.

Table 9

Languages which Participants Felt Most Comfortable Using

		Frequency	Percent	Valid Percent
Valid	English	48	55.8	57.1
	Afrikaans	7	8.1	8.3
	Oshiwambo	21	24.4	25.0
	Otjiherero	2	2.3	2.4
	Khoekhoegowab	3	3.5	3.6
	Nyanja	1	1.2	1.2
	Rukwangali	1	1.2	1.2
	Shona	1	1.2	1.2
	Total	84	97.7	100.0
Missing	System	2	2.3	
Total		86	100.0	

Although only 55.8% of participants indicated that they felt most comfortable using English, an analysis of their perceptions regarding their proficiency in specific areas of the language indicates that the majority felt that they had few difficulties in understanding, speaking, reading or writing English. Table 10 summarises participants' perceptions of their own proficiency in English with regard to these skills. In the light of this study, it is interesting to note that the rating of 'very well' is higher for reading than for the other four areas.

Table 10

Participants Perceptions of Own Proficiency in English

	Understand		Speak		Read		Write	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Very well	56	65.9	46	54.1	66	77.6	47	55.3
Fairly well	27	31.8	34	40.0	19	22.4	33	38.8
Not very well	2	2.4	5	5.9	0	0	1	4.7
Not at all	0	0	0	0	0	0	1	1.2

An analysis of the extent to which participants usually used the language with which they were most comfortable produced the results reflected in Table 11.

Of those who responded to this question, more than half of the respondents (57.1%) stated that they usually spoke English. However, it should again be noted that this cannot be regarded as a factor which might facilitate English reading comprehension. With English being the official language of Namibia as well as the medium of instruction at UNAM, it is to be expected that students would spend the greater part of each day using English, but it cannot be assumed that the English used is of an acceptable standard. The fact that 42.9 % of respondents reported that they did not usually speak English is also of interest, since this would imply that they were less likely to read English.

Table 11

Cross tabulation of First Language and Language Most Often Used

		Language most often used						
		English	Afrikaans	Oshiwambo	Otjiherero	Khoekhoegowab	Rukwangali	Total
Language most comfortable with (L1)	English	43	1	4	0	0	0	48
	Afrikaans	4	3	0	0	0	0	7
	Oshiwambo	11	0	10	0	0	0	21
	Otjiherero	0	0	0	2	0	0	2
	Khoekhoegowab	1	1	0	0	1	0	3
	Nyanja	1	0	0	0	0	0	1
	Rukwangali	0	0	0	0	0	1	1
	Shona	1	0	0	0	0	0	1
Total		61	5	14	2	1	1	84

4.2.1.3 Home Language/s

In addition to the languages used by the respondents themselves, it is also useful to consider the language environment of their homes, which to some extent would also influence their reading practices. Table 12 and Table 13 illustrate the complex mix of languages in the homes of most of the respondents.

It seems probable that the multilingual repertoire of participants, as reflected in Table 12 and Table 13, may have both positive consequences, such as increased metalinguistic awareness and a more highly developed ability to approach language analytically, as posited by Baker (1996), and negative consequences such as cross-linguistic interference, all of which, according to the literature, may play a significant role in reading comprehension.

Table 12

Language Spoken in Home.

		Frequency	Valid Percent
Valid	English	10	11.8
	Afrikaans	7	8.2
	Oshiwambo	51	60.0
	Otjiherero	2	2.4
	Khoekhoegowab	5	5.9
	Rugciriku	1	1.2
	Rukwangali	2	2.4
	German	1	1.2
	Shona	1	1.2
	Ndebele	1	1.2
	Rumanyo	1	1.2
	Thimukush	1	1.2
	Shiyeyi	1	1.2
	Tonga	1	1.2
	Total	85	100.0
Missing	System	1	
Total		86	

Table 13

Other Language Spoken in Home

		Frequency	Valid Percent
Valid	None	53	62.4
	English	20	23.5
	Afrikaans	7	8.2
	Otjiherero	1	1.2
	Khoekhoegowab	1	1.2
	Other	1	1.2
	Rusambyu	1	1.2
	Njanja	1	1.2
	Total	85	100.0
Missing	System	1	
Total		86	

4.2.2 Reading Practices

Since, in any language, reading practices must clearly influence reading skills, Phase 1 of this study explored the possibility that particular aspects of participants' reading habits and strategies might play a notable role in English comprehension, and might contribute to difficulties experienced in participants' processing of English texts. Factors which were found to be significant are presented in this section.

4.2.2.1 Frequency of Reading

Since it might be expected that proficiency in reading comprehension may be influenced by how much English participants read daily, an item investigating participants' reading habits was included in this survey, participants being asked to indicate on a seven-point Likert Scale from 'Never' to 'A lot every day' how often they read English books, magazines or newspapers.

As displayed in Table 14, a large number of students read at least some English either almost every day (28.2%) or a few times a week (23.5%).

Table 14

Frequency of English Reading

		Frequency	Valid Percent
Valid	Sometimes	12	14.1
	Once a month	3	3.5
	Once a week	8	9.4
	Few times a week	20	23.5
	Almost every day	24	28.2
	Lots every day	18	21.2
	Total	85	100.0
Missing	System	1	
Total		86	

Another expectation in this survey was that students who read English extensively would have developed efficient processing skills and strategies through practice, and would thus be able to process texts more easily, and this was, in fact, supported by a bivariate analysis of these two variables which showed a significant[23] correlation at the 1% level (r = .324, p < 0.01, N = 84[24]). In other words, the more English a participant read, the less difficulty that participant was likely to have in processing English texts.

Although the literature suggests that individuals who are proficient L1 readers may transfer L1 reading skills to the L2, it was also pointed out in Chapter 2, Section 2.4.4 that many of the participants in this study either did not first learn to read in their L1, or are speakers of L1s which have limited written material or which have a mainly oral tradition, and that since one cannot be sure about how, why and what L2 students might read in their L1, one clearly cannot assume that L2 readers of English have well-developed L1 reading skills which can be transferred. In the light of this view, it is interesting to note that items in which participants were asked to evaluate reading proficiency levels in English and in their L1 are statistically significantly correlated at the 1% level (r =.433, p < 0.01, N = 83). Table 15 displays these perceptions in more detail.

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[23] While the researcher acknowledges that a correlation of .35 or lower is normally considered as weak, between 0.35 and 0.65 as moderate, and above 0.65 as strong, the significance levels provided in this chapter are presented exactly as reflected in the SPSS analysis.

[24] (r) = Pearson's correlation coefficient; (p) = probability of error; (N) = sample size

4.2.2.2 Difficulties Experienced in Comprehending English Texts

One of the aims of this survey was to examine the various types of language related problems affecting English reading comprehension, an issue which was explored in questions 20 to 26 of the questionnaire as displayed in Table 16. Since items were rated on a five point Likert Scale from 1(Always or almost always) to 5 (Never), the pertinence of each particular aspect is inversely proportional to the mean score for that aspect (i.e. the lower the score, the more pertinent the issue). The mean scores displayed in Table 16, therefore, indicate that while participants felt that they usually grasped the main idea of content (mean score 3.84), unfamiliar words were perceived as posing the greatest challenge (mean score 3.21), followed by unfamiliar concepts (mean score 3.41) and complex sentence structure (mean score 3.46). Unfamiliar cultural references (3.69) and homonymy (3.94) were perceived as posing relatively little challenge.

Table 15

Participants' Perceptions: Levels of Reading Proficiency in English and L1

	English		L1	
	Frequency	Percent	Frequency	Percent
I can read and understand common names, words, and very simple sentences, such as on notices, on posters, or in catalogues.	6	7.1	7	8.4
I can read short and simple texts. I can find the information I need in everyday texts such as advertisements, descriptions, menus, and timetables. I can understand short and simple personal letters.	8	9.5	8	9.6

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	17	20.2	10	12.0
I can read and understand texts in everyday language at home or at university. I can understand descriptions of events, feelings, and wishes in personal messages.	17	20.2	10	12.0
I can read articles and reports about current topics and events where the writer is expressing a point of view or an attitude. I can understand modern literary texts.	19	22.6	16	19.3
I can understand long and complicated factual or literary texts and notice differences in style. I can understand specialised articles and long articles from subject areas I am not familiar with or interested in.	16	19.0	16	19.3
I can easily read and understand almost all kinds of written texts, even abstract texts with a complicated structure and language, such as in manuals, specialised articles, or works of literature.	18	21.4	26	31.3
Total	84	100.0	83	100.0
Missing System	2		3	
Total	86			

Table 16

Participants' Perceptions: Difficulties Experienced in Reading in English

Items, on a five point Likert Scale from 1 (Always or almost always) to 5 (Never)	N	Min	Max	Mean	Std. Dev.
I find that there are words which are unfamiliar to me	85	1	5	3.21	1.070
I find that I don't understand what the passage is mainly about	85	1	4	3.84	.949
I find that there are concepts which are unfamiliar to me	85	1	5	3.41	.942
I find that I don't understand some ideas because they come from another culture	84	1	6	3.69	.957
The way I pronounce some of the words affects my understanding of those words	85	1	5	3.94	.992

I am confused by words which have more than one meaning	85	1	5	3.95	.999
I am confused by sentences which are too complicated	84	1	5	3.46	1.092
Valid N (listwise)	83				

As a check on the consistency of responses to questions 20 to 26, questions 29 to 32, although worded differently, solicited similar information and compared perceptions of reading comprehension difficulties in English with those in the L1, as reflected in Table 17. Again, the higher the mean score, the less challenging the problem was perceived to be. Responses to these questions were not always consistent with those reflected in Table 16 above, since the greatest challenge was here perceived as being complex sentence structure (mean score 4.55), followed by understanding of content (mean score 4.94), with processing of individual words posing the least challenge (mean score 5.05). The latter may be due to the fact that in this case, the question did not refer specifically to unfamiliar words, asking rather "How many words do you understand in English texts?" Since unfamiliar words are generally low frequency words, it would be understandable that this response refers to the more common English words.

Interestingly, as can be seen in Table 17, difficulties were rated in the same order for the L1 as for English, which may support the notion that some reading comprehension difficulties are not necessarily language specific.

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Table 17

Participants' Perceptions: Difficulties Experienced in Reading in English and L1(1)

Items, on seven point Likert Scales from 1 (lowest) to 7 (highest)	English texts Mean scores	Standard Deviation	L1 texts Mean scores	Standard Deviation
How quickly do you read texts?	5.37	1.463	5.30	1.813
How many words do you understand in texts?	5.05	1.188	5.31	1.546
To what extent you find the sentences in the texts difficult to understand?	4.55	1.408	4.89	1.653
To what extent do you find the contents of library books and textbooks understandable?	4.94	1.108	5.19	1.550

A bivariate analysis of correlations between perceived reading proficiency (question 34) and each of the factors specified in questions 20 to 26 provided further insight into the relationship between these variables. A significant correlation was found between reading proficiency and the following factors: understanding the main idea of the passage (r = -.270[25], p < 0.05, N = 84); homonymy (r = .247), p < 0.05, N = 84); complex sentence structure (r + .225, p < 0.05, N = 83). This would suggest that proficiency in understanding main ideas, skill in identifying the appropriate meaning of a word with multiple meanings according to context, and the ability to decode complex sentences are key factors in successful text processing.

A further bivariate analysis indicated that with regard to difficulties experienced in

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[25] The apparent negative correlation results from the code numbering of the options in the questionnaire. In the question on how well individuals read English, the codes ascended from 1 for 'very well' to 4 for 'not at all', whereas in the question on understanding the main idea, the codes descended from 6 for the highest level to 1 for the lowest level.

particular aspects of comprehension, the processing of unfamiliar concepts correlated

significantly with frequency of reading English texts ($r = .240$, $p < 0.05$, $N = 85$) as

did the processing of complex sentences ($r = .193$, $p < 0.05$, $N = 84$), thus lending yet

more weight to the notion that frequent exposure to English texts facilitates at least

these two aspects of reading comprehension.

4.2.2.3 Strategies for dealing with unfamiliar words

As discussed in the literature, and as noted above, unfamiliar words in texts may

pose a challenge to L2 readers. Therefore, the frequency of such words as well as the

strategies respondents use to deal with them, is an important issue. Several items

included in the questionnaire thus asked participants how often they used various

strategies to handle unfamiliar words, on a scale from 1 (never) to 7 (frequently).

Table 18 shows the mean scores of responses to these questions.

Table 18

Frequency of strategies for dealing with unfamiliar words when reading English
novels, textbooks, magazines and newspapers, or on the Internet.

Items, on seven point Likert Scale from 1 (lowest) score to 7 (highest)	N	Mean	Standard Deviation
Consult dictionary	83	5.16	1.871
Use subject knowledge	79	4.91	1.876
Guess from context	78	5.26	1.591
Ask teacher	78	2.78	1.733
Ask parents	78	2.40	1.662
Ask other students	79	4.43	1.858
Continue reading	79	4.87	2.015
Give up reading	79	1.43	1.094

It is interesting to note that strategies which were accorded the highest mean scores

included guessing the meaning of a word from the reading context (5.26) and

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guessing the meaning of a word using knowledge of the subject (4.91), a perception

which is supported by evidence from the focus group discussions (see Section 4.6).

Although a priori experience indicates that students and learners are often

encouraged to use the strategy of inferring meaning from context, the concern is

raised in the literature that in order for this strategy to be effective, the reader needs

to know 95% of the other words in the text, and that especially in the case of L2

readers, this may not necessarily be the case. Evidence from the focus group

discussions further indicated that in some cases, L2 readers might apply an

inappropriate meaning for a word which they perceive as 'familiar', and thus

misinterpret the context.

As might be expected, the mean score for consulting a dictionary[26] was also high

(5.16), while the mean scores for the strategy of asking teachers was relatively low

(2.78). While the latter may be due to the fact that teachers are unlikely to be

available on every occasion where an unfamiliar word is encountered, in the context

of a multilingual, multicultural country such as Namibia, reluctance to ask a teacher

may be underpinned by a number of cultural and social factors which are beyond the

scope of this study. This may also apply to the even lower mean score accorded to

the strategy of asking parents (2.40).

The relatively high mean score of 4.43 for the strategy of asking another student is

not surprising, given that students spend a considerable part of each day in the

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[26] The type of dictionary was not specified, since the use of both monolingual and bilingual
dictionaries may be included in this strategy.

company of other students. However, here too, an important consideration is the fact that the other students are very often subject to same language challenges and may therefore not always provide correct or appropriate information.

A number of the issues discussed above concern vocabulary and word knowledge, which, as mentioned previously, feature prominently in the literature as underpinning reading comprehension. This notion is also reflected in several responses to the open-ended question in the questionnaire. Furthermore, an analysis of the correlation between the scores achieved by participants in the vocabulary test and in the reading comprehension test showed that these two scores are statistically significantly correlated at the 1% level ($r = .464$, $p = < 0.01$, $N = 81$), thus supporting the fundamental importance of vocabulary as an element in reading comprehension. Clearly, therefore, the role of vocabulary in processing texts must be considered in this study, and for this purpose, in the next sections, data elicited in Phase 2, namely scores in the vocabulary test and the reading comprehension test, will be analysed against the background of responses in the questionnaire regarding participants' perceptions and strategies for dealing with unfamiliar words.

4.3   Vocabulary Test

As a background to the discussion of the relationship between vocabulary and various factors explored in the questionnaire, it is necessary to consider the scores of participants in the vocabulary test described in Chapter 3, Section 3.2.6.2. Individual scores are presented in Figure 9, the mean score being 55.71%.
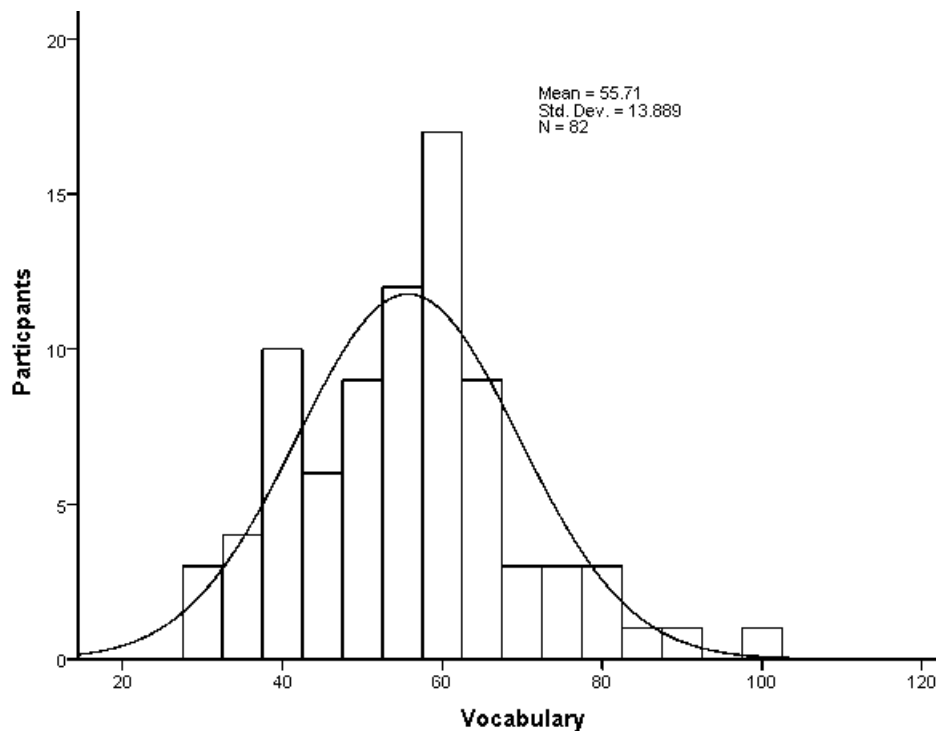
Figure 9. Scores of Participants in vocabulary test.

Scores in the vocabulary test correlated significantly with a number of variables concerning strategies for dealing with unfamiliar words and perceived difficulties in processing English texts. A bivariate analysis of vocabulary scores and perceived difficulties in reading comprehension indicated, not unexpectedly, that vocabulary scores correlated significantly with the problem of unfamiliar words ($r = .271$, $p < 0.01$, $N = 82$), unfamiliar concepts ($r = .279$, $p < 0.01$, $N = 82$), and words which have more than one meaning($r = .197$, $p < 0.05$, $N = 82$). In other words, the more vocabulary knowledge a reader has the less difficulty that reader will experience in processing the meaning of unfamiliar words and concepts, and words with multiple meanings. Similarly, with regard to strategies for dealing with unfamiliar words, significant correlation was found between vocabulary scores and guessing the

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meaning of a word using subject knowledge ($r = .207$, $p = < 0.05$, $N = 76$), indicating that subject knowledge influences the ability to guess the meaning of unfamiliar words from context. Although a significant correlation was also found between vocabulary scores and asking other students ($r = -.242$, $p < 0.05$, $N = 76$), there is no obvious explanation for this, except the possibility that interaction with peers contributes to vocabulary building, and hence to possible increased proficiency in reading comprehension.

With regard to reading proficiency, a significant correlation was found, as may be expected, between scores in the vocabulary test, as discussed above, and participants' perceptions of their own reading proficiency in English ($r = .267$, $p < 0.01$, $N = 81$), thus lending support to these perceptions. Further confirmation with regard to participants' self assessment of their English reading proficiency was evident in that a bivariate analysis of responses to question 14 on the questionnaire asking how well participants read English, and question 28 asking how they rated their level of reading proficiency in the language, also yielded a significant correlation[27] ($r = -.250$, $p = < .05$, $N = 84$). That is to say, participants' perceptions of their own reading proficiency in English was supported.

4.4 Reading Comprehension Test

In Section 4.3, a number of correlations were made between results of the vocabulary test and variables related to the language, reading proficiency and reading habits of

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[27] The apparent negative correlation results from the code numbering of the options in the questionnaire. In the question on how well individuals read English, the codes ascended from 1 for 'very well' to 4 for 'not at all', whereas in the question on reading level, the codes descended from 6 for the highest level to 1 for the lowest level.

participants. Similarly, in this section, possible relationships between questionnaire responses and the reading comprehension test will be explored. (Mean scores for individual texts, however, since they relate more to the issue of challenges in text processing, are presented later, in Section 4.5.2)

Although scores in the reading comprehension test showed no correlation with responses regarding unfamiliar concepts or unfamiliar cultural references, there was a significant correlation with responses regarding unfamiliar words ($r = .217$, $p < 0.05$, $N = 82$) and complex sentence structure ($r = .204$, $p < 0.05$, $N = 81$), thus indicating that vocabulary and complex sentence structure are important factors influencing text processing.

A further significant correlation was found, as might be expected, between reading comprehension scores and frequency of English reading, indicating that as was the case with vocabulary, the more English an individual reads, the better he or she is able to comprehend English texts. With regard to strategies for dealing with unfamiliar words, however, only the strategy of asking another student correlated significantly with reading comprehension scores ($r = -.199$, $p < 0.05$, $N = 76$). However, since, again, there is no discernable reason for this correlation, it should perhaps be regarded as coincidental.

A significant factor concerning the comprehension test became clear in the early phases of the study, namely, the effect of situation and questions on reading comprehension as discussed in Chapter 2, Section 2.6.3. While constructing a

memorandum of correct responses for the multiple choice questions, the researcher became aware of the potential influence of these factors. In some cases, when a sentence or section of a passage seemed to be perfectly clear on first reading, it was found that on reconsideration of the relevant portion of the text following reading of the question together with the distracters, the meaning of the text was no longer as clear-cut as it had seemed. Searching for a correct response often required focusing on microlinguistic features rather than on the global meaning of a sentence or paragraph. The conclusion drawn from this was that in some cases it was possible that a reader might understand the text while not understanding a particular question, or that a question might cause misunderstanding where there had previously been none.

4.5   Analysis of Study Texts: Coh-Metrix 2.1

In this section, both the Coh-Metrix 2.1 analysis and the manual analysis of the 12 texts selected for the study are discussed First, the Coh-Metrix 2.1 measures of each of the 10 selected linguistic properties are presented and graphically illustrated for purposes of comparison across all 12 of the texts selected for the study, thus illustrating the relative role of each linguistic property in contributing to either ease or difficulty in text processing. This is followed by a presentation and discussion of the linguistic properties of the individual texts, focusing on determining which of the ten selected linguistic properties is most likely to influence processing of each particular text.

4.5.1   Coh-Metrix 2.1 Measures of Selected Linguistic Properties

In addition to the vocabulary test and the reading comprehension test, Phase 2 of this study encompassed an analysis of specific language and linguistic properties of the 12 selected texts so as to identify potential sources of difficulty for L2 readers of English texts such as participants in the study. In this section, therefore, the Coh-Metrix 2.1 measures of the specific linguistic properties selected for this phase of the study are presented so as to provide a basis for further analysis of the study texts through manual evaluation by the researcher and comparison with participants' perceptions, as will be discussed in the next section.

Firstly, for purposes of comparison, the Coh-Metrix 2.1 analysis of the study texts will be summarised according to each linguistic feature. The selected linguistic features are grouped according to three of the six categories found in Coh-Metrix 2.1, namely general word and text information, syntactic indices, and referential and semantic indices. These three categories correspond roughly to three general levels which, according to Crossley et al. (2008, p.482) are identified in many psycholinguistic discussions of reading, these three levels being lexical recognition, syntactic parsing, and meaning construction. The analysis of specific features will be followed by a more detailed analysis of each individual text.

The categories of scoring used in Coh-Metrix 2.1, namely incidence scores, ratio scores and repetition scores, are defined as follows:

An incidence score is the number of classified units per 1000 words. For example, the incidence score for pronouns would compute the number of words that are classified as pronouns for a span of 1000 words. It is equivalent to what some researchers call rates or density scores. In contrast, a ratio score is a relative measure that compares the incidence of one class of units to the incidence of another class of units. For example, a pronoun ratio is the incidence of pronouns divided by the incidence of noun-phrases. Ratio scores compare two different metrics (classes of units) whereas an incidence score applies to only one metric.

A repetition score is computed on sequences of text units that are classified into categories. This score is the proportion of adjacent pairs of units in the sequence that are in the same category. If there are N units in a sequence, there are (N-1) adjacent pairs. The number of adjacent pairs in the same category is divided by N-

(Graesser et al., 2006)

For each analysis, the mean and standard deviation for a norm is given as a basis for comparison between texts. This is the norm provided by Coh-Metrix 2.1 for the College Level LSA, based on a variety of texts, novels, newspaper articles, and other information, from the TASA (Touchstone Applied Science Associates, Inc.) corpus. Inclusion in a grade level space is based on a readability score (DRP-Degrees of Reading Power Scale) assigned by TASA to each sample (http://lsa.colorado. edu/spaces.html, 2010).

4.5.1.1 General Word and Text Information

For this level, the linguistic properties selected for analysis were:

- Word frequency

- Average syllables per word

- Average words per sentence

Since according to the literature, words with a high frequency rating are likely to be more familiar and therefore more automatically processed (Graesser et al. 2004, p.5), the converse is clearly also true, that low frequency words will slow down processing and hence hinder comprehension. As research indicates that word processing time tends to decrease linearly with the logarithm of word frequency rather than with raw word frequency (Graesser et al., 2004, p.5), the analysis of each text includes the CELEX mean logarithm frequency value for content words (0-6).

It seems obvious that shorter words (containing fewer letters or fewer syllables) would be easier to read. Furthermore, since longer words are generally less frequent in most texts, word length also plays a role in word frequency, which is an important factor influencing the reading process as frequent words are read more quickly and are easier to understand (Graesser, 2004, p.197). The potential effect of word frequency on reading comprehension in this study is explored in greater depth in the analysis of individual study texts in Section 4.6.

Studies carried out by Brown and Greenfield to examine traditional readability formulae for L2 readers (as cited in Crossley et al., 2008, p.478) indicated that variables such as average number of syllables per sentence, letters per word and words per sentence could be useful in discriminating reading difficulty. Coh-Metrix

2.1 measures of syllables per word and average number of words per sentences are shown in Figures 4.7 and 4.8 below.

4.5.1.1.1 Word Frequency

Based on the word frequency measures reflected in Figure 10, it is to be expected that in the reading section entitled *Face of Africa*, comprehension would be impeded by the number of low frequency words (log frequency 1.812), which would require more processing time and thus present a greater challenge, while in *Intelligence*, low frequency words would not be a significant impediment to comprehension (2.417).
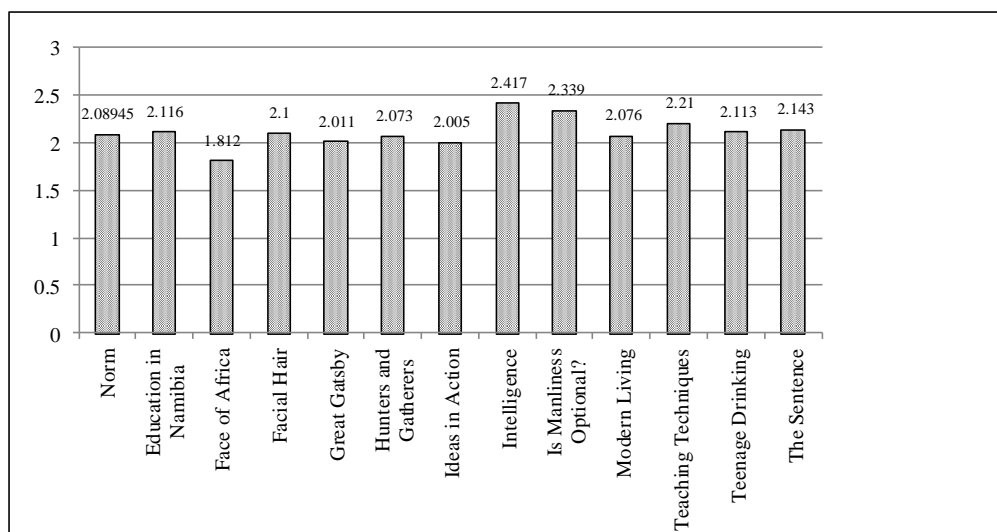
Figure 10.   Log frequency of content words.

4.5.1.1.2 Average Number of Syllables Per Word

Since *Ideas in Action* shows the highest average number of syllables per word (1.859), followed by *Modern Living* (1.721), as indicated in Figure 11, it might be expected that in these two passages, comprehension might be impeded by the length

of words which would take longer to process, while in the *Great Gatsby* (1.404) this aspect would present the least challenge.
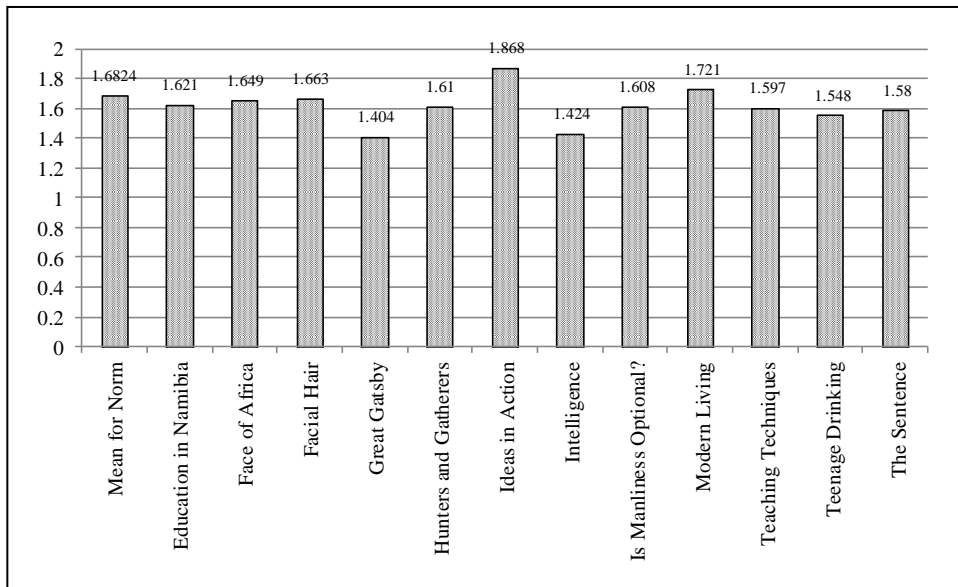
Figure 11. Average number of syllables per word.

