

A STUDY OF READING AMONG SECONDARY SCHOOL PUPILS
IN A DEVELOPING NATION

A Thesis Submitted for the Degree of
Doctor of Philosophy
University of Edinburgh
December 1976

Dan Douglas



ACKNOWLEDGEMENTS

Thanks are due to my supervisors, Clive Criper, who started it, and Alan Davies, who saw it through with such admirable patience. And to Elisabeth Ingram for much help and encouragement.

Thanks also to Eleanor Cornwall, of the Edinburgh Corporation school system, and the headmaster and English staff of Boroughmuir Secondary School for their help with preliminary testing.

Thanks are due also to Mr. C.A.R. Motsepe, Senior Education Officer, Ministry of Education, Republic of Botswana, for his help and kindness. And to the headmasters and staff of Botswana's secondary schools for their help and hospitality. And especially to the Botswana school-leavers of 1974.

Finally, grateful thanks to Debeers Botswana Mining Company (PTY) Limited for their generous grant to cover fieldwork expenses.

FOR
FELICITY

TABLE OF CONTENTS

Chapter One: Introduction to the Study	2
Chapter Two: The Problem and Its Background	13
Chapter Three: Botswana - The Background to the Study	32
Chapter Four: Methodology	63
Section One: The Reading Tests	64
Section Two: The Interview Schedule	86
Section Three: Fieldwork Report	96
Chapter Five: Results of the Reading Tests	104
Chapter Six: Reading Habits in Botswana	107
Chapter Seven: Interrelation of Measures	115
Section One: Results of The Cambridge Examination	115
Section Two: Comparison of Cambridge and Cloze Results	117
Section Three: Comparison of Interview Results of High and Low Scorers	120
Chapter Eight: Discussion of Results	125
Chapter Nine: Conclusions, Summary of Findings, Suggestions for Future Research	142
Bibliography	
Appendix	

ABSTRACT

A study of the nature of advanced literacy among senior secondary school pupils in a developing country, Botswana, was made to test five hypotheses: 1) that there is a substantial relationship between reading ability in English (the second language) and reading ability in Setswana (the mother-tongue); 2) that there is a substantial relationship between reading ability in English and reading habits, and 3) between Setswana reading ability and reading habits; 4) that there is a substantial relationship between English reading ability and success in school, and 5) between Setswana reading ability and success in school. Cloze tests in English and Setswana were administered to 441 Form Five subjects in nine secondary schools in Botswana. A sample of 97 of the subjects was selected by performance on the English cloze test and interviewed about their reading habits. The Cambridge School Certificate results for 435 of the subjects were obtained after they had sat the examination five months after the interviews. The results were treated by correlational and contingency analysis. The findings were that there was a significant relationship between reading ability in English and in Setswana, though not a very large one; that there was a significant relationship between reading ability in each of the two languages and the Cambridge Examination, though the relationship of the Setswana ability was smaller; and that there was a relationship between English ability and reading habits, but almost none between the habits and Setswana reading ability. It is suggested that there is an optimum level of proficiency in English required for success in school, and that increased proficiency produces diminishing returns. Suggestions are made for future research.

CHAPTER ONE: INTRODUCTION TO THE STUDY

When this study was begun it was intended that it should be a descriptive study of the situation in secondary schools in Botswana regarding the relative reading ability of the pupils in their two languages, English and Setswana. The question was how well they could read in English, for it is the language of government, of the civil service, education and commerce. A comparison was to be made with their reading competence in their mother-tongue, for although well over 75% of the people in Botswana speak Setswana as their native language, very little, by comparison with English, is written in that language - Setswana is the language of the village, of the local government, of religion and of the home. Part of the study was to be a survey of the uses of the two languages for reading. Here, the goal was to find out what sort of free reading the students engaged in - reading besides their texts - the scope of their reading, the time they spent at it, and if possible the kind of materials they chose in each of their languages. Finally, there was to be a description of the availability of reading material in Botswana, for a description of their reading habits would have to be presented against a background of the libraries, bookshops, newspapers, and government publications within the country.

This initial thinking led to a consideration of several features of the study in some detail. First, the nature of the art of reading - is it in fact an art? Its physical characteristics were examined, its psychological ones and its social implications in so far as the properties that might influence a research design could be determined. Next, after a consideration of the nature of literacy, the view was taken that reading may be thought of as an ability that is put to use as literacy, the one being a characteristic present in individuals, the other its social function. Finally, the relationship between literacy and national development were considered, since countries like Botswana are in the development business and are interested in the marshalling of all available resources to that end. This point is a central one in this thesis - reference to it

will come up again and again - and the secondary school is the place where this emphasis on development reaches a peak - perhaps has reached a peak in terms of resources allocated. The authors of the 1973 - 1975 National Development Plan for Botswana write "... The secondary sector is viewed by the Government largely as a means of supplying the economy with the skilled and educated manpower required for development and localisation" (p. 108). The years since Independence in Botswana have witnessed a very rapid growth in the productivity of the secondary schools - as has been the case in other new nations - in 1965 37 Botswana pupils passed the Cambridge School Certificate, while in 1974 the secondary schools turned out 242 passes. Such rapid growth - five-fold in 10 years - brings one to a consideration of efficiency, especially in a country like Botswana, where the resources available for development are small when compared with those available to other nations.

In this regard, efficiency must be viewed as the thoughtful use of all components of a development programme so as to get maximum value for time, money and materials spent. Literacy functions as a resource in this way, and in Botswana, where both English and Setswana serve as literacy mediums, thought must be given to the best way to utilise these resources. Here, a concept suggested by Jean Ure (1968), based on an earlier idea of Fishman's, of the two languages together forming a single register range, each language "with its own firmly established and highly valued functions" in Fishman's words, dealing with different kinds of situations, seems useful. Gorman (1974: 351) also noted this situation in Kenya, where he says of English, Swahili and the mother-tongue of his subjects, "it appears that in certain respects these languages have complementary functions...". If it is true in Botswana that English has its own sphere in the life of the country, seldom overlapping with that of Setswana, this would have implications for the teaching of the two languages. But first, one needs to begin to understand something of the functions of the two languages and the relative proficiency of the population in each of the languages in each function. This thesis represents a small beginning toward such an understanding.

The subject of this study is the reading habits of the secondary school leavers in Botswana. Why reading? Reading is obviously one of the central activities in the school and is one which transcends subject areas. Further, it is an activity which is necessary outside the school as a skill indispensable in daily life. Proficiency in this skill must be a necessary part of education. But how much proficiency is necessary for success? It has been suggested (Edwards and Todaro 1974) that education beyond a certain level is not necessarily an unmitigated good in developing countries, and that language proficiency beyond a certain level brings rapidly diminishing returns in academic work (Davies et al 1975). Is the same true of reading ability - is there a minimum level of proficiency in reading necessary for success, but beyond which there are diminishing returns? Another of the goals of this study will be to discover if this is so.

Certainly it has been shown that reading ability plays an important part in success in school. Somerset (1968) found, for example, that reading comprehension questions were the best overall predictors of success in the Cambridge School Certificate examination in Uganda. It would seem, therefore, that a study of reading ability and habits among school leavers in Botswana would be a profitable one in terms of finding out something about what sort of training is necessary for academic success. As will be suggested in Chapter Two, literacy is a very important factor in the life of a developing nation - it is an important means by which information can be made to flow, both vertically and horizontally, from sector to sector within the country - indeed, it may be suggested, literacy is the sine qua non of national development. Just how well do these future civil servants, lawyers, politicians of Botswana read? What do they read? How often do they read?

This study is involved with the reading ability of the Fifth - year secondary school leavers. One might reasonably ask if the skill being studied is properly literacy at all. For usually, the term 'literacy' is used to refer to the basic reading skill, involving the dichotomy between the non-literate and the newly literate. Most of

the research on literacy and its consequences for development - work such as that of Schramm (1964), Rogers (1969), Rao (1972), Goody and Watt (1968) - deals with this basic literacy. However, is it not very important to look at the logical ends of such programmes - the terminal stages of the educational system to see just what literacy means in a developing society? Once a commitment to literacy is undertaken - and such a commitment is practically universal in national development proposals - what does it produce in the end? What is the nature, in terms of ability and use, of the literate individual produced by the system? Given the limited educational resources in most developing countries, what is the level of literacy necessary to function as a member of the development effort?

Answers to questions such as these are of great value when decisions are made in developing educational systems about intensive reading programmes, speed reading courses, universal literacy programmes. Certainly decisions such as these are usually made on socio-political grounds, but how much better informed such decisions would be, backed up by research at the terminal stages of the educational process.

Further, such research can be of value to the educators, for as we are learning, language has a pervasive influence to be found far afield of the English literature or grammar classroom. Teachers of science, history and geography are becoming more and more aware that their pupils are experiencing difficulties and undergoing changes in outlook due in some part to their linguistic development. Scholars have been aware for some time of the changes in societies brought about by the introduction of literacy - Goody and Watt (1968) point out especially in this regard the tension and stratification implied by comparisons between literate and non-literate societies. Is it not legitimate to ask if such stress is present at upper levels of the society - the school-leaving stage, the university degree stage? Such knowledge would add much to our understanding of problems in teaching in developing countries. Goody (1968) suggests, for example, that in developing societies, teachers are regarded as "living libraries" - the tradition of the oral transmission of learning overshadows the new literate tradition. He and Ian Watt also

suggest that due to the impossibly large field of selection from the total cultural repertoire available to the literate individual, there is little chance of his being able to experience it as any sort of patterned whole. They believe that this situation can produce a complex sort of anomie. Is there any evidence that this sort of tension is behind educational problems experienced by teachers and administrators in developing countries? This is a question which requires a different sort of research than the present study is concerned with, but some of the background necessary for answering such questions may be provided by this study, which deals with the relationship between the mother-tongue and the second language - both ability and use.

This study of the reading habits of secondary school children in a developing country can be placed firmly in the context of similar studies which have been made. Among those dealing with the subject have been Jenkinson (1940), the Warwickshire branch of the National Association of Teachers of English (1968), Wall (1948), and Williams (1951) - all dealing with the reading of British children in their native language. Two of the few dealing with reading in developing countries have been those of Thorndike (1973) and Jordan (1975).

Jenkinson's work was with boys and girls aged 12 to 15 and he used a self-reporting questionnaire to get his data on free-time reading. He found that, in books, adventure stories were far and away the most popular for both sexes, though by the age of 15, boys were moving toward detective stories and girls toward love stories. Magazine reading was dominated by such adventure and story papers as Rover, Hotspur, Girls' and Crystal. To those who were worried by young people reading such periodicals, Jenkinson pointed out that children who read a lot of these tended to read a lot of everything. Newspaper reading tended to be of the "Sensational" type, with few children reading 'serious' papers, and though boys read more papers, girls read more habitually. In a survey of teachers about the reading of their pupils in school, Jenkinson found that the norm was

for a small number of books to be read during a term - usually three. The amount of reading during an entire term in school, he found, was less than the average amount read in free time by the average child in one month.

Jenkinson's findings on newspaper reading were corroborated by Wall in 1948 when he studied the newspaper reading habits of 1000 teenagers of varying school backgrounds. He, too, found that the reading of 'serious' papers like The Times and The Guardian had little appeal " even to grammar school children."

Magazine reading was studied more intensively in 1951 by Williams who used as his subjects 43,000 secondary school children from various types of school. The average number of periodicals read per child was well over two. Comics made up 44% of the reading of boys, 53% of that of girls. What he calls 'bloods' - the adventure and story magazines - made up 35% of the reading of boys and 17% of the girls' reading. He found that this ratio - a preponderance of comics - was maintained in secondary modern schools right through from the first to the last year, but grammar school children, especially the boys, began to switch to a preponderance of 'bloods' by the last year of secondary school.

The NATE study involved 2122 pupils aged 11 to 16 in 9 schools. Two hundred and five of the subjects were fifth year pupils. For analysis, the subjects were classified as Category A (GCE Grade 1 potential, as assessed by their teachers), to Category D (potential GCE failure). It was found that the Category A pupils read more magazines of a more specific, educational or adult type than Category D, many of whom read no magazine or comics at all. Similarly, Category D pupils read fewer books than the rest of the pupils, and the greatest distinction was between those who read no books at all and those who read one or more. There was some indication that examination preparation might mean less leisure reading in the fifth year, for fewer Category A fifth year pupils read a book a week than in other years. Also, light escapist literature was most popular with senior students. As in the 1940 study, 'serious' newspapers were seldom read.

The salient feature of these studies is that school children read far more than their teachers give them credit for - indeed, that they read far more outside school than they do in school.

A question that may bother many educators and parents is whether this reading of pulp fiction, comics, adventure magazines dulls reading response in the children - what about developing their critical faculties, their taste for quality? In their work, Hooked on Books, Fader and McNeil (1968) advocate the replacement, whenever possible, of customary texts and workbooks with newspapers, magazines and paper-bound books of the sort indicated in the above studies. Their object with pupils is to 'start from where they are' in teaching them to be responsive in the world of words.

They even include cartoon books in the range of suggestions for the classroom library and ask rhetorically if reading Dennis the Menace cartoons is really reading - "It is if you think it is. You may be looking mostly at the pictures, but if Dennis and Charlie Brown can conspire to convince you that you're a reader just like everyone else, then you become a likely fish to swallow the bait of language when the line is attractively dangled." According to D'arcy (1973) school librarians report that the Fader - McNeil scheme works in terms of the number, breadth and quality of books read.

R. L. Thorndike's study of reading comprehension education in 15 countries deserves attention if only because of its breadth and the staggering achievement of producing (hopefully) equivalent tests of reading in several languages. Thorndike's subjects were 102,500 children in 4651 schools in the 15 nations. There were 34,000 10 year-olds, 39,000 14 year-olds and 29,500 final year secondary school pupils. The countries were Belgium, Chile, England, Finland, Hungary, India, Iran, Israel, Italy, the Netherlands, New Zealand, Scotland, Sweden and the U.S.A. Thorndike gathered data by means of multiple-choice reading comprehension tests, speed tests, word knowledge tests and questionnaires for the pupils, their teachers and their schools.

The major outcomes of the study were 1) the great gap he found in

reading levels between pupils in the developed and in the developing nations (Iran, Chile and India); 2) that home environment is an important contributor to reading success; and 3) the relative inability of the schools to combat the influence of the home or country. Related to the first finding listed, he also found that the developing countries were below the developed ones in reading comprehension scores " from one and a third to three standard deviations for those at the end of secondary school." In other words, the gap widens as the children progress through school.

The results of the testing, as Thorndike says, " are somewhat disheartening as far as providing cues as to what aspects of a school organisation or programme contribute to the reading ability of the children in the school." Among the final year secondary pupils, in his search for factors associated with individual differences in reading achievement, Thorndike's correlations of variables with reading comprehension scores are low - due, he says, to the great degree of selection that has taken place by the time the subjects reach their final year of school. This has the effect of reducing the range of talent by dropping off the lower end of the scale, while factors other than reading ability become dominant. In other words, reading ability is a necessary but not sufficient predictor of success in school. This is shown in Thorndike's study by his correlations between the basic reading skill and reading in literature and science - those whose basic reading is better tend - but not strongly - to perform better in the subject area. His correlations are uniformly low: on reading comprehension correlated with socio-economic status, the mean rho is .16, the range from .35 to .03; with reading resources in the home the mean is .16, the range from .3 to .07; with age, the mean is -.15, the range from -.32 to +.08. The rest of his correlations with reading ability are even lower - with expected occupation the mean is .1 . This would indicate that, while the Thorndike study is to be commended for its breadth, its depth leaves much to be desired, and it would further appear that correlational analysis has its limits in a complex study of this sort.

Jordan's (1975) study was to find out what subject areas most interested children in six African and Asian countries. Like Jenkinson, Jordan found that adventure stories were the most popular, followed by stories of animals and of children. His subjects generally preferred to read about their own country or far-away places like America or Britain - but not neighbouring countries or cities.

These studies give many pointers on methodology, possible avenues of approach, likely outcomes and areas of interest to the researcher in reading habits. A three-part project was planned: 1) an investigation of reading ability in English and Setswana, 2) a survey of reading behaviour by means of interviews and 3) a measure of success in school, with performance on the Cambridge School Certificate examination as the criterion. There was also planned a background study of the availability of reading materials in Botswana, and the policies and attitudes toward literacy and reading in the schools. This research project was carried out between May and September 1974, in Botswana, and this thesis is a report of that research, the theories underlying it, the data collected and the conclusions arrived at.

Chapter Two is a discussion of the problem under study and its background, including a survey of research on the nature of the reading skill from the psychological and linguistic points of view. It also contains a survey of literacy as a pre-condition for national development and the place of literacy within plans for modernisation. The complex nature of the reading skill is emphasized and the difficulties of testing it. A distinction is made between 'reading' - a skill acquired by an individual - and 'literacy' - the social use of the skill.

Chapter Three is a survey of Botswana as a nation which shares many of the problems of developing nations everywhere - a dependence upon agriculture, but with a growing need for highly trained administrators and technicians; few urban centres, but each with growing numbers of

unemployed, slums, poor social services; poor internal communication; a popular demand for education far outstripping the capacity for provision, yet, an already declining demand for top-level personnel becoming less and less in the future as localisation takes place. In this chapter a picture is given of a population made up primarily of one cultural group but with smaller, but important, minorities; a language situation characterized by a single language suitable for internal communication in certain functions for the vast majority but unsuitable (for a variety of reasons) for other very important functions and for international communication. Finally, Chapter Three contains a description of the educational system in Botswana, one like others in Africa and elsewhere, inherited in large part from colonial rulers, but which is nowadays rapidly changing to meet the demands of independence and modernisation. The main point to be made is that Botswana is a country where resources are few and where, consequently, efficiency is called for in all spheres of development.

Chapter Four contains the discussion of the research design and the methodology employed. First, the use of cloze procedure is discussed and a survey of the literature is undertaken. The view is put forward that cloze tests measure a subject's ability to utilize redundancy in language and that this skill is a basic one in language proficiency. Some of the problems of writing a cloze test in Setswana are discussed. Next the problems of interviewing are taken up, particularly the difficulties of reconciling what have been called 'verbal' attitudes and 'action' attitudes - what is said about a subject and what is done about it. In this chapter, it becomes clear that in a field project, simply knowing the dangers and ways to avoid them is not enough, but that practical necessities such as time, money, politics, transportation all need to be considered in a research design. For this reason, a section has been included on the nature of the practical problems encountered in Botswana and the effect these had on the final design.

Chapter Five is the first of the three 'data' chapters - a presentation of the reading test results, with very little discussion. Chapter Six contains the data from the interviews on reading habits

of the Form Five pupils in the study. Chapter Seven has three parts: the results of the Cambridge School Certificate Examination, which the subjects sat in November 1974; the results of the study of the relationship between the cloze tests and the Cambridge Examination; and the results of the study of the relationship between the cloze tests and the interviews.

Chapter Eight is the discussion chapter, where all of the tests and measurements are discussed. Comparisons with the findings of certain other studies are made and the data of this study are interpreted in connection with the hypotheses presented in Chapter Four:

- 1) that reading ability in English is substantially related to reading ability in Setswana;
- 2) that each of these is substantially related to reading habits;
- 3) that each is substantially related to academic success.

The final chapter, Chapter Nine contains a summary of the findings, the conclusions arrived at and suggestions for future research.

CHAPTER TWO: THE PROBLEM AND ITS BACKGROUND

This chapter will deal with the theory of reading, from both a psychological and a practical view. There are two ways suggested for looking at reading - what goes on in the head of the individual reader - what he does when he reads - and what he does with his reading. The first will be referred to as 'reading', the second as 'literacy'. Some of the interlocking dimensions of the problem involve distinctions between the skilled and the unskilled 'reader', between the literate and the non-literate individual, between reading in a first language and reading in a second language. The sections that follow will take up these points: first there will be a discussion of the mechanics of reading, mainly from a psycholinguistic point of view. This discussion will be of importance especially as background for the section on the reading tests in Chapter Four. It will be followed by a discussion of literacy, incorporating the notion of 'functional literacy' to provide background for the section on Botswana as a communications network and that on the interview methodology. Finally there will be a section on the importance of literacy for national development which will include a discussion of how literacy can change the individual and how literate individuals can change their society.

WHAT READING IS

We have surely come to the place where we need to know
just what the child does when he reads...

Edmund Huey 1908

Reading, like listening, is an act of perception. Huey (1908:104-106), in a work which stands as a landmark in reading research, mentions four characteristics of the perceptual process which are relevant to a study of reading. The first is that perceiving is an act - a thing we do - and is never simply passive, by which Huey means that perceiving requires some effort - the use of muscles and 'psychic' activity. This feature of perception, which in reading refers to the interaction of the eyes and the mind, will be discussed in some detail below. Huey's second characteristic follows on from the

first: "Perceiving being an act, it is...performed more easily with each repetition of the act." Huey found, for example, that subjects took longer to identify new words, but less and less time to do so as the words became familiar. A third feature of the perceptual process is that a perception " may involve more and more complex constituent acts", which, with practice, " become synthesized to a total performance which may be set off from a single consciousness cue." This idea was taken up again by Osgood (1952) as he developed his concept of "dispositional mechanisms" in language behaviour - complex verbal skill patterns which become automatic. An interesting corollary to this principle is that people, even in the same culture and language background, may or may not share these patterns, developed as they are in the context of personal experiences and circumstances. The fourth perceptual feature which will have a bearing on the discussion of reading which follows is that a perception is a "projection...outwards of a consciousness which is aroused...by the stimulations that have come inward, but which is conditioned strongly, also, from within." Such a statement as this may be seen as the forerunner of Smith's (1973:6) distinction between 'visual' and 'nonvisual' information in reading, and his claim that the latter is more important than the former (p.8). Consideration of these features of perception led Huey to be 'perfectly certain' that 'words are not perceived by a successive recognition of letter after letter' and that with skill the reader learned to recognise larger units even than words (pp. 111 - 112). The important question as he saw it was in determining what parts of the units were significant in setting off recognition. This continues to be a central question in the study of reading today.

A strong case has been made recently for the letter-by-letter process of reading which Huey rejected. Gough (1972), for example, cites experimental evidence which shows that letter-by-letter reading can take place, then, adopting the idea that a reader can map his letters onto a phonetic system (cf. Chomsky and Halle, 1968), asserts that reading always takes place in this way. Brewer (1972) quite rightly points out that any evidence to the contrary cannot

be accounted for by Gough's model. Such evidence is well reviewed by Bradshaw (1975) who suggests that pairs like shoot-chute are distinguished by word shapes rather than sound, and that words like tear require meaning to be understood before they can be pronounced. Brewer suggests that the crux of the problem is Gough's rigorous separation of the lower letter-by-letter processing from the higher level linguistic meaning components. He points out that studies have shown repeatedly that letter recognition is better and faster for words than for non-words and deduces that there must be some interaction of high and low level components not accounted for by Gough's model (pp. 361 - 362).

Many scholars (Huey, 1908; Brewer, 1972; Smith, 1971; and Bradshaw, 1975) suggest a two-mode reading process, the first of which is nearly always employed by the beginning or unskilled reader, but by the skilled reader only when he encounters a new or unusual word. This is what Smith refers to as 'mediated' word identification: the reader discriminates all or some of the letters of a word and puts together the sound by means of phonemic rules. The skilled reader also has at his command - and most of the time employs - 'immediate' word identification - going directly from the visual features on the page to meaning. Bradshaw (1975) cites very strong experimental evidence to show that lexical items are identified before any phonological information is available to the subject. Goodman (1970b) postulates four processes which make up the skill of utilising the nonvisual information available to the reader: he first samples a relatively small portion of the visual input, relying upon his knowledge of redundancy and probability (see below) on all levels - as suggested by Briere (1971) : phonological, grammatical, lexical and semantic levels - to make predictions about the structure of the material that he is reading. He tests these predictions against meaning which he builds up from context and then either confirms his predictions and continues, or disconfirms them, in which case he must go back and have another look at the input data. This is a very stylised account of a complex process, but serves to represent its essential features.

The reader scans the text, pausing to pick up distinctive features, regressing to check on miscues. Reading then, is a perceptual process that requires the interaction of the eyes and the mind, with the greater part played by the mind perhaps; a complex but highly unified set of patterns which may be triggered by a single cue. In the discussion of comprehension which follows this picture of the mechanism of reading will form the background.

The question of how the reader gets from print to meaning is a basic one in the study of reading. Gough (1972), as indicated above, proposes that the reader maps his letters onto systematic phonemes, using the same system that Chomsky and Halle (1968) assume in the comprehension of speech. However, merely because such a system is possible does not mean that it is always or ever used. The weight of the evidence reviewed by Bradshaw (1975) seems to be in favour of a system of direct access to the semantic content of a passage without the necessity of going through a phonological stage at all. In his discussion of the extraction of meaning from a text, Smith (1971: 193) asserts that "meaning is not just something that suddenly appears when we have read or listened to the end of a sequence of words. Instead information is available at every point to reduce the number of alternatives remaining for those parts of the sequence that have yet to be encountered." In viewing reading as a perceptive act, Smith regards it as a process of decision-making involving the recognition of distinctive features, which themselves depend not so much on the actual nature of the stimulus as on the perceiver's rules for distinguishing features: the perceiver, then, imposes his own organisation upon the information that reaches his receptor system. For Smith, meaning is not simply a semantic feature list, but rather, "it is the way in which the specification of semantic features - or relationships for a particular category relates that category to all other categories in the cognitive system." (p. 191). The result is a definition of comprehension as the reduction of uncertainty through the elimination of alternatives by the allocation of a statement to a particular cognitive structure (p. 185; 192). The crux of Smith's argument is

that a thought, or the meaning of a sentence, is something 'global', "an instantaneous set of relationships established in the cognitive organisation, and not something strung out over time" (p. 194). It is the grammar of a language that is the mechanism by which the thought, with no spatial or temporal organisation, is converted into a sequence of words, and vice versa, the means by which that sequence of words may be translated into a simultaneous cognitive whole.

Finally, Smith follows Osgood (1952) by suggesting that one of the chief internalised sources of information that makes possible the use of visual information in reading is a knowledge of redundancy and transitional probability: "the use of redundancy - the elimination of alternatives by information from non-visual sources... facilitates reading by making far less visual information necessary..." (p. 201). A detailed treatment of the concept of redundancy will appear in Chapter Four, but it is enough here to say that it is this feature of language that is the information "available at every point" in the passage, provided the reader is able to make use of it, which enables him to make predictions about cues and meaning to come - Goodman's 'psycholinguistic guessing game' (Goodman, 1970a). The reader, then, selects graphic cues, processes them, and anticipates further cues based on his knowledge of probable sequences; uses his long-term memory to find related syntactic, semantic and phonological cues and his short-term memory to store partially decoded meaning; tests the partially decoded material for grammatical and semantic acceptability in context and perhaps regresses to find points of inconsistency; and finally, forms expectations about graphic cues and meaning to come (Goodman, 1970; Ruddell, 1969).