4.5.1.1.3 Average Number of Words per Sentence

Figure 12 shows that in *Facial Hair,* which has the lowest number of words per sentence (15.529), sentence length should present the fewest challenges to text processing, while in *face of Africa,* which has the highest number of words per sentence (44.5), lengthy sentences should present more difficulty.
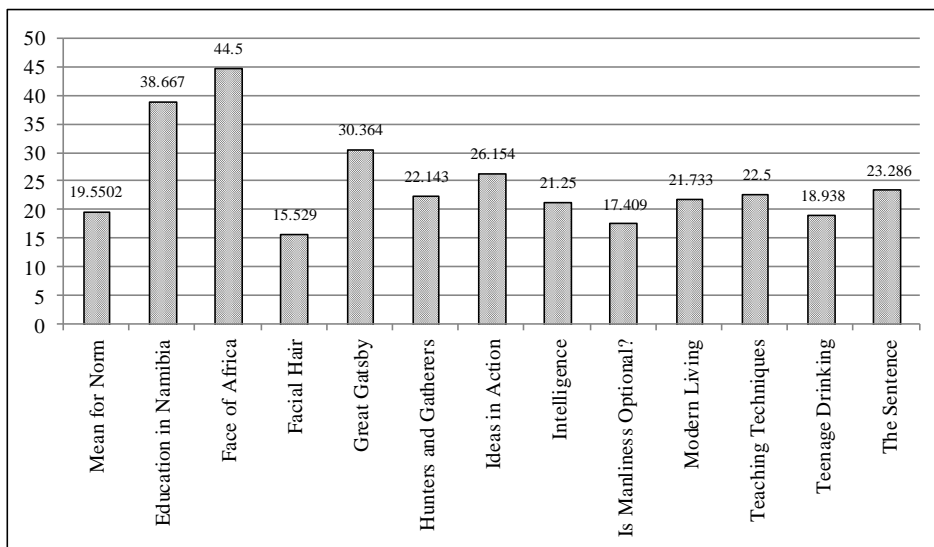
Figure 12. Average number of words per sentence.

4.5.1.2 Syntactic complexity

"Sentences with difficult syntactic composition are structurally dense, are syntactically ambiguous, have many embedded constituents, or are ungrammatical" (Graesser et al., 2006), and such sentences have a higher incidence of verb-phrases. A further consideration is the number of words that appear before the main verb of the main clause, since the more words there are before the main verb, the more taxing the sentence will be on working memory. The number of modifiers before a noun phrase can further contribute to the length and 'denseness' of a sentence, thus making processing more difficult. Structurally dense sentences also tend to have more high order syntactic constituents[28] per word. All of the above-mentioned factors are of particular significance in the case of L2 readers whose working

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[28] "The parts into which a sentence can be segmented are called the **constituents** of the sentence. The term **immediate constituents (ICs)** refers to those constituents which together form a higher-order constituent" (McNamara et al., 2006).

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memory is simultaneously required to process the L2 itself during the reading process.

Four syntactic indices were selected for this study:

- Incidence of personal pronouns

- Sentence syntax similarity, all, across paragraphs

- Incidence of all connectives

- Mean number of words before the main verb of main clause in sentences

4.5.1.2.1 Incidence of Personal Pronouns

The discussion of referential cohesion in Chapter 2 of this study indicates that referential cohesion problems can result from a high density of pronouns, or from a high density of pronouns compared with the density of noun-phrases if the reader does not know what the pronouns refer to. Figure 13 reflects the incidence of personal pronouns in each of the study texts.
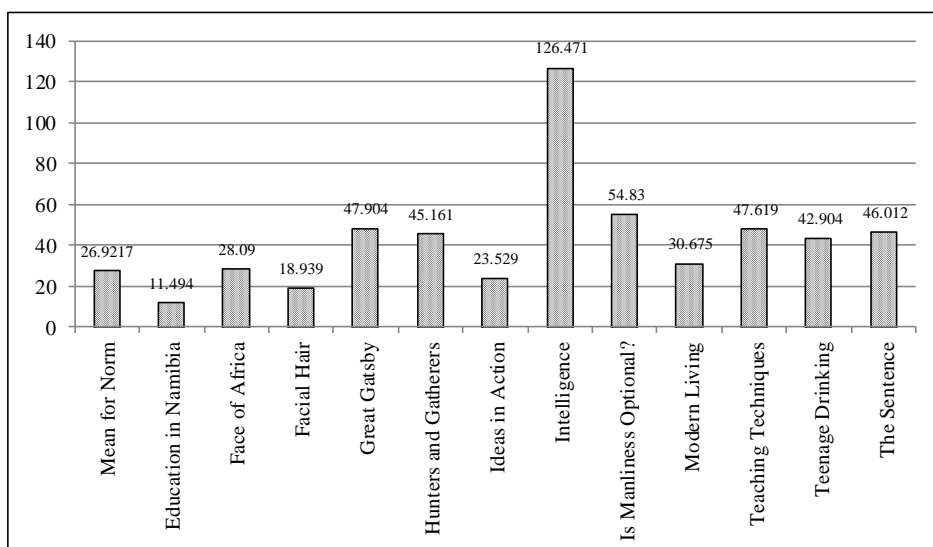
Figure 13. Personal pronoun incidence score.

The high incidence of personal pronouns in *Intelligence* is to be expected, since the text is written in the first person, and this factor is therefore not significant in this respect. However, with the exception of *Facial Hair*, *Education in Namibia* and *Ideas in Action*, many of the other texts also display measures of personal pronoun incidence score above the mean (26.9217), indicating that the processing of personal pronouns might impede reading comprehension in these texts.

4.5.1.2.2 Sentence Syntax Similarity, All, across Paragraphs

Crossley et al. posit that syntactic similarity plays a significant role in readability, and that more uniform syntactic structures in a text make the text easier to process (2008, pp.481- 482). An analysis of the syntactic similarity between sentences in each of the study texts is illustrated in Figure 14.
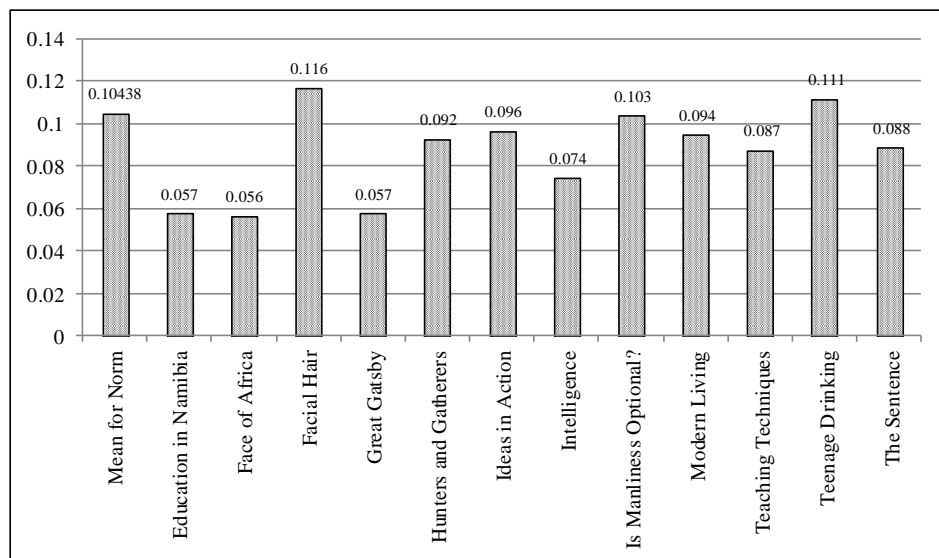
Figure 14. Sentence syntax similarity across paragraphs.

According to this analysis, *Facial Hair* displays the greatest degree of syntactic similarity (0.116) and should therefore be easier to process, while *Great Gatsby*, which displays the lowest degree of similarity (0.057), is potentially the most difficult passage to process.

4.5.1.2.3   Incidence of All Connectives

The importance of connectives as devices signalling particular categories of cohesion relations in a text is highlighted by Halliday and Hasan (1976), as discussed in the literature review in Chapter 2 of this study, and as cited in Graesser et al. (2006). Graesser et al. further cite McNamara, Kintsch, E., Songer & Kintsch, W. as stating that "the insertion of connectives is known to have a substantial impact on comprehension and memory for text." (2006)

Connectives such as *also, moreover* (positive) and *however, but* (negative) serve to create cohesive links between ideas. It could be argued that a high incidence of connectives would serve to clarify the relationship between ideas; however, it could equally be argued that if these connectives are not fully or correctly understood, as may be the case with L2 readers, a reader's understanding of a text could be distorted, and that if this is the case, a text with a higher incidence of connectives might be more difficult to comprehend.
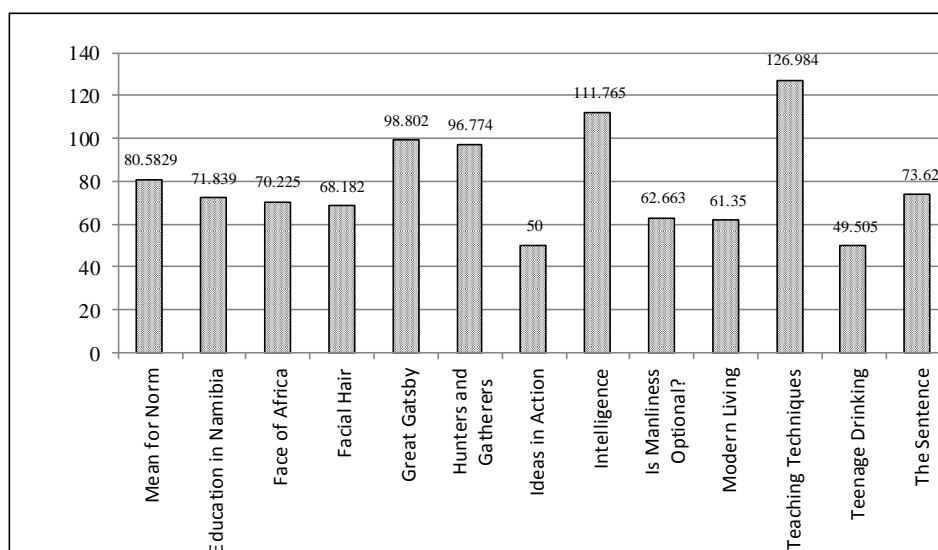
Figure 15. Incidence of all connectives.

Interestingly, as was the case with causal cohesion, *Teaching Techniques* contained the highest incidence of connectives (126.984), followed by *Intelligence* (111.765), with *Ideas in Action* scoring very low (50). *Teenage Drinking* also contained a low incidence of connectives (49.505).

4.5.1.2.4   Mean Number of Words before Main Verb of Main Clause in Sentence

As outlined in the literature, working memory plays a critical role in the processing of texts, particularly with regard to linking propositions and making bridging inferences. It therefore stands to reason that the more information being held in working memory at any one time, the more difficult processing will become. Clearly, therefore, the number of words which must be processed between the subject noun phrase and the main verb will affect the available capacity of the working memory,

and hence also comprehension. Analysis based on this property, as illustrated in Figure 16, indicates that in *Teaching Techniques* (9.643) this textual characteristic should pose the most difficulty, and in *Facial Hair* (3.706) the least.
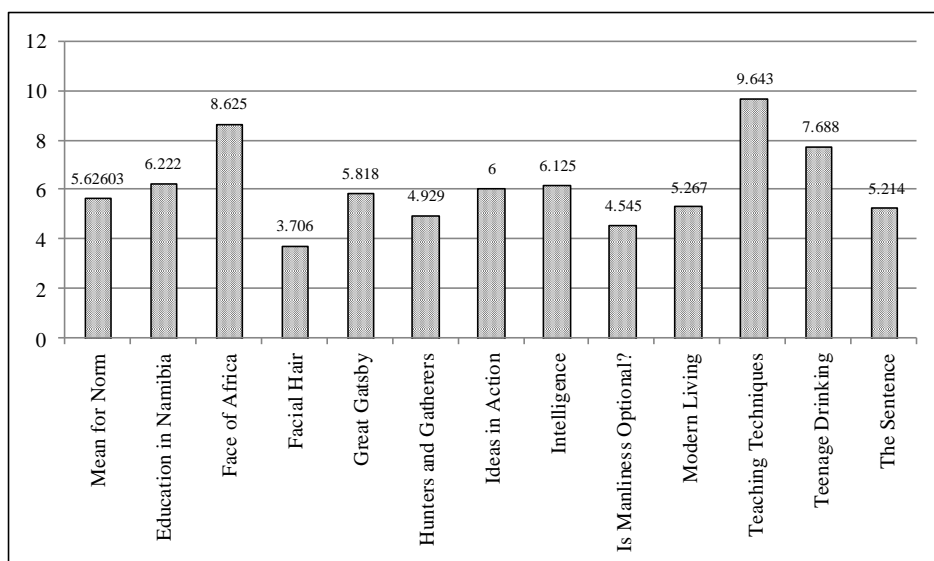
Figure 16. Mean number of words before main verb of main clause in sentence.

4.5.1.3   Referential and Semantic Indices

The referential and semantic indices selected for analysis in the twelve texts were as follows:

- Anaphoric reference, all distances
- Proportion of content words that overlap between adjacent sentences
- LSA, sentences, all combinations, mean

4.5.1.3.1   Anaphoric Reference

An important aspect of referential cohesion, and one closely related to the use of personal pronouns, is that of anaphoric and cataphoric references (see Section

2.7.1.2). As is the case with personal pronouns, problems in comprehension may arise if the reader is unable to make the connection between the referring expression and its referent. A high incidence of anaphoric reference is therefore a potential source of difficulty. The analysis of this property is reflected in Figure 17.
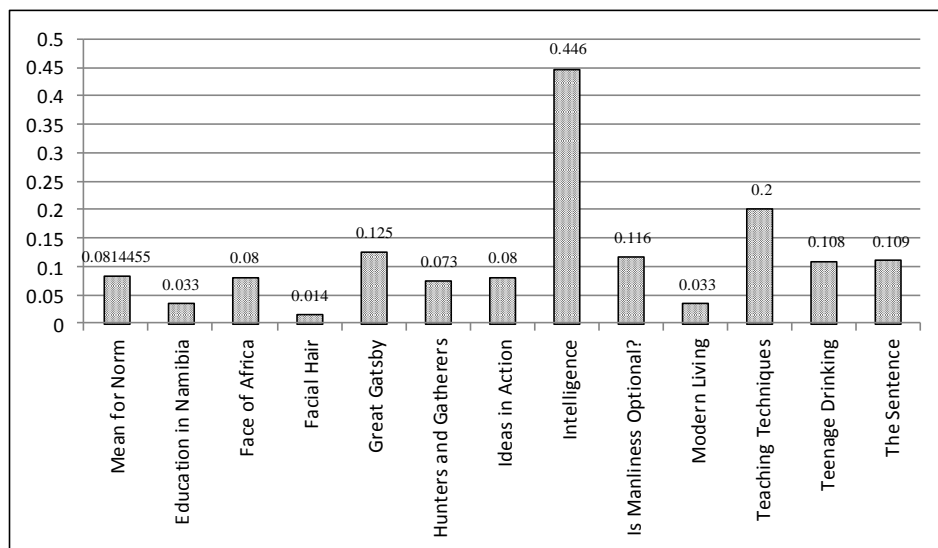
Figure 17. Anaphoric reference, all distances.

Again, as a result of being written in the first person, *Intelligence* is rated as having the highest incidence of anaphoric reference, with several of the other texts also being rated above the norm of 0.0814455. This issue was noted for follow-up regarding the extent to which this property in fact influenced the reading comprehension of study participants; Coh-Metrix 2.1 measures of anaphoric reference were later compared with scores achieved by participants for the test on this text, as well as participant comments in the focus group discussion.

4.5.1.3.2 Proportion of Content Words that Overlap between Adjacent Sentences

Reading speed and text comprehension can be affected by the proportion of content words common to adjacent sentences (Crossley, 2008). As illustrated in Figure 18, only *Intelligence* (0.136) scores above the norm with regard to content word overlap, and would predictably be one of the easiest passages for readers to process.
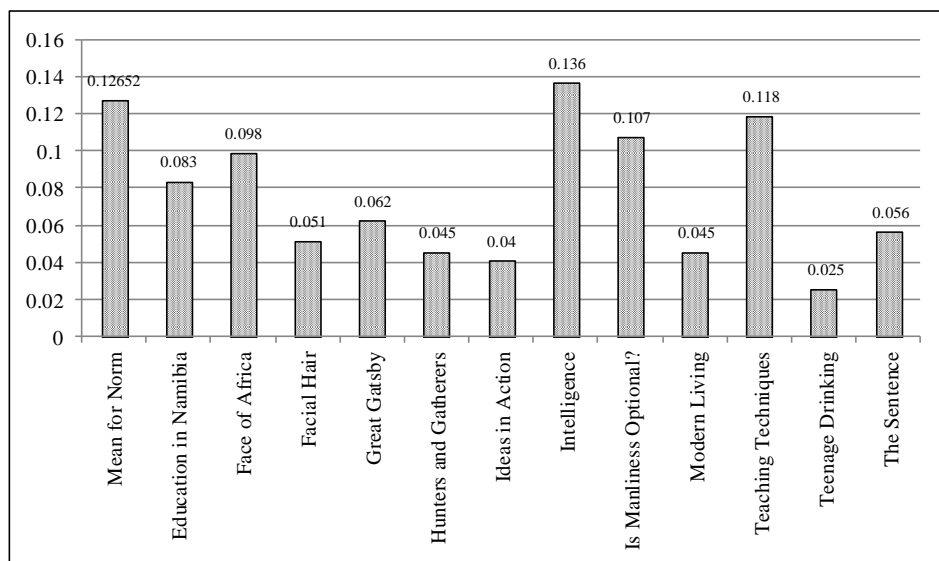
Figure 18. Proportion of content words that overlap between adjacent sentences.

4.5.1.3.3 Latent Semantic Analysis

Latent Semantic Analysis (LSA), which is a further method of computing similarity, is a mathematical/statistical technique for extracting and representing the similarity in meaning of words and passages by analysis of a large corpus of texts, and is based on the idea that the similarity of meaning of words and sets of words to each other is mainly determined according to a set of mutual constraints based on the aggregate of all the word contexts in which a given word does and does not appear. According to Landauer, Foltz and Laham (1998), LSA provides an adequate reflection of human

knowledge, as evidenced by the fact that LSA scores replicate the scores of humans on tests of standard vocabulary and subject matter, and furthermore, that LSA mirrors human word sorting and category judgments, simulates word − word and passage − word lexical priming data, and accurately assesses the coherence of passages.

Based on the LSA measurement of each of the study texts as presented in Figure 19, it would be expected that Great Gatsby and Modern Living would be easiest to process at college or university level.
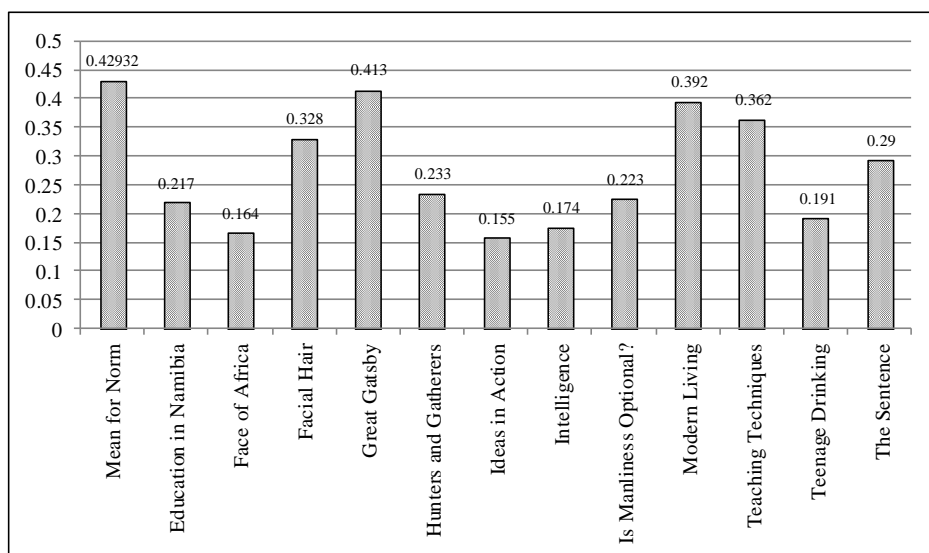
Figure 19. Latent semantic analysis, all combinations, mean.

The Coh-Metrix 2.1 measures of the specific linguistic properties presented above provided a benchmark evaluation to be followed by a manual evaluation and comparison with participants' responses in the reading comprehension test and comments in the focus group discussion, as will be discussed in the next section.

It should be noted here that with regard to the overall ease or difficulty of individual passages, the above discussion of specific textual properties makes it clear that from a linguistic perspective, one cannot make a general classification, since ease and difficulty vary in each text according to each linguistic property, and there is therefore no single text which is easier or more difficult in all aspects.

4.5.2   Analysis of Individual Study Texts

As a background against which to evaluate the significance of the linguistic properties summarised above and discussed in more detail in this section, the rating accorded to each passage by students in the Fundamentals of English Language Studies (FELS) class is indicated in Figure 20 below, while the comprehension test scores of the study participants are shown in Figure 21.
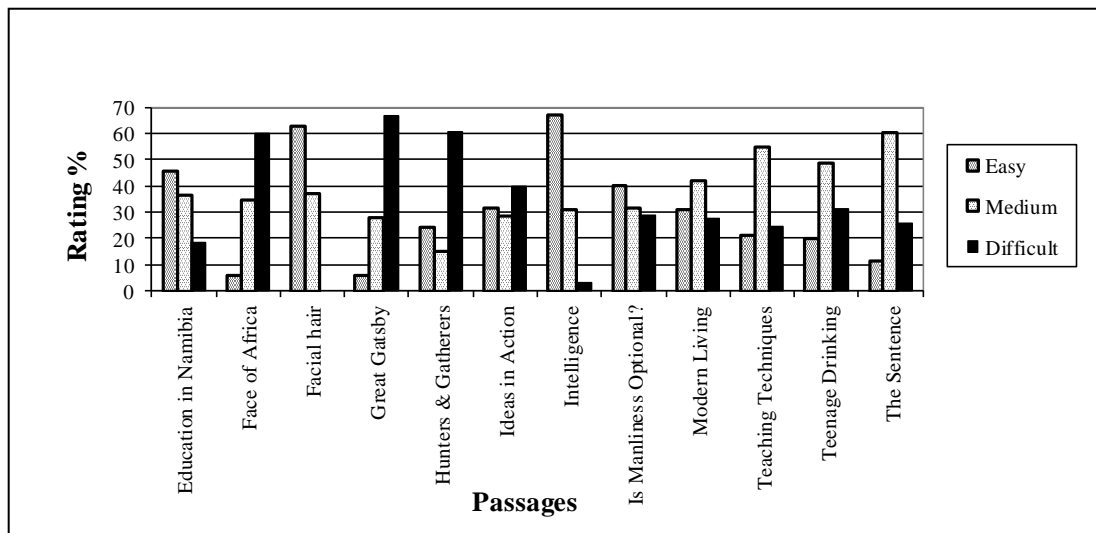
Figure20.   Comparison of rating of text difficulty by FELS students.
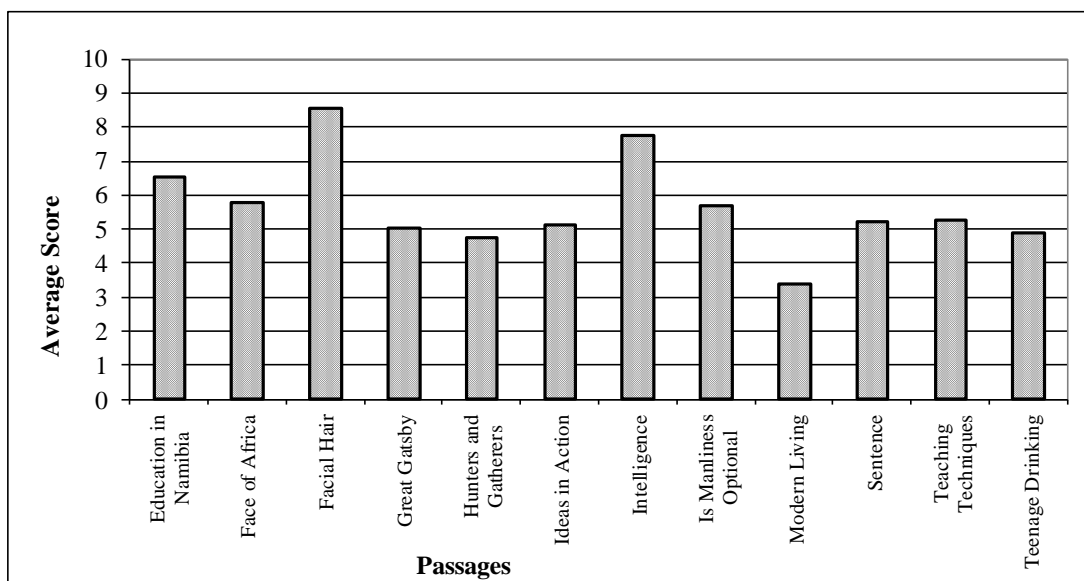
Figure 21. Average scores in reading comprehension test per text.

The following detailed analysis will address not only factors discussed in section 4.5.1 above, but also additional factors which may occur in the texts and which have been mentioned in the literature.

The analysis of each text will include the following: a table displaying Coh-Metrix 2.1 measures for each of the 10 selected linguistic properties in each specific text; manual analysis of texts; background knowledge and culture-related aspects, including schema activation; vocabulary, including word knowledge and lexical access; syntactic complexity; referential indices. With regard to word frequency, after searching a large number of word frequency data bases, the researcher concluded that no single data base provided measures appropriate to this study, making it unfeasible to provide specific frequency measures for individual words. However, since it was of interest to consider specific low frequency words in each

text, it was necessary to highlight such words. For this reason, in addition to the Coh-Metrix 2.1 measure of the log frequency of content words in each text, as provided in the analysis table, low frequency words were identified by means of two data bases, namely SubtlexUS: American Word Frequencies, and the British National Corpus (BNC). Words thus identified are presented in italics in additional tables related to each text, with words which participants themselves identified as difficult highlighted in bold italics in these tables.

Of necessity, since certain language features may influence text processing in more ways than one, topics covered in each analysis will, in many cases, overlap.

4.5.2.1 Education in Namibia

4.5.2.1.1 Text

Judging by the 2009 educational outcomes, Namibia continues to be recklessly wasteful with the futures of its younger generations and the development prospects of the country.

With last year's exam results out, indications are that once again roughly half of grade 10s and 12s, who failed to make the pass grade, have been dumped from the system to either fend for themselves through part-time schooling or to flounder in a society with very few job opportunities, even for those who are qualified. Of those full-time pupils who made it through grade 12, only 21 percent attained the requisite 23 points to garner a place at a tertiary

institution, while the rest just barely scraped through to be able to say they've completed 12 years of formal schooling.

The 2009 results suggest that for all the talk of educational reform and improvement over the last half decade or so, the education system continues to fail to provide some respite for a long-suffering society already stumbling under the weight of a plethora of rampant social ills, which the discarding of a mass of young people from the system on a yearly basis only goes to deepen.

The problems of the formal education sector are multi-faceted and the effects of poor teaching are compounded by limited resources and such external factors as high levels of endemic poverty, especially in rural areas, as well as low levels of general morale as a result of this. The bottom line is that the overall situation in the country is not conducive for producing higher quality education sector outcomes. What all this adds up to in the end is a deepening of the bleakness of the prospects of school leavers, whether graduating or dropping out.

This desperate situation is exacerbated by the paucity of employment opportunities, both skilled and unskilled, in the country for which young people have to compete. The point is that there just aren't nearly enough jobs, or any other opportunities, in the country to mitigate the failures of the education system and young people are literally left destitute.

(Adapted from *Stupid in Namibia* by Frederico Links, Insight, February 2010)

4.5.2.1.2 Analysis

Although this passage has the third lowest Flesch Readability Score (30.451), it was rated by students in the FELS class as the easiest of the three texts in its set, a perception which is supported by the fact that the average score of study participants was 65%, the third highest score of all twelve texts. One of the most obvious reasons for this is that, as highlighted by the comments of participants during the focus group discussion, the topic was familiar to them since these students had been in Grade 12

Table 19

Coh-Metrix 2.1 Measures for Education in Namibia

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.116	2.08945	0.143984
Average Number of Syllables per Word	1.621	1.6824	0.985834
Average Words per Sentence	38.667	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	11.494	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.057	0.10438	0.333631
Incidence of all connectives	71.839	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	6.222	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.033	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.083	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.217	0.42932	0.121177

in 2009 themselves, and thus had first-hand experience of the situation described in the text. However, a possible negative effect of topic familiarity was also indicated, since in some cases where responses were incorrect, the reason appeared to be that these responses were based on general knowledge or personal assumptions rather than on the text, as highlighted in the literature (Koda, 2005, p.141; Johnson, 2002, p.15. An example may be found in responses to the following question:

> *In 2009, ...*
>
> A   *approximately half of the grade 10s and 12s passed the examinations*
>
> B   *many grade 10s and 12s dropped out of school*
>
> C   *many grade 10s and 12s have failed repeatedly*
>
> D   *Don't know*

Rather than A, which was the correct response, many respondents selected option C which presumably reflects their personal perceptions. Furthermore, this response suggests a failure to recognise the implications of the present perfect tense and the adverb *repeatedly* in option C, thus supporting the view that a weak grasp of syntactic and morphological elements can impede the processing of meaning.

With regard to word frequency, in spite of the fact that this text contains a high number of low frequency words, as indicated in Table 20, for many participants it appeared that not knowing the meaning of these particular words did not affect understanding of the passage as a whole, as indicated by the fact that most participants (67%) gave correct responses to the question related to global understanding.

Table 20

Low Frequency Words in the text Education in Namibia

roughly half of the grade 12s
fend for themselves
flounder in a society …
garner a place
scraped through [grade 12]
respite for a long-suffering society
stumbling under the weight
a **plethora** of
rampant social ills
the problems … are multi-*faceted* (facet)
compounded by limited resources (compound)
endemic poverty
conducive for producing
the *bleakness* of the prospects
The desperate situation is **exacerbated**
the **paucity** of employment
mitigate the failures
left *destitute*

It is interesting to note that some of the words in the table above which might reasonably be judged as potentially unfamiliar to L2 speakers were not identified as such by participants themselves, a phenomenon which was also observed during the vocabulary test. A possible explanation for this is that although these particular words are not used frequently in day-to-day discourse, tertiary students may encounter them more often in the Namibian media or in academic texts, thus being able to access the appropriate frame, as described in the literature by Katan (1999) and Gawron (2008).

Amongst the most likely sources of difficulty in this passage, as indicated by the Coh-Metrix 2.1 analysis, are sentence length (average number of words per sentence: 38.667) and the mean number of words between the subject and the main verb in the main clauses (6.222). This is supported by a review of responses in the reading

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comprehension test on this text. For example, in response to the question *What is it that is deepened (para. 3)?* , the majority of respondents chose option A (*discarding of a mass of young people from the system on a yearly basis*), suggesting that they had been unable to link the main verb to the appropriate noun phrase.

4.5.2.2   Face of Africa

4.5.2.2.1   Text

In a stylish haute couture showcase on Saturday, 22-year-old Lukando Nalungwe from Zambia, joined an exclusive group of winners when she was named the eighth M-Net Face of Africa. The striking model scooped US$50 000 from M-Net along with a modelling contract from O Model Africa and skincare products for 12 months from Iman Cosmetics.

Reinvention and innovation are hot buzzwords in the global fashion community and in a two-hour show, screened live from Lagos to 47 countries across Africa, M-Net presented a bold new vision for the Face of Africa final, opting for an edgier version of a traditional runway show and presenting the models on a black, floor-based runway in a contemporary warehouse. With the final themed to resemble the loading warehouse of an art museum, where precious gallery pieces are prepared for display, the staging included massive cargo boxes stamped with African destinations with huge gold frames that showcased the fashion and the finalists and packaging tape demarcating the runway from the show's seated guests, it was a uniquely fresh approach to showcasing Afro-chic expression.

Hosted by Studio 53's Fareed Khimani (Kenya) and former Face of Africa

Kaone Kario (Botswana) with a guest appearance by last season's Face of

Africa Kate Menson (Ghana), the finale included entertainment from Nigerian

superstar D'banj belting out his hits 'Suddenly' and 'Fall in Love'. Meanwhile

soulful South African songstress Lira, shimmering in green silk, showed why

she's one of Africa's rising stars with brilliant performances of two of her hits

– 'Feel Good' and 'Believer'.

But the night belonged to the Top 10. Showing how much they've learnt during

the Face of Africa search, the Face of Africa Top 10 hit the catwalk with

confidence and grace as they strode down the catwalk resplendent in garments

designed by the best of African designers. And in living up to its reputation for

merging African design with the latest in international trends, the Face of

Africa final included the unmistakable style of Christian Lacroix, Versace and

Emmanuel Ungaro while jewellery maestro Chris Aire brought his signature

style to the fashion accessories utilised.

(Adapted from The Namibian, 9 February, 2010)

4.5.2.2.2   Analysis

Although the Flesch Readability score for this passage was the lowest of all the texts

(22.162), and the text was rated as the most difficult in this particular set, the average

score in the comprehension test was among the highest (5.78). The reasons for this

are difficult to discern. One might expect that the passage would present few

potential challenges for study participants in terms of content matter and cultural

references. The passage is taken from a newspaper, which, according to the informal survey mentioned in Section 3.2.4.2.1, situates it in a familiar genre, and in addition,

Table 21

Coh-Metrix 2.1 Measures for Face of Africa

	Study text	Mean	Standard Deviation
Log frequency of content words	1.812	2.08945	0.143984
Average Number of Syllables per Word	1.649	1.6824	0.985834
Average Words per Sentence	44.5	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	28.09	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.065	0.10438	0.333631
Incidence of all connectives	70.225	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	7.25	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.08	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.098	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.164	0.42932	0.121177

the event which it covers is set in an African context and is potentially of interest to young Africans. There are few concepts with which study participants are likely to be unfamiliar, other than that of runway fashion shows. However, comments made in the focus group interviews in fact contradicted some of these expectations, as will be illustrated in Section 4.6.2.

The vocabulary used in the passage, though not always typical of what study participants usually encounter, nonetheless seemed to present little difficulty.

Although there are instances of specialised art or fashion jargon such as *haute couture*, *Afro-chic expression* and *maestro,* understanding of these terms is not essential to global understanding of the passage. In some cases, participants were able to relate some of these terms to their own experience.

There are also instances of less common usage of otherwise familiar words, such as *striking*, *scooped*, *edgier* and *pieces*, though in most cases, the meaning of these words is clarified by the context.

Table 22

Low Frequency Words in the text Face of Africa

The *striking* model
scooped US$50 000
are ***hot buzzwords***
opting for
an ***edgier*** version
precious *gallery* pieces
massive cargo boxes
superstar ***belting out*** his hits
soulful South African songstress
resplendent in garments
his *signature* style

The low Flesch readability score is based on the high incidence of passive constructions (33%), and the high average number of words per sentence. According to the Coh-Metrix 2.1 measures, the average number of words per sentence is 44.5, while the mean number of words before the main verb of main clause in the sentences is 7.5, which may also contribute to difficulty in processing. The following, which constitutes a single sentence, illustrates this element:

With the final themed to resemble the loading warehouse of an art museum, where precious gallery pieces are prepared for display, the staging included massive cargo boxes stamped with African destinations with huge gold frames that showcased the fashion and the finalists and packaging tape demarcating the runway from the show's seated guests, it was a uniquely fresh approach to showcasing Afro-chic expression.

Furthermore, there is, in some sentences, an adverbial clause before the main clause of the sentence which may also impede processing, e.g. 'In a stylish haute couture showcase on Saturday, 22-year-old Lukando Nalungwe from Zambia, joined an exclusive group of winners when she was named the eighth M-Net Face of Africa.'

Another feature in the text which appeared to impede comprehension was the distance of a referring expression from the noun phrase to which it referred. For example, in the phrase 'the loading warehouse of an art museum, where precious gallery pieces are prepared,', 'where' was taken as referring to 'art museum' rather than to 'loading warehouse,' while in the clause 'they strode down the catwalk resplendent in garments designed by the best of African designers', there was confusion regarding whom or what 'they' referred to. In the clause 'And in living up to its reputation for merging African design with the latest in international trends, the Face of Africa final included …', the cataphoric reference, 'its', was largely misunderstood both in terms of referent and, surprisingly, in terms of number, since

the majority of respondents chose the referent as being 'the best of African designers'.

4.5.2.3   Facial Hair

4.5.2.3.1   Text

Women frequently develop excessive hair on the face, especially on the upper lip. This hair growth has been attributed to a decrease in the amount of the female sex hormone oestrogen. Certain facial creams and hormones that can be taken orally or injected into the body also tend to produce hair growth on the face. If a patron complains about this condition, you should suggest that she see a dermatologist. Certain ethnic groups seem to be especially prone to the growth of facial hair. This is an inherited characteristic that shows up even in young girls. There are several services that a beautician can perform to alleviate this condition temporarily. Abrasive papers (pumice), tweezers, waxes, and chemical depilatories are frequently employed in beauty salons to remove excessive or unwanted hair. Shaving is another way of removing hair, perhaps the most common one. This service is usually not provided by beauticians, but is more often used by the patron in her own home. We will discuss this procedure in more detail shortly. Hair can also be destroyed permanently by electrical means. This procedure is called electrolysis and can be performed only by a licensed electrologist. The electrologist inserts a needle into the hair follicle, and a small charge of electrical current is used to destroy the hair papilla. Thus a new hair will not grow from the follicle, having lost its source of nourishment. A good electrologist can remove from twenty-five to a

hundred hairs at a sitting. X-ray therapy has also been employed, but this

method is considered dangerous and should not be used.

(Source: Coh-Metrix 2.1 website)

4.5.2.3.2 Analysis

Table 23

Coh-Metrix 2.1 measures for Facial Hair

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.1	2.08945	0.143984
Average Number of Syllables per Word	1.663	1.6824	0.985834
Average Words per Sentence	15.529	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	18.939	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.116	0.10438	0.333631
Incidence of all connectives	68.182	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	3.706	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.014	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.051	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.328	0.42932	0.121177

Although this text was ranked sixth in terms of the Flesch readability rating (50.383) it stood out clearly as the text which participants found easiest to process. This is evident from the average score in the reading comprehension test (8.56), and from the fact that this was the only study text which received no 'difficult' rating from

students. Apart from the fact that the text is culturally neutral, it apparently also captured the interest of both male and female readers, as illustrated by the comments in Section 4.6.7.

In discussing this text, participants had no questions regarding vocabulary, and did not point out any difficult words, which underscores the fact that the text contains very few low frequency words, and that the few that appear, as listed in Table 32, did not cause any difficulty.

Table 24

Low Frequency Words in the text Facial Hair

If a *patron* complains
seem to be especially *prone*
to *alleviate* this condition
chemical *depilatories* are … employed

With regard to syntax, both the Coh-Metrix 2.1 analysis and the views of participants indicate that the syntactic properties of the text are a significant factor underlying the ease with which it was processed. The Coh-Metrix 2.1 values for the average number of words per sentence (15.529), the mean number of words before the main verb of main clause in sentences (3.706), and the degree of anaphoric reference (0.014) are relatively low, indicating that the text places little demand on working memory.

4.5.2.4   Extract from The Great Gatsby (The Valley of Ashes)

4.5.2.4.1   Text

About half way between West Egg and New York the motor road hastily joins

the railroad and runs beside it for a quarter of a mile, so as to shrink away

from a certain desolate area of land. This is a valley of ashes – a fantastic farm where ashes grow like wheat into ridges and hills and grotesque gardens; where ashes take the forms of houses and chimneys and rising smoke and, finally, with a transcendent effort, of ash-grey men, who move dimly and already crumbling through the powdery air. Occasionally a line of grey cars crawls along an invisible track, gives out a ghastly creak, and comes to rest, and immediately the ash-grey men swarm up with leaden spades and stir up an impenetrable cloud, which screens their obscure operations from your sight.

But above the grey land and the spasms of bleak dust which drift endlessly over it, you perceive, after a moment, the eyes of Doctor T. J. Eckleburg. The eyes of Doctor T. J. Eckleburg are blue and gigantic – their retinas are one yard high. They look out of no face, but, instead, from a pair of enormous yellow spectacles which pass over a non-existent nose. Evidently some wild wag of an oculist set them there to fatten his practice in the borough of Queens, and then sank down himself into eternal blindness, or forgot them and moved away. But his eyes, dimmed a little by many paintless days, under sun and rain, brood on over the solemn dumping ground.

The valley of ashes is bounded on one side by a small foul river, and, when the drawbridge is up to let barges through, the passengers on waiting trains can stare at the dismal scene for as long as half an hour. There is always a halt there of at least a minute, and it was because of this that I first met Tom Buchanan's mistress.

The fact that he had one was insisted upon wherever he was known.

(From *The Great Gatsby*, by F. Scott Fitzgerald.)

4.5.2.4.2   Analysis

From a strictly grammatical and syntactic point of view, this description of the valley of ashes should present few challenges, as is evidenced by its relatively high Flesch Reading Ease score of 57.491. However, in the informal rating done by the FELS class, 83.75% of students rated it as the most difficult passage, and the scores achieved by study participants for the comprehension test on this passage were in the low range for almost all questions.

Comments of participants, as illustrated in Section 4.6.3, indicate strongly that one possible source of difficulty lies in the density of imagery and figurative language in the passage, and the degree of exophoric reference, much of which is closely related to United States culture and to a specific milieu, e.g. the symbolism of the scene

Table 25

Coh-Metrix 2.1 measures for Extract from The Great Gatsby

	Study text	Norm	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.011	2.08945	0.143984
Average Number of Syllables per Word	1.404	1.6824	0.985834
Average Words per Sentence	30.364	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	47.904	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.054	0.10438	0.333631
Incidence of all connectives	98.802	80.5829	18.6363

Mean number of words before the main verb of main clause in sentences	5.818	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.125	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.062	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.298	0.42932	0.121177

described in the passage portraying the failure of the American Dream, and the

burnt-out existence of working class people in the 1930's, most of which is, in all

probability, outside of the experience and background knowledge of young

Namibians. Furthermore, failure to recognise the reference to New York led some

participants to assume that the narrative was set in England.

Responses to particular comprehension questions indicated that participants often

interpreted the imagery literally, and were more successful in comprehending

meaning with regard to areas where the literal interpretation was the correct one.

Vocabulary was also a potential source of difficulty in this text, as evidenced by the

high number of low frequency words shown in Table 24. Furthermore, several words

which may be more familiar to participants in terms of normal usage are more

difficult to comprehend in the metaphorical sense in which they appear in this text.

Table 26

Low Frequency Words in the text Extract from The Great Gatsby.

… so as to *shrink* away from …
… ashes grow like wheat into …***grotesque*** gardens;
… with a ***transcendent*** effort …
…ash-grey men … already *crumbling* …

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> … the *powdery* air …
> … a *ghastly* creak …
> … the ash-grey men *swarm* up …
> … with *leaden* spades …
> … their ***obscure*** operations …
> … the ***spasms*** of bleak dust …
> … some ***wild wag*** of an oculist …
> … the ***borough*** of Queens …
> … his eyes … ***brood*** on …
> … a small *foul* river …

With regard to syntax, the sentence syntax similarity across all paragraphs is the lowest of all the study texts (0.054), and the text contains a high number of relative clauses resulting in an increase in sentence length, and thus potentially placing more demands on short-term memory. In some clauses, the simplification strategy of deletion, as discussed by several scholars (Berman, 1984; Halliday & Hassan, 1976; Katan, 1999) may also hinder processing.

e.g. '… ash-grey men who move dimly and [who are] already crumbling …

'They look out of no face, but, instead [they look out] from a pair of enormous yellow   spectacles …';

'… some wild wag of an oculist set them there to fatten his practice in the borough of Queens, and then [he] sank down himself into eternal blindness, or [he] forgot them and moved away.'

References to the advertisement picturing the eyes and the spectacles caused particular difficulty. Since billboard advertising is not unfamiliar to young Namibians, it would seem that this was a specific instance supporting the notion that

it was the linguistic style which was difficult for participants to process rather than the concept itself.

Anaphoric reference in this text is also relatively high (0.125), as is the frequency of personal pronouns, requiring constant reactivation of referents in the mind of the reader, and thus again placing demands on working memory.

4.5.2.5   Hunters and Gatherers

4.5.2.5.1   Text

Compared with males, then, females have a tremendous investment in the offspring. (Males have an investment too of course, their genes; but if the womenfolk are prepared to nurture the products of those genes, the offspring, the males need not exert themselves. Here we find ourselves in the deep and muddy waters of sophisticated genetics, so we will avoid this particular issue for a while.) The females' pivotal position in the protohominid social group, Tanner and Zihlman argue, put into their hands the power to exploit technological innovation. The first tools, they suggest, were invented not for hunting large, swiftly moving, dangerous animals, but for gathering plants, eggs, honey, termites, ants, and probably small burrowing animals (their italics). In this view of the early hominid world there were advantages to be had in having a menu not unlike a modern chimpanzee's, but which was eaten not during a daily round of social foraging but after it was collected and taken to some form of camp where mothers and offspring gathered. Meat became important only after this initial shift in eating habits, thus including males

more closely in the social fabric. When one considers the merits of the gathering hypothesis it is certainly worth remembering that, unlike hunting, humans are the only primates who "collect" food to be eaten later. On their occasional hunting forays, baboons and chimps may well be re-enacting scenes very similar to those played out by hominids between four and fifteen million years ago. But no primate gathers food, ever! So, on the one hand we have the hunting hypothesis, and on the other, the gathering hypothesis. One argument is male-centred and depends on an early commitment to a quest for flesh. The other focuses on females and sees improved child care as an evolutionary cutting edge for advancement. Both have points in their favour.

(Source: Coh-Metrix 2.1 website)

4.5.2.5.2   Analysis

Table 27

Coh-Metrix 2.1 measures for Hunters and Gatherers

	Study text	Mean	Std
General Word and Text Information			
Log frequency of content words	2.073	2.08945	0.143984
Average Number of Syllables per Word	1.61	1.6824	0.985834
Average Words per Sentence	22.143	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	45.161	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.092	0.10438	0.333631
Incidence of all connectives	96.774	80.5829	18.6363
Mean number of higher level constituents per word	0.697	0.68828	0.0424135
Mean number of words before the main verb of main clause in sentences	4.929	5.62603	1.88927

Referential and Semantic Indices			
Anaphor reference, all distances	0.073	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.045	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.233	0.42932	0.121177

The average score for this text in the reading comprehension test (4.75) was the second lowest, indicating that participants experienced some difficulty. In student ratings, however, although 61% of students in the FELS group rated it as 'most difficult', 24% rated it as 'easy', while only 15% rated it as 'of medium difficulty'. A possible explanation for this might be found in the fact that some participants saw a cultural connection between their own cultures and the social structures described in the passage with regard to the roles of males and females, while other participants said that they could relate the topic to their knowledge of biology and history (See Section 4.6.8).

When asked what they thought caused most difficulty in this text, participants expressed a feeling that "it was the words". Few, if any, participants seemed to realise that *protohominid* was a scientific term rather than a standard English word, and thus may have failed to infer that the text was about early man, which in turn may have inhibited activation of the appropriate schema.

Table 28

Low Frequency Words in the text Hunters and Gatherers

a ***tremendous*** investment
The female's ***pivotal*** position
the ***protohominid*** social group
a daily round of social ***foraging***

> the social **fabric**
> hunting *forays*
> **re-enacting** scenes
> no **primate** gathers food
> the hunting **hypothesis**

Although the average number of words per sentence is fairly high in this text (22.143), as is the incidence of connectives (96.774), these properties did not appear to be a major source of difficult in comprehension. It appears more likely that processing of referents was more challenging, as indicated by the fact that the majority of participants gave incorrect responses to questions related to deictic or possessive pronouns, as illustrated by the following examples:

'Here we find ourselves in the deep and muddy waters of sophisticated genetics, so we will avoid this particular issue for a while': 75% of responses failed to identify the referent for 'this particular issue'.

'The females' pivotal position in the protohominid social group, Tanner and Zihlman argue, put into their hands the power to exploit technological innovation': 50% of responses related 'their' to the nearest preceding noun phrase (i.e. Tanner and Zihlman).

'On their occasional hunting forays, baboons and chimps may well be re-enacting scenes …': 78% responded that their referred to humans.

'… baboons and chimps may well be re-enacting scenes very similar to those played out by hominids …': 63% failed to identify 'scenes' as the referent.

4.5.2.6.   Ideas in Action

4.5.2.6.1   Text

It is necessary to look at history in a more, not less, universal way: almost all forms of political theory generated over the past two hundred years are complicit in their dismissal of non-Western cultures. The world has generally been viewed through the lens of a tiny fraction of humanity. Africa, Asia, and Latin America have never really been part of the discussion. No wonder new demands for recognition in the aftermath of World War II should have arisen from those who were neither white, Christian, nor Western. New spiritual values, new existential forms of self-identification, and new national hopes would become intrinsic elements in the struggle against Imperialism and colonialism. These would indeed become apparent in the writings and influence of diverse political figures like Mahatma Gandhi, Frantz Fanon, and Che Guevara.

World War II transformed the three great continental mass movements. Arguably of even greater international significance was the impetus it provided for what would become the liquidation of the colonial empires of Belgium, Britain, France, Holland, and other Western nations. This process of decolonization indeed transformed the globe.

The anti-imperialist struggle generated an explosion of revolutionary enthusiasm, a genuine sense of shame among many intellectuals in the

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imperialist nations, and an assault on the traditional assumptions

underpinning Western hegemony [leadership]. It brought attention to the

obvious: economic progress along the Western model has produced untold

misery for a great portion of the globe.

With the passing of more traditional economic and political forms of

imperialist exploitation, however, it soon enough became a matter of the ways

in which the newly liberated nations would understand themselves in relation

to their own oppressed constituencies as well as to the world of the former

masters.

Various partisans of "postcolonial theory" have, in this regard, sought to

reinstate the experiences of those excluded from Western culture, and even

their own, without necessarily insisting upon the return to a pre-modern past.

This new trend has been marked by an increasing concern with the cultural,

the non-institutional, and the existential moment of liberation.

(From *Ideas in Action*, by S.E. Bonner)

4.5.2.6.2   Analysis

Of all the study texts, *Ideas in Action*, an extract from a political science handbook, was allotted the second lowest Flesch Readability Score (23.017), and was evaluated by the researcher as being potentially the most difficult to comprehend. Surprisingly, however, this did not appear to be the case. The passage was rated by students as follows: Easy – 44%, of medium difficulty – 41%, difficult – 50%, while the average score of participants in the comprehension test for this passage was 5.11, which fell into the middle range.

Familiarity of topic and content may be one of the factors underlying participants' ability to comprehend this passage. Although some participants said that the political situation discussed in the text was not familiar, many felt that they could relate to it.

Table 29

Coh-Metrix 2.1 measures for Ideas in Action

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.005	2.08945	0.143984
Average Number of Syllables per Word	1.859	1.6824	0.985834
Average Words per Sentence	26.154	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	23.529	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.096	0.10438	0.333631
Incidence of all connectives	50	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	6.0	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.08	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.04	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.181	0.42932	0.121177

It seems probable that with the Namibian War of Liberation being relatively recent, most young Namibians have some understanding of the political context and to some extent, the political discourse and vocabulary of the text. This is even more likely in the light of students' expressed preference for reading newspapers, as described in Chapter 3.

The text contains several low frequency words, as indicated in Table 26, which may have motivated this perception,

Table 30

Low Frequency Words in the text Ideas in Action

are **complicit** in their dismissal
the *aftermath* of WW II
new **existential** forms
intrinsic elements
the struggle against *imperialism*
Arguably of even greater … significance
the *impetus* it provided
This process of *decolonisation* {colonization}
The *anti-imperialist* struggle {imperialist}
assumptions underpinning Western **hegemony**
untold misery
imperialist *exploitation*
partisans of … theory
reinstate the experiences
premodern past

Comments from participants also pointed to sentence length as being a problematic factor, a perception borne out by the Coh-Metrix 2.1 measure of the mean number of words per sentence (26.154).

Although the passage has a low proportion of anaphoric references that refer to a constituent occurring much earlier in a sentence or group of sentences, the few anaphoric references that are to be found in the passage did in fact appear to cause difficulty. This is apparent in the following examples:

- '… almost all forms of political theory generated over the past two hundred years are complicit in their dismissal of non-Western cultures': It was unclear to some respondents that the possessive 'their' referred to forms of political theory.

- 'New spiritual values, new existential forms of self-identification, and new national hopes would become intrinsic elements in the struggle against imperialism and colonialism. These would indeed become apparent in the writings and influence of diverse political figures like Mahatma Gandhi, Frantz Fanon, and Che Guevara'.: The deictic pronoun 'these' was, in most cases, taken as referring to the closest noun phrase, 'imperialism and colonialism' rather than to the noun phrase 'intrinsic elements' which occurred much further back in the construction.

- 'World War II transformed the three great continental mass movements. Arguably of even greater international significance was the impetus it provided … ': 'it' was taken as referring to 'continental mass movement' rather than to World War II.

- 'Various partisans of "postcolonial theory" have, in this regard, sought to reinstate the experiences of those excluded from Western culture and even their own, without necessarily insisting upon the return to a pre-modern past': 'in this regard' was interpreted as referring to postcolonial theory, whereas it refers in fact to the idea that newly liberated nations need to understand themselves.

Another potential source of difficulty lies in the distance between the subject and the main verb in the clause 'No wonder new demands for recognition in the aftermath of World War II should have arisen …', but this appears to have caused little difficulty.

4.5.2.7   Intelligence by Isaac Asimov

4.5.2.7.1   Text

What is intelligence, anyway? When I was in the army I received a kind of aptitude test that all soldiers took and, against a normal of 100, scored 160. No one at the base had ever seen a figure like that, and for two hours they made a big fuss over me. (It didn't mean anything. The next day I was still a buck private with KP as my highest duty.)

All my life I've been registering scores like that, so I have the complacent feeling that I'm highly intelligent, and I expect other people to think so, too. Actually, though, don't such scores simply mean that I am very good at answering the type of academic questions that are considered worthy of answers by the people who make up the intelligence tests - people with intellectual bents similar to mine?

For instance, I had an auto-repair man once, who, on these intelligence tests, could not possibly have scored more than 80, by my estimate. I always took it for granted that I was far more intelligent than he was. Yet, when anything went wrong with my car I hastened to him with it, watched him anxiously as he

explored its vitals, and listened to his pronouncements as though they were

divine oracles and he always fixed my car.

Well, then, suppose my auto-repair man devised questions for an intelligence

test. Or suppose a carpenter did, or a farmer, or, indeed, almost anyone but an

academician. By every one of those tests, I'd prove myself a moron. And I'd be

a moron, too. In a world where I could not use my academic training and my

verbal talents but had to do something intricate or hard, working with my

hands, I would do poorly. My intelligence, then, is not absolute but is a

function of the society I live in and of the fact that a small subsection of that

society has managed to foist itself on the rest as an arbiter of such matters.

(From *Isaac Asimov's Treasury of Humor*)

4.5.2.7.2   Analysis

Among the FELS students, this passage was accorded the highest 'easy' rating (67%)

and the lowest 'difficult' rating (3 %), and was also given the highest Flesch

Readability Score (64.796). The average score of participants in the comprehension

test on this passage was second highest of all the passages (7,75).

There are a number of possible reasons underlying participants' success in

comprehending this passage. Firstly, the topic of intelligence is one with which

students are familiar, and there are very few culture-related references in the passage,

other than 'I was still a buck private with KP as my highest duty', which did not

appear to present any difficulty.

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Table 31

Coh-Metrix 2.1 measures for Intelligence

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.417	2.08945	0.143984
Average Number of Syllables per Word	1.424	1.6824	0.985834
Average Words per Sentence	21.25	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	126.471	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.074	0.10438	0.333631
Incidence of all connectives	111.765	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	6.125	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.446	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.136	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.174	0.42932	0.121177

Participants' perceptions that the vocabulary in this text was "very easy and understandable" are borne out by the fact that the text contains relatively few low frequency words, as indicated in Table 28.

Table 32

Low Frequency Words in the text Intelligence

… the ***complacent*** feeling …
… intellectual ***bents***
… I *hastened* to him with it …
… he explored its ***vitals*** …
… I'd prove myself a *moron* …
… an *arbiter* of such matters …

The word "bents' as used in this context was of such low frequency that it did not appear on the frequency lists consulted by the researcher. However, although some participants acknowledged that they did not know the meaning of this word, they felt that it had not affected their global understanding of the text.

Furthermore, although the passage has a high incidence of personal pronouns, the majority of these are first person, and it is therefore clear who the pronouns refer to. Similarly, although there are a number of anaphoric references, these appeared to cause no difficulty, even when they occurred at some distance from their referents, e.g. 'they' in the sentence 'No one at the base had ever seen a figure like that, and for two hours they made a big fuss over me.'

It is noteworthy that according to the Coh-Metrix 2.1 measure, this passage contains the second highest number of higher level constituents per word (0.762) compared to the other study texts, but that despite this, this factor does not seem to have contributed to comprehension difficulty. This suggests that in some cases, familiarity of content and vocabulary may offset syntactic density.

4.5.2.8   Is Manliness Optional? by Harvey Mansfield

4.5.2.8.1   Text

Today the very word "manliness" seems obsolete. The women's revolution has succeeded to an amazing degree. Our society has adopted, quite without realizing the magnitude of the change, a practice of equality between the sexes never before known in human history. My intent is not to stand in the way of

this change. Women are not going to be herded back into the kitchen by men. But we need to recognise that there have been both gains and losses in this revolution.

Contemporary feminists, and the women they influence, have essentially a single problem with manliness: that it excludes women. Though the word is scarce in use, there is an abundance of manliness in action in the world today. Young males still pick fights, often with deadly weapons. What we suffer from today, is a lack of intelligent criticism of manliness. Feminism has undermined, if not destroyed, the counterpart to manliness – femininity – and with it the basis on which half the population could be sceptical of the excesses of manliness.

Of course, women are still women. While they want men to be sensitive to women, they don't necessarily want them to be sensitive in general. That's why the traditional manly male – who is protective of women, but a sorry flop when it comes to sensitivity – is far from a disappearing species. The "sensitive male" who mimics many female emotions and interests, while discarding the small favours men have traditionally done for women, is mostly just a creation of contemporary feminists who are irritated with the ways of men, no longer tolerant of their foibles, and demanding new behaviour that would pave the way for ambitious women. Feminists insist that men must work harder to appreciate women. Yet they never ask women to be more understanding of men.

Traditionally, the performance of a man's duties has required him to protect and support his family. To be a man means to support dependents, not merely yourself. But the modern woman above all does not want to be a dependent. She may not have thought about what her independence does to the manliness of men (it might make men more selfish). And she may not have considered carefully whether the protection she does without will be replaced by sensitivity, or by neglect.

[Published in *Real Men: They're Back* September 2003]

4.5.2.8.2 Analysis

Table 33

Coh-Metrix 2.1 measures for Is Manliness Optional?

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.339	2.08945	0.143984
Average Number of Syllables per Word	1.608	1.6824	0.985834
Average Words per Sentence	17.409	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	54.83	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.103	0.10438	0.333631
Incidence of all connectives	62.663	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	4.545	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.116	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.107	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.223	0.42932	0.121177

FELS students ratings regarding the difficulty of this passage were mixed, with 40% rating the passage as 'easy', 31% rating it as 'medium', and 29% rating it as 'difficult', the average score in the comprehension test being 5.67. A number of different factors could account for this mixed perception.

Firstly, since perceptions regarding the roles of men and women differ according to culture, not least in many African cultures, cultural values might be expected to have a significant effect on comprehension of this passage. Some evidence of this was found in comments of participants in the focus group discussions, as presented in Section 4.6.6.

However, there appeared to be no evidence of cultural bias in participants' responses to the comprehension questions, possibly because nowadays, the issue of gender equality is widely discussed in many fora, and is of relevance in the lives of young Namibians who would therefore be familiar with the discourse and related vocabulary.

In general, vocabulary seemed to present no problems with regard to this text, and there are, in fact, relatively few low frequency words in the text, as reflected in Table 30.

Table 34

Low Frequency Words in the text Is Manliness Optional?

the very word "*manliness*" seems ***obsolete*** ***contemporary*** feminists

> contemporary *feminists*
> an *abundance* of manliness
> has *undermined* … the counterpart
> the *counterpart* to manliness
> *sceptical* of the excesses
> **a sorry *flop***
> who *mimics* many female emotions
> *discarding* the small favours
> *tolerant* of their foibles
> tolerant of their ***foibles***
> *pave* the way
> the protection she *does without*

Although this passage has one of the highest ratios of pronouns to noun phrases (0.308), in the context of a discussion of male and female roles, this factor seems to present little difficulty. The same may be said of the relatively high measure of anaphoric reference (0.229).

The question which presented the most difficulty was as follows:

(referring to the sentence 'My intent is not to stand in the way of this change.')

'this change' (line 3) refers to …

A. gender equality

B. the increased power of women

C. the women's revolution

D. Don't know

The most common choice was A, indicating that the distance of the pronoun 'this' from its referent was problematic. Furthermore, this response suggests a failure to

recognise that the term 'gender equality' as used in this sentence does not encompass the notion of change.

In general, the most noticeable difficulty appeared to be concerned with understanding of the overall message conveyed in the passage, as opposed to the meaning of specific statements.