The above description is one that may apply to what the reader of his mother tongue does, but it may be asked how the description might change when the reader of a second language is considered. Very little research has been done on this facet of reading. It is fairly obvious that the L₂ reader does something different from the reader of his mother tongue - he usually reads slower, with less comprehension. But what is the cause of this difference? How

does the reader in a second language process language material differently than the L_1 reader? In an effort to find out, Oller and Tullius (1973) used Eye Movement Photography to examine the number of fixations, their duration, the number of regressions, the word span and words per minute of 31 non-native readers of English and compared their results with those of native speakers in an earlier experiment. The only significant (at 5%) differences they found were in the duration of fixations and words per minute. Surprisingly, there was no significant difference in the number of regressions or in the number of fixations needed by the L_1 and L_2 readers. This longer period of fixation required for processing by the non-native readers suggests that they need more visual information, and have less internalised information available, for processing. Use of the short-term memory is affected in this case, for, as Miller (1956) showed, the short-term memory has a capacity for a limited number of items, but the items stored in it may be either rich or impoverished, depending upon the individual's ability to structure the material he is processing. The reader who is able to predict the nature of, and so structure what he is reading, will have an advantage over the reader who cannot do so.

In this section the view has been taken that reading is a perceptual act - an activity with features both inward and outward; a complex activity made up of many definable parts but synthesized into a single performance, one which improves with repetition. It has been seen how the reader, although he must at times make use of his knowledge of grapho-phonemic correspondence to identify new words, when he gains skill, is able to go directly from the printed data on the page to meaning without recourse to lower level phonological data. Further, the suggestion has been discussed that the reader makes use of his knowledge of redundancy in language to form expectations about, and thus structure, his reading. It is this skill which may signal the greatest difference between a reader operating in his native language and in a second or foreign language. The L_2 reader needs more visual information than the L_1 reader because he has less internalised information available for structu-

ring what he reads. Such knowledge has consequences for the teacher of reading in a second language, for it means that reading improvement may not come about through intensive programmes such as the SRA course, or through 'speed reading' programmes, but through enriching the student's internal resources, by increasing his ability to relate semantic information in a system of cognitive structures - or more simply - to come to a better understanding of the world about him - able to fit his perceptions together into a related whole. This is what learning must be, and what education is all about.

WHAT LITERACY IS

Reading has been viewed as a skill in an individual, a personal resource which one can put to many uses: to gain information, to communicate it, to lift his spirits, to have fun. Reading is also something we speak of as a resource of society - we talk about a literate culture, "literacy programmes" and the like. In this respect, the term literacy seems a more natural one to employ, and in this thesis the distinction will be made between reading and literacy, the one is an individual skill, the other the use to which the skill is put in society. The skill of reading brings changes within an individual, literacy brings changes within a society. This distinction is, after all, an analytical one, and should not be taken too far. It is merely a useful distinction for talking about two facets of what is essentially the same ability.

H. L. Elvin (1971: 1 - 25) outlines three stages in the argument about the importance of general literacy in the movement from a pre-technical to a modern economy. First is the argument for mass literacy campaigns, for which two factors are necessary: a genuinely revolutionary mood, and economic development which gives expanding opportunities to use literacy. This is perhaps an oversimplification of the relationship between the psychological character of a nation, economic progress and literacy, as will be discussed below. The second stage in the argument came with the recognition that what the rural worker, for example, really wanted was to improve

his yields, or a better road, or a village school - so the aim was to give these things and then "he will find increasingly that to be able to read and write is useful too." This way of going about things is perhaps backwards: as Gunnar Myrdal (1972: 328) suggests with regard to educational development, "Literacy cannot...be put on a par with the other good purposes (such as imparting knowledge, skills and attitudes of practical importance) as it is primarily an instrument whereby the other goals can be attained. It is a precondition...". Finally, in Elvin's view, the argument arrives at a definition of what has been termed 'Functional Literacy', although he doesn't use the term. There are two requirements for this goal: "...the effort must be made where the relevance and usefulness of reading and writing are ...clear," and "literacy must be fused with programmes of economic and social development."

The concept of Functional Literacy is one which has been elaborated upon since its beginnings at least as early as the World Conference of Ministers of Education on the Eradication of Illiteracy in 1965. In their report, the Ministers stated:

Rather than an end in itself, literacy should be regarded as a way of preparing man for a social, civic and economic role that goes far beyond the limits of rudimentary literacy training, consisting merely in the teaching of reading and writing. The very process of learning to read and write should be made an opportunity for acquiring information that can immediately be used to improve living standards; reading and writing should lead not only to elementary general knowledge but to training for work, increased productivity, a greater participation in civil life and a better understanding of the surrounding world, and should ultimately open the way to basic human culture.

Literacy teaching should be resolutely oriented towards development, and should be an integral part not only of any national education plans but also of plans and projects for development in all sectors of the national life.

UNESCO 1965

The concept of Functional Literacy was proposed to deal with the problems of literacy programmes that simply taught the subjects to read, with little concern, or at least capability, for the use of the new skill for the benefit of the individual or his society,

beyond the general idea that reading is a basic human right. In practice, Functional Literacy might be related to the case of a farmer who wants to increase his productivity, who has heard of hybrid seeds, fertilisers, insecticides but doesn't know how to use or obtain them. A training programme which might be devised to help him, and which would include Functional Literacy as a goal, would give him training in the use of modern techniques and help him to discover the general principles underlying modern agricultural practice. But it would also teach him to measure, compute, keep records, read instructions as necessary - literacy as a function of a wider development programme (Viscusi 1973: 78 - 79). The concept of Functional Literacy has been an elusive one to put into practice, certainly. The relationship of literacy to development goals is a complex one, and the reading skill is only one of many factors which influence development, as will be seen later in this chapter. For the moment, however, it is sufficient to note that UNESCO, the founding parent of Functional Literacy as a programme to be implemented on a somewhat experimental basis, in its evaluation of the programme has been re-considering the usefulness of mass literacy programmes of any sort. The new key phrase is 'lifelong education' (UNESCO, 1972) and the approach to literacy characterised by flexibility rather than adherence to expensive, selective programmes of the work-oriented Functional Literacy type (British Committee for Literacy, 1975).

The inclusion of numeracy and measurement as part of the literacy programme is one which Myrdal (1972: 327) also emphasises:

"'Arithmetical literacy' is a vital aspect of functional literacy. From the standpoint of economic development it is at least as important as 'verbal literacy'". He is critical of the fact that the ability to use numbers meaningfully is largely ignored in the discussion of literacy.

Literacy is much more than simply the skill of reading - it involves a change of major proportions, both psychologically and intellectually, bringing understanding that acquiring skills and knowledge is a lifelong process, not a single experience that is soon over.

Functional literacy means a loose meshing of the individual's skill and the demands of his society. An international symposium on functional literacy in 1973 concluded, among other things, that a person is functionally literate "if he can meet the demands for literacy skills his society makes upon him" (Muller, 1973: 71). It is clear that functional literacy must differ in its requirements from place to place and situation to situation. A farmer who is literate in his village may find, upon moving to the city, that his skills are inadequate to cope with the demands of the urban context. The concept of functional literacy was developed in the context of adult education, but may not the same principles be applied in the area of formal schooling at the secondary level? In the same way as the farmer who moves to the town finds difficulty, the school child who is literate within the academic milieu may experience nearly insurmountable difficulties when he leaves school and enters the world of government, business or higher education. The problem is more than just one of 'reading ability' - the reader must be able to "participate in the life of society and to change it from within" (Muller, 1973: 4). This idea of change as a consequence of literacy is dealt with by Amove (1973) when he warns that there can be a negative aspect of literacy programmes if they have as their goal preparing people to fit into existing structures better. Literacy, he says, should be a first step in helping people control their own destinies - education for liberation as opposed to education for domestication. It is social^{change} and the ability to deal with it on an individual level, that should be at the heart of a consideration of a reading - indeed, the complete educational - programme.

The school, of course, is one of the places where education for development should be taking place. And, certainly, in most of the developing countries, one of the first projects after Independence is the expansion of the educational system. Yet, just as commonly, as time goes on, it becomes clearer and clearer that the schools are not doing enough to produce individuals capable of performing the tasks they are called upon to perform when they leave school. Boadi (1971: 54) describes such a situation in Ghana:

A few years ago most people who had spent eight to ten years in an elementary school could get a reasonably good job because they could claim they were educated. Now the position is different; present-day primary-school leavers and certain categories of GCE 'O' level holders are said for many purposes to be 'illiterate'. In a desperate effort to look for the educated norm, some people have turned to university graduates...

A common story, not wholly explained by reference simply to 'rising standards' in the requirements for educated manpower. There would seem to be a mismatch between the goals set by educators and the requirements of employers. The Botswana Commission on Localisation made this clear and incidentally helped to mark out the parameters of functional literacy when they stated:

We wish to place on record our view that there is a strong case for the modification of the educational system which is at present almost entirely academically oriented.. ..There should be a more realistic assessment of the educational attainments which are necessary at the terminal stages of the system, i.e. end of primary, end of Form Three, and the end of Form Five, to allow students to enter into employment with educational preparation more realistically related to employment needs.

Localisation Report 1973: 17

Certainly, this 'academically oriented' education came about in response to social demands at one time - in 1964, for example, a secondary school headmaster in the then Bechuanaland Protectorate, explaining why it was that his pupils studied Latin instead of Kiswahili, implied a social basis for it - if a subject is removed from the syllabus for Africans but retained for Europeans, the feeling arises that the Africans are being deprived of something peculiarly valuable...(Young, 1966: 106). But, as the localisation report indicates, these social demands change. In the context of 'realistic' education, the concept of functional literacy becomes clearer - literacy is not an end in itself, but a stepping-stone to continuing education, within the framework of a development programme. Thus, too, the need for a study of "advanced literacy" as discussed in Chapter One. If the school leaver^s cannot meet the needs for their literacy that society demands, then a reconsideration of the school reading programmes must be undertaken. In the present work, a closer look will be taken at the relationship between the reader

and his society - the relationship of the psychological and social changes brought about by reading and literacy.

READING: THE INDIVIDUAL AND SOCIETY

"The paramount requirement of change in any society is that the people themselves must change." (Millikan and Blackmer, 1961: 23). This not too startling statement indicates nevertheless the close relationship between the individual and society, and hence, suggests that the advance of literacy among individuals can help bring about social change. One of the most important aspects of individual change has been described by Powdermaker (1962: 228) : "Literacy is not just learning to read, but is concerned with comprehending a form of reality beyond immediate experience." Powdermaker points out that in societies which are or were largely pre-literate - including European ones - individuals are dependent upon oral, personal communication between people of similar background about concrete, sensory objects. This changes, however, with the move toward literacy - as Mendez and Waisanen (1964) point out:

"Mastery over symbols, with literacy as the prerequisite skill, puts the boundaries of human experience beyond the visible horizon and thus extends social space." McLuhan (Miller, 1971; McLuhan, 1964) brings a different insight to the same phenomenon with his suggestion that the pre-literate world was in a way better off in communication than the literate one, since human experience is both plural and voluminous - a rich manifold of simultaneous sensation. Any attempt, he says, to communicate this will fail, but the larger the number of senses involved in the communication act, the better the chance one has of succeeding. Hence, speech, a 'cool' medium, is to be preferred to print, a 'hot' medium, since speaking involves sight and touch, as well as sound - demanding great participation on the part of the listener. McLuhan would suggest that literate Westerners are impoverished in having lost this sensory repertoire, in having become detached and un-involved. This idea is supported in part by Jahn (1972: 89), writing on "African Systems of Thought":

Since we have come into contact with European culture the fact of studying has suggested a conception formerly unknown from which has risen another (kind of human

intelligence). Ask about a child, 'Does that child have intelligence?' and hear the reply, 'He has the intelligence of books, but he does not have intelligence...' he is wanting in the wisdom of life, in the knowledge of relationships...

Others take the view that print helps liberate the individual from his group and from his environment (e.g. Riesman, 1956).

Sociologists have referred to this characteristic of the literate individual as 'empathy' - the ability to imagine oneself in new roles and relationships (Rogers, 1969: 205 - 211; Lerner, 1958: 72) - and have suggested that it is a very important prerequisite to social change: until a man can see himself as something other than he is, he cannot change. In fact, empathy is just one of a number of factors influenced by literacy in a developing country. Rogers (1969: 70 - 71) suggests four reasons why literacy is an important element in the process of modernisation.

First, as has been indicated above in the short discussion of empathy, the literate individual can extend the scope of his experience. The man who can read has access to the manifold experience of humanity - he need not wait for personal contact with the world beyond his horizon. Secondly, the literate individual can control the rate of information input - both in terms of his own ability to comprehend (but see Oller (1973) on short-term memory constraints in reading) but also in terms of breaking the flow of information - he can think about what he is reading, can discuss it, criticize it. Powdermaker (1962: 280) quotes an African reader, educated to Standard VI, on this subject:

In a newspaper you can read and re-read the news, and so you can understand it properly. Also a newspaper keeps a record of what has happened or been said, but the wireless only says something once and leaves no record for the future... and so it is simple to cheat there. (My emphasis)

Thirdly, as the above quotation also indicates, the literate person can store and retrieve information in a way the man dependent upon oral communication cannot. The non-literate farmer who hears of a new planting method must remember the whole of the message, but the man who reads about it need remember only where he read it - he can find it again when planting time comes. Finally, Rogers suggests that literacy is a key for 'unlocking' complex mental abilities such

as the manipulation of symbols, counter-factual thinking, generalisation, and the restructuring of data. He shows that these abilities are necessary ones for the modernisation process.

In the 'multivariate web of factors' contributing to modernisation, mass media exposure is one of the single most important ones: Rogers (1969: 210) found among Columbian peasants that over 23% of the 'variance in empathy' measure, for example, was due to mass media exposure - radio, cinema, newspapers, etc. Schramm (1967: 16-17) has referred to this dimension of communication use as establishing a climate for development, but also suggests that on a more practical level, the use of communication is as a multiplier of information - a distributor of information resources. It is this area that may be of most interest to the educator, for the student must not only be given the resource material, but he must be given the ability to use it effectively. Acquiring information from a radio programme or from watching a film is an activity of a different quality from that of reading a newspaper or magazine. Plaister, in responding to a paper by Spolsky (1968) on aural testing, touched upon this area: he presented an illustration of foreign students in an American university, who in preparation for their studies had lived for several months in the university town. They acquired excellent 'ear' English but their 'eye and finger' English hadn't improved much at all - which, Plaister suggested, is because speaking and listening skills are learned in society, but reading is learned in a classroom. This suggestion is not at variance with that made above that advanced reading might best be improved not by intensive programmes but by extensive ones - there is still the need for a teacher-guided programme, which should take place within the classroom, as Plaister suggests. Thus, in the area of social change and the influences upon it, the educator must be concerned to a great extent with the flow of information and its distribution, especially with regard to print-media. Obviously, this concern cannot be limited to the language teachers - the dissemination of information through print is the domain of all sections of the school, both as a tool for the acquisition of knowledge within the school, and as a preparation for joining the development process outside of school.

A brief discussion of literacy and national development is necessary, for it is in the area of national development that interest should centre when talking about education in a developing nation. The newer nations of the world are in the development business, so to speak - they are interested in a mobilisation of resources for the purpose of change. Development has been defined as "a process through which a society achieves increased control over environment, increased control over its own political destiny and enables its component individuals to gain increased control over themselves." (Inayatullah, 1967: 101). Here again, the close relationship between individual and social change is evident. The job of the educator is not limited simply to the school, but is linked directly to the demands of the developing society. Awareness of the close ties between individual and social change brings hopefulness to the educator, for it means that he need not agonise over a seeming dilemma of whether to attend to the needs of his pupils as individuals, or to the demands of his society. As when in curriculum planning for a literature course, for example, the educator is faced with a decision whether to emphasize the intensive study of a few works, or the wider study of several. In a speech to the Botswana National Assembly in 1971 the Minister of Education said:

We have...to decide where we shall lay emphasis in our educational processes and activities, and I venture to say that while our educational system must endeavour to develop sentiments and feelings, while our educators ... may train our young people to appreciate beauty, or while it is important to cultivate in our young the concept of comprehensive world citizenship, in place of exclusive nationalism, nevertheless, for all developing countries including Botswana, it is the training in skills to facilitate economic development that educational systems in the developing world must lay stress on.

Thema 1971

It may be suggested that there need be little agonising over the placement of emphasis in education - no dispute between the exigencies of the development of "sentiments and feelings" on the one hand, and "training in skills to facilitate economic development" on the other. Rogers (1969: 82ff) for example, has shown that there is a positive relationship between functional literacy and many of the indicators of the "climate for development". For instance, the functionally

literate group in society is far ahead of the non-literate group in measures of empathy. The social status of the functionally literate as indicated by farm size, is much higher than that of the non-literate. This may be because the economic and social factors that accompany large farms encourage school attendance - in other words, though no causality is implied, the fact remains that literacy is related to social status. Similarly, the literate group make many more trips to towns than do the non-literates. This may be due to the literate group having a greater awareness of the business advantages and recreational services available in towns than do the non-literates, and/or being better able to function in towns than illiterates. Finally, the functionally literate group show a much greater degree of political knowledge than the non-literates - perhaps because much political information comes through mass media or because an interest in new ideas is simply a function of being literate.

The published media with which this thesis deals are described in detail in Chapter Six, but here a general description of the demand for and the availability of reading material in Botswana is in order. The 1971 Census took no account of literacy or of linguistic background per se, but the assumption was that anyone with at least five years of primary education was "permanently literate" (Census, 1972: 156). This means that, of the population aged 15 or over, 11% of the males and 10% of the females are literate in English (and presumably in Setswana). The question of what it means to be literate is a fundamental one in this study. There is no question but that in an environment where only 11% of the population have a minimum of five years of education, 'literacy' must mean something different than in one where perhaps 80% are literate. There is very little agreement upon when it is that a person may be considered permanently literate - not apt to slip back into illiteracy from lack of practice. The Botswana Census takes the figure of at least five years of primary education. The data which will be presented concerning the nature of the literacy of the fifth-year secondary school population who are the subjects of this study must be considered against this criterion.

If the demand for reading material in Botswana may be said to be fairly low, the availability of it, on the surface, at least, is not too serious a problem. South African and Rhodesian literature - newspapers, magazines and books - are readily available in shops, and every major village has a branch library where reading material is available. All secondary schools have a library, more or less well-stocked with materials. The government publishes a daily newspaper in both English and Setswana, and a monthly bilingual magazine, both of which are distributed throughout the country. Examples of these are in the appendix. The crux of the problem is that, if literacy is to be treated as a resource for development, an effort must be made to marshal this resource - putting the material in the hands of those who can benefit by it and encouraging the efficient use of it, in the same way as water or land resources are treated in the development programme.

The Inayatullah definition of development has been given above. Other scholars have defined development in similar terms, perhaps emphasising more heavily the economic or the political or the technological side, but none of the various definitions gets very far in the scientific study of the process. They all agree, however, that development is a process for bringing about change within a social system. This social change requires two factors before it can take place - recognition of the need for change and new concepts to meet that need. Each of these factors may be internal or external with respect to the social system. The definition of development need not imply 'Europeanisation' or 'Westernisation' or even that development is 'good', but in this study, development is used to mean simply planned social change.

The place of communication - the flow of information - within the developing society has been the subject of many studies. Schramm (1964: 1) has suggested that the uses of communication in development are two-fold: to establish a climate in which the development can take place, and to act as a multiplier of information. These two uses correspond to the psychological and practical importance

of print-media to the development of a nation - the business of development depends upon the smooth flow, both horizontally and vertically, of information and policies. Regarding the establishment of a climate favourable to development, it has been suggested above that literacy "is concerned with comprehending a form of reality beyond immediate experience" (Powdermaker, 1962: 228).

The second use of communication in development - as a multiplier of information - is especially important in a nation like Botswana, where educational resources are scarce and over-stretched. It is national policy, of course, to make the best possible use of limited educational resources. The subject of concern here is communication strategy - the distribution of the resources so that information can be made to flow where it is most needed - in this case, to the students. The materials for the enrichment of knowledge among the students already exists - I hope to show that Botswana is not badly off for the availability of mass communication print-media - the problem of its use is two-fold: the students must be exposed to the media, and once this has been done, be given the ability to make profitable use of it. Both of these sides of the problem are of concern to the educationalists - the first is a matter of policy, while the second is a one of pedagogy.

CONCLUSION

In this chapter the view has been forwarded that reading is a resource both for the individual and for his society. Changes of great significance take place when a man learns to read, and when a society becomes literate. One of the places where these individual and social concerns come together is the school, and the educator should be aware of reading as a resource both in individual development and in nation building.

We have seen how the advanced reader in a second language requires a broadly-based programme of reading to give him the necessary experience to utilize the redundancy of his second language in a way

similar to his mother tongue. We have seen how reading in the individual is related to literacy in the society, and the meshing of social and individual changes brought about by reading. The concept of functional literacy has been used to exemplify this meshing. Finally, the place of the reading educator at the nexus of these concerns, manipulating both individual changes and social changes has been pointed out. In the chapter that follows we will look at a specific case, that of Botswana, emphasizing a view of the nation as a network of communication, of development information available to the reader who is able to make use of it.

CHAPTER THREE: BOTSWANA - THE BACKGROUND TO THE STUDY

THE COUNTRY

Botswana is a big country. Its land area is equivalent to that of France or of Kenya - people and places are separated by distance and by time - a characteristic of the country that has its effect upon many facets of life there (Table 1). Botswana lies at the centre of a huge plateau, ranging from 3000 to 4000 feet in height, and is completely landlocked, bounded by the Republic of South Africa, Namibia, Zambia and Zimbabwe. Botswana may be said to have three parts - the desert, the swamp and the just adequately watered and fertile eastern strip containing 10% of the land and 80% of the people (Map).

The Kgalagadi Desert, the sands of which cover 84% of the surface area of Botswana (National Development Plan, 1973: 1), is characterised by low bush, thorn trees and patches of grass. There is no surface water in the Kgalagadi, and the ground water, reached by boreholes, is often saline. Huge herds of game animals roam the desert, obtaining water from the plants and from pools formed by the torrential rains which fall infrequently - in an average year, only 8 inches of rain fall on the desert (NDP, 1973: 1).

The Okavango Swamp is formed by the delta of the Okavango River in the north-western corner of Botswana. This 6500-square-mile area of water-ways, islands, swamp-grass, reeds and trees contains one of the richest, largely untouched, concentrations of game left in Africa. The swamp is the only perennial body of water in Botswana and is viewed as a potential source of irrigation, but its remoteness from the rest of the country, added to the fact that malaria is endemic and the Tsetse fly is still a problem, make the utilisation of Ngamiland a long-term project. In the short-term, tourism seems to hold the greatest promise for the area.

The best land in Botswana for farming and for grazing is to be found in the eastern part of the country - grasslands, tree savannah

Table 1
BOTSWANA FACT SHEET

Area: 220,000 sq. miles Population (1971): 630,000

Mean Population Density: 2.9 persons/ sq. mi.

Per Cent of Population in:

Towns: 9.5%

Villages under 500: 52.5%

Villages over 1000: 27.5%

Labour:

Agriculture/Pastoral: 67.0%

Paid Employment: 18.0%

Proportion of Male Pop. Employed Outside Botswana: 25.0%

Proportion of Population Under 20 Years of Age: 53.0%

Education:

Proportion of Population with:

No education: 68%

Some education: 19%

At school: 13%

Proportion who left school with:

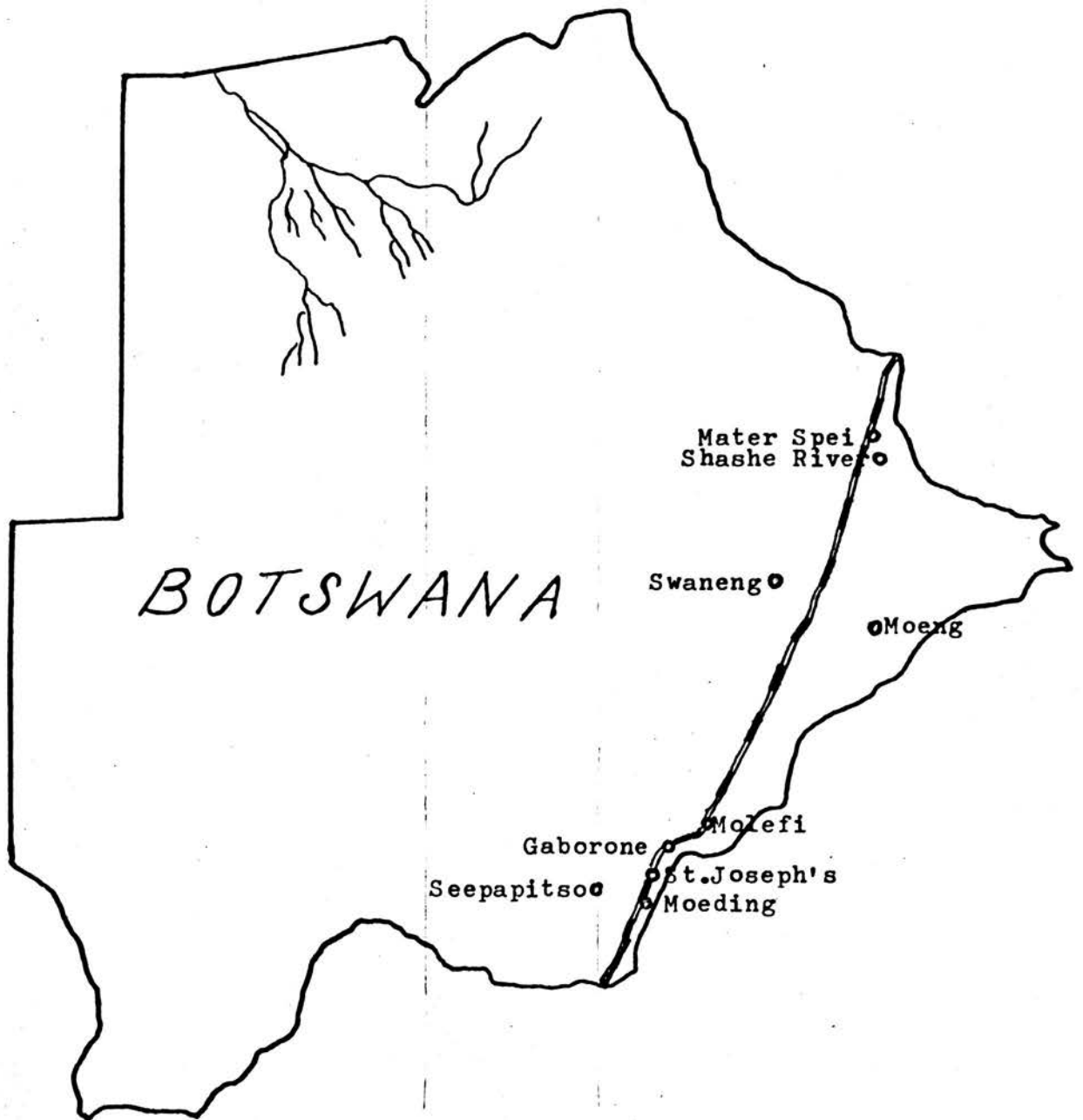
Some Primary Educ.: 61%

Full Primary Educ.: 24%

Jr. Secondary Educ.: 5%

Sr. Secondary Educ.: 2%

Higher Educ.: 1%



Mater Spei
Shashe River

BOTSWANA

Swaneng

Moeng

Gaborone

Molefi

Seepapitso

St. Joseph's
Moeding

and a gently rolling, but rocky, terrain characterise this area. There is no surface water to be found here either, but the rainfall is just sufficient to allow for good pasturage and farming at just above the subsistence level. Overgrazing has led, in many parts of Botswana, to the encroachment of the desert onto this fertile strip.