4.5.2.9 Modern Living

4.5.2.9.1 Text

Our need to understand ourselves and other human beings is as old as civilization, but that need has never been more important than it is today. The urgency of the need springs essentially from the complexities of modern life. We live today in a rapidly changing, often emotionally charged environment where a knowledge of ourselves and others can help immeasurably in making adjustments or adapting to situations that are new and strange to us. Societies throughout all history have experienced changes that sometimes threatened to disrupt their ways of life, but people of no other era have been as jolted as twentieth century people by so many social and technological changes. Among those who watched on television in 1969 as the first human stepped onto the moon were some senior citizens who had cheered at similarly historic news from Kitty Hawk, North Carolina, on December 17, 1903. On that date, Orville and Wilbur Wright proved that a motor driven craft could fly. Orville Wright flew a crude, filmsy contraption called an airplane 120 feet. Less than seven decades later, American astronauts flew over 250,000 miles and landed on the

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moon. The incredibly rapid developments in flight illustrate only one small

aspect of scientific change that twentieth century people have had to adapt to.

In the social sphere of modern culture, changes have been almost as

significant. Since the last quarter of the nineteenth century, technology has

transformed most developed nations from reasonably simple agrarian

communities into great, sprawling urban cultures. These changes have created

problems so difficult that they challenge human intelligence and ingenuity. The

congestion and attendant problems of urban living have created tension

ridden, sometimes emotionally explosive populations who must confront

complexities in day to day living that their grandparents never dreamed of.

Today's social environment in many parts of the world has bred discontent and

dissension never before known. One need only look at newspaper headlines to

be convinced of worldwide turmoil.

(Source: Coh-Metrix 2.1 website)

4.5.2.9.2   Analysis

The relatively low Flesch Readability measure of this text (39.179) is reflected in the fact that the average score in the comprehension test on the text was the lowest of all the texts (3.38). Furthermore, in the reading comprehension test on this text, the majority of participants (78%) gave incorrect responses to the question related to global understanding. However, rating by students indicated mixed perceptions regarding difficulty.

The subject matter of the text in general is not culture dependent and requires little specialised background knowledge, and most readers could reasonably be expected to relate to the topic since it deals with matters relevant to most individuals with some experience of technological development and urban living. However, comments from participants indicated possible negative implications of the familiarity of the topic, which may go some way to explaining the poor test results.

Vocabulary does not initially appear to be a significant challenge in this text since there are few low frequency words. However, since there are a number of words which in this context carry a meaning different from their more usual meaning, it is possible that in some cases participants assigned an incorrect interpretation.

Table 35

Coh-Metrix 2.1 measures for Modern Living

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.076	2.08945	0.143984
Average Number of Syllables per Word	1.721	1.6824	0.985834
Average Words per Sentence	21.733	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	30.675	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.094	0.10438	0.333631
Incidence of all connectives	61.35	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	5.267	5.62603	1.88927

Referential and Semantic Indices			
Anaphor reference, all distances	0.033	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.045	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.392	0.42932	0.121177

In Table 36, words which might be a source of misinterpretation are included even where they are ranked as high frequency, since this may be indicative of their potential for causing miscomprehension. It is of interest that participants themselves did not point out any words as being difficult to understand, thus lending weight to the argument that while they thought they knew the meaning of a particular word, they were, in fact, not assigning a meaning appropriate to the context.

Table 36

Low Frequency Words in the text Modern Living

the need *springs* … from
the need springs *essentially* from
emotionally charged
emotionally *charged*
people have been … *jolted*
a motor driven *craft*
crude flimsy contraption
crude *flimsy* contraption
crude flimsy *contraption*
reasonably simple agrarian communities
agrarian communities
human *ingenuity*
the *congestion* … of urban living
tension *ridden* … populations
discontent and *dissension*
worldwide *turmoil*

Although the Coh-Metrix 2.1 measure of anaphoric reference in this text is the lowest of all the study texts, answers to questions based on this factor nonetheless indicate it as a possible source of difficulty. For example, in the sentence 'These changes have created problems so difficult that they challenge human intelligence and ingenuity', 78% of participants incorrectly identified the referent for 'These' and 'they'. The majority of participants (78%) also seemed to have had difficulty in processing the clause 'changes have been almost as significant'. This may be because of failure to realise the implications of the adverb 'almost', or it may be because of deletion of the second correlative structure in the comparison implied by 'as' in this clause. The comparative function of the adverb 'similarly' likewise seems to have caused confusion in locating an appropriate referent.

4.5.2.10   The Sentence

4.5.2.10.1   Text

We all know that a sentence in grammar is a series of spoken or written words which forms the grammatically complete expression of a single thought. On the page such a unit of discourse begins with a capital letter and ends with the appropriate end punctuation mark. Spoken aloud, the sentence is marked by voice inflection and pauses, the longest of which signals its completion. We have a well-developed intuitive sense of the sentence because we have been hearing and speaking and writing and reading them most of our lives. In English this grammatical term also names a judicial pronouncement. If we look up the word in the Oxford English Dictionary, that historian of our language, we find that "sentence" is one of those words that has contracted over the

centuries: it had more meaning in Shakespeare's time than it has in ours. Some

of these meanings, such as "opinion" and "way of thinking," are listed in the

dictionary as obsolete and are not available to contemporary writers.

Nevertheless, they point the way back to the Latin origin of the word, sentire, *to*

feel, to be of the opinion, to perceive, to judge. The word sentence shares the

same root as sensation and sense, and appropriately so, for the construction of

a sentence, even the simplest two-word kind, requires sensing and thinking,

perceiving and judging. Good sentences are written by a vigilant observer with

the courage to judge and the passion to declare. Such confident declaration

comes from an understanding of how the English sentence works. Like most

highly functional constructions, the sentence is complicated, perhaps at times

bewildering, but always interesting in its varieties and patterns and

possibilities. An analysis of sentence structure begins with a classification of

words on the basis of how they function in the sentence. Such classification is

called parts of speech (a term that happily reminds us that grammar has

something to do with listening to the human voice).

(Source: Coh-Metrix 2.1 website)

4.5.2.10.2　Analysis

Table 37

Coh-Metrix 2.1 measures for The Sentence

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.143	2.08945	0.143984
Average Number of Syllables per Word	1.577	1.6824	0.985834

Average Words per Sentence	23.286	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	46.012	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.088	0.10438	0.333631
Incidence of all connectives	73.62	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	5.214	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.109	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.056	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.29	0.42932	0.121177

The subject matter of this text would in all probability be familiar to all tertiary students, and would therefore present no challenge. Nonetheless, the text was rated as being 'of medium difficulty' by 60% of the FELS group, indicating the presence in the text of other factors which impeded comprehension. The comment of one participant that she "couldn't really get the main point of the article" suggests the expectation of some form of rhetorical organisation which this text, being an extract from a longer text, did not exhibit.

Vocabulary also appeared to present little difficulty, apart from the Latin word *sentire* which, in spite of the italics, participants did not recognise as being a non-English word.

Table 38

Low Frequency Words in the text The Sentence

voice *inflection*
intuitive sense
judicial pronouncement

| judicial *pronouncement* |
| a *vigilant* observer |

The nature of the incorrect responses in the reading comprehension test suggest that anaphoric reference, evaluated by Coh-Metrix 2 as slightly higher than the norm at 0.109, was a source of some difficulty in this text. In addition, there appeared to be some confusion in distinguishing the implications of the definite article in the phrase 'the sentence' as referring to a generic concept; some participants (33%)indicated that this phrase referred to a particular sentence in the text, while others (22%) chose responses which indicated uncertainty.

4.5.2.11   Teaching Techniques

4.5.2.11.1   Text

Many teachers do a dull, boring, unimaginative job of instruction, quite often because they are too lazy to seek ways to try to arouse student interest. Such teachers would probably do a more effective job if they occasionally used some of the techniques just described. If a teacher gets carried away with inventing techniques such as those described by Cullum in "push back the desks," however, certain types of learning may be prevented rather than encouraged. If students are always stimulated to engage in "games" and never asked to engage in self-directed effort, they may fail to acquire some essential habits and attitudes. Sooner or later everyone has to complete dull and tedious tasks. And sooner or later all students are going to encounter teachers who take a no-nonsense, sink-or-swim approach to instruction. If too much school learning is made as entertaining and effortless as possible, students may not acquire

attributes of self-direction and self-discipline. In your teaching, therefore, you might seek a balance between provocative presentations and self-directed effort. Part of the time you might strive to follow the suggestions just offered to make subject matter fascinating and learning lively and enjoyable. But part of the time you should also urge students to engage in concentrated individual effort. This does not mean that you should go out of your way to "make" study tedious or dull; it does mean that you should sometimes ask students to master academic tasks by directing their own learning. The "King Tut's tomb" technique devised by Cullum, for instance, is most ingenious. But it is an awfully elaborate and roundabout way to ask students to solve math problems. If the time students spent building the tomb or crawling around inside it with flashlights were devoted to individual and group study of math problems, it seems likely that mastery of math skills would develop much more rapidly and completely.

(Source: Coh-Metrix 2.1 website)

4.5.2.11.2   Analysis

Coh-Metrix 2.1 measures for this text are presented in Table 39. This text did not appear to be perceived as particularly easy, being rated as 'difficult' by 24%, as 'of medium difficulty' by 55%, and as 'easy' by 21% of the FELS group, a perception supported by the average reading comprehension test score of 5.25. Nonetheless, the text generated very little discussion in the focus groups, the most significant comment being that it "was not challenging at all." One possible reasons for this

perception may be the low incidence of low frequency words, as indicated in Table 40.

With regard to syntax, information structure appears to have been an inhibiting factor. Sentences in which the main clause is preceded by a dependent clause such as, for example, a conditional clause, appear to be more difficult to process. This is illustrated by the number of incorrect responses (63%) to the question asking why certain types of learning might be prevented, referring to the sentence

'If a teacher gets carried away with inventing techniques such as those described by Cullum in "push back the desks," however, certain types of learning may be prevented rather than encouraged.'

Table 39

Coh-Metrix 2.1 measures for Teaching Techniques

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.21	2.08945	0.143984
Average Number of Syllables per Word	1.597	1.6824	0.985834
Average Words per Sentence	22.5	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	47.619	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.087	0.10438	0.333631
Incidence of all connectives	126.984	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	5.214	5.62603	1.88927
Referential and Semantic Indices			

Anaphor reference, all distances	0.2	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.118	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.362	0.42932	0.121177

Table 40

Low Frequency Words in the text Teaching Techniques

ways to try to ***arouse*** students
if a teacher gets ***carried away***
dull and *tedious* tasks
a … ***sink-or-swim approach***
provocative presentations

As mentioned with regard to instances encountered in other study texts, demands on working memory may impede comprehension in sentences such as this. Similarly, working memory may be taxed by the high ratio of pronouns to noun phrases (0.205) and the high incidence of anaphoric reference (0.2) in this text.

A further source of difficulty may be the high incidence of connectives (126.984). According to the literature discussed in Section 2.5.6.1, successful comprehension relies on understanding not only of the connectives themselves, but also of the clauses which are to be connected. A high incidence of connectives would therefore clearly offer more likelihood of misunderstanding.

4.5.2.12 Teenage Drinking

4.5.2.12.1 Text

The first evidence of widespread teen-age drug parties in the panelled rumpus

rooms of the affluent was turned up in 1960 by the Westchester county vice

squad. After the shock had passed parents said that at least it wasn't liquor.

Then police in Santa Catalina island, the Southern California resort,

announced that drunkenness had become common among thirteen and

fourteen-year-old children in wealthy families and in the future they would

charge the parents $2.50 an hour to baby-sit teen-age drunks till parents came

to take them home. Nationally, the number of adolescents who drank regularly

was put at between 50 and 66 percent. In Yonkers, New York, where it was 58

percent among high school juniors and seniors, 64 percent said they drove the

family car while doing it. Parents in Rose Valley, a Philadelphia suburb,

allowed children to bring their own bottles to parties. Their fathers did the

bartending. One wondered what Clarence Day's father would have thought.

Among the recurring news stories of the 1960s... were accounts of rioting at

the Newport Jazz Festival and at Fort Lauderdale, the watering places of the

young. Yet the extent of teen-agers' drinking ought not to have been surprising.

In a sense they were expressing their social role. Opulence, the lack of genuine

responsibility, and a position outside the unemployment pool gave them all the

attributes of a leisure class. In their ennui or their cups, youths of the 1960s

frequently turned destructive. A brief item from Hannibal, Missouri, gave

melancholy evidence of the revision of a cherished American myth. At the foot

of Hannibal's Cardiff Hill stands a famous statue of Tom Sawyer and

Huckleberry Finn, barefoot and carrying fishing poles; a plaque explains that

this is the neighbourhood where Tom and Huck "played and roamed at will."

(Source: Coh-Metrix 2.1 website)

4.5.2.12.2   Analysis

An interesting issue concerning this text is that of content matter. The text was

selected by the researcher as being one to which students could be expected to relate,

and which they might therefore process more easily. However, the view of the

majority of participants was that it was 'boring'. Participants' comments indicated

possible misconceptions on the part of educators as to what types of content matter

students might engage with.

No definite conclusions can be drawn with regard to the difficulty of the text. The

average score for this text in the reading comprehension test was 4.89, while ratings

by the FELS group were inconclusive, with 20% rating the text as 'difficult', 49%

rating it as 'of medium difficulty', and 31% rating it as 'easy'. The reason for this

mixed perception was difficult to determine.

A further interesting issue with regard to vocabulary in this text was that while low

frequency words did not generally appear to interfere with comprehension, several

participants queried the meaning of 'Clarence Day's father' in the sentence 'One

wondered what Clarence Day's father would have thought.' It was unclear whether

this was because the phrase was perceived as being important to global

understanding, or whether participants simply found the phrase interesting in itself.

The word *Day* was perceived by some participants as referring to a particular calendar event, while others expressed surprise that Day could be a surname.

None of the participants who discussed this text seemed to perceive the significance of the apostrophe indicating the possessive case and thus identifying the word Day as a noun. This example illustrates the potential for misunderstanding arising from misinterpretation of mechanical devices such as punctuation.

Table 41

Coh-Metrix 2.1 measures for Teenage Drinking

	Study text	Mean	Standard Deviation
General Word and Text Information			
Log frequency of content words	2.113	2.08945	0.143984
Average Number of Syllables per Word	1.545	1.6824	0.985834
Average Words per Sentence	18.938	19.5502	3.85672
Syntax Indices			
Personal pronoun incidence score	42.904	26.9217	19.9359
Sentence syntax similarity, all, across paragraphs	0.111	0.10438	0.333631
Incidence of all connectives	49.505	80.5829	18.6363
Mean number of words before the main verb of main clause in sentences	7.688	5.62603	1.88927
Referential and Semantic Indices			
Anaphor reference, all distances	0.108	0.0814455	0.959116
Proportion of content words that overlap between adjacent sentences	0.025	0.12652	0.0576927
LSA, sentences, all combinations, mean	0.191	0.42932	0.121177

Table 42

Low Frequency Words in the text Teenage Drinking

paneled *rumpus* rooms
the *affluent*
the *watering places* of the young
Opulence … gave them all the attributes of …
In their ***ennui***
in … *their cups*
melancholy evidence
a *plaque* explains that …

4.6 Focus Group Interviews

The Coh-Metrix 2.1 analysis and the manual analysis described above located a number of language related text properties potentially contributing to difficulties in comprehending English texts. The purpose of the focus group interviews was to determine whether participants, as L2 readers, perceived the same sources of difficulty as those identified in the text analyses, and to explore any further language-related impediments to reading comprehension which might not have been diagnosed in these text analyses.

In each group interview, discussion was initiated through questions exploring the meanings of potentially unfamiliar, confusing or difficult vocabulary contained in each of the three texts, so as to provide an indication of the extent to which such words affected participants' understanding of the texts. Following this, the researcher encouraged further discussion by asking questions focused on the ten particular characteristics or properties selected for the purpose of this study (see page 168), but allowed participants to comment freely on other characteristics of the texts while at the same time ensuring that the discussion

stayed focused on comprehension difficulties. Participants were encouraged to identify and discuss issues of vocabulary and content which interfered with their comprehension of the texts as well as the questions on the texts, and to describe strategies they used in attempting to overcome these obstacles.

The discussion of responses is presented according to the order of the texts in Section 4.5.2 above, followed by a general section dealing with issues not related to specific texts. Comments of participants are reported verbatim so as to enhance the depth of the data by providing first-hand perceptions of the issues under discussion.

4.6.1   Education in Namibia

As mentioned above, this text was rated by students in the FELS class as the easiest of the three texts in its set, a perception which was supported by participants selected for this study, who agreed that comprehension was facilitated by the fact that the topic was familiar to them and they could identify with the situation described in the text. Participants also agreed that the length of some sentences and the high number of words between the subject and the main verb in the main clauses made processing more difficult, as predicted by the Coh-Metrix 2.1 analysis which reflected this text as having the second highest score for the average number of words per sentence, and the third highest for the mean number of words before the main verb in a clause.

4.6.2   Face of Africa

This text generated a number of emphatic responses revealing reactions contrary to the researcher's expectations. Based on the premise that topic familiarity and interest

facilitates comprehension, the passage was originally selected as being of interest to young Africans, particularly females. However, as the following comments indicate, this was not the case:

[Male}"From my personal point of view …Face of Africa .. I couldn't relate, really… relate to it … it didn't interest me so much, so, like, to read it … I was just jumping through the things … skip … skimming. I didn't really find it interesting, and the questions were tough too."

Although the text included specialised fashion jargon such as *haute couture*, *Afro-chic expression* and *maestro,* participants concurred that understanding of these terms had not been necessary for global understanding of the passage. The fact that this text was allocated the lowest score for word frequency in the Coh-Metrix 2.1 analysis does not, therefore, necessarily reflect the perceptions of the participants. This may be partly because in some cases, participants were able to relate some of these terms to their experience:

"I recognised it from, like TV, from this soap – they used to talk about *haute couture* and their fashion lines."

However, with regard to less common usage of otherwise familiar words, such as *striking*, *scooped*, *edgier* and *pieces*, participants appeared to have difficulty

discerning the meaning appropriate to the context, and views expressed during the focus group discussions pinpointed such words as a source of difficulty:

"I couldn't relate to what was the meaning of some words."

[Researcher: What did you think 'striking' meant?]

"I think I understood about her being taller."

"… shiny …"

"… the emphasis on the model …"

"… looking stunning …"

Despite the fact that the number of correct responses in the reading comprehension test suggests that the factors described above did not create any significant difficulty with regard to text processing, participants nonetheless perceived the text as difficult to comprehend, as evidenced in the following comments:

[Researcher: I thought it was familiar to you?] "Ja, it was, but the way it is written …".

"I wasted [meaning 'spent too much of'] my time on this one."

One male participant said that he "gave up trying to understand the passage", and that he "just went to the questions and tried to find the answer".

Interestingly, rhetorical organization also seems to have been an issue in this text, since one participant commented:

> "My problem is I don't know ... I understood the concept as The Face of Africa, but according to the meaning of the whole passage I found out that it has like, how can I say … three different types of explanation, I mean like, they concentrate on three different types of information. First it talks about the Face of Africa, the lady itself, and then they talk about the beauty pageant and then there was performance and all that.. I couldn't really relate to what was the passage all about. When you look at a paragraph, the first sentence is usually important and you don't really know what they are meaning here."

The high score for mean number of words per sentence and mean number of words before the main verb in a clause, as reflected in the Coh-Metrix 2.1 analysis of this text, were not mentioned by participants as impeding comprehension.

4.6.3   Facial Hair

Apart from the fact that this text is culturally neutral, it apparently also captured the interest of both male and female readers:

[Male participant] "The fact that women have hair on their faces is a strange kind of topic, you know. It's kind of, like, a hair-raising topic. It caught my attention."

[Female participant] "These are most of the things that we hear or see on TV … on reality TV, so we just do it on a daily basis."

With regard to syntax, both the Coh-Metrix 2.1 analysis and the views of participants indicate that the syntactic properties of the text are a significant factor underlying the ease with which it was processed. The Coh-Metrix 2.1 values for both the average number of words per sentence and the mean number of words before the main verb of main clause in sentences were accorded the lowest measures of all the texts. The potential role of these factors in facilitating comprehension is illustrated in the following comments made by participants:

"And the kind of English that they use is kind of direct… simple sentences."

"You didn't have to read between the lines because everything was clear."

It would appear, then, that both topic interest and syntactic simplicity contributed to participants' perception of this text as being easy to read.

4.6.4   Extract from The Great Gatsby (The Valley of Ashes)

According to the Coh-Metrix 2.1 analysis, this text presents relatively few challenges with regard to processing, since measures for syllables per word and words per sentence were among the lowest, while the LSA measure was second highest of all the passages. However, sources of difficulty are predicted in the low measure for syntax similarity across sentences and the high measures for connectives and anaphoric reference. Participants' perceptions of this text, as reflected in the following comments, however, give little indication of the extent to which these linguistic properties influenced their comprehension:

"In this one, when we were supposed to write whether it was easy, I write is this one the easiest but I got the lowest."

"It's poetic, it's, like, it's like …. ancient English."

"How I answered it … I just read it through once and got a big headache and just started answering but I thought from my own knowledge what it might mean."

"The grey cars – I only found out later the grey cars were actually trains."

"For me, in my head, once I read that, my imagination went to old England ... like England in the old age where it's really just so grey with the - you know - the industrial revolution, and that was … I

guess when I read this my mind automatically went to that part of

England."

"I could never figure out what the ashes were."

"Ja, specially for the Valley of Ashes because it was kind of like a

riddle to me - it's there but it's, like, speaking of something which is

actually something else. I couldn't make it because of some of the

words like 'grotesque' (pronounced gro – tes – cue)."

It would seem, therefore, that the sources of difficulty for this text are related less to

specific linguistic properties and more to participants' background knowledge and

schemata, especially as the majority of participants agreed that while the sentences

were easy to read and understand on a superficial level, extracting the meaning was

not easy.

4.6.5   Hunters and Gatherers

The perceived difficulty of this text is attested to by the 'difficult' rating accorded it

by the majority of students in the FELS group, and by the average score in the

reading comprehension test which was the second lowest. However, participants'

comments indicated that for some of them, comprehension was nonetheless

facilitated in a number of ways. Some participants reported that they saw a cultural

connection between their own cultures and the social structures described in the

passage with regard to the roles of males and females, saying that they used

knowledge gained from:

"… stories at night"

"… old stories from my grandma"

"… both culture and stories"

Other participants said that they could relate the topic to their knowledge of biology

and history.

Neither the focus group discussion nor a review of the Coh-Metrix 2.1 measures

brought to light specific linguistic properties which might account for difficulty in

processing of this text, indicating that the difficulty might be related rather to the

high incidence of unfamiliar words, lack of background knowledge or the

unfamiliarity of the topic, as well as inappropriate referential processing, as

discussed in Section 4.5.2.8.2

4.6.6   Ideas in Action

Contrary to the researcher's expectation, this text appeared to have been relatively

easy for participants to process. Participants' comments supported the suggestion in

Section 4.5.2.6.2   that familiarity of topic and content may have facilitated

comprehension; although some participants said that the political situation discussed

in the text was not familiar, many felt that they could relate to it:

"by my side it was okay because politics nowdays …we all heard

about … we do politics and everything."

It seems probable that with the Namibian War of Liberation being relatively recent,

most young Namibians have some understanding of the political context and to some

extent, the political discourse and vocabulary of the text. This is even more likely in

the light of students' expressed preference for reading newspapers, as described

earlier. However, on this issue, participants said:

"Way of expressing things also make us not to understand the

content."

"Yes, because most of the time they are use the academic terms and

we are not used to that academic writing and stuff."

These perceptions are to some extent reflected in the Coh-Metrix 2.1 measures of

word frequency (second lowest), mean number of syllables per word (highest)

incidence of connectives (second lowest) and LSA (lowest).

4.6.7   Intelligence

This text generated very little discussion. Participants merely commented that the

passage had been easy to understand, and that they had experienced no particular

difficulties. This accords with the high scores achieved by participants in the reading

comprehension test on this text as well as with the Coh-Metrix 2.1 measures which predicted few challenges.

4.6.8 Is Manliness Optional?

As mentioned earlier, cultural values regarding the roles of men and women might be expected to have a significant effect on comprehension of this passage since perceptions often differ according to culture. Some evidence of this was found in the following comments of participants:

> "I think the idea maybe... to say that maybe … men are more dominating than women or to my own understanding or I think …I don't know …the picture to me was not even clear … I don't know what they mean."

> "Somehow I got the whole picture after reading the whole passage … I could put things together and say okay, this part is talking about …um …men, uh, how can I say it, about men not being sensitive as women."

> "I can say for Oshiwambos, the way they have used it, it's a bit complicated…I can't really get it, what they are actually referring to."

> "Not in our Oshiwambo culture ... there's no other way women can be equal with men."

In the light of these comments, it is arguable that cultural perceptions played a significant role in the processing of this text, especially since the linguistic properties, as measured by Coh-Metrix 2.1, posed few challenges. The mean number of words per sentence and the mean number of words before the main verb in a clause, perceived as sources of difficulty in other texts, were accorded the second lowest measures of all the texts. Furthermore, the Coh-Metrix 2.1 measure of word frequencies accorded with the comment that:

> "Vocabulary was quite light… it was very nice if you read the word before it and the word after it ... like …you can understand what it means."

Responses to this passage thus illustrate the notion that a mismatch between the cultural values reflected in a text and those of the reader may impede comprehension even when the text itself is relatively easy to process.

4.6.9 Modern Living

Since the subject matter of the text in general deals with matters relevant to most individuals with some experience of technological development and urban living, is not culture dependent and requires little specialised background knowledge, most readers could reasonably be expected to relate to the topic. However, the following comments from participants indicate possible negative implications of the familiarity

of the topic, which may go some way to explaining the poor scores in the reading comprehension on this text:

> "The first sentence just drove me away and I didn't really finish reading the thing with all the concentration. I just took it like ... our modern living. Oh."

> "I think because the topic seems to be like an everyday topic so if you are answering the questions you don't really go back to the passage - it's like you just want to answer it on your own because you think you know." (Agreement from other students)

With regard to vocabulary, there are a number of words which in the context of this text carry a meaning different from their more usual meaning, making it possible that in some cases participants assigned an incorrect interpretation. The following comment illustrates this perception, indicating, in addition, that the commonly recommended strategy of inferring meaning from context may be derailed by such words.

> "Mm mm. I don't think I found any words difficult. I think just when you're reading for example you don't … you do know... you have an idea of what the word 'complexities' means. Maybe you do have idea. If you don't you read the whole sentence and you actually can make up what it might mean."

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"'Crude' is, like, using bad language."

As was the case with *Hunters and Gatherers*, no specific linguistic properties were highlighted in the text analyses or the focus group discussion to account for difficulty in processing of this text.

4.6.10 The Sentence

Very little discussion was generated concerning this text, and since the Coh-Metrix 2.1 analysis highlighted no specific linguistic properties which might impede processing, it was difficult to determine why the text had been rated as 'difficult'.

Participants did, however, evince some evidence of the use of word knowledge and background knowledge to facilitate decoding, as indicated in the following observation by two of the participants regarding the word 'inflection':

"I haven't heard it, but inflection is like, just … maybe ... when you hear the word it's like you will think about the word 'reflection'."

"For me, I hear it since I'm in the choir. We have things like inflection."

4.6.11 Teaching Techniques

Again, participants had few comments to make regarding this text, in spite of the fact that it had been rated by students in the FELS class as being of medium difficulty. Although the Coh-Metrix 2.1 measures indicated that this text had the highest score

for mean number of words before the main verb in a clause, and the second highest score for anaphoric reference, these factors were not mentioned by participants as being sources of difficulty.

4.6.12 Teenage Drinking

An interesting issue concerning this text is that of content matter. The text was selected by the researcher as being one to which students could be expected to relate, and which they might therefore process more easily. However, the view of the majority of participants was that it was 'boring'. The following comments reveals possible misconceptions on the part of educators as to what types of content matter students might engage with:

> "It's not important anymore because we are, like, we know too much."
>
> "Too familiar"

As mentioned in the previous section, several participants focused on the meaning of 'Clarence Day's father' in the sentence 'One wondered what Clarence Day's father would have thought.' Some participants perceived the word *Day* as referring to a particular calendar event, failing to deduce from context or from background knowledge that Day could be a surname:

> "I referred this to ... it's just like if you say Africa Day"
>
> "Is there anyone with name Day?"

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There may also be an element of cultural interpretation in the concept of a person as 'founder' being referred to as 'father', as in 'Sam Nujoma, Father of the Namiban Nation.'

> "I understood that Clarence Day's father was the person who founded Clarence Day."

None of the participants who discussed this text seemed to perceive the significance of the apostrophe indicating the possessive case and thus identifying the word Day as a noun. This example illustrates the potential for misunderstanding arising from misinterpretation of mechanical devices such as punctuation.

In addition, there was some confusion arising from the use of the indefinite pronoun *one*.

> "One wonders – who is one?"

> "But the thing I didn't like about the passage was, like, the person who's writing the thing is taking it more like, like …'one wonders' and those kind of, like…personally .. I don't know what do you call it."

The sentence complexity in this text, as reflected in the fact that the Coh-Metrix 2.1 measure for mean number of words before the main verb in a clause was the third

highest, was apparently also perceived by participants as posing a challenge. With regard to syntax, the view of one participant was that

"The grammar was not good. I didn't understand the grammar itself."

4.6.13   Issues Relating to English Reading Comprehension in General

During the three phases of this study, a number of issues which were not directly related to the study texts yet which were found to have influenced English reading comprehension were brought to light. These included issues such as background knowledge and culture, use of L1 in L2 reading comprehension, syntax and effect of questions, each of which will now be discussed in this section.

4.6.13.1   Background Knowledge and Culture

Data gathered during the focus group discussions in this study indicated that background knowledge had been a significant factors in participants' processing of some of the study texts, as illustrated in the following comments:

When I read texts which are familiar to me sometimes I … it also helps when I compare it with my background knowledge ... what happened either in my tribe or whatever, so I compare with text I am reading so it makes me understand the text more than just using the text itself.

Cultural background and cultural values likewise played a role in some cases, particularly with regard to "*Is Manliness Optional?*"; without exception, both males and female participants from the Oshiwambo culture, as well as from several other African cultures, expressed the view that the concepts of femininity and masculinity expressed in this text were foreign to their cultures and therefore difficult to understand. The following comment typically illustrates this view:

> "Not in our Oshiwambo culture ... there's no other way women can be equal with men."

> "I think the idea maybe... to say that maybe … men are more dominating than women or to my own understanding or I think …I don't know …the picture to me was not even clear … I don't know what they mean."

'Understanding conceptual meaning' (Munby, as cited in Urquhart & Weir, 1998, p.90), or not understanding, as the case may be, was also found in some instances to be a source of difficulty, as for example with 'rumpus rooms' in *Teenage Drinking*, and 'wild wag' in the extract from *The Great Gatsby*.

There was, in addition, some evidence in the study that the reverse was also true with regard to participants, namely that where there was a match between the concepts discussed in the text and the cultural background of the reader, comprehension was facilitated, despite other textual constraints. Several participants commented that

they saw similarities between the social structures and practices of their own culture and those described in *Hunters and Gatherers*, and that this aided their understanding. However, the fact that this text was rated as most difficult by 61% of the FELS group, and that the average score in the reading comprehension test was second lowest of all the texts (47,5%) suggests that this was true only of a few individuals, and that in general, cultural similarity did not, in fact, facilitate understanding of this particular text.

Possibly also related to the issue of background knowledge and schema activation, an interesting phenomenon which came to light during the focus group interviews was the potential effect of the title or of the first sentence/s of a passage on initial activation of knowledge. A number of participants in different groups commented that expectations raised by the title of a text had initially impeded comprehension:

> "Ja, like me – intelligence – I was expecting them to emphasise more on what is intelligence …but coming here he was just explaining about how he approached the test."

> "For me was only the first paragraph [explaining why he didn't know what he was going to read about]"

One participant said that when she saw the title *Face of Africa*, she expected a modelling competition, and that the mention of MNet confused her – "it's like a channel or something else", while for another, the title *Ideas in Action* raised false

expectations that the text would be about "ideas that they were going to put into action". This suggests the relevance to participants in this study of the suggestion in the literature that inappropriate information may be activated by text input, although it is deactivated if it does not fit the constraints imposed by the rest of the text (Koda, 2005).

4.6.13.2   Use of L1 in L2 Reading Comprehension

Arguably also a factor in English reading comprehension is the strategy of translating into the L1, as discussed in Chapter 2, Section 2.4.6. Since the reading taxonomies in Chapter 2 focus on L1 reading, translation as such is not addressed. However, many of the elements listed in these taxonomies underpin factors related to the effects of translation on L2 comprehension.

In considering reading in an L2, it seems natural to predict that, to some extent, L2 readers are likely to make use of translation to facilitate comprehension. This notion is reflected in the literature which also suggests that L2 readers frequently rely on translation to facilitate comprehension during reading. However, views expressed by participants in this study tended to contradict this notion since the majority of participants were adamant that when reading English, they did not access their L1 in any way. Within the constraints of this research, it was not possible to determine whether this was an accurate perception on the part of participants or whether they were in fact using the strategy of translation at some level but were simply unaware of doing so. One of the most common explanations given for not using translation was that it would confuse them rather than assisting their understanding. In this

respect, many participants exhibited an awareness of possible interference arising from lexical, semantic and syntactic differences between English and their L1s, even though they might not have had specific knowledge of such differences.

When asked during the focus group interviews whether they translated into their L1 while reading English, participants gave the responses presented below. Since these responses provide interesting insight into several issues related to this study, they are reported in detail. Responses quoted below are grouped firstly according to topic and then, as far as possible, according to the L1 of the participants, so that potential similarities and differences in perceptions between language groups may be more easily discerned. Responses are also numbered for ease of reference in further discussion.

[Researcher: Do you translate into your L1 when reading?]

Oshiwambo:

(1)   "No. I try to read it in English."

(2)   "I read it in English … if I had to translate into Oshiwambo it would have a totally funny … something that doesn't make sense."

(3)   "It's like, time wasting for me and it confuses you."

(4)   "I do. Sometimes it's complicated. When it's written in

Oshiwambo … in your language it will starting from the last

to the first ... you can't ... like in English … okay, let's say

you … in my own language I find I can't translate the whole

thing directly in my own language because it won't be the

same."

(5)   "I think [that] in my native language, like, okay, like

Oshiwambo, it would be very difficult for me to relate, I mean

to, like, change what I read in English to try and translate it

into English or from my mother tongue to English. Okay, for

me personally, I didn't really learn my mother tongue till now.

English is, like, not my first language, but I speak English

better than my mother tongue."

(6)   "For me when I'm reading something in English, it's just

English and that's it. I even forget about my mother tongue,

and when I'm reading something in Oshiwambo, I don't

know, I switch into that language and then I don't even think

about anything in English. 'Cos then if I have to translate,

seriously, it will be a big problem 'cos there's a big

difference."

(7)   "Especially on the arrangement of words … sometimes I
        would say 'the first evidence' but in Oshiwambo 'evidence'
        might come first before the word first."

(8)   "Ja, and the tenses. We don't really have, like, for example
        'drink' you don't take it .. like in English it has to be 'drank'
        or 'drunk' or something, but in Oshiwambo it's just the same,
        just that you have to add some words to show that it happened
        in the past, but the word itself does not change … you just
        have to add some words to show that it happened in the past or
        it's going to happen."

(9)   "We don't really have gender pronouns in Oshiwambo *ye* is
        just *ye* whether it's a he or a she ……"
        "…… unless you say it, like, it's a girl or a boy."

(10)   "For us, the Oshiwambo speakers, Afrikaans is a bit more like
        our language – the word order..."
        "….but more difficult to read."

(11)   "No, I do the opposite [Researcher: Why?] I actually find my
        language totally hard to understand. I remember in the exam
        [Grade 12 L1 examination] when we had to write this essay I
        had to … my ideas were in English, but then I had to … so I

kept on translating them back in my own language .. my

mother tongue is kind of, like, difficult. [Researcher: So you

think in English?] Yes.”

Afrikaans:

(12) “It affects me because if you write an English sentence in

Afrikaans it definitely changes, so I'm used to it being written

in a different way.”

(13) “That's why it's difficult if you try to teach someone … if you

translate just in Afrikaans, maybe if you use dictionaries, you

put every word in English then every word in Afrikaans, then

it won't sound right.”

(14) “My mother tongue is Afrikaans – sometimes I try to relate it

to Afrikaans to see what it really means.”

[Researcher: Does that often work for you?]

“Often … if I really know what the word in Afrikaans means.”

[Note: Speakers of other languages strongly disagreed with

this view.]

Afrikaans/Khoekhoegowab (Damara):

[Researcher: do you ever translate words into either of those languages?]

(15)   "Yes, I would, like ... say maybe I didn't know the word

'deal', in Afrikaans we say 'deel', so it come out to you

automatically or something like that ... you find it more

easier… Damara would be tougher …would I use Damara?

No … it's impossible.

I don't really, like, speak my mother tongue that often."

(16)   "Like when you speak more, like when you speak Damara

most of the words are more complex together …there's much

more meaning … it combines a lot of words … like in

English, the only time you'd use a big word ... the bigger the

word then it combines a lot of things together … so, when you

speak my language it's like …the sentence would be shorter

than the English. You would normally talk something simple

… it would be longer and then something … so the only time

in English you would really use big words, they would make

the sentences shorter. The longer the sentences, maybe it

would make it more boring."

(17)   "One word can mean future past and present at the same time

in my language [Khoekhoegowab] - it depends on how you

say it in the sentence whereas in English you constantly have

to change the whole sentence to show that I'm either talking

about the future the past or the present." [Participant asserted that this did not interfere with comprehension of English]

Language unspecified:

(18) "The setting of the sentences in English are very different from our own language's sentences. That's why we tend sometimes not to understand the whole sentence and not get the meaning of the word which we do not, you know, know the meaning of.

(19) "It's a problem because sometimes people try to get answers by translating to their own language directly."
[Researcher: How often do you do that?]
"I don't – it confuses me."

(20) "If you try to translate in your vernacular language you get lost."

(21) "I think in my own language.
[Researcher: Do you translate?]
"Ja. Sometimes if I find a text difficult, I end up thinking in my own language and find out what the meaning of the sentence ... at least it used to assist me on understanding the text."

(22) "I prefer to use English."

With regard to translation of individual words, in addition to comment (17), the following views were expressed:

(23) "I've seen someone who read a novel but the words that he didn't understand he put the Oshiwambo meanings … Oshiwambo meanings… Oshiwambo meanings…and it's an English novel. That confuses people.

(24) "No I don't [translate]. I will end up confused. I think in English. There are words in English that are not in Oshikwanyama [a dialect of Oshiwambo] but when you read you forget."

(25) "Most of the time it becomes a problem when you don't understand a certain word and you actually … um …okay, let's say it's got a certain meaning, but you give it your own meaning, ja, you interpret it in a different way, you just assume it means this, but it's not what it means."

(26)   "No, 'cos it's like, even if I have to translate into my own language things always come out different. I do borrow words from my language when I can't get the word I want in English

but I never just translate ... direct translation, 'cos it always

just comes out wrong."

[Researcher: Are there some words for which there are no

English/mother tongue equivalents?]

[Two participants from the same L1 nodding.]

(27)   "Like in the English academic debate there are words which

are actually borrowed from other languages, but now because

it doesn't exist in English has been turned into an English

word because people commonly use it."

[Researcher: Do you think a particular word might make you

think of different things in different cultures? Like, *house*, for

example?]

(28)   "I'll ask myself whether it's in Windhoek or where I came

from."

It is noteworthy that several participants claimed to think in English when reading

(see comments 5 and 11), and that some participants in this study appear to have

come to depend more on English than on L1s in which either their language

knowledge or their literacy skills, or both, are often not well developed (see

comments 11 and 15).

An issue which, according to research, appears to be more common to all L2 reading is that of translating individual words. Participants' comments indicated that this was also often avoided. Reasons given for this were that an English word might not have an equivalent word in the L1, or that the translated meaning of a word might not fit a particular context (see comments 15, 18, 23 – 28).

4.6.13.3 Syntax

A large number of comments in Section 4.6.13.2 above refer to language features such as sentence structure, including ordering of SVO and of information presentation (see comments 4, 7, 10, 12, 13, 16, 18), tenses (comments 8, 17), and pronouns (9). As indicated both by responses to questions in the reading comprehension test and by comments from participants in the focus group discussions, syntactic structures were a frequent source of difficulty in processing the meaning of texts.

Another factor which was found to impede comprehension was complex sentence structure, including sentences containing embedded clauses or where there were shifts in SVO ordering, such as when adverbial clauses preceded rather than followed the main clause. Asked whether such sentences were difficult for them to process, the majority of participants confirmed that this was a challenge. Various respondents described their attempts to unravel the meaning of a sentence or to locate a referent thus:

> "I tried to understand the sentences [which came] before."

"I finished the piece, then I came back."

"I read the passage and then I had to come back and read it through again."

"I just read through the previous sentences."

Concerning the effects of such factors on their understanding, participants said:

"You lose concentration" [when the sentence is very long]

"I think you do have the idea, but you're not really sure."

 "Then you have to think about what did they talk about in the first place so I sometimes have to go back and reread the whole sentence and then come back to what they are referring to". [Many other participants agreed].

"Sometimes it's a problem to figure out that question that asks what does a certain word refer to. Sometimes you don't really understand the whole sentence at first."

Complex syntactic structures not only clearly reduce reading speed and make processing more difficult for L2 readers, but they also lead to miscomprehension when, as may easily happen, the L2 reader misinterprets the relations between parts of a sentence. This is reflected in the following comment in which a participant explained how he attempted to locate the noun phrase to which the modifier 'resplendent' referred:

"I checked the content analysis, and I tried to match it up with the

sentence…I used the catwalk to, like, describe resplendent."

Although 'resplendent' in fact referred to the noun phrase 'models' in a previous

clause, this respondent had related this modifier to the closest preceding noun phrase,

'the catwalk'. This example supports Celce-Murcia and Olshtain 's (2000)

contention that complex noun phrases containing dense information are difficult to

process.

Comments quoted in Section 4.6.13.2 above also reflect a number of issues related to

contrastive linguistics, as discussed in Chapter 2, Section 2.8, suggesting that

difference in the syntactic features of an L1 and an L2 may influence certain

elements listed in the taxonomies of reading skills and reading types, and thus

interfere in text processing.

4.6.13.4   Topic interest

Also relevant to reading comprehension, whether in the L1 or the L2, is the effect on

processing of text of the degree of interest the text holds for the reader. Views

expressed by participants in the focus group discussions confirmed the notion

discussed in the literature that comprehension of texts was facilitated by topic

interest, as illustrated in the following comment:

"I think even *Education in Namibia …*'cos, okay, like, when I saw

Education in Namibia, I was like, okay, she gave me stories about my

course, then when I came there was this one *Hunters and Gatherers*,

not really about my course, but *Teaching*, the [unclear] is also about

my course, so I wanted to read more about these two."

However, other comments also pointed to the fact that, as is arguably the case with

most readers, for students in Namibia familiarity of topic may also have negative

effects, in that they quickly lose interest in subject matter which they have

encountered so often that it has become hackneyed. An example of this was the

response to *Teenage Drinking*.

"But sometimes when I am familiar with what they are talking about I

tend to ignore it and not read the text, and sometimes I change some

of the things … especially if the title is very, very interesting the ...

the first ... let me say the first sentence the two first sentences are just

too familiar then I don't want to continue."

"First three lines were interesting, but from the fourth line it started

getting boring."

The focus group discussion also yielded evidence of gender-based influence on

reading comprehension, as mentioned in the literature (Koda, 2005), indicating that

female students were more likely to achieve higher scores on texts of low topical

interest than male students, who were more likely to perform better on texts

involving topics of interest to them. Participants' views in this regard were expressed

thus:

> [Male]"From my personal point of view …*Face of Africa* ... I
>
> couldn't relate, really… relate to it … it didn't interest me so much,
>
> so, like, to read it … I was just jumping through the things … skip …
>
> skimming. I didn't really find it interesting, and the questions were
>
> tough too."

> [Researcher: Was it because it was a girl thing?]

> "Ja – it was."

> [Female]"Ladies read social stuff."
>
> "I prefer more of social life."

Several female participants said that when they read horoscopes and romantic novels,

they "read carefully and try to figure out what's going to happen." A female

participant further commented that although she had rated *Is Manliness Optional?* as

the most difficult text, she had scored the highest marks for it, and that she thought

that this was because she had found it interesting. A number of males, on the other

hand, said that they were "not interested in any of the passages – only sport", and one

added that he "didn't find any [of the passages] interesting because there were

difficult sentences", indicating, perhaps, that an uninteresting topic was not worth the effort of dealing with complex sentences.

4.6.13.5   Effect of questions

The effect of different question types is discussed in Chapter 2, Section 2.6.3 from the perspective of the nature of the skills or knowledge being tested. This issue was brought to light in the focus group interviews, during which it became clear that not only the nature of the questions but also the very presence of questions may influence a reader's purpose and hence his or her strategy in processing a text. This was reflected in general concurrence among participants that their rating of the difficulty of the texts would have been different if there had been no questions to be answered, as reflected in the following response:

> [Researcher: If I had given you these passages with no questions, would it have changed the way you read them?]
> "Yes!"
> "We will read from the beginning to the end."

Evidence of the various ways in which the presence or the nature of questions might influence text processing is also reflected in the following comments:

> "And because this was …we were reading to answer the questions, first you read the questions and then you read the passage …when you go read the questions again ... you just skim in the text ... you just

skim... You don't really read it to get the understanding, you just look

for the answers (much agreement from others)

[Researcher: Are you saying that in some places you could find the right

answer even if you didn't understand the passage?]

"Yes, because of the questions."

"I gave up trying to understand the passage … just went to the questions

and tried to find the answer."

In some cases, the nature of the multiple-choice questions was perceived to be a

problem. One participant felt that "the questions were tricky … the answers were

almost the same", while several others mentioned that multiple-choice questions

confused them, and that "answering the question was hard, not understanding the

sentence." A further comment was:

"It is very easy to understand, you can understand, but maybe the way

the questions were phrased is difficult …"

"…kind of confusing actually."

Another perception was that locating information specific to the choices offered in

the questions was all that was required, and that global understanding was therefore

not important.

"I did not understand the passage that much, but I thought it was just

multiple choice …"

In some instances, it seemed that if the answers to questions could be found by

referring to general or background knowledge, participants saw no reason to look for

answers in the text:

"I think because the topic seems to be like an everyday topic so if you

are answering the questions you don't really go back to the passage.

It's like you just want to answer it on your own because you think

you know." [Agreement from other participants.]

It also became evident during the focus group discussions that the artificiality

of reading for the purpose of answering comprehension questions was

reinforced by techniques and strategies learned at school:

"If we are reading to answer questions, back at Grade 7 we were told

first to read the questions to know what you are looking for."

"Read questions first - That's how we were taught."

4.6.13.6   Conclusion

Despite variation between texts with regard to the content matter and measures of the

10 selected linguistic properties (see page 168), comments in the focus group

interviews generally corroborated results of the Coh-Metrix 2.1 and manual analyses.

More particularly, these discussions highlighted the role of vocabulary, syntactic complexity and rhetorical organisation, thus also supporting views and theories explored in the secondary research in Chapter 2. Furthermore, participants confirmed the frequent practice of guessing meaning from context, while also indicating that this strategy was not always successful. However, contrary to the perceptions expressed in the questionnaire survey, as reported in Section 4.2.2.2, cultural or background knowledge was perceived by participants in the focus group interviews as influencing comprehension, as were topic interest and question type.

4.7   Summary

Using the methodology described in Chapter 3, the study investigated the hypothesis that competencies in English reading comprehension may be retarded by specific aspects of English language structure and usage in texts, and by specific elements in a reader's language background.

This chapter presented a descriptive synopsis of the data obtained from five instruments used in the study, namely a questionnaire survey, a vocabulary test, a reading comprehension test based on twelve selected English texts, a computer-based and a manual analysis of the 12 selected tests, and focus group discussions, which explored the views and perceptions of participants regarding language related factors which impede reading comprehension.

Using data elicited in the questionnaire survey, frequencies and cross-tabulations were provided regarding the language profiles of participants, while bivariate

analyses were used to explore possible relationships between language background and reading difficulties. Results indicated that although none of the participants were mother-tongue speakers of English, the majority felt that they had few difficulties in understanding, speaking, reading or writing English. No specific relationship was found to indicate that the different languages spoken by participants' played a role in their processing of English texts.

With regard to factors impeding reading comprehension, questionnaire responses indicated that unfamiliar words were perceived as posing the greatest challenge, followed by unfamiliar concepts and complex sentence structure. The main strategy identified for dealing with unfamiliar words was that of using a dictionary and guessing meaning from context. Results of the survey furthermore indicated that reading difficulties were not necessarily language specific. The perception that unfamiliar words influenced comprehension was borne out in the second phase of the study by the correlation between participants' scores in the vocabulary test scores and the reading comprehension test.

Phase 2 of the study also included both a computer-based and a manual analysis of ten selected linguistic properties in the twelve selected texts which provided benchmark values for identifying potential sources of difficulty in L2 readers' processing of the texts. A comparison of the results of these analyses with scores in the reading comprehension test and with views expressed by participants in the focus group discussions indicated that of the ten selected linguistic properties, sentence

complexity featured strongly as a potential influence on comprehension, as did vocabulary, as measured by low frequency of unfamiliar words.

Data gathered in Phase 3 of the study, the focus group interviews, were used to evaluate whether the impediments to reading comprehension identified in the first two phases matched those perceived by participants themselves. Results indicated that complex sentence structure and unfamiliar vocabulary were also seen by participants as posing a challenge, but that in addition, aspects such as topic familiarity and interest, as well as background knowledge and culture, also played a significant role.

In Chapter 5, more in-depth discussion of the findings of the study and of the implications of the research results will be presented, as well as suggestions for further research.

CHAPTER 5   DISCUSSION AND CONCLUSION

5.1   Introduction

This study was motivated by the pervasive difficulties which Namibian learners and students experience in reading and understanding English texts, and which impact negatively on the academic progress of these learners and students. The research was aimed at identifying specific language-related properties of English texts which might impede the English reading comprehension of students in Namibia entering university, as well as possible elements in the language background of these students which might contribute to the challenges they face in processing English texts.

The previous chapter examined the results of each phase of the study. This chapter reviews the hypotheses and methodology of the study, and will summarise the main findings from the three phases and relate them to theories and concepts outlined in the literature.

As revealed by the secondary research presented in Chapter 2, studies which investigate reading comprehension have, in the main, focused either on L1 readers or on L2 readers from minority groups in Anglophone countries. In many Southern African contexts, however, the language profiles of students differ in many respects from those of L2 readers in other countries. Firstly, students in a country such as Namibia are usually members of a majority group compelled by political, social or educational circumstances to use a 'minority' language such as English. Furthermore, these students spend a great deal of time amongst people who are L1

speakers of a language other than English, but who use it as a common language of communication, with the result that they are continually exposed to less than proficient English usage. Secondly, the greater part of their education is often conducted through the medium of English, leading to obvious negative educational consequences for those not proficient in the language. One of the most far-reaching of these consequences is difficulty in comprehending English texts.

A consideration of the secondary research in Chapter 2 also reveals that since the majority of studies on reading comprehension focus on particular elements in the reading process, it is difficult to find a comprehensive overview which might provide a richer background against which to evaluate factors influencing reading comprehension in any specific context. This study aimed to provide such an overview, followed by an investigation, based on this overview, of language-related factors impeding the reading comprehension of Namibian tertiary students. The researcher hypothesised that competencies in English reading comprehension may be retarded by specific elements in a reader's language background and by specific aspects of English language structure and usage. The objectives of the study were, therefore, to investigate whether proficiency in English reading comprehension of students in Namibia entering university is related to their language background, including factors such as their language repertoires, and further, to test the hypothesis that specific English language constructions and aspects of usage influence the English reading comprehension of these students.

As a prelude to discussion and interpretation of the findings of the study, an important question to be addressed is whether the hypotheses of the study were justified by the literature (Steinagel, 2005, p.64).

With regard to the first hypothesis, a review of the literature discussed in Chapter 2 shows support from a number of scholars for the notion that reading comprehension is influenced by specific elements in a reader's language background. The cognitive implications of bilingualism or multilingualism are held by many leading scholars to be a significant factor in the reading process. Several sources also highlight the significance of the different knowledge and values brought to the reading process by readers from different backgrounds, particularly as regards different cultures. Furthermore, more recent research in the field of contrastive linguistics has suggested that for bilingual or multilingual individuals, processing of an L2 might be influenced by linguistic similarities or differences between the L1 and the L2.

The second hypothesis of this study, namely, that English reading comprehension may be influenced by specific aspects of English language structure and usage, is likewise supported by a vast body of theory and research, focusing on factors ranging from vocabulary and discourse structure to morphology and syntax.

Based on support in the literature, clear justification can thus be found for the hypotheses of this study, and the discussion in this chapter will explore the extent to which the findings of the study support these hypotheses.

In summary, the study was conducted in three phases, as follows. In Phase 1 data on the language profiles and on the reading proficiency, habits and strategies of participants were gathered by means of a questionnaire survey, and possible correlations between variables in these areas were explored to determine their role in reading comprehension.

In Phase 2, participants were given a vocabulary test so that possible correlations between language profiles, reading profiles and vocabulary scores could be investigated. This was followed by an English reading comprehension test to provide participants' scores for the purpose of investigating the influence of language profile, reading profile and vocabulary knowledge on comprehension, and further, to investigate whether specifically identified linguistic properties of English texts influenced reading comprehension.

For the comprehension test, twelve English texts were selected, and ten linguistic properties were identified, based on the views explored in the secondary research regarding those properties most likely to impede L2 reading comprehension. The twelve selected texts were subjected to a computer-based Coh-Metrix 2.1 measurement of the ten selected linguistic properties, as well as to a manual analysis for the purpose of pinpointing other linguistic features which might possibly influence text processing but which might not be reflected in the Coh-Metrix 2.1 measures. Reading comprehension tests on each of the twelve texts were then constructed and administered to participants. Potential sources of difficulty in English reading comprehension were investigated through an analysis of

participants' comprehension test responses. Linguistic properties thus identified were then compared with the results of the Coh-Metrix 2.1 and manual analyses of each text to determine whether the three sources of data corresponded in identifying potential sources of difficulty in participants' processing of the texts.

In Phase 3, perceptions of participants regarding factors which had influenced their processing of the texts were explored, and were then compared with results of the text analyses and the reading comprehension test scores to determine the extent to which the three sets of data could be triangulated. The discussion in this chapter will be structured according to how prominently each of the identified factors featured in the three phases of the study, and will focus specifically on factors which came to the fore both in the Coh-Metrix 2.1 analysis and in the focus group discussions. Factors which were not significant in the findings will not be discussed in depth.

5.2   Summative Analysis and Discussion

A framework for the discussion of language related factors which influence English reading comprehension is provided by revisiting models and theories regarding components of the reading process and reading skills as described in Chapter 2, Section 2.1. In revisiting these models and theories, it is important to keep in mind that, as mentioned above, many of them focus on L1 readers, or on L2 readers in Western societies, and discussion in this study should therefore include an evaluation of the extent to which they apply to L2 readers in the context of a developing, multilingual country such as Namibia.

It should also be kept in mind that students' reading includes tasks which vary widely in nature and purpose, and that, as Grabe (2009) points out, skills and strategies which are applied during the reading process will differ according to different types of reading. It therefore seems logical that factors which impede or facilitate reading comprehension will also differ accordingly. Urquhart and Weir's (1998) matrix of reading types differentiates between 'expeditious' reading and 'careful' reading. Expeditious reading, with the focus on speed and efficiency, involves skimming or scanning a text to determine main ideas or to quickly locate specific information for predetermined needs, and thus requires recognition of key words rather than more detailed text processing. For this type of reading, therefore, factors related to vocabulary and to automatic word recognition skills are important. However, 'careful' reading, the goal of which is accurate comprehension, requires understanding of features such as the syntactic structure of sentences and clauses, and of lexical and grammatical cohesion, as well as the ability to deduce the meaning of lexical items from morphological and contextual cues. Comprehension for this type of reading is therefore clearly subject to interference arising from a greater variety of linguistic properties of texts.

Namibian tertiary students, like students elsewhere, also face the challenge of dealing with different types of reading matter for a variety of purposes. However, because of the multilingual context in which they study, language-related factors often make their reading tasks more challenging. Based on perspectives provided by the secondary research conducted at the outset of this study, the aim in the empirical portion of the study was to investigate whether the theories and results presented by

scholars in the field of L2 reading accurately reflect difficulties experienced by Namibian tertiary students.

To facilitate reference to the results presented in Chapter 4, this section follows the same order of presentation.

5.2.1. Phase 1: Questionnaire Survey

As mentioned earlier, in Phase 1, data from a questionnaire survey on the languages profiles and reading proficiency, habits and strategies of participants were analysed for possible correlations between variables in these two areas which might reflect their role in reading comprehension.

With regard to language background, findings of this study revealed no significant link between specific reading comprehension difficulties and any particular L1. This is of interest to educators in Namibia, particularly those concerned about the generally low level of reading comprehension proficiency amongst Namibian learners and students, since it suggests that in dealing with sources of difficulty in English reading comprehension, even in multilingual classrooms, teachers may focus on certain fundamental strategies and interventions, regardless of the L1s of the learners. However, this should not negate the notion that an awareness of linguistic similarities and contrasts between languages, as highlighted in Phase 3 of the study, may also prove valuable.

Findings further indicated that two particular elements of text processing were perceived by the majority of participants as sources of difficulty, namely, vocabulary and complex sentence structure. This implies that in the teaching of English reading comprehension, focus on strategies for improving vocabulary and lexical access, and more intensive training in sentence processing would effect a significant improvement in learners' English reading comprehension.

On the question of strategies for dealing with unfamiliar words, responses indicated that the strategy most commonly used by participants was that of guessing meaning in context. Since this clearly involves a number of issues related to word and sentence processing, it is revisited in more depth in the discussion on vocabulary in Section 5.2.2.1

A further strategy identified by participants as being commonly used was that of consulting a dictionary. Although this is clearly an effective and desirable strategy, the frequency with which it is, in reality, employed by students in Namibia is open to question. Views expressed in the focus group interviews concerning this strategy sometimes appeared to be contradictory to ratings given in the questionnaire; for example, while the strategy of consulting a dictionary was accorded the second highest rating in the questionnaire responses, comments from participants in the focus group interviews were sometimes more negative. It is possible that participants chose this option as being one that they knew to be generally recommended rather than as one which they, themselves, actually employed. With respect to the use of this strategy by Namibian tertiary students, certain limitations should be taken into

consideration. Firstly, on a purely pragmatic level, dictionaries are generally fairly expensive and consequently often unaffordable for students in a developing country such as Namibia, many of whom face considerable financial restraints. Secondly, although there have, in recent years, been significant advances in the accessibility of information in dictionaries, the dictionaries which students can afford often provide only superficial information which does not necessarily assist L2 readers. For example, it may happen that meanings given for a particular word simply confuse an L2 reader who may not be able to discern which meaning is appropriate in a given context. Furthermore, taking time to look up a word delays reading, and arguably therefore also taxes working memory.

5.2.2 Phase 2: English Reading Comprehension Test and Text Analyses

Phase 2 included several sub-steps aimed at pinpointing potential language-related impediments to English reading comprehension. Each sub-step is discussed below.

5.2.2.1 Vocabulary Constraints

The views of several scholars (e.g. Alderson, 2000; Cooper, 1984; Koda, 2005) that knowledge of vocabulary correlates closely with performance in reading comprehension were supported by findings in this study showing a correlation between the vocabulary scores and reading comprehension scores of participants. However, the notion that unfamiliar or uncommon words disrupt reading fluency did not appear to be supported, since responses in the questionnaire regarding understanding of English texts at word level showed no correlation with reading comprehension scores. In fact, the converse was found to be true with regard to

participants' processing of some study texts, namely that even where there are fewer unfamiliar words, there can still be comprehension difficulties underpinned by factors other than vocabulary knowledge, as was evident in participants' difficulties in processing of the extract from *The Great Gatsby*. This supports the suggestion by Oakhill & Cain (1997) that "vocabulary deficits will not automatically lead to comprehension difficulties and vice versa". Nonetheless, in the light of research reported in the literature, as well as data generated in this study, there can be little doubt that proficiency in English reading comprehension is related to vocabulary knowledge.

An important facet of vocabulary in text processing is dealing with unfamiliar words. As mentioned above, questionnaire responses in this study indicated that in dealing with unfamiliar words, one of the strategies most frequently employed by participants was that of guessing meaning from context, an issue which is debated by a number of scholars, as discussed in Chapter 2, Section 2.6.3. Since guessing the meaning of a word from context requires knowledge of 95% of the other words in a text, the prevalence of this strategy underscores the fundamental importance of improving L2 readers' vocabulary. It is also the strategy with most relevance to this study, since it was the only one accessible to participants during the comprehension test. However, evidence from both the reading comprehension test and the focus group discussions suggested that with regard to L2 readers, this strategy is not without limitations. The reason for this may lie partly in the fact that guessing meaning from context involves not only word knowledge, but also skill in interpreting the effect on meaning of linguistic features at a number of other levels,

e.g. syntactic features such as the structure of words, clauses and sentences, morphological properties, and mechanical devices such as punctuation (Koda, 2005). Clearly, therefore, lack of knowledge of such features will inhibit the ability of an L2 reader to decode the meaning of words in context, and arguably, training in this regard will facilitate English reading comprehension. However, in the Namibian context, where the vast majority of English teachers are not native English speakers, and have themselves expressed a need for help in improving their own English, it is open to question whether they are yet in a position to teach learners the linguistic features mentioned above.