Communication

It was said above that the people and places of Botswana are separated by time and distance and an examination of the transportation-communication network in the country bears this out (see Table 2). The dominant feature of the network is the railway which runs through eastern Botswana and is a part of the South African - Rhodesian Railways system. Built in the 1890's as a manifestation of Cecil Rhodes' "Cape-to-Cairo" dream, the railway now operates 10 trains a day in each direction between Mafeking, S.A., and Bulawayo, Rhodesia - two of these are passenger trains. By rail, one can make the 350-mile journey from Lobatse, in southern Botswana, to Francistown in the Northeast in about 12 to 15 hours, depending on whether one takes the "mail train" or the "mixed goods". Owing to the fact that the railway runs through the most populated part of the country, great use of it is made by the Botswana for transport between points within the country, although it remains true that a child's first experience of this mode of travel may be when he goes away from home to secondary school. About 45% of the passenger traffic in Botswana is handled by the railway (NDP, 1973: 254).

Road vehicles account for about 53% of the transport of passengers in Botswana, but the roads, although improving, are of a rather low standard. Of the 4900 miles maintained by the government, about 4100 miles are bare earth, almost impassable during the rainy season and unpleasant any time (NDP, 1973:256). The main north-south road, parallel to the rail line, is being bituminised as rapidly as funds and traffic demands allow, but not more than 20% of it is complete so far. The road links between the major towns and

Table 2
BOTSWANA COMMUNICATIONS

Total:	4900 miles
Roads:	
All-weather:	800 miles
Rail:	
Track:	400 miles
Trains/day:	
Passenger:	2
Freight:	8
Passengers carried (1972):	
Total:	632,000
Per day:	1700
Air:	
Flights/day:	
Domestic:	4
International:	2
Passengers carried (1972):	
Domestic:	22/day
International:	44/day
Number of Telephones:	5500
Persons/Telephone:	114 : 1
Number of Radios:	14,000
Persons/Radio:	41 : 1
Broadcasting Hrs./Wk.:	120
National Magazine:	
Copies/Month:	8000
National Newspaper:	
Copies/Day:	
English:	9000
Setswana:	4500

villages of Eastern Botswana are being improved, but a journey to some of them is still no small undertaking. Bus transport, which might mean anything from proper buses to lorries, is still thought of as slow, uncomfortable and unreliable. Road transport between Botswana and her neighbours is in a relatively undeveloped stage - the roads to South Africa and Rhodesia are surfaced with gravel (in part, unsurfaced) and poor; there is no road to Zambia, although one is under construction.

Owing to the great distances involved in travelling around Botswana and to her neighbours, air transport would seem to be a natural and powerful adjunct to the communications network. However, owing to the low demand for passenger service and an almost non-existent freight traffic, Air Botswana is able to offer only minimal service. Several days might pass planning a flight from the capital to Maun in Ngamiland - during which time a four-wheel drive vehicle could make the trip overland. Following the usual pattern of transport in Botswana, the major emphasis of the air service is on travel in the East on a north-south axis.

Other forms of transport in Botswana, used in varying degrees in inter-village communication are walking, bicycling, travelling by donkey-cart, or by canoe (in the Okavango). The importance of these forms of transport should not be under-estimated, for in Botswana, while they are in no sense 'mass transit' and are therefore difficult to quantify, they do account for a great amount of the transfer of information and material. This idea is an important one in this study, for it will be seen later that one of the characteristics of literacy and media use in Botswana is its interpersonal nature - perhaps in contrast to that of Britain or the U.S.A., where the use of "hot" print media, to employ McLuhan's adjective, means becoming less interpersonal and participatory, more introspective.

Important components of the communications network are radio, telephone, and the post. Radio Botswana broadcasts 110 hours per week (this is increasing steadily), approximately half in English and

half in Setswana (Radio Botswana Programme Guide). It provides about three hours of schools broadcasts a day, concentrating on English language and science material, and in July, 1974, began an Extension College series for part-time students at home. A major problem with radio service is the general lack of receivers in Botswana - the national average is 41 persons per set, and in some areas the figure is nearer to 80 persons to a radio. Further, in a survey carried out in a 'typical' Botswana village, one researcher found that 88% of the people reported that they had no access to a radio (Syson, 1972: 64). However, to offset this problem, in 1973 a programme of radio listening groups was begun to encourage people to listen in groups of five to twenty. Materials for a special series of programmes, such as one on the National Development Plan, were distributed to group leaders throughout the country. The initial series met with moderate success and the system is being continued. The telephone service in Botswana continues to be improved, but is still the tool of officialdom - there are very few private telephones in use. In 1973 there were about 5500 telephones - one to 114 people. Important private messages are usually sent by telegram, otherwise, the post is used. As might be expected, north-south service is better than east-west service, but in general the post is good and is used confidently.

The preceding sections have pointed out that Botswana is a large country with meagre communication facilities and it has been suggested that the resulting distance between places and people has had an effect upon the way of life there. In the following few pages, the people and culture of Botswana will be described and a bit more evidence in support of this suggestion will be presented.

THE PEOPLE

Non-Batswana

The name Botswana means 'the land of the Tswana people' and indeed, the vast majority of the population of 630,000 belong to one of the

Batswana tribes. But there are many other groups in Botswana, some of them ethnically related to the Batswana, others not. In the Kgalagadi there are the Bushmen, nomadic hunter-gatherers - probably the first people to arrive in Botswana centuries ago. Their numbers are dwindling as they move closer to the settled areas and take up herding or labouring in response to the ever-decreasing possibilities for existence in their ancient way. Other inhabitants of part of the desert are Afrikaans-speaking people of European descent who own cattle ranches in the area around Ghanzi, where there is sufficient ground water to allow for irrigation. Though this group, like the Boers of South Africa, tend to isolate themselves from the other peoples around them, their culture is an important one in Botswana and more will be said of it later. There is another Afrikaans-speaking group who live primarily along the southern border of Botswana and these are the descendants of the Dutch immigrants of the Seventeenth Century who took African women as wives.

The people of the Okavango area include the riverine Yei, Subia, and Mbukushu and the Herero who come primarily from Angola. All these groups are unrelated to the Batswana whom they outnumber in this part of the country. In the central and northeastern parts of Botswana live large numbers of another important group, the Kalanga, a Central Bantu people related to the Shona of Rhodesia. Though like other non-Batswana groups, the Kalanga are vastly outnumbered, they play an important part in the life of the nation, and will be mentioned in later chapters. They are reputed to be energetic and clever and are prominent in civil service and administrative posts out of all proportion to the relative size of their population. A likely reason for this is that Kalanga boys usually begin school at an earlier than do Batswana boys who have to look after the cattle until the age of about ten or twelve (although this tradition is changing). Another group of non-Batswana people which should be mentioned here is the Moslem Indian group, who, usually, are shopkeepers and small businessmen. Finally, there are the Europeans, usually of British birth who have settled in Botswana and become citizens as farmers or businessmen.

It cannot be emphasised too strongly that the above discussion is a very subjective one - Botswana is a non-racial state which does not keep records of ethnic or racial backgrounds. Obviously, the various peoples in the country do come from different - sometimes very different - cultures and they mix with the dominant culture to a lesser or greater degree. In later discussions of the subjects in this study, reference will be made to one or another of these groups from time-to-time and their relationship to the whole should be kept in mind.

The Batswana

The predominant group in Botswana is of course the Batswana. They are a pastoral-agricultural people who live in relatively large villages of up to 35,000 people, with perhaps widely-separated farm lands and cattle posts. This system of tripartite homesteads makes for a great deal of travelling back and forth at various seasons and may result in the village being half empty part of the year. In fact, in the last census, only 50% of the population were actually in their villages - 25% were at the 'lands' and 13% were at the cattle posts (Census, 1972: 97).

Although it is difficult to assess the exact relationship in size among the various groups in Botswana - the Census takes account only of citizens and non-citizens, not of ethnic or national origin - there is no doubt that the Setswana culture is the dominant one. Everywhere in the country - even in the 'Anglicised' schools and government offices - the approach to problems, ways of communicating, of teaching, of planting crops, of getting married, are Setswana. This might not be evident to the casual visitor, who will be disappointed to see nearly all the people dressed in European clothing, many of them living in European-type houses, doing their best to acquire transistor radios, portable record players and wrist watches. He may be disappointed to learn that the young are not as well-mannered as they used to be, that the old traditions are dying out, that the men sit around and do nothing - and he will see evidence of all this as he walks around a village or town. But this is not

to say that the Setswana culture has been killed, that it has been submerged by the European colonials who have now for the most part gone away and left behind a bastardised culture incapable of sustaining itself. To say this is to underestimate the richness and power of the Setswana way of life which is now in the process of developing a new manifestation, some features of which will be discussed in the later sections on language, literacy and the schools.

The Government

The government of Botswana, although at the national level is modelled upon the European parliamentary system, has its roots in the traditional village assembly, the kgotla. This periodic meeting of the men of the village was traditionally the place where the chief and his councillors received advice on matters of importance and where they made public their decisions. Today, though still presided over by the chief or headman, the kgotla is relied upon by the central government as the best place to impart information about new programmes and policies. There is some evidence, though, that this may not be very reliable - in a village survey, 24% of the men and 67% of the women had not attended kgotla in more than 9 months (Syson, 1972: 63). Still, this 'grass-roots' assembly is probably the most efficient channel of official communication in Botswana (Syson, supported by Kuper, 1970: 82).

The next level of government is that of the District Councils, elected bodies in each of the ten districts of Botswana, responsible for local government. These Councils have taken over many of the duties of the chiefs such as control of land and water resources, primary education, health, housing and general development. Revenue, which comes from rates, taxes, school fees and the like, is spent in the main on education - often 50% or more (NDP, 1973: 100).

Finally, the National Assembly is basically a parliamentary form of government, but with a nationally elected President rather than a Prime Minister. There are 32 seats in the Assembly and 27 of them

are held by the President's party, the remaining five shared by three opposition parties.

LANGUAGES

The two official languages of Botswana are Setswana and English. In the 'official' sphere, English is the dominant one. It is the primary language of publication. Setswana is the language of face-to-face communication, of non-public officialdom, and in general, the secondary language of publication - much of what is written is first written in English and then translated into Setswana.

Setswana

The Batswana belong to the Sotho language group and are thus related to the Basotho and to the Pedi of the Transvaal in South Africa (Table 3). There are eight major subgroups of the Batswana, each with its own area and capital. These subgroups, usually referred to as tribes, are the results of the splintering of two or three older groups. Thus, there is, on the one hand, a lot made of tribal individuality and linguistic difference: as long ago as 1883 in a letter from a Motswana to the editor of one of the earliest newspapers in Setswana the question of dialect is mooted:

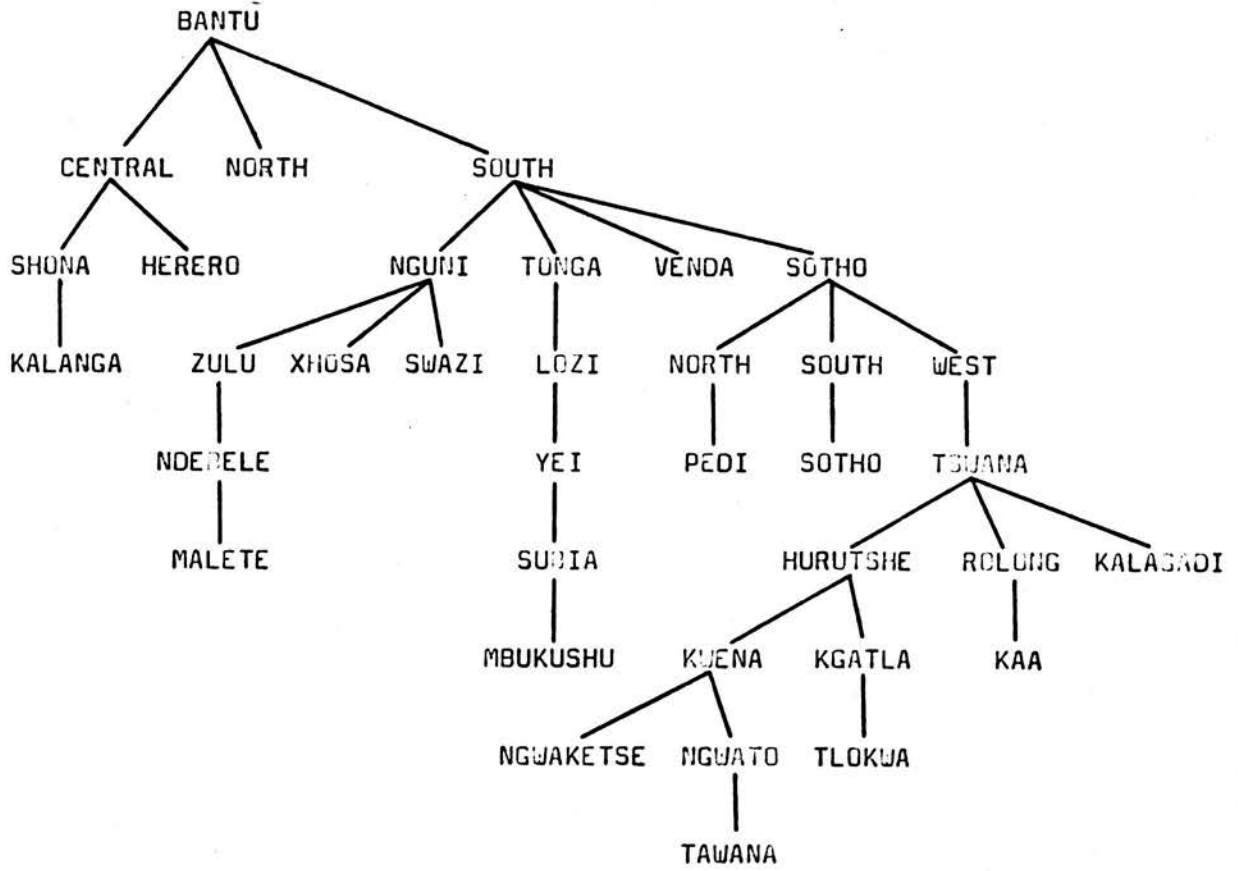
Although the Europeans group us under the name Batswana, we are ourselves many tribes and many languages. There are Batlhaping, Barolong, Bakwena and Bangwato, and I have not mentioned the many tribes of the north. So I ask, Sir, the newspaper of the Batswana - in whose language will it be printed?

Jones, 1972: 114

One of the most common expressions a Motswana will use upon hearing a speaker from another part of the country is "Ga se Setswana" - That's not Setswana! On the other hand, there is much more that binds the Batswana tribes together than separates. A Motswana from the Batswana tribe of the Okavango can travel to Serowe, the capital of the Bangwato and find few cultural differences despite the fact that the two areas are separated by 350 miles of desert.

Geographically, Setswana is one of the most widely dispersed languages

Table 3
LANGUAGES OF SOUTHERN AFRICA



in Africa - it is the major language of an area of over 278,000 square miles. The largest portion of this area is, of course, Botswana, where an unknown, but certainly great, percentage of the population speak Setswana as a mother-tongue, and where a large part of the remainder speak it as a second language. The Setswana area of the Republic of South Africa is much smaller than that of Botswana in geographical size - it is a crescent-shaped area in the northern Cape Province and Western Transvaal - but the Setswana population of South Africa is estimated to be much greater than that of Botswana - 1,650,000 (South African Institute for Race Relations, 1973: 168). In an area so large, one would expect there to be dialectal difference, and certainly they exist on phonological, syntactic and lexical levels. These differences are of course noticed by speakers of the language and are quite frequently remarked upon, usually in a joking way, but they are not great enough to present problems of interpretation or to make for strong feelings of dialect loyalty. Speakers of different dialects when reading aloud from a standard Setswana text, will pronounce words in their own dialect even though the spelling is that of another, just as speakers of one English dialect will do when reading standard English.

The history of the standardisation of Setswana has an early if somewhat scanty beginning with a few notes "Upon the Language of the Beetjuans" included in a two-volume memoir published by a German traveller in 1812. The sort of linguistic treatment to be found in this work - mainly a word list and a few grammatical notes - continued for nearly half a century in the published works of travellers and missionaries - including a 42-page booklet by David Livingstone in 1852. The first full account - according to the standards of its day - of Setswana was evidently by a missionary named Hughes in 1859 (Sandilands, 1972: 105). This grammar survives in manuscript form and contains a summary of the phonology and syntax of the Tlhaping dialect of Setswana - the dialect usually followed by the missionaries who were for many years based in Kuruman, in the territory of the Batlhapi. The two works which form the basis for the modern standard Setswana are John Brown's Tswana Dictionary of 1876 (Revised and enlarged by J. Tom Brown in 1923) and A. J. Wookey's

Secwana Grammar of 1905 (revised, again by Tom Brown, in 1921). Both these works are based upon the Tlhaping dialect, although Tom Brown and Wookey did trouble to consult with a wide variety of informants and try to avoid bias. The standardisation process is still far from complete, however, and more will be said upon the subject in Chapter Four.

Setswana Literature

The history of Setswana literature, while comparatively long and varied, is nevertheless, not too extensive. The missionaries of the mid-Nineteenth Century, notably Robert Moffat at Kuruman, began the written tradition in Setswana and were diligent not only in translating the Bible and religious tracts into Setswana, but in teaching the Africans to read them. The missionaries, too, are responsible for the beginning of a more secular tradition in Setswana letters by having started a monthly newspaper in 1857. Mokaedi Ca Becwana lasted only a short time, but it was followed by other such publications, some of which lasted for a decade or more. The first paper published by a Motswana was Koranta Ea Becoana (note the changing fashion in orthography in the spelling of Botswana), a weekly which ran from 1901 to 1908. Newspapers like these may still be found in Botswana from time to time - they thrive in a local area for a while and then die out, soon to be replaced by another effort. As will be seen in the section on media, there is no independent national press in Botswana - the demand is not great enough to make such a venture economical (kutlwano, Oct. 1971: 16 - 17).

The history of book publication, too, is characterised by notable, but not very lasting, efforts. There is certainly great variety in the list of Setswana books: in 1916, a book of Setswana stories written in IPA script by Daniel Jones and a Motswana, S. T. Plaatje; in 1930, Diphoso-phoso, a translation of Shakespeare's Comedy of Errors by Plaatje; a 1931 history of the Bakwena tribe; a historical drama, written in 1945 and still used in school Setswana classes; a novel of tribal life in 1943. But each of these seems to have been a

'flash in the pan', really, not forming the beginnings of any sort of mainstream of Setswana literature. Certainly there was and is a 'literacy' or 'literate' group in Botswana "whose way of life differed greatly from that of the ordinary tribesmen. They often spoke and corresponded in English even among themselves... bought books and subscribed to newspapers, ran literary and debating societies..." (Schapera, 1970: 236 - 7). There will be more discussion of the position of English in the following section, and in the chapter on education. While on the subject of Setswana literature, though, there is a further point perhaps worth mentioning and that is the current interest in traditional oral literature which is being preserved in print. Examples such as Praise Poems of the Tswana Chiefs (Schapera, 1965), oral history (Tlou, 1971), proverbs (Campbell, 1972) and riddles (Mitchison and Pilane, 1974) may be seen as representing an approach to Setswana literature with roots in tradition and as hopeful of developing a continuity with Setswana culture - a movement from an oral society to a literate one.

English

The history of English in Botswana is, on the one hand, very much in line with what may be seen in the colonial traditions of other African states- it began as the language of missionaries, administrators and educators, and is still the primary language of government and education. However, in Botswana, as in other states, the development of English has taken on a unique form due to the differing demands made upon it as a tool of communication. In Botswana, for example, there is no great need for English as a language of national unity, since Setswana is already serving that purpose, - or should be allowed to do so. English in Botswana began as the language of religion and education (though, as noted above, the missionaries devoted a great amount of their time and energies to developing written Setswana) and became later the language of the administration in the days of the Protectorate. Today English is necessary in Botswana first because of the very great dependence upon manpower from outside Botswana - in 1972, of 850 posts requiring qualification of A-level or above 687 were held by non-

Batswana (Localisation Report, 1973: 26). In a situation like this, if English were not the language of government and education, communication at the higher levels would grind to a halt. Secondly, English, especially in education, is an economic necessity - textbooks and other materials are simply not available in Setswana. These two factors - manpower and economics - are the two over-riding ones in a consideration of a national language policy for Botswana, but there is an attitudinal factor as well. English is thought to be much better suited to modern use - especially in technology - than is Setswana: even in his call for the use of Setswana in parliamentary debates, M. L. A. Kgasa (1972: 109) would limit its use to debates "dealing with non-technical matters such as community development, sanitation and village management." Of course, it is true that Setswana is not as well-developed as it might be for coping with technological terminology, but as far as that goes, neither is English, which depends heavily upon Latin and Greek. There is a rich heritage of acquiring foreign words in Setswana and the active encouragement of this heritage would do much to overcome the attitude that English is necessary for modern thought and work.

English and Setswana in Botswana operate in what might be termed a symbiotic relationship - there are overlapping domains for each. In an official sense English is the dominant language, for it is the one used in parliament, in schools, in publication sponsored by the government - the national newspaper is first written in English and then translated for the Setswana edition. At a different functional level, however, the same people who use English one minute, may use Setswana the next, for not very clearly defined reasons. Much work could be done on making explicit the strategies employed in the use of Botswana's two official languages. It is beyond the scope of the present work to attempt a detailed analysis of the domains of English and Setswana, but data presented in later chapters will shed light upon the relationship within a selected group of the population.

EDUCATION

Traditional Education

Education has always been important in Africa, and the central place children have within the family is reflected in the concern Africans have for the responsibility of educating them. Traditional (pre-colonial) education in Botswana was characterised by its social nature and its emphasis on gradual achievement, geared to the physical, emotional and mental development of the children. A central goal of education was that of moulding character and of preparing the child to take his place as a member of his society. It culminated in initiation into adulthood, which was marked by great ceremony, ritual instruction and by circumcision (Pilane, 1973: 120; Schapera, 1970: 126 - 8).

It is sometimes suggested that among Africans intellectual development does not traditionally receive the importance attached to it by Europeans. Preparation of the spirit and of the body is at least as important: "What a man knows is...less important than what he does, how he lives and behaves; success and welfare are closely related to morality..." (Krige, 1946: 88). The results of this tradition may be seen in two facets of modern life in Botswana: first, education is viewed very practically, as an achievement, something to be passed through. Failure to do so can have serious social consequences. This brings us to the second point: the rite of initiation, which has been formally abandoned by the Batswana since the arrival of the Christian missionaries, has been replaced to some degree by a one- or two-year sojourn in the mines of South Africa - the alternative for many of those who do not achieve an education. Thus adult society in Botswana may be entered in two ways, both with roots in tradition - through education in school or through 'initiation' in the mines.

The Missionaries

Education in the European form - but not necessarily content - began

among the Batswana early in the 19th Century with the work of the Christian missionaries at Kuruman in the Northern Cape Province of South Africa. The primary goal of the missionary educational efforts was the teaching of reading for the purpose of biblical study, but not necessarily anything else - as late as 1900, among the Bakgatla, "The idea was that 'kaffirs' must learn to read God's word, but if they learned to write, it might lead them to think that they were as good as their teachers" (Pilane, 1973: 120). Thema (1968: 1) asserts, however, that most of the missionaries were not quite so bad: "It was quite clear to the early missionary that he was the sole agent of civilisation, and consequently his efforts were extended to almost every field in which the lives of the Africans revealed defects." Two factors, however, prevented education from taking real root for many years: Thema (1968: 3 - 4) suggests that there was on the one hand a lack of common policy among the missions, and on the other, that the Batswana were going through a very unsettled period, marked by the frequent migrations. By the 1870's, as Thema notes, 'serious' education was possible and there were small schools in most tribal centres in Botswana.

The Tribal Schools

As the years went by, dissatisfaction arose among the Batswana with the mission schools. Many of the missionary teachers saw it as their primary duty to teach "the word of God, not the wisdom of the world" (Pilane, 1973: 120), and the Batswana required a more practical approach to education, as alluded to above. Before 1930 several of the tribes had developed their own education committees, established independent schools, appointed their own teachers, and, as the mission schools were not free anyway, imposed taxes to pay for their schools (Schapera, 1970: 248). Pilane (1973: 121) gives a graphic description of the building of the first tribal school among the Bakgatla - the men of the chief's age-group had to contribute £5 each, earned through "their own work of their own hands", to the building fund. The principle of tribal education continues to be present, as will be described in the section on Primary education.

Government Schools

In 1930 the British Administration took over control of education in the Protectorate. Which control consisted mainly of setting guidelines for tribal education committees and coordinating the work of the committees with that of the Director of Education. The Administration during this period was under the head of the Resident Commissioner, located in Mafeking, outside the borders of the Protectorate, so it is not hard to understand, perhaps, the reasons for the notoriously poor record the Administration had in furthering education in Botswana: small grants were given to the missions to help in their educational efforts, but very little else was done (Sillery, 1974: 141). It was not until Botswana's independence was imminent that education began to move rapidly: the first secondary school built by the Administration was started in 1965 - one year before Independence. At Independence, there were 247 primary schools, 9 secondary schools and two teacher training colleges.

MODERN EDUCATION IN BOTSWANA

The School System

Botswana's school system is modelled upon the British colonial pattern with a Ministry of Education, headed by the Minister, and staffed by civil servants (Table 4). Primary education is largely in the hands of the District and Local Councils, the Ministry responsible mainly for registration, standards, teacher training and curriculum development. There are four English medium schools operated by the Ministry of Education, one operated by a mining company, and twenty-one primary schools operated by religious missions, with the help of district councils. Altogether, there are (1973) 309 primary schools, 16 secondary schools and three teacher training colleges.