Also with regard to vocabulary, it is interesting in the context of this study to consider the issue of cognates. Although the literature mentions that reading comprehension may be facilitated by the use of cognates (Koda, 2005), the issue appears to be a complex one in a country such as Namibia where in many cases, the languages which students know best share few cognates with English. This is possibly reflected in the reluctance to translate individual words, as expressed by participants (see Chapter 4, Section 4.6). However, it seems to be worth considering whether a better developed knowledge of word derivation in English, especially from languages such as Latin, Greek and French, would provide Namibian L2 readers with a resource for deducing possible word meanings. The possibility that this strategy is not a familiar one to students in Namibia is reflected in the fact that participants' responses to the question "Do you try to link unknown words to known words?" were either a definite "No", or "Sometimes". Interestingly, the only respondents who

gave positive answers to this question were those who were most comfortable speaking Afrikaans, a language which shares numerous cognates with English.

5.2.2.2. Textual Properties Impeding Comprehension

In addressing the aim of this study, the English reading comprehension test served a twofold purpose. Firstly, incorrect responses to the questions on the selected texts served as pointers indicating potential sources of difficulty in each text, and secondly, the texts presented a number of different linguistic features in context for later discussion in the focus group interviews. The Coh-Metrix 2.1 analysis likewise pinpointed potential areas of difficulty by providing comparative measures for each text of the ten linguistic properties selected for the study, while the purpose of the manual analysis was to confirm and, where necessary, augment findings generated by both the above instruments. Since the aim of the three processes was a combined one, namely to locate textual properties which might impede English reading comprehension, the discussion which follows integrates findings from all three.

Based on views and theories discussed in the literature, the researcher anticipated that the language-related factors which would be most likely to impede comprehension in the twelve texts selected for the study were those which drew on more sophisticated linguistic understanding, such as complex sentence structure and anaphoric references. As indicated in Chapter 4, responses to questions in the reading comprehension test supported this notion, indicating that linguistic features such as sentence structure, including ordering of SVO and of information presentation, as

well as tenses and pronouns, were a frequent source of difficulty in processing the meaning of texts.

One reason why language features such as those described above might impede reading comprehension is suggested by several scholars as being that such features place high demands on working memory. The notion of working memory as a critical element in reading comprehension, especially with regard to L2 readers (Field, 2003; Van Dijk & Kintsch, 1983) was supported by the results of this study in several respects.

Firstly, results of the study supported the assertion by several scholars (Halliday & Hasan, 1976; Katan, 1999; Koda, 2005; Slobin, 2003) that the processing of anaphoric reference, particularly personal and deictic pronouns, involves complex processes which slow down the reading process and impede comprehension because they place high demands on working memory. In addition, the Coh-Metrix 2.1 analysis indicated that in general, study texts which participants perceived as easy to process, and for which they achieved higher scores in the reading comprehension test, contained a low incidence of personal pronouns compared to those study texts which were perceived as difficult. Furthermore, in response to questions in the reading comprehension test which required identification of appropriate references, participants often performed poorly.

Also supported by findings in this study was the influence on reading comprehension of complex sentence structure, including sentences containing embedded clauses or

where there were shifts in SVO ordering, such as when adverbial clauses preceded rather than followed the main clause. Again, such features are viewed by a number of scholars as placing demands on working memory and thus impeding comprehension, since processing requires the location of the subject of the main clause which then has to be retained in working memory while the other clauses are processed.

As was the case with vocabulary, as discussed in Section 5.2.2.1, these findings again highlight the fact that syntactic density is an important element in the processing of English texts. This means that in dealing with L2 students such as those in Namibia, educators should be made aware of this aspect, and be encouraged either to evaluate and select reading materials more carefully in this respect, or provide learners and students with more knowledge and practice to equip them to process more complex texts. However, once again, not all educators in Namibia may have the requisite training and/or knowledge to deal with this challenge.

5.2.3 Phase 3: Focus Group Interviews

Phase 2 of this study focused primarily on ten linguistic properties selected on the basis of discussion in the literature as having a potential influence on reading comprehension. However, in the light of the wide variety of factors acknowledged by scholars as playing a role in the reading comprehension process, it was clearly essential to explore the possible influence of impediments not identified in the first two phases of the study. The purpose of the focus group interviews was thus not only to corroborate or dispute the findings of the first two phases of the study, but also to bring to light any further issues which participants saw as having an influence on

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English reading comprehension. Discussion of the findings in Phase 3 is organised according to major themes which emerged from the focus group interviews.

5.2.3.1   Syntactic complexity

The findings in Phase 2 indicating that certain linguistic features were a frequent source of difficulty in processing the meaning of texts were supported by comments from participants in Phase 3 of the study, as was the notion that linguistic elements which placed the highest demands on working memory, as discussed in 5.2.2.2 above, would impede text processing.

5.2.3.2   Use of L1 in L2 reading comprehension

An issue which was not raised in the questionnaire survey and which could clearly not be investigated by means of the instruments used in Phase 2 of the study was the strategy used by some L2 readers of accessing the L1 during L2 reading. Comments of participants in the focus group interviews encompassed not only the question of translation of individual words, but also aspects of contrastive linguistics, as outlined in chapter 2, Section 2.8, in which a number of scholars describe certain linguistic properties of other language which differ from those of English.[29]

When asked during the focus group interviews whether they translated into their L1 while reading English, participants had a great deal to say, thus reflecting the degree of interest in this topic. The views expressed provide additional background against

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[29] Ameka, 2008; Downing, 1995; Haacke, 2006; Katan, 1999; Koda, 2005; Kramsch, 2008; Liddicoat & Curnow, 2008; Maleki, 2006; Miti, 2006; Möhlig & Kavari, 2008; Nurse, 2006; Nurse & Philippson, 2003; Ross, 2010; Slobin, 2003; Svorou, 2007.

which to evaluate information collected in the questionnaire survey, particularly with regard to the implications and effects on reading, and perhaps by extension, on education, of participants' multilingual status. Participants' comments supported Banda's (2003) assertion that certain concepts often do not have comparable labels in different languages, and that sociolinguistic and applied linguistic concepts cannot always be expressed in dictionary entries. Support was also indicated for the arguments of Celce-Murcia and Olshtain (2000), Katan (1999) and Koda (2005) that understanding may be impeded where differences in cultural perception give rise to lexical and conceptual disconnectedness, especially where specific concepts do not exist in a particular language.

It is noteworthy that several participants claimed to think in English when reading. This raises a point worth considering in the light of this study, namely that the majority of discussion on this topic in the literature centres around L2 readers who have a more well-developed knowledge of their L1, and have usually not had to learn to read in complex multilingual contexts such as those found in Namibia, as described in Chapter 4, Section 4.1. It may therefore be argued that L2 readers with a strong L1 background may be more likely to think in the L1, and hence to resort to translation when reading, as suggested in the literature, but Namibian readers such as participants in this study have come to depend more on English than on L1s in which either their language knowledge or their literacy skills, or both, are often not well developed.

Although participants appeared to have strong opinions on this issue, views differed widely, with no clear picture emerging, thus suggesting a need for more specialised research in this area. Clearly, a teacher in a multilingual classroom who has little or no knowledge of the various L1s of the learners cannot be expected to analyse and address difficulties rooted in language differences. Nonetheless, as a potential impediment to English reading comprehension, this aspect cannot be ignored.

5.2.3.3   Background Knowledge and Culture

Closely related to the issue of language differences is that of background knowledge and culture. As indicated in Chapter 2, Section 2.2.3, it is widely acknowledged by scholars that background knowledge is fundamental to comprehension for all the types of reading highlighted at the beginning of Section 5.2. Munby's (1978) taxonomy of reading skills includes the element of "interpreting text by going outside it", while Grabe's (1991) taxonomy includes the element of background knowledge, including world knowledge and cultural knowledge, both of which are highlighted by several scholars as playing a fundamental role in reading comprehension. It became clear from the focus group discussions in this study that background knowledge did indeed play a significant role in the processing of the study texts by participants. In some cases this background knowledge entailed what Van Dijk and Kintsch (1983) also refer to as knowledge of the world, as was the case with knowledge required, for example, for *Ideas in Action* and the extract from *The Great Gatsby*. For other texts, such as *Intelligence* and *Education in Namibia*, appropriate background knowledge was possibly gleaned through personal

experience, while for *Is Manliness Optional?* and *Hunters and Gatherers*, the requisite background knowledge was culture-related.

There was also some evidence indicating the relevance to a study of Namibian tertiary students of the notion that where the required schemata are lacking, the reader may activate the closest matching schema, and try to relate it to the text (Carrell, 1988). This appeared to be the case, for example, with some participants' processing of the extract from *The Great Gatsby*. With regard to L2 readers, this strategy may also, in effect, be culture related, since the closest matching schema may have cultural origins, as suggested by comments of participants as reported in Chapter 4, Section 4.7. The view of several scholars (Carrell and Eisterhold, 1988; Katan, 1999; Koda, 2005) that inasmuch as cultural background includes cultural values, differences between the culture of the reader and the writer in this respect may lead to comprehension difficulties, was also found to be true of participants in this study. This was clearly evident with regard to "*Is Manliness Optional?*" which was an example of a text which presupposed what Carrell and Eisterhold (1988) refer to as 'implicit cultural content knowledge'

Not unexpectedly, some evidence in the study indicated that similarly, where there was a match between the concepts discussed in the text and the cultural background of the reader, comprehension was facilitated, despite other textual constraints. It was surprising, however, that participants did not always perceive possible links between the content of a text and their own background and cultural knowledge until these

were pointed out to them, which suggests that training in this strategy might improve L2 readers' proficiency in English reading comprehension.

5.2.3.4   Effect of questions

Although a reading task which requires the answering of comprehension questions may be seen as somewhat artificial in that academic reading is not usually done for this purpose, such a task could arguably be incorporated under the overall category of reading for the purpose of locating specific information, and may thus incorporate both expeditious and careful reading, as described earlier.

The effect of different question types is discussed in Chapter 2, Section 2.6.3 from the perspective of the nature of the skills or knowledge being tested. Comments of participants in the focus group interviews corroborated the notion that the nature, or even the very presence, of questions in English reading comprehension tests may influence comprehension in that a reader might understand the text while not understanding a particular question, or that a question might cause misunderstanding where there had previously been none. Furthermore, the notion that the purpose of the reading activity may affect reading strategies and hence influence comprehension was also supported. In some instances, participants felt that if the answers to questions could be found by referring to general or background knowledge, there was no reason to look for answers in the text. It also became evident during the focus group discussions that the artificiality of reading for the purpose of answering comprehension questions was reinforced by techniques and strategies learned at school, such as reading the questions before reading the passage. Inasmuch as such

strategies focus the reader's attention on specific, predetermined information, they clearly neither encourage nor measure global understanding of the text to any great extent. Similarly, the commonly taught strategy of targeting key words may sometimes mislead L2 readers with regard to understanding the global meaning of a text, or may cause a reader to regard reading of the whole text as unnecessary.

5.2.3.5 Topic Interest

A further unanticipated yet interesting view which came to light during the focus group interviews was that English reading comprehension was influenced by the degree of interest which the text held for the reader. Participants' comments indicated that familiarity of topic may not always have a positive effect, since readers might lose interest in subject matter which they have encountered so often that it has become hackneyed. This evidence possibly gives pause for thought on the part of educators who make assumptions, albeit well-meaning assumptions, about what may be interesting to students and learners.

Closely related to topic interest is another unexpected issue mentioned by participants, namely that comprehension may be influenced by expectations generated by the title of a text. While this issue is not directly related to language and is thus beyond the scope of this study, it is nonetheless worth considering in terms of the activation of schemata and the relevance of background knowledge, as described in Chapter 2.

5.3 Summary

With regard to the role of language background and language repertoire in L2 reading comprehension, the literature explored in the secondary research phase of the study strongly supported the notion that background knowledge, particularly culture-related aspects, is an important element in the reading process. In addition, findings in the study also confirmed the significant role in reading comprehension of factors such as title, topic interest and test, task or question type. While the latter are not specifically language-related, these findings were nonetheless relevant to this study in that they highlighted the possibility that in some instances where language factors are thought to underlie difficulties in reading comprehension, the source of difficulty may sometimes, in fact, lie elsewhere.

The secondary research in this study also brought to light a considerable number of models and theories supporting the notion that reading comprehension is influenced by a variety of factors related to language constructions and usage. Results of the empirical phase of the study, in which specific aspects were explored, indicated that the reading comprehension of participants was indeed influenced by several factors discussed by scholars in the field. Among the most widely discussed elements affecting reading comprehension was vocabulary, as outlined in Chapter 4, including the ability to deal with unfamiliar words encountered in text. As indicated in the literature, a number of scholars support the notion that struggling with word-level tasks places a load on working memory and uses up valuable cognitive space that could be allocated to deeper levels of text analysis. Furthermore, since the strategy of using contextual cues to predict the meaning of new words is often inadequate and

may result in erroneous or superficial understandings of key terms, a basic knowledge of syntax and morphology can facilitate understanding. Findings of this study further supported the premise that English reading comprehension might be influenced by certain syntactic properties, particularly those which make greater demands on working memory, such as anaphoric reference and distance between main verb and subject in a clause.

Although not specifically tested in this study, some facets of contrastive linguistics, such as differences in sentence structure or information structure, also came to light as being possible impediments to comprehension.

Following the discussion on findings in Chapter 5, Chapter 6 will present conclusions, recommendations and suggestions for further research generated by these findings.

CHAPTER 6:   CONCLUSION AND RECOMMENDATIONS

In this chapter, the findings of this study will be related to the aims and goals laid out at the outset of the study, and the limitations of the study will be discussed. The chapter will further discuss the implications of this research and will present recommendations as well as suggestions for further research.

6.1 Introduction

This study was inspired by the need to determine reasons why the reading and processing of English texts poses so great a challenge to so many Namibian learners and students. The issue is of particular importance when one considers the crucial relationship between reading comprehension and academic achievement (Baker, 1985, 1989; Brown & Day, 1983; DuBoulay, 1999; Wood, 1982, as cited in Collins, Ongwuegbuzie & Jiao, 2002). This relationship is highlighted in a study by Collins and Onwuegbuzie (2002) indicating that both reading comprehension and reading vocabulary scores were moderately significant predictors of graduate students' understanding of course reading materials, and furthermore, that many graduate students demonstrated inadequate comprehension monitoring and metacognitive awareness in their reading of course textbooks (Collins et al. 2002). If this is true of graduate students, as shown in these findings, it may be argued that it is likely to be true also of undergraduate students, and that reading comprehension, particularly with regard to reading materials in English, might play a similar role in the academic performance of students in Namibia entering university.

According to a report by the National Institute of Child Health and Human Development (2000), "students demonstrate reading comprehension when they engage in a reciprocal process between the text and reader in order to construct meaning". The secondary research carried out in this study attested to the fact that reading is a complex undertaking that involves many levels of processing, with arguably the most important goal being comprehension, both explicit (requiring only text-based recall of information) or implicit (requiring processing of information, inferring and drawing conclusions). In an academic environment particularly, students clearly need to be able to comprehend not only various forms of text, but also instructions and questions so as to be able to respond appropriately; therefore, where students' reading comprehension is inadequate for these tasks, it is essential that factors impeding the comprehension process be identified. Since most texts encountered by Namibian tertiary students are written in English, which for the majority of students is not their first language or mother tongue, language-related factors clearly have a potential influence on English reading comprehension.

One of the main goals of this study, therefore, was to test the hypothesis that specific English language constructions and aspects of usage influence the English reading comprehension of students in Namibia enrolled in a first year English course at university.

Also related to the issue of the role of language in reading comprehension is the language background of the readers themselves. Since reading is a reciprocal process, an investigation of factors related to text alone would clearly yield an

unbalanced, one-sided assessment of the issue. In a multilingual context such as Namibia, language diversity cannot be ignored; it should, in fact, be a primary consideration in discussions and decisions impacting education. For this reason, a further goal of this study was to investigate whether proficiency in English reading comprehension of students in Namibia is related to their language background, including factors such as their language repertoires.

To address these aims, intensive secondary research was first carried out, aimed at providing an overview of different perspectives on reading comprehension as well as investigating as wide a variety as possible of language related factors influencing the reading comprehension process. Both quantitative and qualitative methodologies were then employed to gather data that would provide empirical evidence to either support or contradict hypotheses arising from the secondary research. The empirical investigation specifically analysed the effect on processing of ten selected linguistic properties in twelve selected English texts, and explored the views and experiences of a group of students enrolled for a first year English course at UNAM regarding language related difficulties in English reading comprehension.

6.2 Limitations of the findings

The researcher fully acknowledges that this research represents only an initial step in investigating possible language-related reasons for English reading comprehension difficulties among students at UNAM, since it has been subject to the following limitations:

The empirical portion of the study encompassed a single group of participants which, although relatively large, included only students following programmes in the Humanities or in Education. While it could be argued that students following programmes in Law, Business or the Sciences often come from backgrounds similar to those of participants in the study, the possibility should be kept in mind that students in these other programmes may often encounter written texts of a different nature to those investigated in this study, and may arguable bring a variety of different purposes, skills and knowledge to the process of comprehending such texts.

As demonstrated in the secondary research, the number of linguistic properties which may influence reading comprehension is so vast and so complex that it would be extremely difficult to research all of them in one study. This study was therefore limited to only ten linguistic properties, whereas many of the other properties or features discussed in the literature could also play a significant role in the reading comprehension process.

The literature further indicated that a number of elements affecting reading comprehension are related to cognitive psychology and are therefore beyond the scope of this study. Furthermore, a study such as this does not encompass the considerable individual variation among participants with regard to variables such as reading proficiency, reading skills and strategies, motivation and so forth. Also beyond the scope of this study were areas which in themselves constitute significant fields of research, such as deeper cultural issues in L2 language processing.

Despite the limitations outlined above, however, the study nevertheless provides valuable insight into a number of different language-related factors influencing the English reading comprehension of Namibian tertiary students. The fact that the sample in this study comprised respondents who were L1 speakers of thirteen different languages used in Namibia allowed for a wider language perspective in exploration of English reading comprehension difficulties, and thus provided a more accurate reflection of the wider population of the study.

6.3   Researcher Reflections

For this researcher, insight garnered during the research process led to a shift in perspective on the nature and purpose of students' and learners' processing of English texts.

Like many other English teachers in educational institutions in Namibia, and probably also elsewhere in Southern Africa, the researcher was conditioned through training and assimilation to adopt a traditional approach to teaching and assessing English reading comprehension. In this approach, generally speaking, the main aim of English reading comprehension activities is to assess students' 'understanding' of a particular text by requiring them to give 'correct' responses to a set of questions on the passage. Incorrect responses are then regarded as evidence that the student did not understand some element of the passage. Furthermore, students are trained in strategies aimed at finding answers to particular questions rather than at understanding the passage as a whole.

What is often not taken into consideration, however, is that activities and assessment processes such as these do not represent authentic reading contexts, and furthermore, are subject to a number of limitations; firstly, questions are not always objective and can be coloured by the perceptions of the person setting the assessment; secondly, processing of a particular passage may require background knowledge which some students may not necessarily possess; and thirdly, an incorrect response does not necessarily indicate lack of comprehension of the passage, but may merely be a result of failure to understand a particular question. While the latter is, in itself, an important consideration, it is also constrained by subjectivity.

Findings in this study thus led the researcher to question the efficacy of the traditional approaches to analysing and addressing Namibian tertiary students' difficulties in English reading comprehension which are the focus of the study, and to reflect rather on the possible development of new and innovative methods based on the theoretical foundations suggested by the findings presented in the study.

A further reflection prompted by the findings of this study is on the question of why difficulties in comprehending English texts are so prevalent among Namibian tertiary students in particular; the results of the study indicate that Namibian tertiary students do not appear to be more significantly affected by commonly identified constraints in L2 reading comprehension than L2 readers from other language communities, yet the perception persists that the reading comprehension skills of many students in Namibia are less than adequate. Furthermore, according to the literature, bilingualism, and by extension, multilingualism is thought to enhance the

development of a number of cognitive skills which should facilitate reading

comprehension; however, this does not always appear to be true of students in

Namibia. Thus, one might posit that in addition to constraints common to other L2

readers, constraints specific to students in Namibia might also exist.

Finally, in the specific context of examining impediments to the English reading

comprehension of students in Namibia such as participants in this study, the

researcher was prompted to ask the following questions:

- Since many educators in Namibia are also non-native speakers of English, do
  they posses adequate knowledge of the language to be able to anticipate
  reading comprehension difficulties arising from factors such as those brought
  to light in this study?

- Do Namibian educators, themselves, always process English texts correctly? If
  so, might they not assume that students have a grasp of English comparable
  to their own, when in fact this is very often not the case?

- Do lecturers and teachers take text density and linguistic accessibility into
  account when assigning reading?

Questions such as these indicate that while the findings of this study give useful

insight into the multi-dimensional, iceberg-like nature of the reading comprehension

process and potential sources of English reading comprehension difficulties among

Namibian tertiary students, more intensive studies are needed. Furthermore, the results of the study highlight the need for more extensive studies comprising representative samples of students from other academic fields, as well as smaller studies designed to identify causal relations. In section 6.4, therefore, areas of further research will be suggested.

6.4   Suggestions for Further Research

Findings of this study indicate the following possibilities for further research with regard to the difficulties experienced by Namibian tertiary students with regard to English reading comprehension:

- Since one of the limitations of this study was that it did not include students from faculties other than Humanities and Education, a large-scale, follow-up study designed to replicate these analyses and allow for external validity should be done to investigate the nature of language-related impediments to English reading comprehension among students in other faculties.

- In addition to the ten linguistic properties investigated in this study, there is a large number of other linguistic properties which may potentially influence English reading comprehension. More intensive causal studies should be carried out to test the influence on reading comprehension of specific properties, focusing on one at a time, with a view to isolating those which pose the greatest challenges to Namibian tertiary students in comprehension of English texts.

- Scholars specialising in Namibia's national languages should collaborate in studies to explore whether, and the extent to which, linguistic differences

between the L1s or mother-tongues of readers and the language of reading materials impacts on comprehension.

- Several scholars have approached the issue of reading comprehension from the standpoint of cognitive psychology. A study of the English reading comprehension skills and strategies of students in Namibia carried out by linguists in partnership with psychologists may yield valuable insight into specific impediments to these students' processing of English texts.

- Since medium of instruction is a key issue impacting education in Namibia, a causal study of medium of instruction at each individual school level (including pre-school, primary and secondary levels) should be conducted to isolate causal relations with regard to the development of English reading proficiency and vocabulary.

- This study highlighted a number of complex phenomena deeply embedded in a cultural context. Since the literacy development of students in Namibia is moulded by the multicultural context in which they grow up, a more intensive study of the impact of culture on English reading comprehension should be conducted.

- Issues which are less directly related to text properties, such as processing of metaphor in texts, should be explored.

- More intensive studies should be carried out to investigate in more depth the efficacy of task and question type in testing reading comprehension, with a view to developing assessment measures which are not subject to the constraints identified in this study and which would thus allow for more realistic evaluation of actual comprehension during authentic reading tasks.

6.5 Contribution of the study

Political, social and educational changes in Namibia in the years since Independence have resulted in a shift in the demographics of undergraduate students, and engendered an increased focus on the expectations and demands of academic study at undergraduate level. An important component of this focus is that in the context of English-medium instruction, students in Namibia engage with English texts which often incorporate language which is unfamiliar, even to readers whose English proficiency is high, and these students thus face an additional challenge in negotiating and constructing meaning in texts written in a language other than their own.

While there is considerable concern regarding the problem of English reading and reading comprehension in Namibia, this is the first study done to address the problem in more depth, and to present research results specifically related to students in this country. The study has led the way in identifying challenges in this area which need to be addressed, as laid out in Section 5.2.

At a general level, the study contributes importantly in drawing attention to the numerous and complex factors underpinning L2 reading comprehension, as attested to by the growing body of research in the field, and addressing the question of whether the constraints in English reading comprehension in L2 settings brought to light in previous studies would be equally relevant to students in Namibia.

More specifically, the study contributes to deeper understanding that the disjunction between the expectations of educators that students should supplement study with wider reading, and the reality that many students do not do so, may partly be due to English reading comprehension difficulties and the extent to which students are linguistically ill-equipped to fulfil these expectations.

The theoretical contribution of the study is the possible shaping of approaches to dealing with impediments to English reading comprehension, both for educators in the field and for learners and students, through promoting understanding that if traditional approaches have proved to be inadequate, deeper causes should be sought, and these might lie in a number of different areas.

6.6   Recommendations

Since the development of reading skills, including reading comprehension, begins in early childhood, the issue of improving the proficiency in English reading comprehension of Namibian leaners and students must be addressed on a number of levels. Firstly, since the teachers themselves play a pivotal role in developing learners' English reading skills, it is vital that they are adequately equipped to do so. In the Namibian context, this means that teachers should be knowledgeable and competent in all areas of English, including phonology, morphology and syntax, especially as related to the processing of English texts. Appropriate training should be incorporated into teacher training both at educational institutions and in programmes such as ETSIP and the ELPP, or through workshops for in-service teachers.

Furthermore, especially at upper primary levels and beyond, teachers should place more emphasis on training learners to deal with difficulties in English reading comprehension by making the learners aware of what strategies they use when reading English and suggesting what other strategies may be effective, and then helping them to choose the appropriate strategy for a specific problem. This may include strategies such as analysing morphological, syntactic or lexical properties of difficult sentences, ensuring that one has the requisite background knowledge to make sense of a text, and making connections between the text and one's own knowledge (e.g. own experience, something previously read or learned, real world issues).

Since implementation of the recommendations outlined above fall within the province of policy makers and curriculum designers, it is further recommended that findings of this study be made available to responsible parties in government and educational institutions.

6.7   Summary

Chapter 6 concludes this study. Using a mixed method research design, the study explored language-related factors underpinning difficulties experienced by Namibian tertiary students in comprehension of English texts. The theoretical framework proposed that reading comprehension may involve top-down, bottom-up and/or interactive processing, as well as background and cultural knowledge, schema activation and processing in working memory. It further proposed that a study of

reading should take into consideration the various types and purposes of reading, and the different skills required in different reading contexts. The literature implied that English reading comprehension was influenced by a number of different factors, including vocabulary, background and cultural knowledge, discourse and information structure, and morphological and syntactic structures in English, as well as by differences between the linguistic properties of English and those of various other languages used in Namibia.

While themes varied as to impediments to English reading comprehension as related to particular linguistic properties of specific texts and as perceived by participants in this study, data gathered in the three phases of the empirical portion of the study suggested the underlying conclusion that a fundamental constraint in the English reading comprehension of Namibian tertiary students, in common with other L2 readers, is lack of vocabulary and of linguistic knowledge which would enhance comprehension by facilitating the processing of unfamiliar words and complex sentence structures. Findings further suggested, however, that the fundamental constraints mentioned above, while undoubtedly contributing to English reading comprehension difficulties, may not adequately account for the fact that so many Namibian learners and students repeatedly perform poorly in English reading comprehension, and that further research is needed to investigate in more depth the possibility of causes related specifically to the Namibian context.

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ADDENDUM A

QUESTIONNAIRE FOR STUDENTS

FOR QUESTIONS WHICH ASK YOU TO WRITE IN INFORMATION, PLEASE PRINT THE INFORMATION IN THE SPACE PROVIDED. FOR OTHER QUESTIONS YOU ARE ASKED TO MARK A SQUARE.

GENDER	Male
	Female

AGE IN YEARS [ ]

1   PRIMARY SCHOOL (GRADE 1)   _____

    REGION   _____

2   SECONDARY SCHOOL (GRADE 12)   _____

    REGION   _____

3   WHICH LEVEL OF GRADE 12 ENGLISH EXAM DID YOU DO?

HIGCSE	IGSCE	OTHER

4   SYMBOL OBTAINED FOR ENGLISH IN GRADE 12   [ ]

5   WHAT OTHER LANGUAGE/S DID YOU STUDY IN GRADE 12?

    _____

WHICH LEVEL OF GRADE 12 EXAM DID YOU DO FOR THE OTHER LANGUAGE?

HIGCSE	IGCSE

SYMBOL OBTAINED FOR THE OTHER LANGUAGE IN GRADE 12   [ ]

The following questions are about languages spoken by you and your family.

6 What was the first language you spoke when you were a child? (MARK ONE)

English		01
Afrikaans		02
Oshiwambo		03
Otjiherero		04
Nama-Damara (Khoekhoegowab)		05
Silozi		06
Other (Write in)		07

7 What language do the people in your home usually speak?

English		01
Afrikaans		02
Oshiwambo		03
Otjiherero		04
Nama-Damara (Khoekhoegowab)		05
Silozi		06
Other (Write in)		08

8 What <u>other</u> language did you speak when you were a child – before you started school? (MARK ONE. IF MORE THAN ONE, MARK THE ONE YOU SPOKE MOST OFTEN).

I spoke no other language		01

In addition to my first language (mother tongue), when I was a child I also spoke

nglish		02
Afrikaans		03
Oshiwambo		04
Otjiherero		05
Nama-Damara (Khoekhoegowab)		06
Silozi		07
Other (Write in)		08

9 What other language is spoken in your home? (MARK ONE. IF MORE THAN ONE OTHER LANGUAGE IS SPOKEN, MARK THE OTHER LANGUAGE WHICH IS
SPOKEN **MOST OFTEN**.

No other language is spoken in my home		01

The other language which is often spoken in my home is

English		02
Afrikaans		03
Oshiwambo		04
Otjiherero		05
Nama-Damara (Khoekhoegowab)		06
Silozi		07
Other (Write in)		08

10 Which language do **you** feel most comfortable using?

English		01
Afrikaans		02
Oshiwambo		03
Otjiherero		04
Nama-Damara (Khoekhoegowab)		05
Silozi		06
Other (Write in)		07

11 Which NON-ENGLISH language do **you** feel most comfortable using?

Afrikaans		02
Oshiwambo		03
Otjiherero		04
Nama-Damara (Khoekhoegowab)		05
Silozi		06
Other (Write in)		06

12 What language do you <u>usually</u> speak <u>now</u>? (MARK ONE).

English		01
Afrikaans		02
Oshiwambo		03
Otjiherero		04
Nama-Damara (Khoekhoegowab)		05
Silozi		06
Other (Write in)		07

13 With regard to the language you regard as your first language (the language you feel most comfortable using), how well do you do the following? (MARK **ONE** SQUARE FOR EACH LINE).