In the descriptions that follow of primary and secondary education, reference will be made to the state of education as it pertained to

Table 4
BOTSWANA EDUCATIONAL SYSTEM
(1974)

Age	Year	Institutions		
21	16	UNIVERSITY OF BOTSWANA, LESOTHO & SWAZILAND		
20	15			
19	14			TEACHER TRAINING COLLEGES
18	13			3 Colleges
17	12	Cambridge O-level	46 Teachers	
16	11	SECONDARY SCHOOLS	650 Pupils	
15	10	Junior Certificate	16 Schools	
14	9		350 Teachers	
13	8		5564 Pupils	
12	7	Standard Seven		
11	6	PRIMARY SCHOOLS		
10	5		309 Schools	
9	4		3047 Teachers	
8	3		95,700 Pupils	
7	2			
6	1			

the subjects under study - the Form Five school leavers of 1974, who started school in 1963, completed primary school in 1969 by passing the Standard Seven Examination, and passed the Junior Certificate Examination at the end of Form Three in 1972.

Primary Education, 1963 - 1969

When the present Form Five pupils entered primary school in 1963, there were about 240 schools in Botswana. Only one-third of them offered the full primary course, the rest offering 4 - 6 years of education. Just over one-sixth of the pupils were able to do more than four years (Sasnett and Sepmeyer, 1966: 1021). Sixty percent of the teachers were wholly untrained and many of the rest acquired their training by correspondence courses. Eighty percent of the teachers, trained or not, had had only 7 - 8 years of primary education. The pupil-teacher ratio was in the neighbourhood of 1: 42, with 25% of the teachers trying to teach classes of over 50 pupils (NDP, 1968 - 73: 53).

The facilities of the schools were no better - they were characterised by poor classrooms, and a scarcity of furniture and equipment. Eighty percent of the schools had no water or latrines; only 50% of the pupils had no desks - these were usually for the upper classes - 15% of the pupils sat on the floor and the remaining 35% sat on the ground outside, having no classroom at all. If they had a building at all, most of the lower primary schools were one-room affairs and virtually all of the first-year classes were conducted in the open air (UNESCO, 1964: 7). There was a wide age-range among the pupils due to the Botswana custom of sending the boys to look after cattle until the age of perhaps 10, and postponing school entry until then.

Secondary Education

Botswana's fourteen (now sixteen) secondary schools reflect a fascinating variety of approach. They fall into three broad sectors: the mission-based schools, mostly elderly, well established, reputable fellows pursuing their own con-

cept of service within a well disciplined and traditional framework of values; the private secular schools (and associated brigades) of which Swaneng Hill was the fore-runner and pace-maker, distinctly more radical in outlook, also committed to the concept of service but motivated by a good socialistic sense of the basic injustices of society as it exists; and the Government sector, rather dull in comparison, neutral in tone, less concerned with objectives than examination results but taking a little here and a little there from its more colourful partners, growing stronger more quickly than the others, an Octavious to an Anthony.

Thompson, 1972: 95

Despite its somewhat florid metaphors, the above description is a fairly good introduction to Botswana's school system (Tables 4 and 5). Perhaps the most striking factor about the state of secondary education in Botswana is its scarcity. With only nine schools capable of producing leavers at Cambridge O-level, the pupils in the schools are an elite group from the day they enter the gates. In 1974 the Form Fives represented 3% of the group who started school in 1963. What is important, as Thompson sensibly points out, is "the kind of values and attitudes with which they leave the school.. .." (95).

Botswana's secondary programme is a five-year course leading to the Cambridge O-level Examination. At the end of the third year there is a Junior Certificate Examination which selects about 50% of the pupils to continue for the final two years (Table 6). The Junior Certificate is produced by the University of Botswana, Lesotho and Swaziland and is modelled roughly on the Cambridge Examination. In 1972 there were 1230 of our subjects left to sit the JC and 575 of them did well enough to be offered a place in Form 4 - 47%.

All of the 16 Government and Grant-aided schools in Botswana offer the JC examination, while 9 of them go on to the Cambridge. The secondary schools are of two types, basically - those run wholly by the Government (8), and those operated either by religious missions (4) or private organisations (4). The mission and private schools are, with one exception, given grants by the government to help cover operating costs. The exception is Maru-a-Pula, a new school which will ultimately offer A-level education, run on the lines of

Table 5
BOTSWANA TEACHING STAFF
(1974)

PRIMARY		SECONDARY	
Total:	3047	Total:	350
Untrained:	994	Batswana:	75 (21%)
Expatriate:	298	British:	61
Pupil/Teacher Ratio:	34 : 1	Rhodesian:	58
		American:	58
		Untrained:	130 (37%)
		Pupil/Teacher Ratio:	20 : 1

Table 6
1974 EXAMINATIONS

Standard Seven	
Sat:	13,453
Selected for Form One:	2841 (21%)
Junior Certificate	
Sat:	1618
Passed:	1273 (74%)
Merit Pass:	4
First Class:	85
Second Class:	727
Third Class:	457
Estimated Number Form Four Places, 1975:	865 (68%)

Gordonstoun, with emphasis on self-reliance and community service. A detailed description of each of the nine schools which figure in this study will be given below, as each is different.

School Libraries

Each of the secondary schools has some sort of library. Quite often, however, the books in the libraries are unsuitable and unused. The collections often include poorly chosen 'gifts' - multiple copies of the life of Lady Bird Johnson - largely uninspiring 'children's literature', mouldy volumes of the 'classics', and outdated reference works. Little guidance is given to students in the use of the library, aside from the once or twice weekly 'library period', which is characteristically a time for the teacher to get some marking done while the students 'browse'. At the top, the expressed attitude toward the importance of libraries in schools is admirable -

While the quality of teaching in a school may be very good, the effectiveness of a good teacher is reduced if the student does not have the opportunity to learn and discover by himself... Priority has been given to the construction of libraries at each of the schools and colleges and funds will be used during the plan period for the purchase of additional books.

NDP, 1973 - 75: 73

In the schools themselves, however, the exigencies of the examination system encourage intensive reading of a very few texts, and very little extensive reading of the kind that will give the student the ability to "learn and discover by himself".

National Plans for Education

At this point it would be well to look briefly at the Botswana National Development plans for education, which are geared to national manpower requirements. Secondary education has received the lion's share of funds and planning in Botswana's development programme since Independence. Where primary education has been viewed as providing a broadly-based education (with the introduction of a new syllabus in 1969), relevant to the needs of the country as a whole, "recognising that the great majority of pupils would inevitably be forced to seek their livelihoods in a rural

economy" (NDP, 1970 - 75: 97), secondary education has been geared to the cold, hard reality of the need for trained manpower for localisation and national development (NDP, 1973 - 78: 108). The Botswana Government, which at present, is greatly dependent upon expatriate workers, has plans to localise entirely by 1988. The burden of this expansion is placed upon secondary and degree qualification: "requirements in 1978 will be almost double those of 1972... The increases are particularly noticeable at Form-V level" (NDP, 1973:95). The Government estimates that it will need 4600 new workers with Form Five or Degree qualifications by 1978; and that schools and universities will produce 2400 of these (the rest will be expatriates) (NDP, 1973: 97). Thus, in its effort to reach the goal of localisation, Botswana must produce a high quality of secondary school leaver - one who is capable either of entering the work force at a relatively high level of responsibility or of going on to University. The Presidential Commission on Localisation recognised this need as quoted above, and made the point about realistic preparation for employment with Form Five leavers in mind, and suggested, regarding post-secondary studies, that the problem of producing the required number of trained people is not the number of places available or of money (provided that outside support continues), but that:

The real constraint centres around the shortage of candidates available to enter university. The bottleneck is, and has been, the very limited number of School Certificate passes available for entry into UBLS, to preservice training programmes, or to technician training programmes offered outside Botswana.

Localisation, 1973: 21

Botswana's secondary schools are very much dependent upon expatriate teachers - in 1974 79% of the staff were expatriates, the greater number of whom came from Britain, Rhodesia, the United States and South Africa (Botswana Daily News, 14 Jan. 1975: 1). Such a situation means that there is a great lack of continuity in the teaching, due to a continual shifting of the teaching staff and to the fact that the teachers are from widely-differing ethnic backgrounds. Generally speaking, the secondary schools have fairly good facilities - they all have good buildings to house the classes, water and electricity supplies, boarding facilities, housing for staff, ample

teaching aids. Since Botswana is such a large country and since the students must be drawn from all over it, the secondary schools must have fairly substantial boarding facilities. The trend in recent years, however, has been to plan for less and less boarding and to encourage schools to take students first from local primary schools. As will be seen in the following discussion of the individual schools studied some of them are so far removed from any local catchment area that they must of necessity remain primarily boarding establishments.

THE SCHOOLS IN THIS STUDY

Urban Schools

The term 'urban' must be used with care in reference to Botswana - there are only four 'towns', in the European sense, in the country, and all of them are smaller than the largest of the traditional 'villages'. Without getting involved in the complex issue of what constitutes 'urbanism', the term will be used here to refer to a centre of commerce and industry where there are shops carrying a variety of reading material - not always the case in the villages. The two towns which are relevant to the secondary schools studied in this project are Gaborone, the national capital, and Francistown, a somewhat older town in the northeast.

Gaborone has a population approaching 20,000 and is the fountain-head of all Government publications, the centre for the National Library Service and has three bookshops and various other shops selling magazines, newspapers and books. It is the most 'European' of Botswana's towns, has the highest proportion of literate population and may be considered the centre of modernisation. Two of the secondary schools included in this study are located in or near Gaborone - Gaborone Secondary School (GSS) and St. Joseph's College.

Gaborone Secondary School Founded in 1964 as the first secondary school to be built by the Government, GSS has grown to a size of about 800 pupils, the largest school in Botswana. It has very good



facilities - it is regarded as the showpiece of the Botswana educational effort - and attracts well qualified staff and a generally high standard of pupil. In line with recent Government policy to move in the direction of day-schools and away from traditional boarding-schools where-ever possible, GSS has a majority of day-scholars, whose contact with the cultural milieu of the city is potentially very great. They have the greatest opportunity of all students in Botswana to visit shops, libraries, theatrical performances, cinemas. What use they make of this opportunity will be seen in Chapter 6.

St. Joseph's College This Roman Catholic mission school was founded in 1944, offering a three-year secondary course. At that time it was the only secondary school in Botswana. Ten years later, it began the five-year course leading to the Cambridge O-level Examination. In 1974 the student population was about 450 and the school plans to stabilise at that size and to diversify its curriculum - it now teaches commercial subjects, wood working, agriculture, and other pre-vocational subjects. St. Joseph's is one of the seven grant-aided schools and thus receives financial support from the Government. While most of its pupils are boarders, close ties with the Capital, which is only 5 miles away by bitumined road, are maintained mainly by members of staff who commute daily, and through frequent visits by groups of students for cultural affairs such as plays and concerts.

Mater Spei College This is another Catholic mission school, founded in 1965 in Francistown. This northeastern centre of Botswana's industry and commerce was created in 1880 as a European mining concession by the Ndebele chief, Lobengula - the fact that he had no right to make the concession apparently mattered little - as part of a 2000 square mile European enclave known as the Tati Concession, after the owners, confirmed by the British Government in 1911 (Sillery, 1974: 103). Francistown today retains some of its colonial appearance and character - one long, main street with shops on one side, the rail line on the other - and charges of racialism are made in Francistown from time to time, though the

concession is now controlled by the Botswana Government. Though slightly larger than Gaborone, Francistown is not nearly so well-served culturally - there is a small book shop carrying a range of newspapers and magazines and a poor selection of books, and a small library. The secondary school is mainly a day-school, so the pupils have the opportunity to take advantage of whatever is to be had in Francistown in the way of culture. There were about 450 pupils in 1974.

Village Schools

Three secondary schools in this study were located in traditional villages - tribal capitals, in fact - of Botswana. The Setswana village is almost unique in Africa, due mainly to its size - the Batswana prefer to live in conglomerates of authoritarian social groups - a large village is made up of several smaller villages known as wards, each under the authority of a headman, responsible to the chief. The three villages of concern here are the capitals, respectively, of the Bamangwato, the Bangwaketse, and the Bakgatla tribes - Serowe (43,000 people maintaining residence there), Kanya (39,000) and Mochudi (21,000). Despite their large size, these villages must be considered as rural and not urban centres - the majority of the population support themselves by cattle-raising and agriculture, and spend a considerable part of the year outside the main village, either at their cattle posts or in their agricultural lands, which may be widely separated. These villages are the centres of their respective District Councils, maintain hospitals, libraries, and other social services. There is very little in the way of industry, except of a craft nature, although the recent developments in diamond, copper-nickle and coal mining are all within the Central District, of which Serowe is capital, and have already made changes in the traditionally quiet pace of life in that village.

Swaneng Hill School The story of this school is one which should be of interest to educationists with a concern for education for development - it is an experiment in providing education that is less costly, less exclusive, more self-reliant and committed to

social justice. Swaneng was founded in 1963 by Patrick van Rensburg and his wife, political refugees from South Africa, with one classroom, built by volunteer labour, and 28 pupils. From the start, pupils were encouraged and taught - but not forced - to provide for themselves as much as possible - from clearing their own sports field, to preparing their own meals, to building their own school hall and classrooms (van Rensburg, 1974: 16 - 17). The administration of the school was turned over to a Board of Governors, elected by the parents of pupils, and the pupils themselves played a great part in deciding policy. By 1974 the school had grown to be the second largest in Botswana, with about 700 pupils, a fine array of buildings, and staff quarters; two sister-schools had been founded in other villages on the Swaneng model, and a variety of vocational brigades - farmers, weavers, mechanics, building brigades - had resulted from the Swaneng commitment to rural development. But this is not the whole story - Swaneng's development is punctuated by student unrest - refusals to work, complaints about food and accommodation - staffing problems - great reliance on untrained, volunteer staff and a resulting high turn-over - parental complaints - slack discipline, slovenly dress, neglect of sports - and eventually, the school lost much of its original pioneering spirit. In 1972, Patrick van Rensburg left, moving on to other approaches to rural development, and in 1975 the Botswana Government took over control of the School (along with its sister-schools) from the Swaneng Board of Governors. In 1974, during the period covered by this study, Swaneng was undergoing a period of unrest - students were very dissatisfied with administrative policy - and the school was closed for a time.

Seepapitso Secondary School Located in Kanye, Seepapitso was built in 1950 by the Bangwaketse Tribal Council. In 1967 it was taken over by the Government and in 1974 its first group of Form Five pupils sat the Cambridge Examination. It has about 400 pupils in all, and like other former tribal schools, is undergoing a period of rapid expansion. Kanye, though a large village, is fairly isolated - it is about 30 miles from the line of rail, along a difficult road, and is the last settlement of any size before entering the Kgalegadi

Desert. There is a small, well-kept library, but no shops carrying more than a few magazines and books. Though many of the pupils are day-pupils, they are unable to supplement the school's complement of reading material - most outside literature comes from Lobatse, a town on the rail line and somewhat infrequently visited.

Molefi Secondary School This is another former tribal school, founded in 1951 by the Bakgatla Tribe in Mochudi. Like its counterpart in Kanye, it was taken over as a Government school in 1967 and now has about 450 pupils. Mochudi, though smaller than Kanye, is not so isolated - it is within an hour's drive of Gaborone by bituminised road and there is quite a lot of commerce with the Capital. Like most other major villages, Mochudi has a small library, and small shops but most of the supplementary reading material comes from Gaborone.

Isolated Schools

The last three schools in the study may be classed as isolated, being located neither in or near a major village nor in regular contact with an urban centre.

Moeng College This is possibly the most beautifully sited school in Botswana - located in a bowl-shaped valley, surrounded by green hills, the buildings of the college have lovely arched corridors and are painted a striking ochre. The school was founded in 1949 by Tshekedi Khama, then regent of the Bamangwato, as a tribal school - the first secondary school to be built entirely from African initiative and finances. Tshekedi chose the isolated site for the school - deep in the Tswapong Hills, fifty miles from the rail line and near no village of any size - for at least two reasons. First, the site was a favourite one of his father's - Chief Khama III had expressed a desire to build a school there - and second, it was the usual practice in those days to site schools away from the temptations and distractions of home and village life (Thema, 1970: 71). The isolation of Moeng has influenced its character - Thema (1970: 73) points out, on one hand, that during his nine years as headmaster

there, he found "this isolation serving as an instrument for building up a strong esprit de corps among the student body, and for building a closer relation between teacher and student..." This spirit is evident today, for Moeng is definitely a closed community - the school lorry makes semi-weekly trips to the rail line bringing back post, supplies and the occasional visitor. Otherwise, communication with the outside world is by radio-telephone in the headmaster's office. By necessity the staff and students are close-knit and communication is free and easy. However, there is another side to the situation of Moeng - the isolation meant first that the concept of a tribal secondary school was too narrow and in 1956, the school was reorganised on a national basis and after 1967, became a Government school (Sillery, 1974: 154). Further, staffing is a problem as many of the best-qualified teachers are reluctant to go to Moeng; and the old concept of a remote boarding establishment no longer fits in with the recent movement toward day-schools located in population centres.

Shashe River School This school was founded in 1969 as a sister-school to Swaneng, based upon the same principles of self-help and education for social justice. Located in Tonota, a village of about 11,000, only a few miles from the rail line, the school might seem not to merit inclusion in the group of 'isolated' schools. However, the village of Tonota is, despite its size, not too highly developed, and transport to Francistown, 20 miles by poor roads, is undertaken only infrequently. The school library was one of the best visited by the researcher for organisation and convenience. There was a good selection of newspapers and magazines, well-displayed, with plenty of seating at tables. There was a very good collection of Government publications, such as the National Development Plan. The books were shelved neatly, and there was evidence that students used the library a good deal. The school library was open for use by the residents of Tonata - an innovation in school-community relations. In 1974 Shashe River School had about 550 pupils, and like Swaneng, was experiencing troubles among students, staff, and administrators. It has since been taken over by the Government.

Moeding College This is another school which is a borderline example of an isolated institution - it is located on the Gaborone-Lobatse road - now all bituminous - about 13 miles from the latter. Nevertheless, there are no large villages within easy walking distance, all of the staff live on the school compound as do all of the students. Further, Moeding is another example of the educational philosophy which calls for the separation of education from the traditional society. The school has an interesting background. Before secondary education was available in Botswana, the only place for Botswana to go was a London Missionary Society school, Tiger Kloof, south of Vryburg in the northern Cape Province of South Africa. This excellent institution is the alma mater of many of Botswana's leading figures of today, including the President, Sir Seretse Khama. However, in 1955, due to the area in which Tiger Kloof is located being designated a "white reserve" by the South African Government, the missionaries were forced to leave. The LMS founded Moeding College in 1962 as an effort to continue the Tiger Kloof tradition. The school now has about 500 pupils, and like St. Joseph's, will probably not grow a great deal larger.

THE SUBJECTS

In 1974 there were about 550 Form Five pupils in Botswana's nine Senior Secondary Schools. This group was chosen as subjects for the study because they represent the fruits of Botswana's major effort in educational development and will enter the work-force in relatively high positions of authority. This is a highly selected group of pupils - they have passed a Standard Seven examination which eliminated about 76% of their original number, and a Junior Certificate examination which eliminated 53% of the remainder. Thus, these 550 pupils are all that are left of an original group of about 17,000 who started primary school in 1963. These are the successful ones. Part of the interest in this study is to ascertain the place of reading ability in the success of this group, and to suggest the importance of it in their future success as they take their places in the development of their country. As an indication of the importance attached to this group of school

leavers, the Government expects to require 310 new workers with university degrees by 1978 (NDP, 1973:97) and most of these will come from the group of Form Five pupils who are the subjects of this study. At present about 30% of the Form Five enrolment go on to higher education and 90% of these enter the work force five years after leaving school. The 70% who do not go on to university, however, enter the work force immediately or within a year (Localisation Report, 1973:18). It is important, then, that not only the potential university candidates, but also the majority of pupils, who will enter the labour force as contributing members soon after leaving school, learn to be self-reliant. The importance of a well-qualified force of school leavers becomes even more evident when the Government goal for localisation is borne in mind: "to produce sufficient educated manpower to meet the 1988 demands... and to localise all posts by that date with the exception of a small number of very senior positions..." (NDP, 1973: 95). As has already been outlined in Chapter Two the close relationship between manpower needs and the output of schools in Botswana means that a high degree of efficiency is necessary if the goals are to be realised. It was also emphasised in Chapter Two that this efficiency is closely related to the ability to use print media effectively.

It was the aim to test the reading ability in both English and Setswana of virtually all the bilingual Form Five pupils in Botswana, and then to interview about 100 of them to gain a more detailed view of their reading habits and preferences.

Choosing the Sample

Not all of the Form Five pupils in Botswana are bilingual in Setswana and English. No records are published on the ethnic or linguistic background of the pupils, so it was not possible to eliminate non-Setswana speaking pupils beforehand. One solution would have been to test only those pupils who were in Form Five Setswana classes, since usually, Kalanga-, Afrikaans- and English-speakers choose not to do Setswana. However, many of the Setswana-speakers choose, for various reasons, not to do Setswana at the

Cambridge level, either. Furthermore, from an administrative point of view, it would have been difficult to schedule testing in the Setswana classes, which do not meet every day. It was decided, therefore to let the pupils themselves decide whether or not they were bilingual - if they did not choose to do the Setswana test, they did not have to. As a result, the final test data contains results from a few Kalanga-speakers who considered themselves to be near-native-speakers in Setswana. Altogether 444 pupils did both the English and Setswana tests - indicating that 81% of the total Form Five population consider themselves to be bilingual in Setswana and English.

LANGUAGE EDUCATION IN BOTSWANA

Four languages may be studied by Botswana's school children - Setswana, English, French and Latin. Setswana is the initial language of primary schools and is a medium of instruction until secondary education begins. English is introduced as early as the third year of primary education as a subject, where there are sufficiently well-trained teachers, and later where there are not.

The formal study of Setswana in Botswana's schools is based upon a strictly structural approach to grammar and a textual-analytical approach to the study of literature. Setswana is thought by students to be a very difficult subject - and as it is taught and examined, it is indeed difficult. In 1971 only 36% of the candidates sitting the Cambridge O-level Examination in Setswana received a subject pass (only 6% more than passed English Language) (NDP, 1973: 115). It is the aim of the Government to provide as many pupils as possible with "permanent literacy in English and Setswana" (NDP, 1973: 103), and the primary school syllabus has been revised with this in mind.

In 1964, the second primary year for the subjects of this study, a new syllabus was introduced for the primary schools, abolishing the old 8-year course and instituting a seven-year one. There were 235 primary schools, one-third of which offered the full

course. The study of English was meant to have begun in the fourth year, but this depended upon the availability of qualified teachers - and still does. In 1964 there were 11 schools in Botswana in which English was the medium of instruction from the first year, while all the rest used Setswana in the earlier years. Many of these English-medium schools were carry-overs from the days when there were 'European' schools for the children of farmers and Government officers (Bech. Prot. Reports, 1959 and 1965).

A UNESCO survey team reported in 1964 that: "some primary schools used English as the medium of instruction from the start of the course; in others instruction is given in the earlier years in Setswana, and while English is taught as a subject in the school, the aim is to introduce it gradually as a medium of instruction until the final year when it is expected that all instruction will be given in English" (UNESCO, 1964: 20). Such a statement implied that instruction in English was a rare thing - indeed, the UNESCO Report states that only 11 schools offered English medium from the first year - and that only in the final year of school might a child expect all English medium instruction. Of course, by the time the Cambridge leavers of 1974 were finished with primary school in 1969, the position had certainly changed and many of them had had several years of English medium instruction, but even so, the poor standard of primary teaching meant that most children who entered secondary school were not of a very high standard of English. Still, they represent the cream - of 5618 in Standard 7, 1336 went on to Form 1 - 24%. But not only were some of the teachers in the primary schools something of a liability, as the UNESCO team wrote: "We feel that a comment on what might be termed the isolation of the primary school is necessary. In a country which is rapidly moving toward independence, we found little effort to acquaint children with the changing circumstances of their country, or to awaken their consciousness of their new opportunities and responsibilities. Information about the country, its potential, its development, or even about its daily life is virtually not available to the schools" (UNESCO, 1964: 30). One of the aims of this thesis is to discover how pupils who began their schooling in such

conditions have fared eleven years later. Just how important is an emphasis on reading and language proficiency in the educational system?

At present, primary school pupils have two years of school in the medium of Setswana, beginning English in the third year, increasing its importance and use until by the end of primary school they should be carrying on most of their education in English, with Setswana relegated to the status of "school subject". This, as indicated above, is the ideal and depends upon the availability of teachers whose command of English is sufficiently high to teach in that language. The generally low level of proficiency in English among primary teachers is a problem not unrecognised in Botswana: "The essence of the problem is the vicious circle set up by primary pupils being exposed to teachers with an inadequate command of the language so that they in turn will become teachers with similar inadequacy" (Bloor, 1973: 1).

There are today four English Medium Primary schools in Botswana, located in centres where there are large numbers of English-speaking expatriate workers who require such schools for their children (NDP, 1973: 100). These schools also admit Batswana children, of course, and places in them are much sought-after since they have a reputation for being the best schools in the country - indeed, in the 1974 Standard Seven Examination, the three top schools were English medium schools (Botswana Daily News, 6 Dec. 1974: 1).

When pupils enter the secondary schools, they must be prepared for all of their instruction to take place in English. Naturally, those who come from the English medium schools are better prepared for this than are the majority who do not. This difference soon levels out, however, and, in the opinion of a senior education official, is non-existent by Form Five (Motsepe, 1974), though this may be due largely to attrition as a result of the Junior Certificate Examination. The secondary school curriculum calls for all students to study English language and literature, and 'one other language', up to the Junior Certificate, and English language for the Cambridge.

The 'other language' is usually Setswana but most schools attempt to offer French for those who are not Setswana-speakers. Some schools offer Latin, and occasionally a student will be allowed to sit the Afrikaans examination. Generally speaking, those pupils who choose not to do Setswana are speakers of Kalanga, Afrikaans, or English. Some Batswana students will opt out of Setswana at the Cambridge level, preferring to spend their time on other subjects: in 1971 270 pupils sat the English Language examination, 268 the Literature, and 215 Setswana (NDP, 1973: 115).

The instruction in the English classes is based upon the exigencies of the examination system, and consists primarily of grammar exercises, composition and intensive reading in the "set books". The reading programme is supplemented, especially in the lower forms, with SRA materials - more intensive reading - and a weekly or semi-weekly "library period". The SRA kits are suggested for the upper forms, but many teachers feel they haven't enough time to cover the set books and do SRA work as well. The English Language Teaching Adviser in Botswana suggested that the Form Five reading level in the SRA material is equivalent to about Standard Seven (Bloor interview, 9 May 1974).

CHAPTER FOUR: METHODOLOGY .

INTRODUCTION: CONCEPTS, OPERATIONS, HYPOTHESES

This chapter deals with the operations by which the major concepts discussed in the thesis are realised. The concepts, as outlined in Chapter One, are those of reading ability in English, reading ability in Setswana, reading habits, and success in school. The relationships between these concepts to be explored are as follows: that reading ability in English is positively related to reading ability in Setswana; that each of these is positively related to reading habits; and that each is positively related to success in school. The theoretical hypotheses are illustrated in Fig. 1.

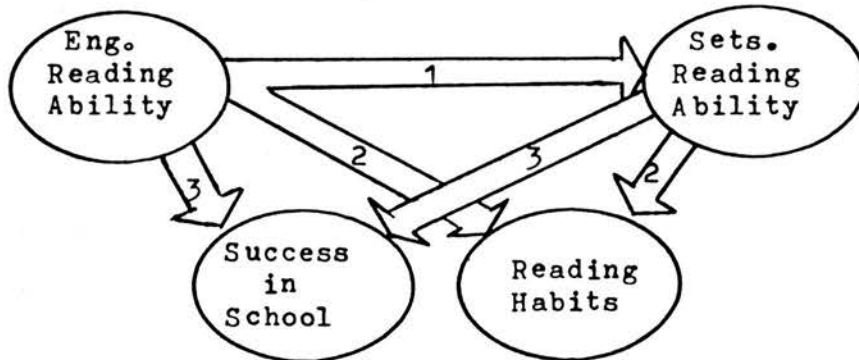


Figure 1

The concepts mentioned above were operationalised respectively, by means of a test of English reading ability, a test of Setswana reading ability, an interview concerning reading behaviour and the Cambridge School Certificate Examination. Therefore, the main empirical hypotheses are: 1) that there is a substantial relationship between performance on the English reading test and on the Setswana reading test; 2) that there is a substantial relationship between performance on each of the tests and elements of reading behaviour ascertained by the interviews; and 3) that performance on the tests is substantially related to performance on the Cambridge Examination. These hypotheses correspond to the numbered arrows in Fig. 1 above.

Experimental Design

The method by which the hypotheses were tested was, briefly, as follows: all bilingual Form Five pupils were tested in English and

Setswana reading ability, a sample of 97 was selected on the basis of the English reading results and interviewed on their reading habits. When the pupils sat the Cambridge School Certificate Examination, their scores were used to form the fourth block of data. The total Form Five population, then, was treated as illustrated in Fig. 2.

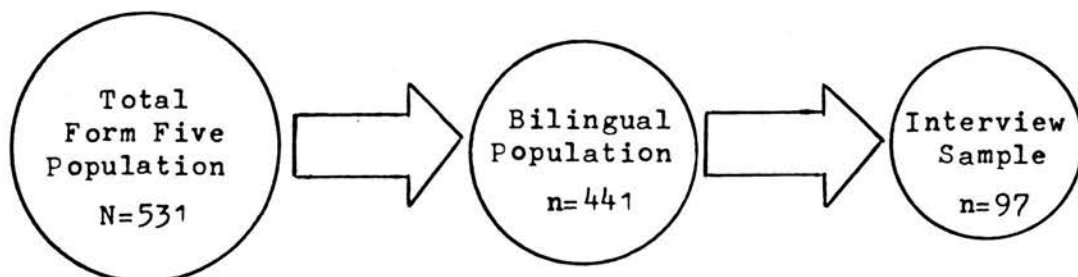


Figure 2

The total Form Five population consisted of all those who would sit the Cambridge Examination in November - some 531 pupils. The bilingual population was determined by those of the total who were able (and willing) to do both the English and the Setswana reading tests - 441 pupils met this criterion. The interview group was selected as a stratified sample of the bilingual population, based upon their performance on the English reading test - 97 were interviewed.

Each of these operations in the successive reduction of the total population will be discussed in the following section. The nature of the relationship between concept and operation, practical reasons for choosing particular instruments, the theoretical background of each of the instruments, and the realisation of each particular instrument for this study will be taken up in turn. The final section will be a description of the fieldwork done for the project - an analysis of how the instruments worked 'on the ground'.

SECTION ONE : THE READING TESTS

Objectives

The choice of reading tests was governed by several interrelated factors. Certainly, an important necessity was that the tests must rank the subjects in terms of English reading ability and Setswana

reading ability. The usual statistical criteria of validity and reliability apply, of course, and these will be discussed in the appropriate sections of this and later chapters. However, there were other factors to be considered - 'practical' factors, as opposed to 'theoretical' ones. First, although there are only nine Form Five secondary schools in Botswana, they are spread over quite a large area, and some are difficult to reach other than by four-wheel drive vehicles. Therefore, the test form chosen must be easy to transport over long distances - even on foot. It was necessary then, to construct a test which required a minimum number of pages, parts, special equipment, etc. A second objective was influenced by the experimental design which required that all bilingual subjects be tested and then that the interview sample be selected from the ranking produced by the English test. This meant that the test had to be marked speedily, by hand, possibly in surroundings which were something less than ideal. Finally, the testing sessions themselves had to be considered - as an outsider, there was a limit to how much time could be asked from each school for the research. The Form Five classes were engaged in the serious business of examination preparation and neither pupils nor teachers would welcome too extensive a disruption of their time-tables. Therefore, the test had to be one which would get the required information quickly as it was anticipated that two class-periods was the maximum that could be asked from each teacher: a total of 80 minutes for both the English and the Setswana tests.

For these reasons - mainly concerned with practical efficiency - then, it was decided to consider using the cloze technique in constructing the testing instruments. The following sections on cloze methodology will show why this test is a particularly effective one for this research project.

Theoretical Background to Cloze Procedure

In Chapter Two it was suggested that one of the internalised sources of information that makes reading possible is a knowledge of redundancy, which is a part of the study of information theory and the

concept of entropy. This concept is one which comes originally from thermodynamics and is a measure of the unavailability of heat energy for transformation into useful work (Rapoport, 1966: 52). Heat energy is most efficient when there is a flow from a source of high temperature to a low temperature; when the temperature is constant throughout a system entropy is at its highest and no work can be done. In other systems, for example that of a deck of cards, the concept of entropy may also be applied. The most probable state of a deck of cards thrown into the air is disorder - that the cards will fall into suits, highest to lowest, is fairly improbable - and the less order, the more information needed to describe the state of the deck. Thus, if entropy is a measure of disorder, it is equivalent to the amount of information needed to describe the disordered system. In a text, the more highly organised the text, the less information needed to describe it.

The concept of entropy was first applied to human communication by Shannen(1948) and is a measure of the probability that a text will be ordered in a certain way. In empirical terms, when subjects are asked to replace items from a text, their ability to do so is directly related to the predictability of the order of the text. Taylor (1954) - who coined the term 'cloze' from the Gestalt principle of 'closure' - first explored the relationship of cloze and entropy measures. He found a negative correlation (-.87) between cloze scores and the amount of information carried by deleted words in the text: the lower the entropy or amount of information needed to describe the text, the higher the cloze score or ability to replace deleted items. Redundancy is related to entropy in that, in a perfect communication system each unit of communication would carry the maximum possible amount of information - for example, binary digits might be used where each digit is either 'yes' or 'no' - but in communication systems, such as natural language, where the units do not carry the maximum possible amount, or even equal amounts, of information - words vary from each other in the amount of information they carry (their probability of occurrence) and the probability of occurrence of any given word varies from context to context. Thus redundancy is the difference between the maximum possible entropy and the actual

entropy of a text - the higher the actual entropy, the lower the redundancy.

In notional terms, redundancy is what we think of in language as that which makes a text or a lecture easy to understand, even boring. A highly redundant text is one where we know exactly what the author is going to say next - it requires a relatively small amount of information to describe the text - 'it didn't say anything new'. Conversely, a text which exhibits a low level of redundancy, for example a highly abstract scientific text, we find difficult to read and difficult to summarise. Certainly, this difficulty varies from reader to reader - and this is tied to notions of the nature of reading - the text that is redundant for the professor of statistics might require a lot of description for the student of art history. Thus, the data for entropy measures must come from a valid sample of the population, or the results interpreted in a very narrow way.

Cloze Procedure and Clozentropy

As Taylor (1953) first used cloze procedure, it involved the deletion of every n th (usually 5th) word from a text. Subjects were then asked to fill in the deleted items, being given one point for each item they replaced exactly as it was before deletion, the total number of points called the 'cloze score'. In subsequent experimentation, Taylor (1954; 1957) found this 'exact word' scoring method gave the same information about subjects as an 'acceptable word' method which gave points for synonyms, or alternate responses; that two different tests based on the same passage, but deleting different words could give significantly different results, but that a test of at least 35 items would give an accurate reflection of the difficulty of the passage; that deletion of every n th word was statistically equivalent to random deletion and easier to operate; and that the n th word method, where any word in the text is liable to deletion, is superior in the measurement of general comprehension than a method which deletes only certain words in the text, such as every n th noun or verb.

Experimentors after Taylor have used different deletion systems from his every-fifth-word system, notably seventh-word (Oller and Conrad, 1971), eighth-word (Anderson, 1972) and tenth-word (Darnell, 1970). The reason for departing from Taylor's precedent seems to be the fact that the investigators mentioned were all dealing with non-native speakers of English and wanted to provide more context for the subjects to work with than fifth-word deletion allows. Taylor (1957: 20, footnote) noted the problem that successive blanks in the test may not be independent, and Darnell (1970: 37) states that he used tenth-word deletion in his tests to minimize dependency among blanks, and for this reason, his lead has been followed in the test for this study. From a practical standpoint, tenth-word deletion allows for a test that native speakers can complete within fifteen minutes and non-natives, within twenty to twenty-five.

Various opinions have been offered concerning the kind of words to be deleted in the cloze test, centering on a distinction between "lexical" and "structural" deletions. The former is the deletion of every nth noun or verb or some other category, while the latter is the deletion of every nth word with all words being equally liable to deletion. It should be noted that the terms "structural" and "lexical" are not to be confused with the terminology of the Structural Grammarians, but refer here to the deletion of items in a mechanical or random way and to the deletion of specific word-class items, respectively. The confusing terminology is followed here since it is the terminology used in the literature on cloze deletions cited below. Taylor's (1957) experimentation showed that structural deletion was to be preferred so far as correlation with standard comprehension tests was concerned. Rankin (1959) found that structural deletions correlated significantly higher on the vocabulary and reading comprehension subtests of the Diagnostic Reading Test than did lexical deletions. Weaver and Kingston (1963) used both kinds of deletion in their factor analysis and found little difference between them. Some work has been done using lexical deletion as a diagnostic tool (e.g. Oller and Inal, 1972, with prepositions) but in tests of general reading ability, the most common method is structural deletion, and, for reasons mainly due to Taylor's findings

and subsequent experiments, which have also shown it to be the simplest to use, structural deletion is the method used in this study.

Several different methods for scoring cloze tests have been tried. Since it seems reasonable to allow synonyms or contextually suitable answers as correct, various experimentors have compared the "acceptable word" scoring method with the "exact word" method. Taylor (1953) found that though the former gave a higher overall score, the relationship between the subjects remained the same, and these results were replicated by Rankin (1957). These experiments were done with native speakers of English as subjects, however, and the question arose concerning the value of the exact word method for non-native speakers. The basic objection to the method for non-natives is, simply, that it is too difficult (Oller, 1972). Attempts to solve the problem have been varied: Bowen (1969) weighted subject's responses according to a subjectively-determined degree of correctness, but failed to provide any external criterion to validate his results. Anderson (1972) experimented with four scoring methods: exact word; synonyms, which received half-credit; alternative responses, half-credit; and words of the same grammatical class as the deletion, also half-credit. The second of these methods was one used, and rejected for native speakers, by Taylor (1953), as being too cumbersome and failing to provide significantly different results from the exact word method. Anderson found, testing a small group of Pidgin speakers in Papua - New Guinea, that with these subjects, too, the alternatives to exact-word scoring offered no significant improvement. Oller (1972a), however, experimenting with a fairly large number of foreign students (398) in an American university, found that an acceptable word technique, giving credit for answers that violated no contextual constraints, correlated with all parts and the total of the UCLA ESL Placement examination better than the exact word scoring method ($p < .001$, except the vocabulary subtest, $p < .05$). Furthermore, acceptable word scoring provided better item discrimination scores than did the exact word method - only 7 of 150 items failed to discriminate at $p < .05$ level using the acceptable word method, while 28 items failed to discriminate

with the exact word method. Thus, there seems to be a case for using a system other than the exact word method to score cloze tests for non-native speakers of English. The problem with the acceptable word method, however, lies in its subjectivity - what exactly is a 'contextually acceptable' response? The notion of contextual constraints is far from stable enough to allow for an objective application by different scorers. The great merit of the exact word method has been its ease of application and objectivity.

D. K. Darnell (1970) suggested a method for scoring cloze tests for non-native speakers of English which combines the discriminatory power and validity of the acceptable word technique with the objectivity of the exact-word technique. Known variously as 'focus', 'community of response' or 'response interagreement' scoring, methods of scoring which took no account of right and wrong answers to cloze blanks had been tried earlier (Taylor, 1954) and possible exploitation of them suggested: "The extent to which members of a population tend to propose similar words to fill any particular blank on a cloze form depends both on the relative homogeneity of the group and on the invariability, definiteness and familiarity of the stimulus complex" (p. 6). More recently Taylor and Waldman (1970) suggested that "the response interagreement approach to quantifying cloze response seems to offer reading research more than just a way of assessing the focus of just one blank at a time...the number of blanks in which an individual's response agrees (or disagrees) with the majority's responses (whether they are 'right' or not) might index something about that individual's ability..." (p. 257).

Darnell made the first attempt to develop a technique for such scoring and make definite proposals for its use in ESL. His technique is based upon information theory, and directly is a measure of the subjects' ability to utilize redundancy in English compared with that of a criterion group of native speakers. Darnell would assign a weighted score to each answer given for an item according to the percentage of the group that gave the answer. Thus, the amount of information carried by each alternate answer for an item in the test could be computed by the formula $I = \log_2 1/p$, where p is the probability of the answer being given by the group. Secondly, the average

amount of information carried by each item in the test may be computed by the formula $H = -\sum p_i \log_2 p_i$, where all the values of p (for all alternate answers to the item) are weighted and summed to show the degree of freedom open to respondents. When I is subtracted from H , the result is a measure of the degree to which an individual answer is deviant from the average - how unusual it is. If the answers given by non-native speakers are weighted by the I scores of native speakers, the resulting score shows by how much the non-natives differ from the norm established by the natives. Darnell tested 48 foreign students in an American university, using cloze tests scored with his 'clozentropy' method. The criterion group with which he compared the non-natives was a group of 200 native speakers. As a validity measure, Darnell had the foreign students sit the Test of English as a Foreign Language, a standardized proficiency examination used by many American universities as an admission test for foreign students. The total clozentropy scores correlated with the total TOEFL scores at .838. Thus, in clozentropy, we have a scoring method which is an acceptable word method, but one which is based upon a native speaker criterion of 'acceptable' rather than a subjective assessment, and consequently offers great discriminatory power and external validity. It has the further advantage of being compatible with the principle upon which cloze testing itself is based, that of information theory. Oller (1973) has suggested that his acceptable word method is roughly equivalent to the clozentropy method. The major drawback of the clozentropy scoring method, however, is its extraordinary complexity and tedious calculations - Darnell used a specially-designed computer programme to score his tests. In order to facilitate the use of Darnell's scoring method, Reilly (1971) has offered an algebraic equivalent which retains all of the information of the clozentropy method (in other words, scoring weights based on the probability of native speaker responses) but which cuts through much of the complexity of it. Clozentropy, it must be remembered, is a direct application of information theory, and scores obtained by its use reflect how much a student's responses vary from a probable norm in terms of 'bits' of information. This is more than is absolutely necessary for the purposes of ranking students - what is needed is a method which ranks

students in the same way as the clozentropy method, with as great a degree of discrimination, but leaving out the refinement of information theory. Reilly's system does this. It gives a total score - T - by the use of a single formula: $T_k = \sum \log_{10} N_k$ where N is the number of native speakers who gave the same answer as the subject whose test is being marked. Thus, a second language speaker whose answers coincide with those given by a large number of native speakers will receive a high score, while one whose answers are unusual compared with those of natives will score lower. The conversion to logarithms serves to minimize apparent differences between subjects at the top of the scale - the majority - and maximize the distinction between them and those at the lower end of the scale - the relatively few linguistic deviants.

In the present study, then, the English test was given to a group of 100 native speakers of English to set up a criterion against which to measure the reading ability of the students in Botswana. The native speakers were secondary school pupils at the same educational level as those in Botswana - that is, at the end of the school year, 1974, they would sit their leaving examination which is roughly equivalent to the Cambridge examination. The result of this administration of the test was used to weight the answers given by the students in Botswana - the N in Reilly's formula. When the test was given in Botswana each of the 50 answers given by each subject was weighted and the results totalled to obtain the final score.

Mention should be made of the difficulty level of passages used in cloze tests. Oller (1972a) experimented with three different levels for his university students and found that more difficult passages gave significantly closer correlations with the criterion measure than an easier passage. He used the Flesch readability formula and the Dale-Chall 1948 formula to rank his passages, although it has been suggested that such formulae as these do not give valid results when used for non-native speakers (Anderson, 1972). Still, they do provide a rough approximation of the relative difficulty of passages in terms of word length, sentence length and vocabulary (Stephens, 1971). Darnell (1970) found that, similar to Oller's findings, there

was a tendency in his testing for the discriminatory power of the cloze tests to increase as the difficulty of the passages used increased (he also used the Flesch formula). There is, undoubtedly, an upper limit to the general desirability of difficult passages - a "frustration level" where subjects find they cannot make enough sense of the passage to warrant their interest (see for example, Alexander, 1968). Oller's most difficult passage had a Flesch score of 69, ranking it as "standard" for native speakers, while his middle passage had a score of 77 and his easiest, 100. It is interesting to note that Oller's results showed that, with the exact word method, the "easy" passage was more difficult for the subjects than the "middle" one - he attributes this to a lower redundancy in the easy passage due to short sentences and a limited vocabulary. The rather mundane lesson to be learned from all this is that passages used for cloze tests must be neither too hard nor too easy.

What is the Cloze Test a test of?

Two important questions may be asked about a test: What does it measure? and How well does it do this? Taylor (1953) initially used the cloze procedure to devise a test of readability - that is, he wanted to rank texts rather than people. Very soon, however, he began to explore the possibilities of using the procedure for tests of reading comprehension (Taylor, 1957). He found highly significant correlations between his cloze tests and multiple-choice comprehension tests - the correlations ranged from .7 to .8.

In an analysis of cloze testing as a measure of reading ability, Weaver and Kingston (1963) wanted to see if cloze tests shared factors with more commonly used measures of vocabulary, language aptitude and reading ability. They wanted to correlate cloze scores with discrete points of linguistic ability. They used, for example, the Modern Language Aptitude Test subtests to measure the memory component, sound-symbol association ability, vocabulary knowledge, sensitivity to grammatical structure, rote memory, listening comprehension, analogy ability and reading comprehension - all as separate units. Their results showed that cloze testing is related

to these individual abilities only little or moderately and they suggest that there is a distinct 'cloze factor' related to an ability to utilize the redundancy of language, having little to do with the "verbal comprehension factor". Another experiment, by Rankin (1957), had achieved comparable results. In an attempt to see if cloze tests were related to general reading skill, Rankin correlated cloze results with a group of subtests based on reading speed, intelligence, previous knowledge, level of permeability, level of anxiety and personality type - again as separate entities. His results led him to conclude that cloze is not an accurate measure of general reading skill. Both these experiments sought associations between reading tested as an integrated process - cloze tests - and isolated components of the process. Further, in Weaver and Kingston's study, they achieved very strange correlations throughout - even in the correlation of their two standard reading tests, they accounted for only some 56% of the variation in scores. And although Rankin points out in his discussion that a concept of 'reading comprehension' is "a function of the techniques used in its analysis..." (1957: 43 - 44), his failure to find a strong relationship between cloze tests and any of the techniques he used to analyse 'general reading skill' would suggest that he is still left with a concept of 'general reading skill' that is not particularly suited to an examination of cloze tests.

Cloze procedure is a means of testing an integrated skill such as reading without attempting to break it up into its components. The surface skill in cloze tests - filling in blanks - requires subjects to use an underlying skill somewhat like that they must use for reading: utilize knowledge of language to form expectations about the graphic cues and meaning to come in the running text. Oller and Conrad (1971) have suggested that integrative skills are best tested by integrative means and cite their own work to show that cloze testing correlates highly (indeed, in their experiment, the highest) with dictation - a measure of listening comprehension. This somewhat surprising result was first noted by Darnell (1970) whose results showed a higher correlation between cloze tests and the Listening Comprehension subtest of the Test of English as a

Foreign Language (TOEFL) than any other part of TOEFL, and has been replicated since by Oller (1972a). The work of Bormuth (1969), too, has shown that the integrative skill of reading is best tested by integrative means. He questioned the findings of Weaver and Kingston, noting that they had used a wide assortment of standardized tests which bore little relation to the cloze passage they used. Bormuth, on the other hand, compared cloze measures of reading ability with standard multiple-choice questions based on the same passages and isolated one factor common to all the tests - "reading comprehension ability". One aspect of the study of reading ability which has emerged recently is an emphasis on the reader's ability to recognize and make use of the natural redundancy of language, as described in Chapter Two.

Spolsky (1968) reports an experiment in which the ability of foreign students of English to comprehend mutilated oral material was not of the level suggested by their performance on standard language tests. The missing element, he suggests, one which the standard tests failed to measure was an understanding of probabilities of occurrence in English. Upshur (1968) suggests that this principle of redundancy is a key to understanding why some students are able to perform well on drills and tests, yet with whom communication is very difficult. This concept, says Upshur, reinforces the suggestion of the need to assess proficiency by providing a more linguistically complex situation for the student to work with than has been the case in much previous testing.

Oller and Conrad (1971) point out that the principle of redundancy as implemented by Spolsky (see also Gradman, 1973) in oral language has its counterpart in reading, and reference to the model of the reading process (discussed in Chapter Two) will show the need for the ability to anticipate and supply cues in the running text, based on a knowledge and utilization of redundancy in language. Schlesinger (1968) also notes the relationship of redundancy to reading ease, cautioning, of course, that it is not the only feature to be considered.

That cloze tests measure the ability to utilize redundancy has been asserted by Carroll, Carton and Wilds (1959) and Carroll (1972), largely on the basis of Weaver and Kingston's findings: "It would seem that cloze scores are dependent chiefly on what might be called the 'local redundancy' of a passage..." (p. 18). Schlesinger also accepts this opinion (p. 153), and Oller (1972a) bases much of his research on it. This ability is one that native speakers have apparently, and which can aid in determining the competence of non-natives in this respect. But, of what value in determining overall language ability - or, as in the present case, reading ability - is a measure of redundancy recognition and utilization? Various studies have shown a correlation between cloze tests and tests of language proficiency which may be said to be more usual measures. For example, Taylor (1957) found high correlation between his cloze tests and "standard comprehension tests"; Bormuth (1962) found correlations of nearly .95 between cloze and measures of comprehension; and (1969) used multiple-choice tests as validation of cloze tests in a factor analysis, again achieving high correlations; Massoglia (1972) validated his cloze test with the Nelson-Denny Reading Test, finding a correlation of .76. The above results suggest that cloze testing is a useful and valid device for the testing of reading ability for native speakers, but much work has also been done with cloze as a tool for use with second-language learners. Carroll, Carton and Wilds (1959) first explored its possibilities, using English speakers learning a foreign language. Bowen (1969) used cloze tests to measure relative English and Amharic proficiency among different language groups in Ethiopia; Crawford (1970) validated his cloze measures of reading comprehension among Mexican-American speakers by correlation with the Stanford Achievement Test and standard comprehension tests; Darnell (1970) used the TOEFL as validation for cloze tests of proficiency for foreign students in an American university; Oller (1972a; 1972b) used the UCLA ESL Placement Test for its foreign students to correlate with his cloze tests; Oller and Conrad (1971) used the same validation criterion. In all of the above experiments, cloze tests were shown to be valid and reliable measures of reading proficiency, and more details of some of the experiments will be discussed in sections below. Such

correlations of cloze tests with more usual measures of reading ability do not indicate necessarily that the tests are measuring the same things - they do indicate that scores obtained on cloze tests, which measure the ability to utilize redundancy, are predictive of scores obtained on more complex, expensive and perhaps subjective tests of reading ability. Before going on to a discussion of the cloze tests used in this study, reference must be made to some objections to the use of cloze procedure in language testing.

A commonly-voiced objection, e.g. Gilliland (1969: 17) is that blank filling such as that demanded by cloze tests will simply reflect responses to speech patterns, i.e. "function words", and Carroll (1972: 19) speculates that "cloze scores are probably more dependent on detection of grammatical than of semantic cues". Gilliland suggests that control of the context of the blanks is the answer to the problem, and one takes this to mean somehow minimizing the effect of function words in the test. Taylor (1957), however, showed that a test format in which all words in the test were equally liable to deletion was consistently better in correlation with standard comprehension questions than either a format which deleted only "hard" words - adverbs, verbs and nouns - or one which deleted only "easy" words - verbal auxiliaries, conjunctions, pronouns and articles. In answer to Carroll's suggestion, it may be pointed out that while many cloze blanks could perhaps be filled in using only syntactic cues, it is by no means certain, especially in the case of child subjects, that this is the way they are filled in. In fact, recent work in reading which suggests a close relationship in the decoding process between semantics and syntax, e.g. Schlesinger (1968: 123 - 24), would indicate that Carroll's view is unlikely.

A second objection to cloze tests involves their use as analytical tools in the same way that discrete-point tests have been used: "...the cloze technique in its usual form is too crude to permit measuring the degree to which the individual comprehends particular lexical or grammatical cues, or possesses a knowledge of specified linguistic rules" (Carroll, 1972: 19). As has already been suggested, dividing the reading process into its component parts may be in-

advisable due to the danger of distorting the results. Furthermore, as Upshur (1968: 11) points out in his consideration of the principle of redundancy, it may not be possible "to demonstrate that any given language item is essential to successful communication, nor to establish the functional load of any given item in communication". There is here, as Oller and Conrad note (1971: 187), an element of vagueness which many testers cannot accept; however, given our present state of knowledge about the interdependence of all the components of the reading process, it seems better to test integratively. Experimentation on this interdependence is a different matter. For example, Schlesinger (1968: 155) notes the usefulness of cloze tests in broadly-based studies, but cautions against their use "wherever there is a question of studying the fine-grain structure of a sentence". He makes a plea in reading research for not merely measuring "how much" has been understood, but also "how much of what". In a sense, that is what Carroll is calling for in classroom testing, but the validity of such discrete-point information as he seeks for the teacher on reading may be seriously questioned.