How well do you…	Very well	Fairly well	Not very well	Not at all
a. understand your first language when people speak it?				
b. speak your first language?				
c. read your first language?				
d. write your first language?				
	01	02	03	04

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The following questions are about your problems with **English**?

14 With regard to English, how well do you do the following? (MARK **ONE** SQUARE FOR EACH LINE)

How well do you….	Very well	Fairly well	Not very well	Not at all
a. understand spoken English?				
b. speak English?				
c. read English?				
d. write English?				
	01	02	03	04

15 Which of the following statements describes **your background in English**? (you may tick more than one answer)

		YES	NO
16	I have no special English background.		
17	One or both of my parents are speakers of English as their first language		
18	I have had schooling (6 months or more) in country where English is most people's first language		
19	I have a different background in English. (Please describe)_____		
		01	02

Reading and comprehension

When I read an English text ….	Always or almost always	Most of the time	About half the time	Sometimes	Never
20 I find that there are words which are unfamiliar to me.					
21 I find that I don't understand what the passage is mainly about					
22 I find that there are concepts which are unfamiliar to me.					
23 I find that I don't understand some ideas because they come from another culture.					
24 The way I pronounce some of the words affects my understanding of those words.					

25	I am confused by words which have more than one possible meaning.					
26	I am confused by sentences which are too complicated					
		01	02	03	04	05

27 How often do you read English books, magazines, newspapers etc.? (Tick **only one** answer)

Never	Sometimes	About once a month	About once a week	A few times a week	Some almost every day	A lot every day
01	02	03	04	05	06	07

In the boxes below you will find descriptions of different levels of reading proficiency, Please read through all of them, and then tick in front of the box that best describes **your level** of English reading proficiency. (Give **only one** answer)

28	I can read and understand common names, words, and very simple sentences, such as on notices, on posters, or in catalogues.		01
	I can read short and simple texts. I can find the information I need in everyday texts such as advertisements, descriptions, menus, and timetables. I can understand short and simple personal letters.		02
	I can read and understand texts in everyday language at home or at university. I can understand descriptions of events, feelings, and wishes in personal messages.		03
	I can read articles and reports about current topics and events where the writer is expressing a point of view or an attitude. I can understand modern literary texts.		04
	I can understand long and complicated factual or literary texts and notice differences in style. I can understand specialised articles and long articles from subject areas I am not familiar with or interested in.		05
	I can easily read and understand almost all kinds of written texts, even abstract texts with a complicated structure and language, such as in manuals, specialised articles, or works of literature.		06

These are questions about the difficulties you experience when you read English library books and text books .

Give **only one answer** on the scale from 1 to 7 **per question** about your reading of English library books and text books.	1	2	3	4	5	6	7
29	How quickly do you read English texts?	1- Very slowly	2	3	4	5	6	7- Quickly and easily
30	How many **words** do you understand in English texts?	1- Very few	2	3	4	5	6	7-All
31	To what extent you find the **sentences** in the English texts difficult to understand?	1- All are impossible to understand	2	3	4	5	6	7-All are understandable
32	To what extent do you find the **contents** of English library books and textbooks understandable?	1- Everything is Impossible to understand	2	3	4	5	6	7- Everything is understandable

QUESTIONS ABOUT YOUR READING HABITS IN <u>YOUR FIRST LANGUAGE</u> (The language you feel most comfortable using - see Q13 above)

33 How often do you read books, magazines, newspapers etc. in your first language? (Give only one answer)

Never	Sometimes	About once a month	About once a week	A few times a week	Some almost every day	A lot every day
01	02	03	04	05	06	07

In the boxes below you will find descriptions of different levels of reading proficiency. Please read through all of them, and then tick in front of the box that best describes your level of reading proficiency in your first language. (Give only one answer)

34	I can read and understand common names, words, and very simple sentences, such as on notices, on posters, or in catalogues.		01
	I can read short and simple texts. I can find the information I need in everyday texts such as advertisements, descriptions, menus, and timetables. I can understand short and simple personal letters.		02
	I can read and understand texts in everyday language at home or at university. I can understand descriptions of events, feelings, and wishes in personal messages.		03
	I can read articles and reports about current topics and events where the writer is expressing a point of view or an attitude. I can understand modern literary texts.		04
	I can understand long and complicated factual or literary texts and notice differences in style. I can understand specialised articles and long articles from subject areas I am not familiar with or interested in.		05
	I can easily read and understand almost all kinds of written texts, even abstract texts with a complicated structure and language, such as in manuals, specialised articles, or works of literature.		06

These are questions about the difficulties you experience when you read novels, textbooks, newspapers, or magazines in **your first language (the language you chose in question 13).**

Give only one answer on the scale from 1 to 7 per question about your reading of English texts.		1	2	3	4	5	6	7
35	How quickly do you read texts in your first language?	1 Very slowly	2	3	4	5	6	7 Quickly and easily
36	How many **words** do you understand in texts in your first language?	1Very few	2	3	4	5	6	7 All
37	To what extent you find the **sentences** in texts in your first language difficult to understand?	1- All are impossible to understand	2	3	4	5	6	7 All are understandable
38	To what extent do you find the **contents** of texts understandable in your first language?	1- Everything is impossible to understand	2	3	4	5	6	7 Everything is understandable

These are questions about how you handle **unfamiliar English words**
What do you usually do when you find unfamiliar words when reading English novels, textbooks, magazines and newspapers, or on the Internet? Indicate on the scale how often you did each of the following. (Give only one answer per question).

	Give only one answer on the scale from 1 to 7 per question about what you do when you find unfamiliar words in a text.	1 Never	2	3	4	5	6	7 Very often
39	Consult a dictionary	1	2	3	4	5	6	7
40	Guess the meaning of the word using my knowledge of the subject.	1	2	3	4	5	6	7
41	Guess the meaning of the word from the reading context.	1	2	3	4	5	6	7
42	Ask a teacher.	1	2	3	4	5	6	7
43	Ask my parents.	1	2	3	4	5	6	7
44	Ask other students.	1	2	3	4	5	6	7
45	Continue reading.	1	2	3	4	5	6	7
46	Give up reading.	1	2	3	4	5	6	7

47 Do you have any other comments on things which cause difficulty for you when you read English?

_____

_____

_____

_____

This is the end of the questionnaire. Thank you **very much** for your help!!!

PILOT ENGLISH READING COMPREHENSION TEST

Oral instructions: Use information from the passage, not your own ideas.
Don't guess. Rather leave a blank.

Zambia's Lukando wins M-Net Face of Africa '10

In a stylish haute couture showcase on Saturday, 22-year-old Lukando Nalungwe from Zambia joined an exclusive group of winners when she was named the eighth M-Net Face of Africa. The striking model scooped US$50 000 from M-Net along with a modelling contract from O Model Africa and skincare products for 12 months from Iman Cosmetics.

Reinvention and innovation are hot buzzwords in the global fashion community and in a two-hour show, screened live from Lagos to 47 countries across Africa, M-Net presented a bold new vision for the Face of Africa final, opting for an edgier version of a traditional runway show and presenting the models on a black, floor-based runway in a contemporary warehouse. With the final themed to resemble the loading warehouse of an art museum, where precious gallery pieces are prepared for display, the staging included massive cargo boxes stamped with African destinations with huge gold frames that showcased the fashion and the finalists and packaging tape demarcating the runway from the show's seated guests, it was a uniquely fresh approach to showcasing Afro-chic expression.

Hosted by Studio 53's Fareed Khimani (Kenya) and former Face of Africa Kaone Kario (Botswana) with a guest appearance by last season's Face of Africa Kate Menson (Ghana), the finale included entertainment from Nigerian superstar D'banj belting out his hits 'Suddenly' and 'Fall in Love'. Meanwhile soulful South African songstress Lira, shimmering in green silk, showed why she's one of Africa's rising stars with brilliant performances of two of her hits – 'Feel Good' and 'Believer'.

But the night belonged to the Top 10. Showing how much they've learnt during the Face of Africa search, the Face of Africa Top 10 hit the catwalk with confidence and grace as they strode down the catwalk resplendent in garments designed by the best of African designers. And in living up to its reputation for merging African design with the latest in international trends, the Face of Africa final included the unmistakable style of Christian Lacroix, Versace and Emmanuel Ungaro while jewellery maestro Chris Aire brought his signature style to the fashion accessories utilised.

(Adapted from The Namibian, 9 February, 2010)

A *Are the following statements true (write T) or false (write F)*

According to the passage…
1. The M-Net Face of Africa show is a beauty competition.   ____

2. Reinvention and innovation are words which describe the global fashion

    community.   ____

3. New ideas were used in the runway show.   ____

4. The main theme for the decorations was Africa.   ____

5. Kate Menson was one of the hosts.   ____

6. Two famous singers provided entertainment.   ____

7. Only the best African clothing designs were included in the show.   ____

8. The Top 10 means the 10 best fashion designs.   ____

B *Choose the best answer, and circle the number of the answer that you have chosen:*

The passage tells us about …

1. how Lukando Nalungwe won the M-Net Face of Africa competition.

2. various interesting and exciting things that happened at the M-Net Face of Africa show.

3. the best fashion designs and entertainment at the M-Net Face of Africa show.

_____

Is Manliness Optional?   By Harvey Mansfield

Today the very word "manliness" seems obsolete. The women's revolution has succeeded to an amazing degree. Our society has adopted, quite without realizing the magnitude of the change, a practice of equality between the sexes never before known in human history. My intent is not to stand in the way of this change. Women are not going to be herded back into the kitchen by men. But we need to recognise that there have been both gains and losses in this revolution.

Contemporary feminists, and the women they influence, have essentially a single problem with manliness: that it excludes women.

Though the word is scarce in use, there is an abundance of manliness in action in the world today. Young males still pick fights, often with deadly weapons. What we suffer from today, is a lack of intelligent criticism of manliness. Feminism has undermined, if not destroyed, the counterpart to manliness – femininity – and with it the basis on which half the population could be sceptical of the excesses of manliness.

Of course, women are still women. While they want men to be sensitive to women, they don't necessarily want them to be sensitive in general. That's why the traditional manly male – who is protective of women, but a sorry flop when it comes to sensitivity – is far from a disappearing species.

The "sensitive male" who mimics many female emotions and interests, while discarding the small favours men have traditionally done for women, is mostly just a creation of contemporary feminists who are irritated with the ways of men, no longer tolerant of their foibles, and demanding new behaviour that would pave the way for ambitious women. Feminists insist that men must work harder to appreciate women. Yet they never ask women to be more understanding of men.

Traditionally, the performance of a man's duties has required him to protect and support his family. To be a man means to support dependents, not merely yourself.

But the modern woman above all does not want to be a dependent. She may not have thought about what her independence does to the manliness of men (it might make men more selfish). And she may not have considered carefully whether the protection she does without will be replaced by sensitivity, or by neglect.

Published in Real Men: They're Back September 2003

A *Are the following statements true (write T) or false (write F)*

According to the passage…

1. The word 'manliness' is an important word.   ____

2. There has never been equality between the sexes.   ____

3. There has been a very big change in the role of women in society.   ____

4. Many men still show 'manliness' in the world today.   ____

5. Because of the women's revolution, femininity has become less valued.

____

6. Women still want males to be 'manly'.   ____

7. Feminists want men to share women's interests, but not show them any

   special attention.   ____

8. There are possible disadvantages resulting from women's independence.

____

9. An independent woman will still have the protection of a man.   ____

10. A man might stop supporting or caring for a woman who wants to be

   independent.   ____

B *Choose the best answer, and circle the number of the answer that you have chosen:*
The passage is about

1.   equality for women

2.   the attitudes of modern women

3.   the attitudes of feminists regarding the roles of men and women

_____

The Forgotten: Anti-Imperialism, Nationalism, Postcolonialsim

It is necessary to look at history in a more, not less, universal way: almost all forms of political theory generated over the past two hundred years are complicit in their dismissal of non-Western cultures. The world has generally been viewed through the lens of a tiny fraction of humanity. Africa, Asia, and Latin America have never really been part of the discussion. No wonder new demands for recognition in the aftermath of World War II should have arisen from those who were neither white, Christian, nor Western. New spiritual values, new existential forms of self-identification, and new national hopes would become intrinsic elements in the struggle against Imperialism and colonialism. These would indeed become apparent in the writings and influence of diverse political figures like Mahatma Gandhi, Frantz Fanon, and Che Guevara.

World War II transformed the three great continental mass movements. Arguably of even greater international significance was the impetus it provided for what would become the liquidation of the colonial empires of Belgium, Britain, France, Holland, and other Western nations. This process of decolonization indeed transformed the globe.

The anti-imperialist struggle generated an explosion of revolutionary enthusiasm, a genuine sense of shame among many intellectuals in the imperialist nations, and an assault on the traditional assumptions underpinning Western hegemony [leadership]. It brought attention to the obvious: economic progress along the Western model has produced untold misery for a great portion of the globe.

With the passing of more traditional economic and political forms of imperialist exploitation, however, it soon enough became a matter of the ways in which the newly liberated nations would understand themselves in relation to their own oppressed constituencies as well as to the world of the former masters.

Various partisans of "postcolonial theory" have, in this regard, sought to reinstate the experiences of those excluded from Western culture, and even their own, without necessarily insisting upon the return to a premodern past. This new trend has been marked by an increasing concern with the cultural, the noninstitutional, and the existential moment of liberation. (From Ideas in Action, by S.E. Bonner)

A *Are the following statements true (write T) or false (write F)*

According to the passage…

1. In the past, political theories were usually based on Western cultures.   ____

2. Non-Western cultures form a small part of the world's population.   ____

3. After World War II, non-western societies began to demand recognition.   ____

4. Western societies developed new forms of self-identification, and new national hopes.   ____

5. Decolonization began before World War II.   ____

6. All people in the imperialist nations opposed the anti-imperialist struggle.   ____

7. The Western model brought economic progress to the whole world.   ____

8. Nations which have gained independence still face political challenges.   ____

B *Choose the best answer, and circle the number of the answer that you have chosen:*

The passage is about…

    1. how non-Western countries have become independent.

    2. factors which have contributed to the struggle of non-Western societies to become liberated.

    3. different political theories about post colonialism.

_____

Education in Namibia

Judging by the 2009 educational outcomes, Namibia continues to be recklessly wasteful with the futures of its younger generations and the development prospects of the country.

    With last year's exam results out, indications are that once again roughly half of grade 10s and 12s, who failed to make the pass grade, have been dumped from the system to either fend for themselves through part-time schooling or to flounder in a society with very few job opportunities, even for those who are qualified. Of those full-time pupils who made it through grade 12, only 21 percent attained the requisite 23 points to garner a place at a tertiary institution, while the rest just barely scraped through to be able to say they've completed 12 years of formal schooling.

    The 2009 results suggest that for all the talk of educational reform and improvement over the last half decade or so, the education system continues to fail to provide some respite for a long-suffering society already stumbling under the weight of a plethora of rampant social ills, which the discarding of a mass of young people from the system on a yearly basis only goes to deepen.

    The problems of the formal education sector are multi-faceted and the effects of poor teaching are compounded by limited resources and such external factors as high levels of endemic poverty, especially in rural areas, as well as low levels of general morale as a result of this. The bottom line is that the overall situation in the country is not conducive for producing higher quality education sector outcomes. What all this adds up to in the end is a deepening of the bleakness of the prospects of school leavers, whether graduating or dropping out.

    This desperate situation is exacerbated by the paucity of employment opportunities, both skilled and unskilled, in the country for which young people have to compete. The point is that there just aren't nearly enough jobs, or any other opportunities, in the country to mitigate the failures of the education system and young people are literally left destitute.

 (Adapted from Stupid in Namibia by Frederico Links, Insight, February 2010)

A *Are the following statements true (write T) or false (write F)*

According to the passage…

1. The Namibian educational outcomes for 2009 developed the prospects of the
   country.   ____

2. Half of the Grade 10s were treated roughly.   ____

3. All learners who failed will continue with part-time schooling.   ____

4. There are enough job opportunities in Namibia for people who are qualified. ___

5. The majority of Grade 12s passed the exams in 2009.   ____

6. People have been discussing the education problem since independence. ____

7. Discussions about educational reform have improved the education system in
   Namibia.   ____

8. Poverty is the main cause of problems in education in Namibia.   ____

B *Choose the best answer and circle the number of the answer that you have*
chosen:

The main topic of the article is that …

  1. many learners fail because they come from rural areas.

  2. learners who pass Grade 12 cannot find jobs.

  3. young people find it difficult to get jobs because of poor education.

_____

The Valley of Ashes

   About half way between West Egg and New York the motor road hastily joins the
railroad and runs beside it for a quarter of a mile, so as to shrink away from a certain
desolate area of land. This is a valley of ashes - a fantastic farm where ashes grow
like wheat into ridges and hills and grotesque gardens; where ashes take the forms of
houses and chimneys and rising smoke and, finally, with a transcendent effort, of
ash-grey men, who move dimly and already crumbling through the powdery air.
Occasionally a line of grey cars crawls along an invisible track, gives out a ghastly
creak, and comes to rest, and immediately the ash-grey men swarm up with leaden
spades and stir up an impenetrable cloud, which screens their obscure operations
from your sight.
   But above the grey land and the spasms of bleak dust which drift endlessly over it,
you perceive, after a moment, the eyes of Doctor T. J. Eckleburg. The eyes of Doctor
T. J. Eckleburg are blue and gigantic - their retinas are one yard high. They look out
of no face, but, instead, from a pair of enormous yellow spectacles which pass over a
non-existent nose. Evidently some wild wag of an oculist set them there to fatten his

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practice in the borough of Queens, and then sank down himself into eternal blindness, or forgot them and moved away. But his eyes, dimmed a little by many paintless days, under sun and rain, brood on over the solemn dumping ground.

The valley of ashes is bounded on one side by a small foul river, and, when the drawbridge is up to let barges through, the passengers on waiting trains can stare at the dismal scene for as long as half an hour. There is always a halt there of at least a minute, and it was because of this that I first met Tom Buchanan's mistress.

The fact that he had one was insisted upon wherever he was known.
(From The Great Gatsby, by F. Scott Fitzgerald.)

A *Are the following statements true (write T) or false (write F)*

According to the passage…

1. This is a description of a farm where a crop is grown.   ____

2. Many crops grow on this piece of land.   ____

3. Everything is grey because there has been a fire.   ____

4. There is a huge advertisement showing a pair of eyes.   ____

5. Doctor T. J. Eckleburg still works in Queens.   ____

6. Barges travel on the river.   ____

7. The author met the women who employed Tom Buchanan.   ____

8. Not many people knew that Tom Buchanan had a mistress.   ____

B *Choose the best answer, and circle the number of the answer that you have chosen:*

This passage is mainly ...

1. a description of the scenery in a particular valley in the USA

2. a description of a disaster in which a lot of ash blew around

3. a description which emphasises the miserable lives of the people in this area.

_____

Intelligence by Isaac Asimov

What is intelligence, anyway? When I was in the army I received a kind of aptitude test that all soldiers took and, against a normal of 100, scored 160. No one at the base had ever seen a figure like that, and for two hours they made a big fuss over me. (It didn't mean anything. The next day I was still a buck private with KP as my highest duty.)
All my life I've been registering scores like that, so I have the complacent feeling that I'm highly intelligent, and I expect other people to think so, too. Actually, though,

don't such scores simply mean that I am very good at answering the type of academic questions that are considered worthy of answers by the people who make up the intelligence tests - people with intellectual bents similar to mine?

For instance, I had an auto-repair man once, who, on these intelligence tests, could not possibly have scored more than 80, by my estimate. I always took it for granted that I was far more intelligent than he was. Yet, when anything went wrong with my car I hastened to him with it, watched him anxiously as he explored its vitals, and listened to his pronouncements as though they were divine oracles¬ and he always fixed my car.

Well, then, suppose my auto-repair man devised questions for an intelligence test. Or suppose a carpenter did, or a farmer, or, indeed, almost anyone but an academician. By every one of those tests, I'd prove myself a moron. And I'd be a moron, too. In a world where I could not use my academic training and my verbal talents but had to do something intricate or hard, working with my hands, I would do poorly. My intelligence, then, is not absolute but is a function of the society I live in and of the fact that a small subsection of that society has managed to foist itself on the rest as an arbiter of such matters.

A *Are the following statements true (write T) or false (write F)*

According to the passage…

1. The author (Asimov) doesn't know what intelligence is.   ____
2. Asimov has above-average intelligence.   ____
3. Asimov was promoted because he was intelligent.   ____
4. Asimov always felt that he was intelligent.   ____
5. Other people also think Asimov is intelligent.   ____
6. Asimov is more intelligent than the auto-repair man.   ____
7. The auto repair man had his own kind of intelligence.   ____
8. If Asimov wrote a test designed for a farmer, he would prove that he was intelligent.   ____

B *Choose the best answer, and circle the number of the answer that you have chosen:*

The main idea expressed in the article is that …

1. Asimov is more intelligent than people such as farmers and carpenters
2. all people are intelligent
3. there are different types of intelligence

ENGLISH READING COMPREHENSION TEST FOR STUDY

Education in Namibia

1 Judging by the 2009 educational outcomes, Namibia continues to be recklessly
2 wasteful with the futures of its younger generations and the development prospects
3 of the country.
4   With last year's exam results out, indications are that once again roughly half of
5 grade 10s and 12s, who failed to make the pass grade, have been dumped from the
6 system to either fend for themselves through part-time schooling or to flounder in a
7 society with very few job opportunities, even for those who are qualified. Of those
8 full-time pupils who made it through grade 12, only 21 percent attained the requisite
9 23 points to garner a place at a tertiary institution, while the rest just barely scraped
10 through to be able to say they've completed 12 years of formal schooling.
11   The 2009 results suggest that for all the talk of educational reform and
12 improvement over the last half decade or so, the education system continues to fail to
13 provide some respite for a long-suffering society already stumbling under the weight
14 of a plethora of rampant social ills, which the discarding of a mass of young people
15 from the system on a yearly basis only goes to deepen.
16   The problems of the formal education sector are multi-faceted and the effects of
17 poor teaching are compounded by limited resources and such external factors as high
18 levels of endemic poverty, especially in rural areas, as well as low levels of general
19 morale as a result of this. The bottom line is that the overall situation in the country
20 is not conducive for producing higher quality education sector outcomes. What all
21 this adds up to in the end is a deepening of the bleakness of the prospects of school
22 leavers, whether graduating or dropping out.
23   This desperate situation is exacerbated by the paucity of employment
24 opportunities, both skilled and unskilled, in the country for which young people have
25 to compete. The point is that there just aren't nearly enough jobs, or any other
26 opportunities, in the country to mitigate the failures of the education system and
27 young people are literally left destitute.
(Adapted from Stupid in Namibia by Frederico Links, Insight, February 2010)

1 The passage states that …
A the Namibian educational outcomes for 2009 developed the prospects of the country
B the Namibian educational outcomes for 2009 did not develop the prospects of the country.
C the prospects of young Namibians are good
D Don't know

2 In 2009, ...
A approximately half of the grade 10s and 12s passed the examinations
B many grade 10s and 12s dropped out of school
C many grade 10s and 12s have failed repeatedly
D Don't know

3 All learners who failed

4 What society is referred to in line 5?

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A will continue with part-time schooling
B may continue with part-time schooling
C must continue with part-time schooling
D Don't know

A Namibia
B school
C business
D Don't know

5 *'the rest' (line 6) refers to ...*
A Grade 12s who got 23 points or more
B Grade 12s who got less than 23 points
C Grade 12s who completed 12 years of schooling
D Don't know

6 *'for all the talk' (line 8) means ...*
A even though there has been talk
B because of all the talk
C all people talked
D Don't know

7 *What is it that is deepened (line 11)?*
A discarding of a mass of young people from the system on a yearly basis
B long-suffering society
C the weight of a plethora of rampant social ills
D Don't know

8 *'this' (line 14) refers to ...*
A The problems of the formal education sector
B limited resources
C high levels of endemic poverty,
D Don't know

9 *The passage states that ...*
A Discussions about educational reform have improved the education system in Namibia.
B Poverty is the main cause of problems in education in Namibia.
C Neither A nor B
D Don't know

10 *The main topic of the article is that ...*
A many learners fail because they come from rural areas.
B learners who pass Grade 12 cannot find jobs.
C young people find it difficult to get jobs because of poor education.
D Don't know

Face of Africa

1 In a stylish haute couture showcase on Saturday, 22-year-old Lukando Nalungwe
2 from Zambia, joined an exclusive group of winners when she was named the eighth
3 M-Net Face of Africa. The striking model scooped US$50 000 from M-Net along
4 with a modelling contract from O Model Africa and skincare products for 12 months
5 from Iman Cosmetics.
6   Reinvention and innovation are hot buzzwords in the global fashion community
7 and in a two-hour show, screened live from Lagos to 47 countries across Africa, M-

1   Net presented a bold new vision for the Face of Africa final, opting for an edgier
2   version of a traditional runway show and presenting the models on a black, floor-
3   based runway in a contemporary warehouse. With the final themed to resemble the
4   loading warehouse of an art museum, where precious gallery pieces are prepared for
5   display, the staging included massive cargo boxes stamped with African destinations
6   with huge gold frames that showcased the fashion and the finalists and packaging
7   tape demarcating the runway from the show's seated guests, it was a uniquely fresh
8   approach to showcasing Afro-chic expression.
9   Hosted by Studio 53's Fareed Khimani (Kenya) and former Face of Africa Kaone
10   Kario (Botswana) with a guest appearance by last season's Face of Africa Kate
11   Menson (Ghana), the finale included entertainment from Nigerian superstar D'banj
12   belting out his hits 'Suddenly' and 'Fall in Love'. Meanwhile soulful South African
13   songstress Lira, shimmering in green silk, showed why she's one of Africa's rising
14   stars with brilliant performances of two of her hits – 'Feel Good' and 'Believer'.
15   But the night belonged to the Top 10. Showing how much they've learnt during
16   the Face of Africa search, the Face of Africa Top 10 hit the catwalk with confidence
17   and grace as they strode down the catwalk resplendent in garments designed by the
18   best of African designers. And in living up to its reputation for merging African
19   design with the latest in international trends, the Face of Africa final included the
20   unmistakable style of Christian Lacroix, Versace and Emmanuel Ungaro while
21   jewellery maestro Chris Aire brought his signature style to the fashion accessories
22   utilised.
23   (Adapted from The Namibian, 9 February, 2010)

1 The 'exclusive group of winners'
mentioned in line 2 is …
A. all winners of the M-Net Face of
    Africa competition
B. the ten finalists in the 2010
    competition
C. models who have won competitions
D. Don't know

2 The model referred to in line 3 is ...
A. Model Africa
B. Iman
C. Lukando Nalungwe
D. Don't know

3 'the final' (line 11) refers to ...
A. the fashion show
B. the theme of the show
C. the last stage of the competition
D. Don't know

4 'where' (line 11) refers to ...
A. A warehouse
B. an art museum
C. African destinations
D. Don't know

5 Which of the following combination
   of phrases (lines 11-13) makes the

6 What does 'it' (line 15) refer to?
A. the edgier version of a traditional

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most sense in this context?

A. cargo boxes stamped with African destinations
B. African destinations with huge gold frames
C. huge gold frames that showcased the fashion and the finalists
D. Don't know

runway show
B. the staging
C. the fashion
D. Don't know

7 What was 'hosted' (line 17)?
A. The finale
B. The entertainment
C. The guest appearance
D. Don't know

8 What does the word 'resplendent' (line 26) describe?
A. the catwalk
B. the models
C. African designers
D. Don't know

9 What does 'its' (line 27) refer to?
A. the unmistakable style of Christian Lacroix
B. the Face of Africa final
C. the best of African designers
D. Don't know

10 The passage tells us mostly about ..
A. how Lukando Nalungwe won the M-Net Face of Africa competition.
B. various interesting and exciting things that happened at the M-Net Face of Africa show.
C. the best fashion designs and entertainment at the M-Net Face of Africa show.
D. Don't know

Facial hair

1 Women frequently develop excessive hair on the face, especially on the upper lip.
2 This hair growth has been attributed to a decrease in the amount of the female sex
3 hormone oestrogen. Certain facial creams and hormones that can be taken orally or
4 injected into the body also tend to produce hair growth on the face. If a patron
5 complains about this condition, you should suggest that she see a dermatologist.
6 Certain ethnic groups seem to be especially prone to the growth of facial hair. This is
7 an inherited characteristic that shows up even in young girls. There are several
8 services that a beautician can perform to alleviate this condition temporarily.
9 Abrasive papers (pumice), tweezers, waxes, and chemical depilatories are frequently
10 employed in beauty salons to remove excessive or unwanted hair. Shaving is another
11 way of removing hair, perhaps the most common one. This service is usually not
12 provided by beauticians, but is more often used by the patron in her own home. We
13 will discuss this procedure in more detail shortly. Hair can also be destroyed
14 permanently by electrical means. This procedure is called electrolysis and can be
15 performed only by a licensed electrologist. The electrologist inserts a needle into the

1   hair follicle, and a small charge of electrical current is used to destroy the hair

2   papilla. Thus a new hair will not grow from the follicle, having lost its source of

3   nourishment. A good electrologist can remove from twenty-five to a hundred hairs at

4   a sitting. X-ray therapy has also been employed, but this method is considered

5   dangerous and should not be used.