The English cloze test used in this study is based on a passage from Gerald Durrell's Catch Me a Colobus, an example of moderately informal prose giving an account of the author's arrival at an abandoned mining village in Sierra Leone. The passage makes a fairly complete episode in itself, lacking only some bits of context that add to the sense of dread of the primitive conditions the author expected. It has a Flesch readability score of 73 - "fairly easy" - having a mean sentence length of 23 words and a mean word length of 1.3 syllables, and is therefore a bit easier than the most difficult of Oller's passages described above. This passage was chosen primarily because of its difficulty level and for its style, which is descriptive, yet interesting and personal - important considerations in testing situations where motivation is not likely to be too high.

The passage is about 600 words long and for the cloze test every tenth word was deleted, beginning with the tenth word of the third sentence, to give a total of 50 blanks. The first two sentences were left unmutated to allow the subjects to "work into" the pas-

sage before they encountered blanks, following Moyle (1971) and Oller (1972a), among others. An examination of the words actually deleted gives another indication of the difficulty of the test, based on Taylor's (1957) findings regarding the difficulty of replacing various parts of speech. In this passage there are 27 "hard" words (adverbs, nouns, verbs), 12 "medium" words (adjectives, prepositions) and 11 "easy" words (auxiliaries, conjunctions, pronouns, articles) that were deleted. It should be remembered that this classification is based on the words in isolation, and that many of the "hard" words are greatly reduced in difficulty by such contextual aids as previous mention and cliché. For example, "run the dynamo for us" is cued by reference to the dynamo earlier in the same sentence; "commanding the most magnificent view" is a fairly common expression, and in addition is repeated further down the paragraph. There are other blanks which could have been filled in because of the reader's knowledge of the world or his reasoning ability. For example, most readers should have known that a dynamo is used to produce electricity, while African readers were aware that one might find scorpions in the roof of a thatched house. These points did not make it a certainty that the blanks would be filled in correctly, but they must have added to the probability of it. Furthermore, there were no blanks which would seem, in theory, to be impossible to fill in - there were no proper names or numbers used only once, for instance. The name of the village, Bambawo, is used twice in the blanks, but is mentioned previously and some subjects filled it in correctly.

Since cloze testing has been put forward as a measure dependent upon the redundancy of a passage, a brief consideration of the redundancy of this passage is appropriate. To properly measure the redundancy in a passage one must first obtain an estimation of the probability of each deleted word in its particular context. This has been done, as in Darnell (1970), by using native speaker judgement concerning likely alternatives for each blank. One problem with this method is that the result is an obtained probability, not an actual probability, and this limits the scientific value of the findings. If, on the other hand, one uses actual probability of occurrence,

such as from a word-count list, it fails to take into account the fact that a relatively rare word in terms of occurrence may be the only acceptable one in context. Therefore, bearing in mind that redundancy is a value representing the relationship between the greatest amount of information possible which a system is capable of carrying and the amount of information it actually does carry, and that the amount of information depends on the number of alternatives available within the system - the more alternatives, the greater the amount of information carried by each - a rough approximation of the degree of redundancy in a passage can be arrived at in a very subjective way. The rule of thumb is that the fewer the number of acceptable choices to fill each blank, the higher the degree of redundancy in the passage. An examination of the passage used for this test shows that there are perhaps twenty blanks where there is only one contextually acceptable word, fifteen where there are perhaps two acceptable choices and fifteen where there are three or more choices. Compare this with a passage from an introductory linguistics book, where native speakers determined that, in fifty blanks, seven had one acceptable choice, nine had two alternatives, while thirty-four had three or more possible choices - indicating a relatively low level of redundancy¹. It must be emphasized that the estimates for the passage used in this study were arrived at in a very subjective manner - it would require extensive native speaker testing to gain a true assessment of the alternatives available for this test - but for the purpose of suggesting what is going on in the test, it is hoped that the above discussion will suffice.

The cloze test described above was administered to the subjects on a type-written stencil duplication, double-spaced, with each blank represented by a line ten typewriter spaces long, numbered consecutively. A separate answer sheet with spaces numbered one

¹ This information is taken from a testing experiment performed in October, 1973, University of Edinburgh.

to fifty was provided for subjects' answers. Instructions to the subjects were given at the top of the test paper. A practice test of five items based on very easy material was given to the subjects before the main test to familiarize them with cloze test procedure. The subjects were advised to read the passage through before they began filling in blanks so as to make themselves familiar with its content. They were not timed, but they had to finish each test in a forty-minute class period. The test was scored by clozentropy and spelling did not count against the subjects except in cases of ambiguity or complete illegibility.

THE SETSWANA CLOZE TEST

Problems in writing a cloze test in Setswana

The first difficulty in constructing a test in Setswana is a general one that faces the tester no matter what form of test he chooses. The formalization of Setswana grammar is a comparatively new thing and one finds much disagreement among scholars and students as to the proper way of describing the language. In schools this problem is overcome through the forcefulness of the Cambridge Examination - Setswana is taught in order to pass the examination and the exam requirements constitute a de facto formalization of the language in this very limited sphere. In other words, the Setswana studied in the schools is that demanded by the Cambridge exam, not that which is used by the majority of the people in Botswana. While this in itself is not necessarily a bad thing - the same may be said to be true of English in British schools - it does mean that Setswana grammar is an imposed formalization, not reflecting the natural dynamics of the language. Any test that operates outside the confines of the Cambridge formal model is likely to come up against objections concerning the suitability of the examples of Setswana used in the test. For example, the native speakers consulted during the construction of the test used in this study continually referred to the difference between the "spoken" Setswana used in the test and proper "written" Setswana. By "spoken" Setswana they referred here to the narrative style of the author of the passage,

which is rather informal, and not to the actual examples of spoken Setswana in the passage. There were indications that the question of "correctness" in Setswana may be of more importance than in English - the subjects may be more put off by an informal passage in Setswana than similar subjects would be in English.

The second difficulty is related to the first general one, but is more specific and is especially important in writing a cloze test in Setswana. Since Setswana first began to be studied by Europeans in the early 19th Century there has been a question of what constitutes a word orthographically. Like other Bantu languages, Setswana makes use of subjectival and objectival concords - ke a reka (I buy), o a reka (you buy), monna o bona dikgomo (the man sees the cattle). The problem is whether these concord elements - ke, a, o, - should be written separately as in the example above or as part of the verb - keareka, oareka, monna obona dikgomo (see Cole, 1955, xxix - xxxv). Without going into the complex arguments for and against conjunctive and disjunctive word division, suffice it to say that current standards set by the government - manifested in official usage - follow a 1964 pronouncement by the Department of Bantu Affairs of the Republic of South Africa favouring disjunctive word division as in the first set of examples above (Brown, 1971, iii). This is the system taught in the schools and used in government publications and therefore is the system followed in the cloze test here. Thus, all concordal and formative elements will appear as single words and will be subject to cloze deletion, except for the plural formatives which are written as part of the noun - dikgomo. That this system still causes problems, however, was evidenced by the group of native speaker informants, one of whom insisted that e ne ought to be written as one word.

The Setswana cloze test

By far the most common form of the cloze test has been the English one. Tests in languages other than English are rare (e.g. Bowen, 1969 - Amharic; Oller, Bowen, Dien and Mason, 1972 - Thai and Vietnamese; Gorman, 1971 - Swahili), but indications are that the

cloze test performs as well in other languages as in English, even, as in Thai, where the orthography creates difficulties. Part of the interest in this study, therefore, was whether the cloze test in Setswana discriminated as well, was as reliable and valid as the English test.

The passage chosen for the Setswana test was taken from a magazine, Kutlwano, published by the Botswana Government Information Service (1971). A translation is given in the appendix. It was chosen, first, because it represented current standards in Setswana orthography, with respect mainly to word-division. Second, the passage was old enough that those students who might have read it (and due to the limited extent of writing in Setswana, it is difficult to find any suitable passage that none of the students might have read) they would have forgotten it so that any influence previous reading may have had on their scores was negligible. Finally, the passage is interesting in content, relevant to Botswana, and in style is comparable to the English passage used in this study.

The content of the passage concerns a vegetable farmer in one of the larger villages in Central Botswana who took over part of a dry river bed for his garden. The story outlines his legal troubles in gaining possession of the plot, his financial success with his crop, and the part played by his family in the undertaking - all interesting themes for the reader. There is quite a lot of quoted speech in the passage, from the protagonist, Mr. Rakhudu, and his wife, which adds to its interest.

Every tenth word was deleted from the passage beginning with the ninth word of the third sentence. An analysis of the deleted words shows that there are eleven nouns, nine pronouns, nine adverbs (or adverbial formatives), five verbs, five copulas, three possessive particles, three "stabilizers" (semantically null 'fillers' appearing with pronouns), two adjectives, two auxiliaries, one negative particle and one conjunction. Three of the deleted items illustrate the Bantu characteristic of including in a single item what would in English be two words - molapong (molapo - 'river bed' +

ng - locative formative); nthusa (n - pronominal 'me' + thusa - verb 'to help'); mothusang (mothusi - 'helper' + ng - relative formative). One of the deleted words - enjini - is a direct borrowing from the English, a common practice in Setswana. Other examples in the passage are ditamati - tomatoes - and diekere - acres. In the original, it is interesting to note, the author gives English translations of two terms - Banka ya Tlhabololo ya Morafe (National Development Bank) and Merogo ya sekgowa (cabbages (lit. vegetables of the Europeans)). The first of these translations has been left out in the cloze passage, while the second has been retained since it was thought that merogo ya sekgowa might be a specialized or dialectal term strange to some of the readers.

Six Setswana native speakers were consulted concerning the suitability of the passage and the difficulty of the test. They were all law students at Edinburgh University, in their third or fourth years. None of them were experienced in Setswana teaching, but all had passed the Cambridge Ordinary Level Examination in Setswana. They worked through the cloze test collectively and informally, discussing possible answers and difficulties with the text. In general, their response to the format of the test was enthusiastic and showed high interest - at times the discussion grew quite animated with regard to possible interpretations and consequent acceptable answers. One of the first reactions was that the text represented Sengwato - the dialect of Central Botswana - two of the informants were Bangwato - but this may have been suggested by the mention of Mahalapye, a Mongwato village. The group experienced little difficulty with the passage and were able to fill in all of the blanks correctly except for two which were nouns and one which they said, disgustedly, was a construction borrowed from English. The speaker had wanted to convey the equivalent of the English past "used to" (do something), and had used the verb dira - use - instead of the proper Setswana thlolo. They decided that this was because the speaker, Mrs. Rakhudu, was uneducated and was using the spoken vernacular instead of the written form.

Finally, the completed Setswana test was sent to two native-speakers of Setswana, experienced in the teaching and testing of the language, one employed in the Botswana Regional Testing Centre, the other in the Botswana Literature Bureau. They were asked to comment upon the general suitability of the passage, to correct any points of grammar which they thought might give the subjects undue difficulty and to comment upon the problem of word-division. The informants agreed that the choice of passage was a good one since it represented the sort of Setswana they would encounter outside the school and should form a good basis for a test of general ability. Further both informants made suggestions for changes in spelling and word-division, which were incorporated into the final version of the test. These changes, in the main, were made to make the text consistent. One informant referred to an experiment he had conducted some years before to find out whether disjunctive or conjunctive word-division was easier for students to use, and reported that it seemed to make little difference (M. L. A. Kgasa, personal communication, 1974).

SECTION TWO : THE INTERVIEW SCHEDULE

Introduction

In "A Summary of Environmentalist views on Language Deprivation and Reading Failure", D. Plumer (1972) makes two suggestions, one negative, and the other positive, which have influenced the construction of the interview schedule used in this study, in terms of what it was hoped to discover. First, he points out that students do not leave school because they cannot speak the standard dialect (therefore, reading teachers shouldn't spend time trying to change dialect) but because they can't read. This point bears consideration in the context of Botswana, where much time, effort and money are spent to improve students' grammar in both English and Setswana, and very little time, effort or money in improving their reading ability (a great deal of importance is attached to improving their reading 'taste' but this is not the same thing).

Plumer's second suggestion is that educators emphasize reading - that schools should provide students with materials that they can and will read. In Botswana we return again to the question of time, effort and money. It will be attempted to show that materials students can and will read are not expensive, that they already exist if only students were allowed and encouraged to avail themselves of them. It is no new idea that students learn to read by reading - that once they have mastered the concept of the sound-symbol relationship more and wider experience is necessary for them to improve their reading ability. Certainly, a structured reading programme incorporating suggestions such as those of C. Chomsky (1970) or Davies and Widdowson (1973) is of great value in directing students' minds, but such a programme is of greatest value when developed against a background of the free use of all sorts of reading material.

In the previous sections the method used in measuring the reading ability of Form Five students in both English and Setswana was discussed. It was indicated that a separate rank-order for each language would be obtained based on the subjects' compatibility with the

criterion group in English and their homogeneity as a group in Setswana. The present section is a discussion of the interview of selected subjects to learn about their reading behaviour, their attitudes toward reading, and their access to reading material.

In Botswana's secondary schools, English is the medium of instruction, the language of the Cambridge examination, and indeed, the single most important section of the Cambridge examination which the students will sit - unless they pass English Language and Literature, they cannot obtain a Certificate. For this reason, it was decided to use the ranking of English reading ability as the criterion for selecting subjects for interview. That is, the top 33, the middle 33 and the bottom 33 subjects were taken from the ranking of the total number of students who sat the cloze test in English (provided, of course, that each one chosen also sat the Setswana test). This 'disproportionate stratified sample' allowed for the comparison of the strata - the characteristics of 'good', 'average' and 'poor' readers (see Goode and Hatt, 1952: 222).

Reading Behaviour

The differences between the three strata will be studied in terms of the three areas mentioned above - behaviour, attitude and access to material - and in addition, several personal variables will be obtained. The first dimension, behaviour, is perhaps the least well-defined of the three. Its operational definition is in terms of answers to questions - that is, reading behaviour is defined by what subjects say they do. The problem, then, is to ask questions that are answerable - that are within the scope of subjects' memories and are concrete enough to allow for definite answers. In preparing such questions, the experience of the National Readership Survey was used - a continuing study of reading behaviour with regard to periodical literature in Britain, sponsored by the Joint Industry Committee for National Readership Surveys. These researchers, who are concerned with measuring the readership of over 80 newspapers and magazines, and interview 16,000 subjects a year, have, in the course of their work, developed what they believe to be reliable

methods for obtaining the desired information. Their techniques were adapted to the situation in Botswana, to study the reading of periodicals. To obtain information on the reading of books, techniques were used which were devised for a study of reading habits in three London boroughs, a sub-survey used for an experiment conducted concerning different interviewers' effects on data (Durbin and Stuart, 1951; Stuart, 1952). These two surveys have influenced the construction of the interview schedule used in the present study. As Moser and Kalton (1971: 238) point out, there is no 'coherent set of principles or a theoretical framework' for the collection of information. Experience and common sense play a large part in the design of material - an application of principles borrowed from such disciplines as psychology, linguistics and statistics, as well as practical advice from studies like those mentioned above.

Returning to the problem of measuring reading behaviour, it seems that as the period specified for informants to recall becomes longer, as in the case of monthly publications, for example, informants tend to mis-report the number of items they looked at. Belson (1962) suggests that a feature at least as important as memory-span is the nature of the behaviour being reported. He makes a distinction between habitual readership and casual readership. Thus, in the case of newspapers published every day, the chances of habitual readership are much greater and therefore self-reporting is much more accurate than in the case of monthly publications where there is a high incidence of casual reading. This is an important point in Botswana, where even newspapers normally published every day may not reach readers regularly (Botswana National Library Service, 1974). Thus, the problem of a long memory-span is, in Botswana, affected by the likely high incidence of casual reading. Corlett (1964: 7 - 8) suggests a technique which may be adapted to fit the problem in Botswana. First, the informants were asked to recount, with prompting, the opportunities for reading newspapers and magazines during the three days before the interview. The purpose of this step was to focus thought on particular times and places when reading was done and so increase the chance of remembering casual reading, as well as shortening the memory-span. This has the further advantage of

encouraging informants to report actual behaviour rather than usual behaviour (which can mean reporting items usually read, but not actually read during the specified reading period, and vice versa). The second step was to ask the informants what they had read during each reading opportunity they mentioned, again prompted, perhaps with the aid of a list of possible choices. The information gained from this type of questioning would be reports of actual reading done on those occasions. In order to get an overview of the breadth of reading, and to get an indication of the scope of material available to students, further questions were asked about material read apart from that mentioned specifically as having been read during the three-day period. The specified reading period for these questions was one month. The information gained from this type of question is probably, from the informant's point of view, representative of his normal reading behaviour (see Belson, 1962).

It should be noted that the primary interest is in the breadth of reading experience and not so much in the depth of it - that is, it was desired to find out how many different items students read and not how thoroughly they read each one. 'Read' is here defined as 'looked at' or 'seen' and refers to the subjects' experience with different kinds of material. It may be that this type of questioning gets answers which indicate how many names of newspapers and magazines the informants can recognise. This can be overcome only by an interview technique which encourages informants to refrain from exaggeration. This depends to a large extent upon the personality of the interviewer and touches upon a paradox of the interview technique - it is an attempt to objectify what is principally a subjective situation. Furthermore, the information should not be regarded as indicative of frequency of reading - the fact that a subject read the Daily News during the last three days does not mean that he usually reads that paper. Two questions were asked - one about the Daily News, one about Kutlwano - eliciting frequency information. The technique involved a five-point scale for informants to indicate reading frequency: in the case of the Daily News, from 'None' to 'All' issues usually read during a week; for Kutlwano, from 'None' to 'Almost all' issues read during the year. The validity of this technique is

supported by Corlett (1964), who observes that frequency distributions are U-shaped - that is, most people see either 'Almost all' or 'None' of the issues published, but few see half of them - and by Broadbent (1964, reported in Corlett), who suggests the five-point scale. Frequency questions were included about these two publications because they were the two of greatest importance, in terms of money spent, at least, in Botswana, and are the most widely distributed publications as well. They should provide a good gauge of discrimination between strata in the sample.

Reading behaviour in terms of books presents a somewhat different problem from that of periodicals. Magazines and newspapers are relatively few in number and can be listed for informants to indicate their choices; further, periodical literature is just that - periodical - it may be read regularly. Books, on the other hand, are vastly too numerous to list, and are read intermittently, over a longer period of time, than are magazines and newspapers, which are usually 'read' at one sitting. Thus, it is a legitimate question to ask, "What magazines and newspapers do you read?" but not "What books do you read?" The techniques for obtaining information about book-reading used in this study is one adapted from Durbin and Stuart (1951) and Stuart (1952). It involves asking informants whether they ever read books, for pleasure, in this case, and if so, whether they are reading one now. Then they are asked for the title and subject of the book. If they are not currently reading a book they are asked about the 'last good book' they read. The information gained from the question about the title of the book is entered into the statistics as a yes or no question and can be used to verify the quality of the information on book-reading: Stuart (1952) reports that about 90% of the current readers could remember the title of the book they were reading, while only 65% of the non-current readers could remember the title of the last good book they had read. Memory-span, of course, plays a large part in these findings. The information about the subject of the book can be categorized and cross-tabulated with such variables as sex and reading ability. It is interesting to note that in the 1951 study, current and non-current readers could remember the subject of fiction equally well, while non-current readers often

failed to remember the subject of non-fiction.

Before leaving the subject area of reading behaviour, a further element of behaviour must be discussed - that of the language used for various kinds of reading. This subject is an important one in this study, and yet one of the most difficult to obtain information about. There were two basic ways that this information was gained in this study: by inference and by direct questioning. Items which are published in one language only - such as many daily newspapers and most magazines - may be immediately indicative of language. In other cases - especially local newspapers, the 'Daily News', and some magazines - it was necessary to ask whether the item was read in its English or Setswana (or other language) edition. With Kutlwano, which accepts articles in either English or Setswana, it was necessary to hold up a copy and ask the informant to show which articles he read (the informant was not told that information about which language he prefers was wanted but was left to conclude that the point of the question was only which articles he read). In the case of books, the informant was simply asked what language the book he was reading (or last read) was in. Language information may be used to determine if there is any difference, between the strata, in the amount of literature read in one or the other of the languages - bearing in mind, of course, that much more literature is published in English than in Setswana. The purpose is to see if preferences tend toward one language or the other in cases where there appears to be an equal chance to read in either language (for example, in Kutlwano).

All of this information about behaviour was used to compare, by means of correlation and cross-tabulation, subjects grouped in different ways - by reading ability, primary school, sex, age and others discussed below. The statistical measures were performed with the aid of the SPSS computer programme at the Edinburgh Regional Computing Centre.

Attitudes toward reading

The second major area studied by means of the interview was the attitude of the various ability strata toward reading of various kinds. Other groupings of subjects, for example, by school location, were compared to look for significant differences in attitude. The information was elicited indirectly by means of questions about the amount of time spent reading various kinds of material. For example, subjects were asked how many hours a week they spent reading magazines. It seems natural that students would tend to give replies to such questions indicating what they think they 'ought' to do. The technique of eliciting attitudinal information in this way is one used, by, among others, Gardner and Lambert (1972: 152 - 152). Spolsky (1967) suggests that indirect questioning about attitude obtains less inhibited results than direct questioning. This question type was used in the cases of newspapers, magazines, books and textbooks, and replies treated as four separate values to be cross-tabulated with values from other variables. In addition, however, the first three were combined to form a fifth variable, 'attitude toward reading', the fourth value excluded since, presumably, all students feel that they ought to read their textbooks.

Access to materials

The third area for study was that of the access students say they have to reading material in their locale, in terms of where they say they get various kinds of literature. Botswana is no different from other places in that it has varied sources of reading material - libraries, both public and school; British Council and USIS reading rooms; bookstores; newsagents and the like. Furthermore, agencies such as the Government Information Service and various community organizations publish periodical literature for general or specialized audiences. An important question, sometimes overlooked by educators and publishers, is whether this material is in fact available to students in different localities. Even in the capital, where one would suppose that students had access to all available material, they are allowed outside the school compound for only one thirty-

minute period each week, effectively limiting the use to which they can put various sources of reading material. Information gained from questions about sources of material was compared mainly with variables of reading ability and school location: do good readers buy books which others borrow? How do students in remote areas obtain material? Do students in urban areas make use of source facilities existing there? Some information relative to this area can be inferred from that gained in other areas - for example, if few students in a particular school read Kutlwano, we may assume that Kutlwano is not easily available there.

Personal Information

Other information gained from the questionnaire is personal information about each informant to be used in grouping subjects in ways other than by reading ability. These variables are ones considered to be possible factors in reading ability, attitudes, behaviour and access to material. They are, first, the informant's primary school - where he learned to read: it is of interest to know whether subjects from certain districts display common characteristics. Second, the informant's secondary school, and if applicable, his junior secondary school (many Form Five students may have attended schools for their first three years of secondary school which did not offer the Cambridge syllabus). Again, it is interesting to see whether certain schools offer more facilities to students and if, for example, isolated schools are deprived of reading material. Third, father's employment on a five- or six- point scale may help distinguish those students whose home environment has contributed to reading ability. Students whose parents are government officials, for example, may be in an advantageous position as far as encouragement and opportunities for reading are concerned - or such an atmosphere may not matter (Lytton's (1972) work on remedial reading achievers and non-achievers suggests that there are few environmental differences which affect achievement in reading). Parents' knowledge of English and Setswana was the only other environmental background variable to be considered. The students' knowledge of languages other than English and Setswana was noted to see whether a wider linguistic ability is

perhaps related to reading. The variable of sex is important in Botswana's culture, where women are only just beginning to acquire abilities and skills outside the traditional ones of home and family. Age was noted since there is the possibility that, if age differences are great among the strata, it might point to a particular time when the pupils in primary schools were taught reading in a particular way, or to maturity levels affecting reading.

These particular variables were thought important because in Botswana, as in other developing (indeed, in many 'developed') nations, variations between districts, schools, home environments, expectations based on sex, and the ages of students are great. All of these variables, along with the ones mentioned in the three areas described above, represent secondary hypotheses that they are important considerations in any analysis of reading among bilingual school-leavers in Botswana. A careful analysis of data and interpretation of results was necessary to prove or disprove any of these hypotheses - it may be that the most valuable result is an indication of areas for further study. It must be emphasized again at this point that even high correlations or significant differences between variables do not indicate causation, or answer the question 'why?' They can only suggest that a relationship exists or that a variable may be important. This study, then, is an exploratory one in that it is hoped that certain areas for further, deeper study will emerge.

The interview schedule used in the survey is shown in the appendix. The type of information to be elicited from it is as follows:

Personal information about informant:	Q1, 2, 23, 24, 25, 26
Newspaper reading:	Q4, 5, 12
Magazine reading:	Q8, 9, 13
Book reading:	Q14
Time spent reading:	Q3, 6, 10, 15, 18
Language:	Q4, 8, 12, 13, 14, 27, 28
Sources of material:	Q7, 11, 16, 19
Interests and attitudes:	Q14, 17, 20, 21, 22

As it appears in the appendix, and as it was used in Botswana, the

interview schedule is in fact a coding sheet which allowed the interviewer to convert informants' responses directly into codes which could be punched onto computer cards and processed. The format of the schedule and the coding were developed by a very small pilot survey conducted in Edinburgh, using colleagues in the Department of Linguistics as informants, both native speakers and foreign speakers of English. Certainly, many of the questions were not applicable to the Edinburgh situation, or to speakers of languages other than Setswana, but the pilot survey allowed the correction of many errors, wording, style etc., so that when the schedule was used in Botswana, only one or two of the items gave problems, as will be described in Chapter Six.

SECTION THREE : FIELDWORK REPORT

Introduction

There were three basic tasks to complete in Botswana: to gather data which would characterise the literate milieu within which the secondary school pupils worked - official and professional attitudes toward reading and the availability to the pupils of reading material; to measure, by means of cloze tests, the reading ability of the pupils in both English and Setswana; and to interview a sample of the pupils to gather data on a number of variables, including materials read, subject preferences, time spent reading, and certain personal variables. The testing of about 500 Form Five pupils was anticipated, in nine schools, scattered throughout the country, using the cloze tests consisting of a Setswana passage and an English passage, scored by a "clozentropy" method. Based upon experience with School Certificate - equivalent Scottish pupils, tested in English at Boroughmuir Secondary School, in March, 1974, 40 minutes were to be allowed for the pupils to complete each test. For the interview schedule, the sorts of questions to be asked were decided, but the details were left until arrival in Botswana. Before leaving for Botswana, the cloze tests, the practice test, and the answer sheet were prepared and duplicated. Permission from the Office of the President of the Republic of Botswana to conduct the research was applied for and received under Section 3 of the Anthropological Research Act, 1967. A grant of £500 from DeBeers Mining Botswana (Pty) Ltd. was given to cover the costs of the project.

Background Data

The researcher arrived in Botswana on 6 May, 1974, and the following day saw Mr. C. A. R. Motsepe, Senior Education Officer in the Ministry of Education, with whom an itinerary was worked out for the testing. Since the school term did not begin until 21 May, there was ample time to plan and inform headmasters of the impending visit, which Mr. Motsepe did in a circular letter sent to all the senior secondary

schools. Having made plans to start testing in the second week of the new term, 27 May, the intervening fortnight was used to gather background material, talk to people involved in the teaching of reading and to research Government policy toward literacy in general.

The first discussions were with Mr. T. Bloor, the British Council English Language Teaching Adviser in Botswana. His work was mainly with the Secondary schools and he was particularly interested in upgrading the pre-School Certificate sector of secondary English teaching, the Junior Certificate. He was very interested in improving reading among the pupils and had conducted his own tests in an effort to convince people of the need to promote better reading. He had aided in the implementation of the SRA materials in the secondary schools and recommended that they be used with all forms right up to Cambridge level. He reckoned that the Cambridge pupils in Botswana were at about the American Grade 7 level in the SRA kits. Mr. Bloor told of other projects, concerning reading in Botswana, such as an effort at Botswana Extension College to produce a series of SRA-type materials more culturally suited to Botswana for use in a correspondence course for those not able to get places in secondary schools; a reading testing project in the English Department of the University of Botswana, Lesotho and Swaziland, where incomplete results indicated that University entrants required remedial reading programmes; and an experiment with radio listening groups sponsored by the UBLS Extramural Services Department which included studies in English Literature and National Development. The people connected with these various activities were visited and much was learned about the state of literacy in Botswana at several different levels. During this period also, a pilot test of 12 UBLS 2nd-year education students was conducted in Setswana, to see how the Setswana cloze test worked since it had not been administered before under test conditions. Mistakes in typing were corrected as were some points in the Setswana instructions.

The Botswana National Library provided statistical data and public statements on literate policy. It was discovered that the Education

Ministry, unlike other ministries, had not produced an annual report for several years, and this somewhat hampered the investigation. Some information from such sources as the 1971 Census Report, a Civil Service Localisation Report, Education Statistics from 1973 and a Manpower and Employment Report was useful in filling in gaps. Concerning the availability of reading material in the country, help was received from Mrs. B. Mogae and Mrs. Z. K. Matthews of the National Library Service, who provided library statistics and lists of periodicals; the Government Information Services, who publish the national newspaper, the Botswana Daily News; the librarian at the U.S. Information Service Reading Room, Mr. S. Matingwa; the Botswana Book Centre; and various secondary school librarians. In general, the situation was that there was a wide range of publications in libraries and shops in Botswana - certainly in the Capital. South African, British and American newspapers and magazines could be found, as well as the latest in books - both paper and hard cover editions could be purchased or borrowed. As one got further from the urban centres, of course, the number of publications to be found decreased - most villages of any size had a branch library, usually with a good selection of books, but weak on periodical and current literature.

Testing

The reading ability testing was begun at St. Joseph's College, a Roman Catholic Mission school with 59 Form Five pupils in three classes. Each school presented a slightly different testing situation in terms of time available, rooms available etc., but in the main a standard was maintained for all the testing. In schools where there was more than one Form Five class - the majority - the usual practice was to do the testing in one 80 minute period (two normal class periods). This necessitated moving from one room to another in succession. In each class, the nature of the project was explained - that it was a joint project for the University of Edinburgh and the Botswana Ministry of Education - the Practice Test was distributed and instructions for it were given orally. While the pupils worked on the Practice Test, the Answer Sheets for the Main Test were

distributed. The pupils were given only two or three minutes for the Practice Test and the main emphasis was on writing only one word for each blank and writing answers in the answer column. Each class was then given either the English or the Setswana cloze test, the order of presentation changed from class to class. They were given 40 minutes to complete the first test, at the end of which time the papers were collected and they were given the other test - they kept the same answer sheet, which had 50 answer-blanks on each side. It was found that the pupils required the full 40 minutes to complete the English test and only slightly less time for the Setswana, on average - although, of course, the faster ones finished in less time and the slowest failed to complete either test. An effort was made to give each group the full time, but this may have varied by as much as five minutes either way, due to having sometimes to move between three different rooms to collect and distribute papers.

The testing was begun on 28 May and completed on 10 June, with one exception noted below. One day was spent at each school, the rest of the time in travelling. The itinerary for this part of the project was worked out in advance with Mr. Motsepe, and it was adhered to, which helped considerably in relations with the various headmasters and teachers, upon whom the success of the project depended. The last school was tested, actually, on 17 June, after the interviews in two others had been completed. This was due to transport difficulties to this isolated school: it was better to make do with one visit, when all the testing and interviewing was done.

The marking of the English passage, using the clozentropy method, could be done fairly rapidly with the use of a portable electronic calculator, and the results of each day's testing were usually ready on the same day as the tests were administered. In the nine schools a total of 441 pupils were tested in both languages, with an additional 30 in English only (whose results were not analysed). The scores on the English test ranged from a high of 81.5 to a low of 10.0, with a mean of 51.0 (the native-speakers had obtained a high of 88.1, a low of 35.1 and a mean of 77.0). The top four Botswana pupils scored above the native-speaker mean. While no detailed

analysis of the validity of the test was possible until the results of the Cambridge examination became available in early 1975, conversations with teachers concerning the pupils chosen for interviews (that is, the high, middle and low scorers) indicated that the test ranking did correspond generally with expected performance on the Cambridge English papers.

Of the total Form Five population in Botswana, 83,5 were tested (n = 441), the rest missed because of refusals and absences. All 441 were fluent Setswana/English bilinguals, by their own account, although not all were doing Setswana for the Cambridge examination. Further, a very small number of those who did the Setswana test were members of the Kalanga tribe, a non-Tswana group, and spoke as their mother-tongue Sekalanga, but these felt comfortable enough in Setswana to do the test, and no effort was made to separate them out of the results. Other Kalanga pupils (the majority of them) declined to do the Setswana test, as did the Asian and European pupils. A few Setswana-speaking pupils refused to do the Setswana test on the grounds that they were not doing Setswana as a school subject for the Cambridge examination.

All the tests were administered by the researcher, with the exception of those at Gaborone Secondary School, which, due to scheduling problems, were given by the head of the English Department there. The Table overleaf shows the details of the testing.

Interviews

The interview schedule was completed during the three weeks before the start of the testing. The draft questions were discussed with several people involved in education and their suggestions solicited - few had any to make. A list of available newspapers and magazines was prepared to give to the students to prompt their responses. Due to carelessness - there is no other excuse for it - one South African newspaper - the Star of Johannesburg - which was to be found in the Capital of Botswana - was omitted, but otherwise, the list of reading material proved to be fairly complete. While not

exhaustive in content, the list did provide a good cue for pupils to help them remember what they might have read.

The interview schedule was constructed in the form of a coding sheet to facilitate the transfer of the numerical data to computer cards (although this had to be amended in the case of one question, described below). The coding sheets required quite a bit of editing before analysis was possible, in fact, but in general proved to work quite well. Copies of the coding sheet, the coding lists of various responses, and a transcript of what was said in the interviews by the interviewer are included in the Appendix.

The researcher conducted all the interviews and was thus able to standardise the technique so that all the subjects were treated the same in terms of basic stimuli - clarification questions and probing questions quite often had to be improvised on the spot, but even here a certain amount of consistency was maintained. Most of the interviews were conducted in unused rooms in the schools - the library, book store, empty classrooms, etc. The usual practice was to call the subjects out of class one at a time. Often one subject fetched the next while the interviewer organised the papers between interviews. Each subject was interviewed for about 20 minutes. This was the anticipated time, but from the first interview, no effort was made to keep within this time - 20 minutes simply proved to be how long it took. In most schools, interviews were allowed during the five hours of morning classes and the hour and a half of afternoon classes. The most subjects interviewed during one day was 14.

Pupils were chosen for interview as planned, by ranking the 441 subjects by English test scores and choosing the top, middle and bottom 33. In addition, several alternates were chosen in each group to replace any who were missing on the day they were to be interviewed. In fact, at one school five of the pupils wanted were away on a sports trip and in another two were ill. Alternates were found for all but two of these and so in the end, 97 pupils were interviewed, 92 of whom were in the original group chosen. By

choosing pupils from the national ranking rather than from school ranks, or an equal or proportional number from each school, it appears that some schools are over- or under- interviewed. For example, at one school, only three pupils were interviewed, while at another, twenty were interviewed. Proportionally, the percentage of pupils from each school vary from 9.4% to 32% of the Form Five pupils in that school. The percentage of pupils interviewed in each school who fall within each group of the rankings has been calculated. All these figures are shown in the Table.

Three of the questions on the questionnaire presented problems during the interviews. Question 3, about opportunities for reading in the last three days, required quite a lot of discussion, sometimes, before it was clear that the subject understood what was wanted. This was just a matter of being patient and observant, however. One problem with this question came up in two schools visited just after they had finished their mid-year examinations. Every pupil insisted that during the previous three days he had read nothing but textbooks in preparation for the examinations. In the face of this, the pupils in these schools were asked when they usually read. With Question 15, the feeling was that some pupils, although they had no difficulty with similar questions about newspapers and magazines, when asked how much time they spent reading books, interpreted it to mean how long it took them to read a book. Finally, with Question 20, where a score was given indicating the degree to which the pupil seemed to be aware of national development plans, by talking over with him some facet of the National Development Plan, from the very first interview an inherent weakness in this line of questioning showed up - viz., the National Development Plan itself was not generally available - so pupils were asked to tell what, in the list of contents of the Plan, which they were shown, they would like to have read. It was this section of the coding sheet that required expansion when the data was put onto the computer punch cards.

Finally, coding lists, Numbers 2, 3, 6, 7 and 8 were reproduced on 5" x 7" cards to hand to the pupils as prompters. Three copies each were made of the newspaper, magazine and subject lists with

Table
TESTING AND INTERVIEWING DATA

School	Date tested	No. tested	% of total	Date interviewed	No.	%	% interviewed of total tested	No. and % of no. interviewed in each scoring group		
								Top	Mid	Low
Gaborone Sec. School	3 June	74	17%	25-26 June	20	21%	27%	11 55%	5 25%	4 20%
Moeding College	29 May	55	12%	18-19 July	15	15%	27%	10 67%	3 20%	2 13%
Moeng College	17 June	28	16%	18 June	3	3%	11%	2 67%	0 0%	1 33%
Mater Spei College	10 June	23	5%	13 June	6	6%	26%	1 17%	5 83%	0 0%
St. Joseph's College	28 May	58	13%	11-12 July	14	14%	24%	7 50%	5 36%	2 14%
Seepapitso Sec. School	3 June	45	10%	24-29 July	13	13%	29%	1 8%	5 39%	7 54%
Molefi Sec. School	30 May	46	10%	10 July	5	5%	11%	1 20%	1 20%	3 60%
Shashe River School	7 June	62	14%	14 June	5	5%	8%	0 0%	3 60%	2 40%
Swaneng Hill School	5 June	50	11%	19-20 June	16	16%	32%	0 0%	7 44%	9 56%
Totals		441	100%		97	100%	22%	33 34%	33 34%	31 32%

the items listed differently on each list to avoid influencing pupils by item order.

In four schools all the interviews were completed in one day, in another four schools, two days were spent, while in one school, the interviews were spread over four days, since the headmaster would allow the interviews to be held only during the 80-minute afternoon study period.

In conclusion, this fieldwork report has shown up the complex relationship between the theoretical and the practical sides to the problem of methodology. To say something to the effect that 'the best-laid plans of mice and men...' is to oversimplify. The theory must be formed in consideration of the reality in which operations are to be carried out. By the same token, practical problems cannot be solved always by the most expeditious means - theory must be adhered to as rigorously as possible. The methodology described in this Chapter was worked out by attempting to take cognizance of both these facets - the theoretical issues surrounding such topics as reading, testing, national development and the like were interpreted against a background of knowledge of Botswana in terms of travel, school facilities, accommodation, availability of duplicating services, electrical supply and many other often petty concerns. In the last analysis, though, only a firm grasp of the theoretical demands of the project is the best insurance that the inevitable practical problems, which could not be foreseen, might be solved.

CHAPTER FIVE : RESULTS OF THE READING TESTS

The reading tests are clozentropy tests in English and Setswana as described in Chapter Four. The English test, requiring a native-speaker criterion group, was administered to 121 pupils of Boroughmuir Secondary School, Edinburgh, on 27 March, 1974. This school was chosen because of its reputation for high academic standards, yet for several years has been a comprehensive school and its pupils represent a wide range of backgrounds and abilities. The pupils tested were in fourth-year English Literature classes and would sit the Scottish Certificate of Education O-grade Examination, in April. They were from six different classes and teachers and represented varying levels of ability since the classes were streamed. There were 71 boys and 50 girls, and their mean age was 16. Table 1 shows the results of the testing of the criterion group, and Item 1 in the Appendix is the scoring sheet with the answers and clozentropy weightings produced by this group.

The score data from Botswana is from the administration of the tests during May - June, 1974. A total of 441 pupils sat both tests, in 9 secondary schools. Table 2 shows the results of the tests in both English and Setswana, the English marks based on the native-speaker criterion described above, the Setswana marks on the responses of 121 Setswana native-speakers chosen at random from among the 441 subjects. (The scoring sheets resulting from these tabulations are Items 2 and 3 in the Appendix.) Tables 3 and 4 are histograms of the data in the English and Setswana tests respectively. The scores are shown in 2-point intervals for convenience, and the means and \pm one standard deviation are also indicated. On the English test, \pm 1 s.d. takes in 67% of the population, while \pm 1 s.d. on the Setswana test takes in 84% of the total.

Tables 5 to 8 deal with item analysis statistics from the two tests - Facility Value and Discrimination Index. Since both these values are somewhat different from the usual item analysis figures, some explanation is necessary for the interpretation of the tables. In Table 5 the Facility Value of each item is the total of the clozen-

Table 1
 ENGLISH CLOZE CRITERION GROUP (BOROUGHMUIR)
 N = 121

\bar{X}	=	77.0
Range	=	88.1 - 35.1
s.d.	=	8.9
Reliability coefficient (KR21)	=	.04

Table 2
 CLOZE TESTS IN BOTSWANA
 N = 441

	English	Setswana
\bar{X} =	51.0	78.6
Range =	81.5 - 10.0	91.5 - 36.2
s.d. =	10.4	7.6
Reliability r_{22}^1 =	.90	.73
KR21 =	.79	.79

Table 3
 HISTOGRAM OF ENGLISH CLOZE RESULTS

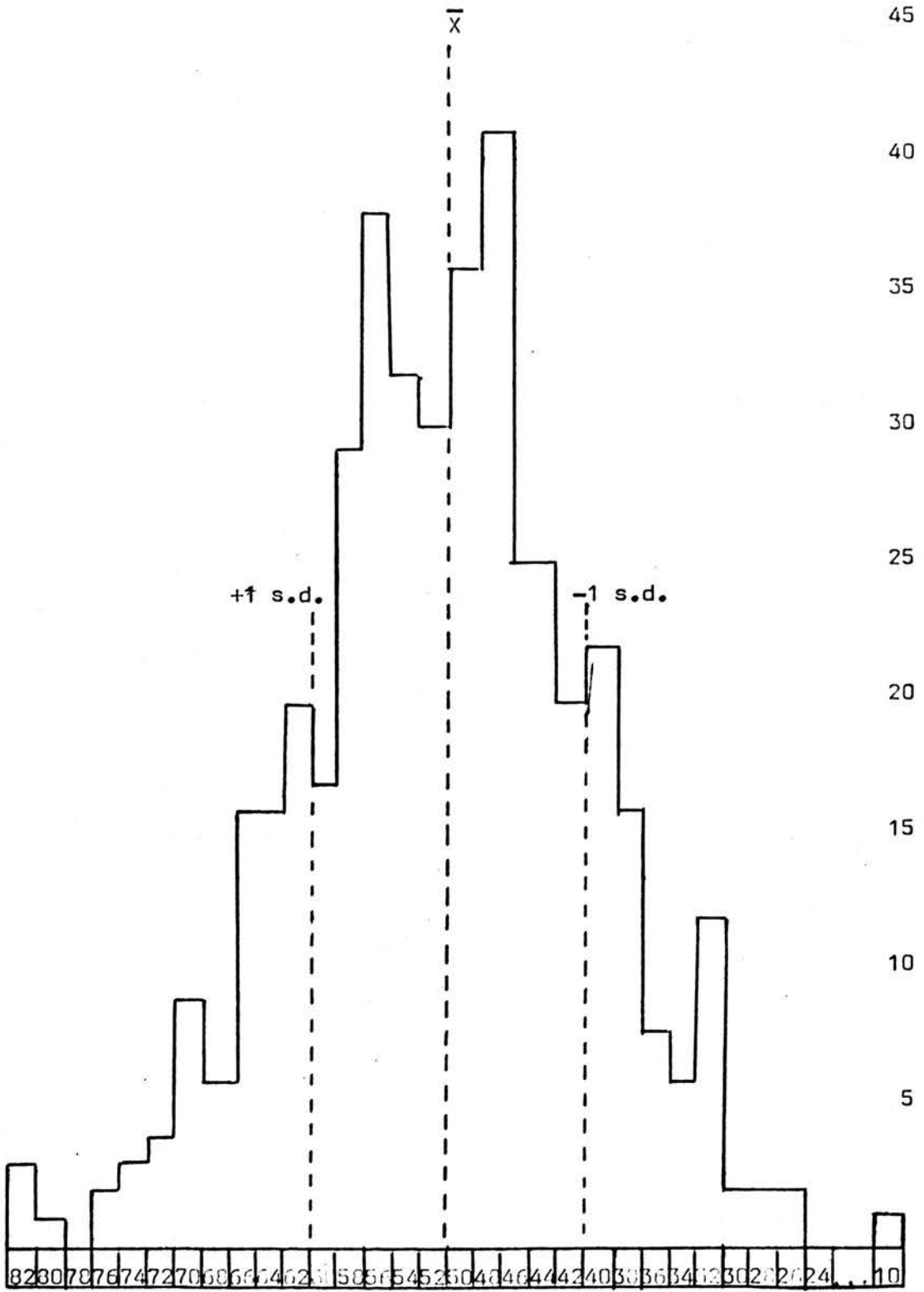
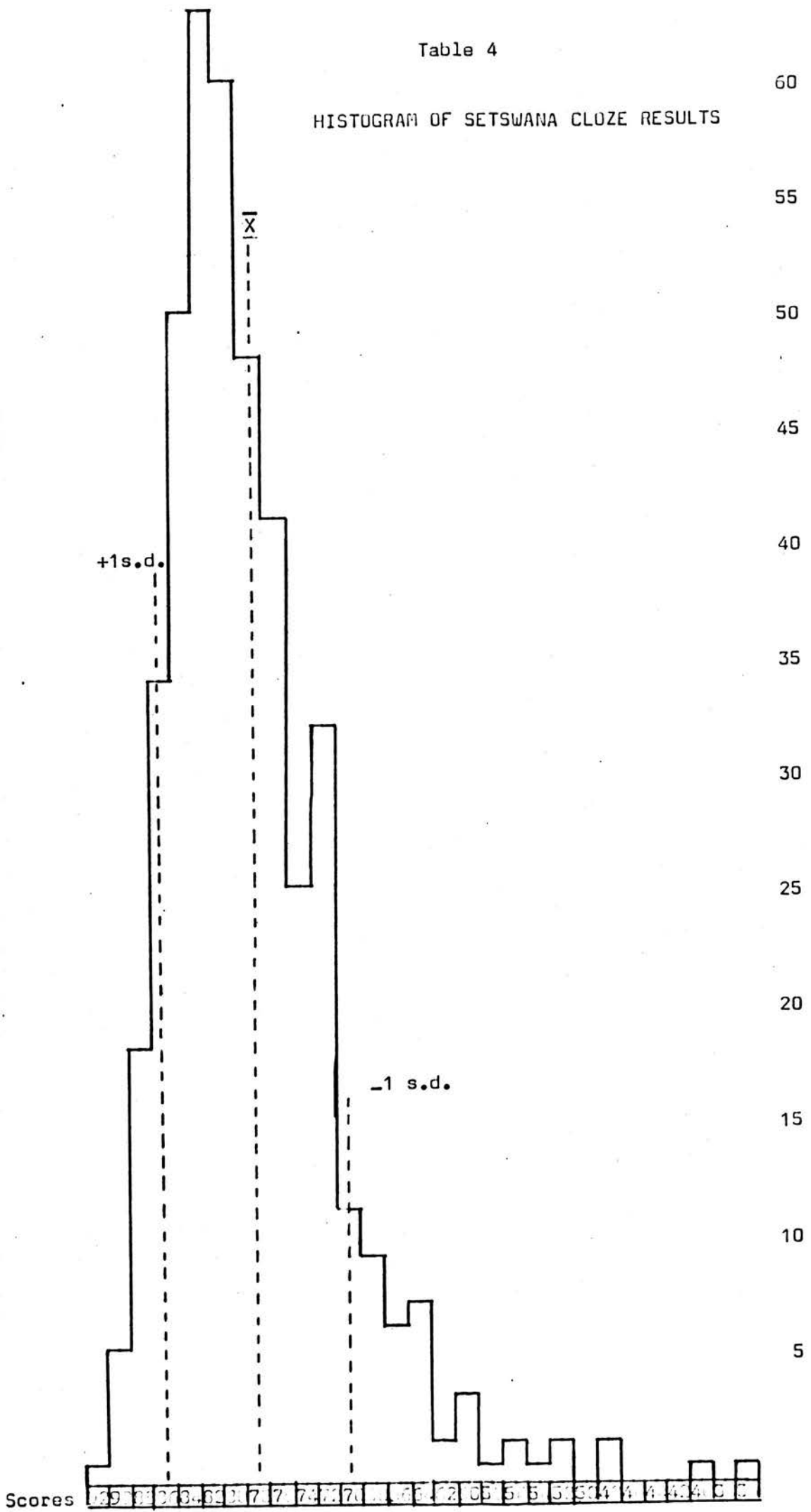


Table 4

HISTOGRAM OF SETSWANA CLOZE RESULTS



trophy values for each response to the item. Thus, if an item has many possible responses, it has a high clozentropy value, while if there are few possible responses, the value is lower. Table 5 also shows a mean Facility Value for the whole of each test. This may be used as a basis for comparing the two tests. A T-test performed on the difference between these means showed that there was no significant difference between them, i.e. the tests were of equal difficulty for their respective native-speakers (see Carroll *et al*, 1959: 41 for a similar procedure). As with the Facility Value on any test, a decision must be made of what criterion to use in analysing the items: Table 6 shows the result of applying a criterion of ± 1 s.d. from the mean Facility Value. On the English test 24 items are shown to be either too easy or too hard, while on the Setswana test, there were 14 such items.

The Discrimination Index (D.I.), also shown on Table 5, is based on a comparison of the top third and the bottom third of the subjects. A feature of clozentropy is that each item, and each test, has a maximum entropy value, calculated on the basis of the fiction that each subject gave the same response to each item. The closer the subjects come in practice to this maximum agreement, the easier the item may be said to be. The percentage of the maximum possible for each item achieved by the top and bottom thirds of respondents would indicate whether the item discriminated successfully between the two groups. Table 5 shows the percentage of the maximum possible achieved by the high and the low thirds and the difference between them - the Discrimination Index. As with the Facility Value, a mean D.I. has been calculated. Table 7 shows those items not within ± 1 s.d. of the mean D.I., while Table 8 shows those items which fail to fulfill either criterion. A fuller discussion of the implications of the item analysis appears in Chapter Eight.

Table 9 is a list of the number of subjects tested in each school and the test means for each school. Table 10 shows the results of correlations between the English and Setswana tests. Although all achieve significance, none indicate very strong relationships. Table 11 shows the correlation between the Reilly clozentropy scoring system

Table 5

FACILITY VALUES AND DISCRIMINATION INDECES

English Cloze					Setswana Cloze				
	FAC.	Hi	Lo	DI		FAC.	Hi	Lo	DI
1.	5.7	84%	63%	21%	1.	5.6	89%	51%	38%
2.	6.6	63	16	47	2.	5.7	90	57	33
3.	2.1	95	55	40	3.	2.8	100	71	29
4.	3.0	87	77	10	4.	2.4	100	95	5
5.	2.4	95	54	41	5.	9.5	71	44	27
6.	3.7	97	79	18	6.	10.2	89	63	26
7.	4.6	81	54	27	7.	2.1	98	95	3
8.	2.1	93	78	15	8.	8.3	77	49	28
9.	2.6	55	9	46	9.	4.7	94	82	12
10.	2.4	95	65	30	10.	2.1	100	90	10
11.	2.4	100	70	30	11.	2.1	100	98	2
12.	6.8	86	78	8	12.	4.2	97	78	19
13.	6.7	78	59	19	13.	3.0	98	73	25
14.	10.0	43	40	8	14.	4.4	94	92	2
15.	7.9	42	22	20	15.	2.1	100	95	5
16.	7.4	77	35	42	16.	2.8	100	83	17
17.	2.1	100	95	5	17.	4.3	96	84	12
18.	2.3	90	28	62	18.	3.4	100	76	24
19.	2.1	93	38	55	19.	4.6	96	74	22
20.	9.0	23	4	19	20.	3.7	96	79	17
21.	6.9	80	44	36	21.	3.9	97	82	15
22.	5.4	52	11	41	22.	2.4	100	88	12
23.	4.2	36	12	24	23.	2.5	95	86	9
24.	8.1	62	43	19	24.	8.5	80	66	16
25.	6.1	69	26	43	25.	3.2	100	63	37
26.	5.6	30	3	27	26.	4.3	95	54	41
27.	2.7	53	5	48	27.	8.8	72	29	43
28.	2.4	93	58	35	28.	4.2	100	65	35
29.	7.8	68	46	22	29.	2.1	100	90	10
30.	2.5	95	58	37	30.	7.2	90	59	31
31.	6.6	59	22	37	31.	4.8	96	78	18
32.	4.4	81	23	58	32.	6.3	97	62	35
33.	6.5	74	28	46	33.	3.6	97	63	34
34.	7.7	35	3	32	34.	4.1	97	68	29
35.	4.0	77	22	55	35.	7.9	71	39	32
36.	3.0	91	58	33	36.	4.0	93	39	54
37.	3.4	87	44	43	37.	3.7	100	69	31
38.	4.8	62	14	48	38.	8.7	75	31	44
39.	5.3	51	14	37	39.	2.6	100	61	39
40.	6.6	58	27	31	40.	2.5	100	61	29
41.	2.5	93	63	30	41.	5.6	88	43	45
42.	3.1	86	30	56	42.	2.6	98	79	19
43.	8.9	81	42	39	43.	5.7	90	37	53
44.	10.5	83	33	50	44.	4.6	94	46	48
45.	7.7	24	3	21	45.	5.3	94	44	50
46.	2.4	95	56	39	46.	5.6	86	29	57
47.	5.6	67	27	40	47.	4.4	89	31	58
48.	8.5	30	6	24	48.	4.2	96	46	50
49.	6.3	50	32	18	49.	3.4	93	63	30
50.	5.0	70	17	53	50.	2.1	100	63	37
				1652					1347
\bar{X}	= 5.2			\bar{X} = 33.0	\bar{X}	= 4.5			\bar{X} = 26.9
s.d.	= 2.4			s.d. = 16.1	s.d.	= 2.2			s.d. = 17.1

Table 6
ITEMS NOT WITHIN 1 S.D. OF MEAN FACILITY VALUE

English Cloze (± 1 s.d. = 2.8 - 7.6)		Setswana Cloze (± 1 s.d. = 2.3 - 6.7)	
Below	Above	Below	Above
3	14 - 15	7	5 - 6
5	20	10 - 11	8
8 - 11	24	15	24
17 - 19	29	29	27
27 - 28	34	50	30
30	43 - 45		35
41	48		38
46			
14	Totals 10	6	Totals 8
	24		14

Table 7
ITEMS NOT WITHIN 1 S.D. OF MEAN DISCRIMINATION INDEX

English Cloze (Items below 17%)	Setswana Cloze (Items below 10%)
4	4
8	7
12	11
14	14 - 15
17	23
5	Totals 6

Table 8
ITEMS VIOLATING BOTH FACILITY VALUE AND DISCRIMINATION INDEX CRITERIA

English Cloze	Setswana Cloze
8	7
14	11
17	15

Table 9
 NUMBER OF SUBJECTS, MEAN SCORES, BY SCHOOL

School	N	Eng. X	Sets. X
Gaborone Sec.	74	54.6	79.1
Shashe River Sch.	62	48.9	79.9
St. Joseph's Coll.	58	51.5	77.0
Moeding Coll.	55	54.4	81.5
Swaneng Hill Sch.	50	46.5	74.2
Molefi Sec.	46	48.3	79.0
Seepapitso Sec.	45	51.3	77.6
Moeng Coll.	28	52.6	79.9
Mafer Spei Coll.	23	50.7	78.9
Total	441	51.0	78.6

Table 10
 CORRELATIONS OF ENGLISH CLOZE WITH SETSWANA CLOZE (N = 441)

Kendall's Tau	Spearman Rank-Order	Pearson P - M
.27	.40	.36

All sign., $p < .01$

Table 11
 CORRELATIONS OF REILLY CLOZENTROPY WITH BINARY SCORES (N = 130)

Kendall's Tau	Spearman Rank-Order
.87	.97

Both sign., $p < .01$

(logarithmic scale) and a modified scoring system which gives a point to any response made by at least two subjects. As the correlations show, the two methods are very nearly equivalent. A discussion of the implications of this finding are to be found in Chapter Eight. Table 12 shows the conversion of the cloze scores into deciles to facilitate the statistical treatment described in Chapter Seven.