1 Which of the following statements is true?
A. The more oestrogen, there is in the body, the more the growth of excess hair
B. The more oestrogen, there is in the body, the less the growth of excess hair
C. The less oestrogen there is in the body, the more the growth of excess hair
D. Don't know

2 'this condition' (line 5) refers to ...
A. lack of oestrogen
B. the growth of facial hair
C. the need for hormone injections
D. Don't know

3 Certain ethnic groups ...
A. are less likely to have facial hair
B. are more likely to have facial hair
C. prefer to have facial hair
D. Don't know

4 'alleviate this condition' (line 5) means ...
A. reduce the problem of facial hair
B. remove facial hair completely
C. treat inherited characteristics
D. Don't know

5 What method of removing unwanted hair is not usually provided by beauticians?
A. tweezers
B. waxes
C. shaving
D. Don't know

6 What procedure is referred to in line 13?
A. tweezers
B. shaving
C. none of the above
D. Don't know

7 What procedure is referred to in line 15?
A. waxes
B. shaving
C. none of the above
D. Don't know

8 Hair gets its nourishment from
A. the blood
B. the papilla
C. neither of the above
D. Don't know

9 'A good electrologist can remove from twenty-five to a hundred hairs at

10   X-ray therapy ...
A. is included in electrolysis

A. the patient must be in a sitting position
B. many hairs can be removed in one treatment
C. many hairs can be removed from one site on the skin
D. Don't know

B. is more effective than electrolysis
C. is more dangerous than electrolysis
D. Don't know

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B. the growth of facial hair
C. the need for hormone injections

hair
B. The more oestrogen, there is in the body, the less the growth of excess hair
C. The less oestrogen there is in the body, the more the growth of excess hair
D. Don't know

D. Don't know

3 Certain ethnic groups ...
E. are less likely to have facial hair
F. are more likely to have facial hair
G. prefer to have facial hair
H. Don't know

4 'alleviate this condition' (line 5) means ...
E. reduce the problem of facial hair
F. remove facial hair completely
G. treat inherited characteristics
H. Don't know

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F. waxes
G. shaving
H. Don't know

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E. tweezers
F. shaving
G. none of the above
H. Don't know

7 What procedure is referred to in line 15?
E. waxes
F. shaving
G. none of the above
H. Don't know

8 Hair gets its nourishment from
E. the blood
F. the papilla
G. neither of the above
H. Don't know

9 'A good electrologist can remove from twenty-five to a hundred hairs at a sitting' means
E. the patient must be in a sitting position
F. many hairs can be removed in one treatment
G. many hairs can be removed from one site on the skin
H. Don't know

10 X-ray therapy ...
E. is included in electrolysis
F. is more effective than electrolysis
G. is more dangerous than electrolysis
H. Don't know

Hunters and gatherers

1 Compared with males, then, females have a tremendous investment in the offspring.
2 (Males have an investment too of course, their genes; but if the womenfolk are

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1 prepared to nurture the products of those genes, the offspring, the males need not
2 exert themselves. Here we find ourselves in the deep and muddy waters of
3 sophisticated genetics, so we will avoid this particular issue for a while.) The
4 females' pivotal position in the protohominid social group, Tanner and Zihlman
5 argue, put into their hands the power to exploit technological innovation. The first
6 tools, they suggest, were invented *not for hunting* large, swiftly moving, dangerous
7 animals, *but for gathering plants*, *eggs, honey, termites, ants, and probably small*
8 *burrowing animals* (their italics). In this view of the early hominid world there were
9 advantages to be had in having a menu not unlike a modern chimpanzee's, but which
10 was eaten not during a daily round of social foraging but after it was collected and
11 taken to some form of camp where mothers and offspring gathered. Meat became
12 important only after this initial shift in eating habits, thus including males more
13 closely in the social fabric. When one considers the merits of the gathering
14 hypothesis it is certainly worth remembering that, unlike hunting, humans are the
15 only primates who "collect" food to be eaten later. On their occasional hunting
16 forays, baboons and chimps may well be re-enacting scenes very similar to those
17 played out by hominids between four and fifteen million years ago. But no primate
18 gathers food, ever! So, on the one hand we have the hunting hypothesis, and on the
19 other, the gathering hypothesis. One argument is male-centred and depends on an
20 early commitment to a quest for flesh. The other focuses on females and sees
21 improved child care as an evolutionary cutting edge for advancement. Both have
22 points in their favour.

1 The passage states that ...
A. both males and females take care of
   their young ones.
B. only males take care of their young
   ones.
C. only females take care of their young
   ones.
D. Don't know

2 'this particular issue' refers to -
A. sophisticated genetics
B. the fact that males do not need to
   work
C. the question of who takes care of
   offspring
D. Don't know

*3 Females have the power to exploit
technological innovation because ...*
A. they have a very important role in
   their society
B. they belong to the protohominid
   social group
C. Tanner and Zihlman support them
D. Don't know

4 'their' (line 7) refers to ...
A. Tanner and Zihlman
B. females
C. protohominids
D. Don't know

5 'this view' (line 10) refers to ...
A. the idea that the first tools were used
   for gathering food

6 In prehistoric times, ...
A. humans ate while gathering food
B. ate like chimpanzees

B. the idea that the first tools were used
for hunting

C. the idea that the first tools were used
for both hunting and gathering food

D. Don't know

C. gathered food and ate it later

D. Don't know

*7 Males became more important in
society ...*
A. when they started gathering food
B. when they built camps
C. when humans started eating meat
D. Don't know

8 'their' (line 18) refers to ...
A. humans
B. baboons and chimps
C. other primates
D. Don't know

9 'those' (line 19) refers to ...
A. hunting forays
B. baboons and chimps
C. scenes
D. Don't know

10 The 'gathering hypothesis'...
A. argues that evolutionary progress
was achieved by improving the way
women brought up their children
B. argues that evolutionary progress
was achieved when men began to eat
meat
C. focuses on men
D. Don't know

Ideas in Action

1 It is necessary to look at history in a more, not less, universal way: almost all
2 forms of political theory generated over the past two hundred years are complicit in
3 their dismissal of non-Western cultures. The world has generally been viewed
4 through the lens of a tiny fraction of humanity. Africa, Asia, and Latin America have
5 never really been part of the discussion. No wonder new demands for recognition in
6 the aftermath of World War II should have arisen from those who were neither white,
7 Christian, nor Western. New spiritual values, new existential forms of self-
8 identification, and new national hopes would become intrinsic elements in the
9 struggle against Imperialism and colonialism. These would indeed become apparent
10 in the writings and influence of diverse political figures like Mahatma Gandhi, Frantz
11 Fanon, and Che Guevara.
12   World War II transformed the three great continental mass movements. Arguably
13 of even greater international significance was the impetus it provided for what would
14 become the liquidation of the colonial empires of Belgium, Britain, France, Holland,
15 and other Western nations. This process of decolonization indeed transformed the
16 globe.
17   The anti-imperialist struggle generated an explosion of revolutionary enthusiasm,
18 a genuine sense of shame among many intellectuals in the imperialist nations, and an
19 assault on the traditional assumptions underpinning Western hegemony [leadership].

1   It brought attention to the obvious: economic progress along the Western model has
2   produced untold misery for a great portion of the globe.
3   With the passing of more traditional economic and political forms of imperialist
4   exploitation, however, it soon enough became a matter of the ways in which the
5   newly liberated nations would understand themselves in relation to their own
6   oppressed constituencies as well as to the world of the former masters.
7   Various partisans of "postcolonial theory" have, in this regard, sought to reinstate
8   the experiences of those excluded from Western culture, and even their own, without
9   necessarily insisting upon the return to a premodern past. This new trend has been
10 marked by an increasing concern with the cultural, the noninstitutional, and the
11 existential moment of liberation.
12 (From Ideas in Action, by S.E. Bonner)

1 'their' (line 3) refers to ...
A. the past two hundred years
B. forms of political theory
C. non-Western cultures
D. Don't know

*2 'a tiny fraction of humanity' (line 4)
    refers to ...*
A. Africa, Asia, and Latin America
B. Western cultures
C. non-Western cultures
D. Don't know

3 'No wonder' (line 5) means ...
A. nobody wonders about it
B. it is not surprising
C. not very good
D. Don't know

4 What 'should have arisen' (line 6)?
A. new demands
B. recognition
C. World War II
D. Don't know

5 'those' (line 6) refers to ...
A. certain people
B. certain demands
C. certain theories
D. Don't know

6 'these' (line 9) refers to
A. national hopes
B. intrinsic elements
C. imperialism and colonialism
D. Don't know

7 'it' (line 13) refers to ...
A. World War II
B. continental mass movement
C. impetus
D. Don't know

8 'it' (line 20) refers to ...
A. Western hegemony
B. the anti-imperialist struggle
C. revolutionary enthusiasm
D. Don't know

9 'in this regard' (line 27) refers to
A. in postcolonial theory
B. concerning the idea that newly
    liberated nations need to understand
    themselves

10 'their' (line 28-29) refers to ...
A. partisans of "postcolonial theory
B. those excluded from Western culture
C. neither A nor B
D. Don't know

C. concerning imperialist exploitation
D. Don't know

Intelligence by Isaac Asimov

1   What is intelligence, anyway? When I was in the army I received a kind of
2 aptitude test that all soldiers took and, against a normal of 100, scored 160. No one at
3 the base had ever seen a figure like that, and for two hours they made a big fuss over
4 me. (It didn't mean anything. The next day I was still a buck private with KP as my
5 highest duty.)
6   All my life I've been registering scores like that, so I have the complacent feeling
7 that I'm highly intelligent, and I expect other people to think so, too. Actually,
8 though, don't such scores simply mean that I am very good at answering the type of
9 academic questions that are considered worthy of answers by the people who make
10 up the intelligence tests - people with intellectual bents similar to mine?
11   For instance, I had an auto-repair man once, who, on these intelligence tests,
12 could not possibly have scored more than 80, by my estimate. I always took it for
13 granted that I was far more intelligent than he was. Yet, when anything went wrong
14 with my car I hastened to him with it, watched him anxiously as he explored its
15 vitals, and listened to his pronouncements as though they were divine oracles and he
16 always fixed my car.
17   Well, then, suppose my auto-repair man devised questions for an intelligence test.
18 Or suppose a carpenter did, or a farmer, or, indeed, almost anyone but an
19 academician. By every one of those tests, I'd prove myself a moron. And I'd be a
20 moron, too. In a world where I could not use my academic training and my verbal
21 talents but had to do something intricate or hard, working with my hands, I would do
22 poorly. My intelligence, then, is not absolute but is a function of the society I live in
23 and of the fact that a small subsection of that society has managed to foist itself on
24 the rest as an arbiter of such matters.

*1 In the first line of the passage, the
    author (Asimov) ….*
A   shows that he doesn't know what
    intelligence is
B   thinks that the readers doesn't know
    what intelligence is

*2 Who scored 160 in the intelligence
    test?*
A   the author
B   the soldiers
C   normal people
D   Don't know

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C   is not really looking for an answer to
     his question about intelligence
D   Don't know

---

3 'they' (line 3) refers to ...

    A   soldiers

    B   people at the base

    C   the people who conducted the
       intelligence test

    D   Don't know

4 'it (line 4) refers to ...

    A   the test

    B   the high test score

    C   the fuss which people made

    D   Don't know

---

5 The passage tells us that ...

A   Asimov was promoted because he
   was intelligent

B   Asimov was not promoted

C   Neither A nor B

D   Don't know

6 'that' (line 6) refers to ...

A   the score of 100

B   the score of 160

C   the aptitude test

D   Don't know

---

7 The passage tells us that ...

A   Asimov was more intelligent than the
   auto-repair man

B   The auto repair man did not score
   more that 80 in the intelligence test

C   The auto repair man had his own
   kind of intelligence

D   Don't know

8 'they' (line 16) refers to ...

A   the car's vitals

B   the auto repair man's
   pronouncements

C   divine oracles

D   Don't know

---

9 'those tests' (line 20) refers to   ...

A   academic intelligence tests

B   intelligence tests set up by people
   like farmers and carpenters

C   tests which people like farmers and
   carpenters write

D   Don't know

10 'such matters' (line 25) refers to   ....

A   what intelligence is

B   what society is

C   whether Asimov is intelligent

D   Don't know

Is Manliness Optional?   by Harvey Mansfield

1   Today the very word "manliness" seems obsolete. The women's revolution has
2 succeeded to an amazing degree. Our society has adopted, quite without realizing the
3 magnitude of the change, a practice of equality between the sexes never before
4 known in human history. My intent is not to stand in the way of this change. Women

1   are not going to be herded back into the kitchen by men. But we need to recognise
2   that there have been both gains and losses in this revolution.
3   Contemporary feminists, and the women they influence, have essentially a single
4   problem with manliness: that it excludes women. Though the word is scarce in use,
5   there is an abundance of manliness in action in the world today. Young males still
6   pick fights, often with deadly weapons. What we suffer from today, is a lack of
7   intelligent criticism of manliness. Feminism has undermined, if not destroyed, the
8   counterpart to manliness – femininity – and with it the basis on which half the
9   population could be sceptical of the excesses of manliness.
10   Of course, women are still women. While they want men to be sensitive to
11 women, they don't necessarily want them to be sensitive in general. That's why the
12 traditional manly male – who is protective of women, but a sorry flop when it comes
13 to sensitivity – is far from a disappearing species. The "sensitive male" who mimics
14 many female emotions and interests, while discarding the small favours men have
15 traditionally done for women, is mostly just a creation of contemporary feminists
16 who are irritated with the ways of men, no longer tolerant of their foibles, and
17 demanding new behaviour that would pave the way for ambitious women. Feminists
18 insist that men must work harder to appreciate women. Yet they never ask women to
19 be more understanding of men.
20   Traditionally, the performance of a man's duties has required him to protect and
21 support his family. To be a man means to support dependents, not merely yourself.
22 But the modern woman above all does not want to be a dependent. She may not have
23 thought about what her independence does to the manliness of men (it might make
24 men more selfish). And she may not have considered carefully whether the
25 protection she does without will be replaced by sensitivity, or by neglect. [
26 Published in Real Men: They're Back September 2003]

*1 What has the author's society adopted
(line 2)?*
A. gender equality
B. the women's revolution
C. major change
D. Don't know

2 'this change' (line 4-5) refers to ...
A. gender equality
B. the increased power of women
C. the women's revolution
D. Don't know

*3 The passage says that .... reject the
   idea of manliness.*
A. all women
B. no women
C. a specific group of women
D. Don't know

4 'it' (line 8) refers to ...
A. a gender problem
B. the idea that men have special
   qualities
C. the idea that feminists influence
   women
D. Don't know

5 The 'word' mentioned in line 8 is ...
A. women
B. feminism
C. manliness
D. Don't know

*6 'Feminism 'has undermined, if not
   destroyed', the counterpart to
   manliness' (line 12) means that ...*
A. 'Feminism *has almost destroyed* the
   counterpart to manliness
B. 'Feminism *has completely destroyed*

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the counterpart to manliness

C. 'Feminism *has not had any effect on*
the counterpart to manliness

D. Don't know

---

7 'they' (line 14) refers to ...

A. men

B. women

C. feminists

D. Don't know

8 'them' (line 15) refers to ...

A. men

B. women

C. feminists

D. Don't know

---

9 'they' (line 23) refers to ...

A. men

B. women

C. feminists

D. Don't know

10 The last paragraph states that ...

A. A man might become more sensitive
if a woman is independent

B. An independent woman will still
have the protection of a man

C. A man might stop supporting or
caring for a woman who wants to be
independent.

D. Don't know

Modern living

1 Our need to understand ourselves and other human beings is as old as civilization,
2 but that need has never been more important than it is today. The urgency of the need
3 springs essentially from the complexities of modern life. We live today in a rapidly
4 changing, often emotionally charged environment where a knowledge of ourselves
5 and others can help immeasurably in making adjustments or adapting to situations
6 that are new and strange to us. Societies throughout all history have experienced
7 changes that sometimes threatened to disrupt their ways of life, but people of no
8 other era have been as jolted as twentieth century people by so many social and
9 technological changes. Among those who watched on television in 1969 as the first
10 human stepped onto the moon were some senior citizens who had cheered at
11 similarly historic news from Kitty Hawk, North Carolina, on December 17, 1903. On
12 that date, Orville and Wilbur Wright proved that a motor driven craft could fly.
13 Orville Wright flew a crude, filmsy contraption called an airplane 120 feet. Less than
14 seven decades later, American astronauts flew over 250,000 miles and landed on the
15 moon. The incredibly rapid developments in flight illustrate only one small aspect of
16 scientific change that twentieth century people have had to adapt to. In the social
17 sphere of modern culture, changes have been almost as significant. Since the last
18 quarter of the nineteenth century, technology has transformed most developed
19 nations from reasonably simple agrarian communities into great, sprawling urban
20 cultures. These changes have created problems so difficult that they challenge human
21 intelligence and ingenuity. The congestion and attendant problems of urban living

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1   have created tension ridden, sometimes emotionally explosive populations who must

2   confront complexities in day to day living that their grandparents never dreamed of.

3   Today's social environment in many parts of the world has bred discontent and

4   dissension never before known. One need only look at newspaper headlines to be

5   convinced of worldwide turmoil.

1 Our need to understand ourselves and others has increased because of …
A. the need to adapt to new environments
B. the need to adapt to new situations
C. the need to make adjustments
D. All of the above

2 The author says that social and technological changes …
A. did not affect people in the past
B. have had more effect since 1900
C. have always had the same effect on people
D. Don't know

3 'similarly historic news' (line 11) refers to…
A. the moon landing
B. the flight of the Wright brothers
C. both of the above
D. Don't know

4 According to the passage …
A. Orville Wright's airplane was not very strong
B. Orville Wright's airplane was 120 feet long
C. Orville Wright did not fly very far
D. Don't know

5 According to the author, the most significant changes have been in …
A. scientific change has been more significant than social change
B. social change has been more significant than scientific change
C. scientific change and social change have been equally significant
D. Don't know

6 'These changes' (line 20) refers to
A. the growth of cities
B. developments in science
C. developments in technology
D. Don't know

7 'they' (line 21) refers to
A. changes
B. problems
C. developments
D. Don't know

8 What is it that 'their grandparents never dreamed of (line 24)?
A. day to day living
B. complexities
C. explosive populations
D. Don't know

9 'One need only look at newspaper headlines' means …
A. you should not look at any other source, just newspapers
B. you do not need to read the articles, only the headlines
C. newspaper headlines will give you

10 The main idea of the passage is that
A. there is much more stress today than in the past
B. people need to get to know themselves and others
C. people today have to adapt to many

The sentence

1   We all know that a sentence in grammar is a series of spoken or written words which
2   forms the grammatically complete expression of a single thought. On the page such a
3   unit of discourse begins with a capital letter and ends with the appropriate end
4   punctuation mark. Spoken aloud, the sentence is marked by voice inflection and
5   pauses, the longest of which signals its completion. We have a well-developed
6   intuitive sense of the sentence because we have been hearing and speaking and
7   writing and reading them most of our lives. In English this grammatical term also
8   names a judicial pronouncement. If we look up the word in the Oxford English
9   Dictionary, that historian of our language, we find that "sentence" is one of those
10   words that has contracted over the centuries: it had more meaning in Shakespeare's
11   time than it has in ours. Some of these meanings, such as "opinion" and "way of
12   thinking," are listed in the dictionary as obsolete and are not available to
13   contemporary writers. Nevertheless, they point the way back to the Latin origin of
14   the word, *sentire*, to feel, to be of the opinion, to perceive, to judge. The word
15   *sentence* shares the same root as *sensation* and *sense*, and appropriately so, for the
16   construction of a sentence, even the simplest two-word kind, requires sensing and
17   thinking, perceiving and judging. Good sentences are written by a vigilant observer
18   with the courage to judge and the passion to declare. Such confident declaration
19   comes from an understanding of how the English sentence works. Like most highly
20   functional constructions, the sentence is complicated, perhaps at times bewildering,
21   but always interesting in its varieties and patterns and possibilities. An analysis of
22   sentence structure begins with a classification of words on the basis of how they
23   function in the sentence. Such classification is called *parts of speech* (a term that
24   happily reminds us that grammar has something to do with listening to the human
25   voice).

1 The grammatically complete expression of a single thought is formed by ...

A. a sentence
B. a series of spoken or written words
C. grammar
D. Don't know

2 The 'unit of discourse' referred to in line 3 is ...

A. a single thought
B. a grammatically complete expression
C. a sentence
D. Don't know

3 'which' (line 5) refers to ...
A. the sentence
B. voice inflection
C. pauses
D. Don't know

4 'its' (line 5) refers to ...
A. the sentence
B. voice inflection
C. pauses
D. Don't know

5 What grammatical term is referred
   to in line 8?
A. unit of discourse
B. a judicial pronouncement
C. the sentence
D. Don't know

6 The 'historian' in line 9 is ...
A. a judge
B. a history expert
C. a dictionary
D. Don't know

7 'they' (line 13) refers to ...
A. contemporary writers
B. meanings of the word 'sentence'
C. people in Shakespeare's time
D. Don't know

8 What is 'the word' in line 14?
A. sentire
B. sentence
C. sensation
D. Don't know

9 'kind' (line 17) means ...
A. kind of meaning
B. kind of construction
C. kind of sentence
D. Don't know

10 'the sentence' (line 20) refers to ...
A. a specific sentence in the passage
B. a type of grammatical structure
C. neither A nor B
D. Don't know

Teaching techniques

1 Many teachers do a dull, boring, unimaginative job of instruction, quite often
2 because they are too lazy to seek ways to try to arouse student interest. Such teachers
3 would probably do a more effective job if they occasionally used some of the
4 techniques just described. If a teacher gets carried away with inventing techniques
5 such as those described by Cullum in "push back the desks," however, certain types
6 of learning may be prevented rather than encouraged. If students are always
7 stimulated to engage in "games" and never asked to engage in self-directed effort,
8 they may fail to acquire some essential habits and attitudes. Sooner or later everyone
9 has to complete dull and tedious tasks. And sooner or later all students are going to
10 encounter teachers who take a no-nonsense, sink-or-swim approach to instruction. If
11 too much school learning is made as entertaining and effortless as possible, students
12 may not acquire attributes of self-direction and self-discipline. In your teaching,
13 therefore, you might seek a balance between provocative presentations and self-
14 directed effort. Part of the time you might strive to follow the suggestions just
15 offered to make subject matter fascinating and learning lively and enjoyable. But part
16 of the time you should also urge students to engage in concentrated individual effort.

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1   This does not mean that you should go out of your way to "make" study tedious or
2   dull; it does mean that you should sometimes ask students to master academic tasks
3   by directing their own learning. The "King Tut's tomb" technique devised by Cullum,
4   for instance, is most ingenious. But it is an awfully elaborate and roundabout way to
5   ask students to solve math problems. If the time students spent building the tomb or
6   crawling around inside it with flashlights were devoted to individual and group study
7   of math problems, it seems likely that mastery of math skills would develop much
8   more rapidly and completely.

*1 Certain types of learning may be
prevented rather than encouraged if
...*
A. a teacher is lazy
B. a teacher often leaves the classroom
C. a teacher tries too many new methods
D. don't know

2 Cullum described ...
A. new ways of teaching
B. lazy teachers
C. interested students
D. don't know

*3 If teachers always use games for
teaching, children will ...*
A. always learn better
B. sometimes learn better
C. never learn anything
D. don't know

*4 'a no-nonsense, sink-or-swim
approach to instruction' means that
the teacher ...*
A. expects students to be serious about
their work
B. doesn't like to make jokes
C. will not allow games in the class
D. don't know

*5 students may not acquire attributes of
self-direction and self-discipline if ...*
A. their work is never interesting and
entertaining
B. their work is dull and uninteresting
C. they never have to do ordinary hard
work rather than playing games
D. don't know

6 The author advises teachers to ...
A. make lessons new, exciting and
enjoyable
B. give lessons which develop
children's independent learning skills
C. both A and B
D. don't know

7 What does 'this' (line 17) refer to?
A. a new approach to teaching
B. concentrated individual effort
C. the necessity for students to make an
effort
D. don't know

8 What does 'it' (line 20) refer to?
A. "King Tut's tomb" technique
B. a way of solving maths problems
C. a way of testing students
D. don't know

*9 Students would master maths skills
more quickly if they ...*
A. used the "King Tut's tomb" technique
B. studied in groups

10 In this passage, the author
A. describes different teaching
techniques
B. advocates a mixture of teaching

C. studied either alone or with other students
D. don't know

techniques
C. says that teaching should not be done through playing games
D. don't know

Teenage drinking

1 The first evidence of widespread teen-age drug parties in the panelled rumpus rooms
2 of the affluent was turned up in 1960 by the Westchester county vice squad. After the
3 shock had passed parents said that at least it wasn't liquor. Then police in Santa
4 Catalina island, the Southern California resort, announced that drunkenness had
5 become common among thirteen and fourteen-year-old children in wealthy families
6 and in the future they would charge the parents $2.50 an hour to baby-sit teen-age
7 drunks till parents came to take them home. Nationally, the number of adolescents
8 who drank regularly was put at between 50 and 66 percent. In Yonkers, New York,
9 where it was 58 percent among high school juniors and seniors, 64 percent said they
10 drove the family car while doing it. Parents in Rose Valley, a Philadelphia suburb,
11 allowed children to bring their own bottles to parties. Their fathers did the
12 bartending. One wondered what Clarence Day's father would have thought. Among
13 the recurring news stories of the 1960s... were accounts of rioting at the Newport
14 Jazz Festival and at Fort Lauderdale, the watering places of the young. Yet the extent
15 of teen-agers' drinking ought not to have been surprising. In a sense they were
16 expressing their social role. Opulence, the lack of genuine responsibility, and a
17 position outside the unemployment pool gave them all the attributes of a leisure
18 class. In their ennui or their cups, youths of the 1960s frequently turned destructive.
19 A brief item from Hannibal, Missouri, gave melancholy evidence of the revision of a
20 cherished American myth. At the foot of Hannibal's Cardiff Hill stands a famous
21 statue of Tom Sawyer and Huckleberry Finn, barefoot and carrying fishing poles; a
22 plaque explains that this is the neighbourhood where Tom and Huck "played and
23 roamed at will."

1 In 1960, ...
A. there were many teen-age drug parties
B. rich teenagers held drug parties in rumpus rooms
C. the police found signs that teen-age drug parties were being held
D. Don't know

2 According to the passage ...
A. parents said that liquor was used more than drugs
B. liquor abuse was more serious than drug abuse
C. liquor abuse was the least serious problem
D. Don't know

3 'they' (line 6) refers to ...
A. police
B. parents

4 'them' (line 7) refers to ...
A. police
B. parents

C. babysitters
D. Don't know

C. babysitters
D. None of the above

5 'it' (line 9) refers to ...
A. the number of adolescents
B. alcohol abuse
C. drug abuse
D. Don't know

6 'it' (line 10) refers to ...
A. driving a car
B. abusing alcohol
C. abusing drugs
D. Don't know

7 In the phrase 'One wondered' (line 12), 'one' means ...
A. one teenager
B. one father
C. neither A nor B
D. Don't know

8 The passage says that we should not be surprised about ...
A. the fact that teenagers drink alcohol
B. the seriousness of the teenage drinking problem
C. neither of the above
D. Don't know

9 According to the passage, young people became destructive ...
A. in the 1960s
B. when they were bored or drunk
C. very often
D. Don't know

10 The 'cherished American myth' mentioned in line 20 is ...
A. the story of Tom Sawyer
B. the story of Hannibal
C. a story about fishing
D. Don't know

The Great Gatsby (The Valley of Ashes)

1   About half way between West Egg and New York the motor road hastily joins the
2   railroad and runs beside it for a quarter of a mile, so as to shrink away from a certain
3   desolate area of land. This is a valley of ashes - a fantastic farm where ashes grow
4   like wheat into ridges and hills and grotesque gardens; where ashes take the forms of
5   houses and chimneys and rising smoke and, finally, with a transcendent effort, of
6   ash-grey men, who move dimly and already crumbling through the powdery air.
7   Occasionally a line of grey cars crawls along an invisible track, gives out a ghastly
8   creak, and comes to rest, and immediately the ash-grey men swarm up with leaden
9   spades and stir up an impenetrable cloud, which screens their obscure operations
10 from your sight.
11 But above the grey land and the spasms of bleak dust which drift endlessly over it,
12 you perceive, after a moment, the eyes of Doctor T. J. Eckleburg. The eyes of Doctor
13 T. J. Eckleburg are blue and gigantic - their retinas are one yard high. They look out
14 of no face, but, instead, from a pair of enormous yellow spectacles which pass over a
15 non-existent nose. Evidently some wild wag of an oculist set them there to fatten his
16 practice in the borough of Queens, and then sank down himself into eternal
17 blindness, or forgot them and moved away. But his eyes, dimmed a little by many
18 paintless days, under sun and rain, brood on over the solemn dumping ground.

1   The valley of ashes is bounded on one side by a small foul river, and, when the

2   drawbridge is up to let barges through, the passengers on waiting trains can stare at

3   the dismal scene for as long as half an hour. There is always a halt there of at least a

4   minute, and it was because of this that I first met Tom Buchanan's mistress.

5   The fact that he had one was insisted upon wherever he was known.

(From The Great Gatsby, by F. Scott Fitzgerald.)

1 This passage is mainly ...
A. a description of a farm where a crop is grown
B. a description of a disaster in which a lot of ash blew around
C. a description which emphasises the miserable lives of the people in this area.
D. Don't know

2 Everything is grey because ...
A. there has been a fire
B. ash from factories covers everything
C. there is no sunlight
D. Don't know

3 The 'grey cars' (line 7) are ...
A. motor cars
B. train carriages
C. neither A nor B
D. Don't know

4 Doctor T. J. Eckleburg is ...
A. a doctor in this valley
B. a character in an advertisement
C. an oculist
D. Don't know

5 'them' (line 16) refers to ...
A. retinas
B. spectacles
C. eyes
D. Don't know

6 The oculist (line 15) ...
A. still works in Queens
B. is not in Queens anymore
C. is blind
D. Don't know

7 'his eyes' (line 17) refers to ...
A. the oculists's eyes
B. the eyes in the advertisement
C. both A and B
D. Don't know

8 'the dismal scene' (line 22) refers to ...
A. the dirty river
B. the grey valley
C. the advertisement
D. Don't know

9 'there' (line 22) refers to ...
A. the place where barges cross the river
B. the place where trains cross the river
C. the boundary of the valley
D. Don't know

10 The last paragraph tells us that ...
A. the author met the woman who employed Tom Buchanan
B. not many people knew that Tom Buchanan had a mistress
C. the author met Tom Buchanan's mistress on the train
D. Don't know

LETTER FROM DEAN OF FACULTY: HUMANITIES AND SOCIAL SCIENCES AT UNAM

UNIVERSITY OF NAMIBIA

Private Bag 13301, 340 Mandume Ndemufayo Avenue, Pioneerspark, Windhoek, Namibia

Department of Language and Literature Studies
Faculty of Humanities and Social Sciences

13 April 2010

The Dean
Faculty of Humanities and Social Sciences
University of Namibia

Strongly supported by the Faculty AB 2010/11/25

Dear Professor Mchombu

DPhil study

My proposal for a DPhil degree has been accepted and approved by Senate, and I would like to begin the empirical research. Since the study focuses on first year students at the University of Namibia, I would like to select my sample from students enrolled for Fundamentals of English Language Studies in 2010, and therefore hereby request your permission to do so.

The title of the dissertation is "**A study of language related factors impeding the English reading comprehension of Namibian first year university students**".

Selected students will be fully informed of the nature and purpose of the study and will be asked to participate on a voluntary basis. They will be asked to complete a questionnaire and to discuss their understanding of three English texts, which I envisage will take no more than three hours of their time.

The data collected in this study will only be used for the purpose of my DPhil dissertation, and will remain the property of the University of Namibia.

Thank you

Your sincerely

Cynthia Murray