Table 12
CLOZE DECILES

Test	Decile	Range	\bar{X}	s.d.
English Cloze	1	81.482 - 64.743	5.0	2.7
	2	64.481 - 58.907		
	3	58.760 - 55.753		
	4	55.739 - 53.896		
	5	53.831 - 51.006		
	6	50.841 - 48.293		
	7	48.272 - 45.872		
	8	45.846 - 42.732		
	9	42.502 - 10.030		
Tswana Cloze	1	91.506 - 86.760	5.0	2.7
	2	86.620 - 84.417		
	3	84.351 - 82.635		
	4	82.633 - 81.524		
	5	81.471 - 80.293		
	6	80.247 - 78.685		
	7	78.678 - 76.733		
	8	76.664 - 73.662		
	9	73.540 - 36.181		

CHAPTER SIX : READING HABITS IN BOTSWANA

This chapter is a description of the results, of 97 interviews carried out in Botswana, during June and July, 1974. The subjects represent a disproportionate stratified sample of the secondary school Form Five population, chosen on the basis of their performance on an English reading test administered during the previous month. A total of 441 subjects sat the test - about 90% of the Form Five population - all bilingual in English and Setswana. The sample was drawn by taking the top 33, the middle 33 and the bottom 31 test ranks (two subjects were missing from the bottom group and could not be replaced). This method allows for analysis of results which should be translatable to the whole Form Five population, as well as comparison of high scorers with low scorers. These 97 represent 22% of the whole population tested. The fact that the mean test score of the whole population is 50.8, while that of the sample is 51.8, suggests that the sample is a valid one.

First, some of the characteristics of the whole sample: they were 57% male and had a mean age of 19 years. About 20% came from what might be called urban backgrounds, while the rest came from predominately rural backgrounds. The fathers of 42% of them were engaged in agriculture, hunting or fishing; 15% in labour; 10% in civil service or clerical work. These job categories are those used in the Botswana census and employment statistics. About 57% of the subjects had at least one English-speaking parent, while both parents of 95% of them spoke Setswana. Seventeen per cent of the subjects attended the one large urban secondary school in Botswana, 30% attended schools run by religious missions, 26% were in village schools run by the government, and 25% attended privately sponsored village schools. The same data, recast, suggests that 36% attended schools in or near urban centres, 21% were in schools located in very large villages, and 42% attended relatively isolated schools.

It is important to note that this group of Form Five pupils is a highly select group - many of the statistics given above suggest this, when seen against the background of the whole population of

Botswana. For example, only about 6% of the whole population came from urban centres, compared with 20% of these students; 67% of the male population in Botswana was engaged in agriculture, compared with only 42% of the fathers of this group. These figures are what should be expected, of course, since these students, even those at the "bottom" of the scale, did represent the 'cream' of Botswana's educated youth: of 15,000 children who started primary school in 1962, only 500 finished Form Five in 1973 - just over 3% (Botswana Education Statistics, 1973). They had passed two selective examinations, one at the end of primary school and another after three years of secondary school.

The group claimed to have a high degree of linguistic variety: 55% said they could read at least one other language in addition to English and Setswana, 24% said at least two others, and 8% three others. Kalanga was the most prominent of the other languages with 22% claiming knowledge of it; 18% knew Sesotho, 11% each for Ndebele and French (as a school subject) and 10% said they could read Afrikaans. Unfortunately, no comparable data is available on the variety of linguistic ability among the whole population of Botswana - the 1974 census did not take language into account at all. In the 1964 census, about 2% of the population claimed to be literate in a language additional to English and Setswana.

The subjects were asked what sort of job they would like when they finished secondary school. Twenty-two per cent of them wanted to enter science or medicine, but nearly as many - 21% - wanted to work in industry, usually as engineers. Fourteen per cent wanted to enter teaching, 12% the civil service or clerical work, 10% hotel, police or information services, 9% law, administration or politics, 9% agriculture. Only 3% wanted to work in business or sales. When asked what they would do if their first choice proved impossible, 22% said they would enter the civil service.

To gain an impression of the trend toward modernisation evident in the group, two questions were asked. The object was to place subjects on a four-point scale of interest in national development and on a

three-point scale of type of adviser consulted on future plans. For the first scale, subjects were shown a copy of the 1973 - 78 National Development Plan and asked to look through the table of contents pointing out those items which they were interested in and would like to read if they had the time (see Appendix). Among the items on the table, seven were pre-selected as indicators of interest in national development and subjects were rated according to the number of these items they mentioned. In this way, 16% were rated nil, as they had mentioned none of the seven indicators, 53% were rated Some Interest, 22% Medium Interest and 10% Strong Interest. For the scale on adviser type, subjects were asked if they ever asked advice about their future employment and if so, who they usually asked, and replies were categorised as traditional - uncle, parent, chief - and modern - teacher, professional person. Nineteen per cent said they never asked advice, 32% asked advice of a traditional source, and 49% of a modern source. Further analysis, which will be described later in this paper, has suggested that neither of these scales produced results along anticipated lines. One point which might be mentioned here is that it is possible that, when faced with a wide variety of choice, some of the subjects tend to choose many items, due perhaps to indecision, while other students limit their choices, being more sure of their interests. This is suggested by the results of the development interest scale, and later by the results on magazine reading and preferred reading subject. It becomes clearer when seen in the comparison of results from the high scoring group and the low scoring group, discussed in Chapter 7.

Turning now to the subject of reading habits specifically, questions were asked about the national newspaper, 'The Daily News', the national magazine, Kutlwano, and about other newspapers, magazines and books available to pupils in Botswana. According to responses given, about 5% of the subjects never read 'The Daily News'; 12% read it once or twice a week; 20% read it three or four times a week, and 63% read it every day. All read the English rather than the Setswana edition.

Regarding Kutlwano, 4% claimed never to read it, while 36% said they

read less than half and 20% read about half. Thus, 32% said they read almost all the issues (12 a year). This statement is corroborated, it may be suggested, by the response to a question on whether subjects had read the last month's issue - a copy was shown to them and some articles discussed, so responses to this question would tend to be fairly accurate - and 26% said they had read the issue. In 'last month's issue' (during the first half of the interview period - June - the May issue was used, during July, the June issue was used, but the data below remains the same for both), there were 6 English articles and 4 Setswana articles. All those who had read the issue had read at least one of the English articles and 16% had read more than half of them. But nearly 50% had not read any of the Setswana articles and only 1 person had read more than two of them.

A question was asked on what opportunities subjects had had for reading - when they had actually done some reading, aside from school work - in the last three days. They were allowed to tell up to five opportunities - only 3% claimed to have used five chances to read in three days. Eighty-nine per cent said they had had at least one chance to do some reading; 38% at least three opportunities. By far the most popular reading time was weekends, when 60% said they had done some reading, while 41% used their afternoon free time (in most schools, this is the time when the library was open), 36% read before bed, 25% at lunch time. Only 5% claimed to have done any reading during the tea break! Free class periods were utilised by 14%, early morning pre-class period by 13% and evening study periods by 12%. Ten per cent found no time at all for reading in three days.

What did they read during the times they mentioned: 212 opportunities for reading in three days - about 2 per person. During those times they read 74 newspapers and 122 magazines, roughly one item per opportunity. About a third of them said they had read no newspaper in the last three days, so two thirds had read at least one. One third of the group said they had read at least two papers, and a tenth claimed to have read three different ones in three days. This data was gained, by the way, by counting the number of papers named

by subjects, not by asking them how many they had read. The most popular paper was 'The Daily News', read by nearly 60%, but after that, the percentage dropped to 16% for the 'Sunday Times' (of Johannesburg), and 12% each for 'World' and 'Rand Daily Mail'. These last three are South African publications - no 'foreign' papers were mentioned - Zambian, Malawian, British or American - although these were listed on the memory aid given to subjects, and are available in some of the schools.

Subjects were asked to tell, in addition to those papers mentioned in the three-day question, what they read over a whole month. Now 90% said they had read 'The Daily News', 50% the 'Sunday Times', 42% 'Rand Daily Mail' and 39% 'World'. This is basically the same rank order as in the previous item but with the percentages greatly increased - just what was expected. The biggest changes occurred in reported reading of the 'foreign' papers - 27% said they read the 'Times' of Zambia, 16% the 'Rhodesian Chronicle'. Two people said they had read 'The Guardian'.

Magazine reading is apparently more wide-spread than newspaper reading - certainly a more popular past-time. Nineteen per cent said they had read no magazine, while 81% claimed at least one, 28% three and 12% at least four magazines in three days. A South African 'African' picture magazine, Drum, was the most popular with 46% claiming to have read it in three days, while Kutlwano was mentioned by 43%. A very interesting response to this question was that 13% said they had read Agrinews, a monthly publication of the Department of Agriculture, intended mainly for employees of that Department, with a content devoted to new farm and breeding techniques. Perhaps this should not be too surprising since 9% of the group had said they wanted to enter agriculture as a career, and perhaps a closer look should be taken at the relationship between reading and personal interests. Iswelelopele, one of the few Setswana language magazines available, was mentioned by 10% as was the American news magazine Time. Foreign publications, in contrast to what was reported for newspapers, account for about 22% of the items mentioned.

When subjects were asked what other magazines they read during a month, 84% claimed that they read Kutlwano. Drum was mentioned by 79%, but after that the readership drops and Reader's Digest, Tswelelopele, Agrinews, and Newsweek were each claimed by 25% - 28%.

A third major area of questioning was about book reading. Subjects were asked to tell about books they read for their own enjoyment - not text-books. Ninety-three per cent claimed that they read books, while 52% said they were reading a book at the time of the interview. Of those reading a book, 72% could remember the title (more or less accurately), and 74% could remember the subject. Eighteen per cent of them were reading about Africa and Africans (both fiction and non-fiction), 16% spies and detectives, 13% problems of society, 12% politics and history. Love and romance and adventure together accounted for an additional 16%. When subjects were asked later what were their favourite subjects, however, 43% said politics and history, with love and romance second at 36%. Africa and Africans, problems of society and spies and detectives were each chosen by 26% - 30%. There was a somewhat surprising reported 20% interest in reading about health and hygiene. Further probing suggested that this was due to a specific interest in sex manuals. Nearly as many - 19% - liked reading about religion and philosophy.

For each of the three reading media, subjects were asked how much time they spent each week reading. The purpose here was not so much to get a measure of actual time spent reading, but to get a scale of attitude toward reading - the more time claimed, the more importance attached to reading. The subjects reported that they spent an average of 3.1 hours per week reading magazines, 3.2 hours/week reading newspapers (no significant difference between these two) and 4.7 hours/week reading books (this figure is significantly different from each of the other two by the t-test, 1% level of confidence).

Subjects were also asked how much time they spent studying in a day: 16% said they spent only 1 - 2 hours, 55% said 3 - 4 hours, 28% 5 - 6 hours. This is an average of 3.8 hours per person each day.

The standard deviation of 1.4 takes in 68% of this group.

The final area of information sought from the subjects was on the sources of reading material utilised by them. School libraries were by far the most popular source with 70% of the subjects using them for newspapers, 72% for magazines and 74% for books. Over 50% of them borrowed magazines from friends, 45% borrowed newspapers, but only 25% borrowed books. By contrast, the National Library was used by only 2% for newspapers, 4% for magazines, but by 12% for books. Similarly, local branch libraries were used by 10% for books but not at all for newspapers and magazines. A small number - about 5% - said they got their magazines and newspapers at home or by subscription. No one said he got his books at home. About 4% claimed to use no sources for reading material. As one might expect, 64% of book sources were libraries of one sort or another, while only 40% of newspaper and magazine sources were libraries. Similarly, while buying and borrowing played fairly large roles in obtaining magazines and newspapers, they had reduced importance in access to books. Perhaps the most important feature of the data here is that pupils usually preferred not to go outside the school for reading material - 65% - 70% of material was obtained within the school, either in the school library or by borrowing from other students.

Further information on sources was gained by asking subjects which of the sources they had visited or used in the past week. Eighty-five per cent said they had been to the school library, 27% had borrowed reading material from friends, and 17% had bought something to read in a shop. Local branch libraries had been visited by 6% and the U.S. Information Service reading room by 5%. Nine per cent said they hadn't visited a source of reading material at all in the week, while 47% had used at least two, and 16% at least three.

Finally, some cross-tabulations were done with the total population data to investigate possible relationships between variables, but only two produced significant results.

Table 1 shows the relationship of sex to the first choice of employment, where males predominate in agriculture, and industrial preferences, females in science and medicine and law, administration or politics. Table 2 shows that, as regards reading the two national publications, 'The Daily News' and Kutlwano, if a subject read one he tended to read the other as well.

Table 1
FIRST CHOICE OF EMPLOYMENT BY SEX

	Sci. Med.	Law Pol. Admin.	Tchg. Rel.	Civ.Ser. Cleric.	Info. Hotel Police	Bus. Sales	Agric. Hunt. Fish.	Lab. Ind.
Male	29%	37%	54%	55%	44%	0%	88%	95%
Female	71%	63%	46%	46%	56%	100% (n=3)	12%	5%

$$\chi^2 = 23.3, 8df, p < .01$$

Table 2
FREQUENCY OF 'DAILY NEWS' READING BY FREQUENCY KUTLWAND READING

DAILY NEWS \ KUTLWAND	Never	Less than half	Half	Almost all	N
Never	40%	40%	0%	20%	5
1 - 2/week	0%	50%	33%	17%	12
3 - 4/week	11%	21%	37%	32%	19
Every day	0%	38%	26%	36%	61
N	4	35	27	31	97

$$\chi^2 = 26.0, 9df, p < .01$$

CHAPTER SEVEN : SECTION ONE : CAMBRIDGE RESULTS

The Form Five Pupils in Botswana sat the Cambridge School Certificate Examination in November, 1974. The Scores of the Examination for each pupil were received in Edinburgh for analysis in March, 1975. Analysis was carried out with the aid of the SPSS computer programme (Nie, Bent and Hull, 1970) at the Edinburgh Regional Computing Centre. The subtests written by each subject varied through the nine schools, and within each school, but it was decided to study the results of the English Language, English Literature, Setswana, French, Mathematics, Biology or General Science (whichever the subject sat), and History and the total score. There were six candidates who sat the cloze tests for whom no Cambridge marks could be located - due either to the fact that they were absent on the days of the Cambridge Examination, or that the name they had given on the cloze tests was not the name given on the Cambridge papers. Thus, the highest number of subjects for whom a comparison of test results and examination results could be made was 435. The lowest number was considerably less - only 19 subjects did the French examination, for example. Table 1 shows the total number of candidates in Botswana for the School Certificate Examination, and the number and percentages of passes by school.

The system used in Botswana for awarding certificates for the Cambridge Examination is a simple one, but requires some explanation since it was used in the present study as the measure of success in school. Tables 2, 3a and 3b deal with the scoring system. A subtest score of between 1 and 6 is called a 'Credit Pass', a score of 7 or 8, a 'Pass', and a score of 9 is a failure. The total score is obtained by summing the six highest scores of the subtests, as shown in Table 2. Thus, the lower the score, whether on the subtests or the total, the better it is. Table 3a shows that Division honours are awarded on the following basis: a total of not more than 24 with Credit Passes in five subjects, one of which must be English Language, and at least a Pass in a sixth is called a First Class Certificate; a total of not more than 34 with Credit Passes in four subjects and a Pass in two more, one of which is English Language,

TABLE 1

SUMMARY OF CAMBRIDGE SCHOOL CERTIFICATE EXAMINATION RESULTS 1974

SECONDARY SCHOOL	NUMBER OF CANDIDATES		First	Second	Third	TOTAL	G.C.E.	GRAND TOTAL	FAILED	PERCENTAGE PASSED	
	Registered	Absent								Present	1st, 2nd and 3rd
Gaborone Sec.	101	1	7	15	36	58	39	97	3	58.0	97.0
Mater Spei	26	2	-	3	7	10	11	21	3	41.7	87.5
Moeding	74	1	1	13	24	38	28	66	7	52.1	90.4
Moeng	29	1	-	-	9	9	14	23	5	32.1	82.1
Molefi	50	1	-	2	16	18	21	39	10	36.7	79.6
St. Joseph's	71	-	4	14	32	50	19	69	2	70.4	97.2
Seepapitso	49	1	2	-	18	20	21	41	7	41.7	85.4
Shashe	70	4	-	-	7	7	23	30	36	10.6	45.5
Swaneng	61	1	1	5	26	32	25	57	3	53.3	95.0
TOTAL	531	12	15	52	175	242	201	443	76	46.6	85.3

Ministry of Education
Republic of Botswana

Table 2

KEY TO CAMBRIDGE SCORES

D. RESULTS IN SUBJECTS

17. The standard reached in each subject taken is shown by a grade from 1 to 9 followed by the letter P, S or F. The table given below shows the meaning of these grades and letters in terms of School Certificate and G.C.E. standards.

Grade and letter	S.C. Standard	G.C.E. Standard	
1 P } 2 P }	Very Good	Ordinary Level pass	
3 P } 4 P }			
5 P } 6 P }	Pass with credit		
7 S } 8 S }	Subject pass		Fail
9 F	Fail		

Table 3a

SCORING PROCEDURE FOR THE BOTSWANA CAMBRIDGE RESULTS

CAMBRIDGE SCHOOL CERTIFICATE EXAMINATION RESULTS 1974

1. THE REQUIREMENTS FOR THE AWARD OF THE SCHOOL CERTIFICATE

- a) The requirements for the higher Divisions of School Certificate are as follows:

FIRST DIVISION:

An aggregate not exceeding 24, with at least Credits in five subjects including English Language and at least a Pass in a sixth. A First Division Certificate is not awarded to a candidate who fails to gain a Credit in English Language.

SECOND DIVISION:

An aggregate not exceeding 34 with at least Credits in four subjects and at least Passes in two others. These six subjects must include English Language.

- b) The conditions for the award of a School Certificate are as follows:

(All requirements for the Certificate must be satisfied at one sitting)

- i) reach a satisfactory general standard as judged by their performances in their six best subjects and
EITHER
- ii) pass in at least six subjects, including English Language with Credit in at least one of them
OR
- iii) pass in five subjects, including English Language, with Credit in at least two of them.

2. GENERAL CERTIFICATE OF EDUCATION

To qualify for a certificate, candidates must obtain G.C.E. Ordinary Level passes, equivalent to School Certificate Passes with Credit, in at least one subject.

is called a Second Class Certificate; all other Certificates are called Third Class unless the candidate fails to gain a pass in six subjects, in which case he is not awarded a School Certificate. This system is somewhat complicated by the fact that a candidate may be awarded a General Certificate of Education for each subject he passes, although he may not pass enough to gain a School Certificate. Table 3b shows examples of various score contingencies.

Table 4 shows a comparison of the Botswana results with the total number of candidates who sat the examination in 1974. It shows the disproportionate weight given in Botswana to 'arts' subjects rather than to science subjects. Table 5 is a summary of the Botswana Cambridge results by subtests. It should be noted that the means are, with the exception of Setswana, all below the Credit Pass level, and the mean Cambridge total is below the acceptable level for a School Certificate. Tables 6 and 7 are histograms for English Language, English Literature, Setswana and the total Cambridge results. It can be seen that the score dispersions are skewed negatively.

Table 3b
 EXAMPLES OF CAMBRIDGE EXAMINATION RESULTS

	Eng. Lg.	Eng. Lit.	Hist.	Geog.	Sets.	Maths.	Bio.	Phys. Sci.	Agg.	Div.	No. G.C.E. pass
Candidate 1	2P	8S	7S	4P	4P	5P	6P	7S	28	2	5
Candidate 2	3P	7S	9F	7S	3P	9F	9F		38	4	2
Candidate 3	7S	8S	9F	9F	8S	9F	9F	9F	50	9	0

Table 4
 COMPARISON OF BOTSWANA CAMBRIDGE RESULTS WITH WORLD CAMBRIDGE RESULTS, 1974

	World N	% reaching Credit	Botswana % Credit
Eng. Lg.	138,813	34.8%	44.0%
Eng. Lit.	56,156	46.6	40.0
Setswana	456	59.9	61.0
Maths (Syll. A)	7,070	27.0	9.0
Biology	30,951	47.1	18.0
History	7,603	31.0	21.0

Table 5
 SUMMARY OF BOTSWANA CAMBRIDGE RESULTS BY SUBJECT

	\bar{X}	s.d.	N
Cambridge Lg.	7.0	1.7	435
Cambridge Lit.	7.0	2.0	399
Cambridge Tswana	6.0	2.2	333
Cambridge French	9.0	1.4	19
Cambridge Maths	8.0	-	430
Cambridge Biology	8.0	-	411
Cambridge History	8.0	-	360
Cambridge Total	42.0	6.9	435

Table 6

HISTOGRAMS OF CAMBRIDGE ENGLISH LANGUAGE, LITERATURE AND SETSWANA SCORES

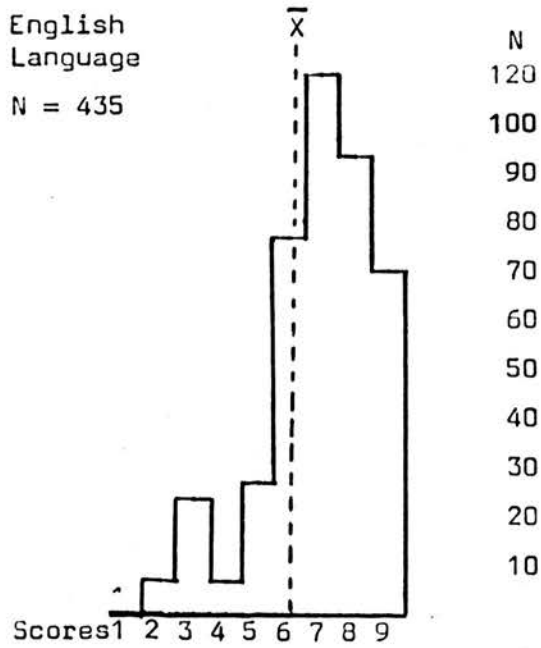
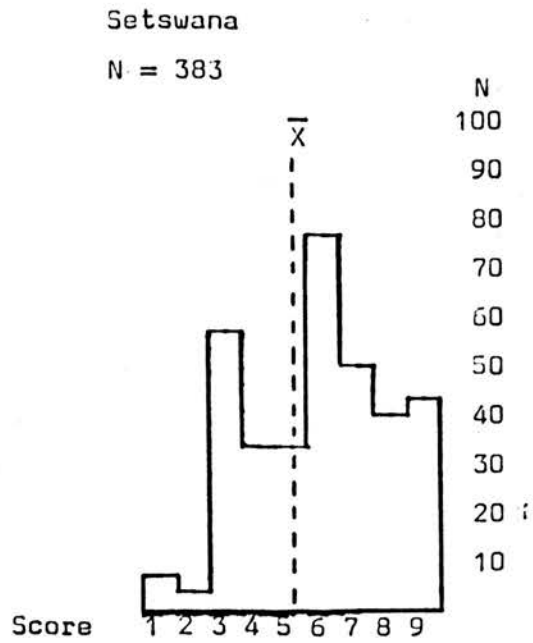
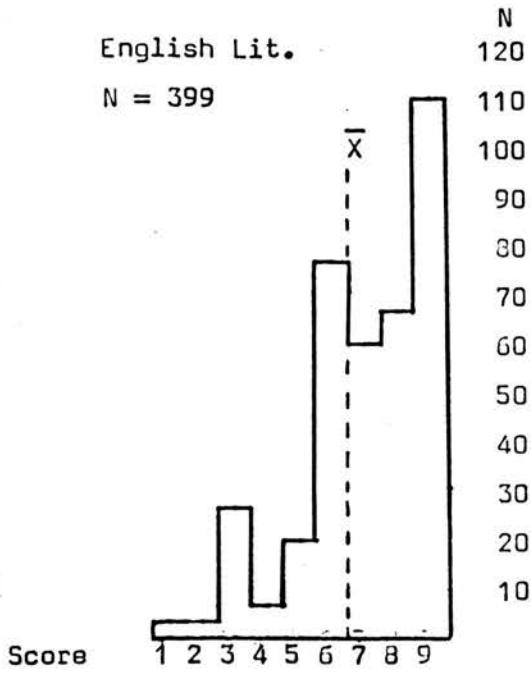
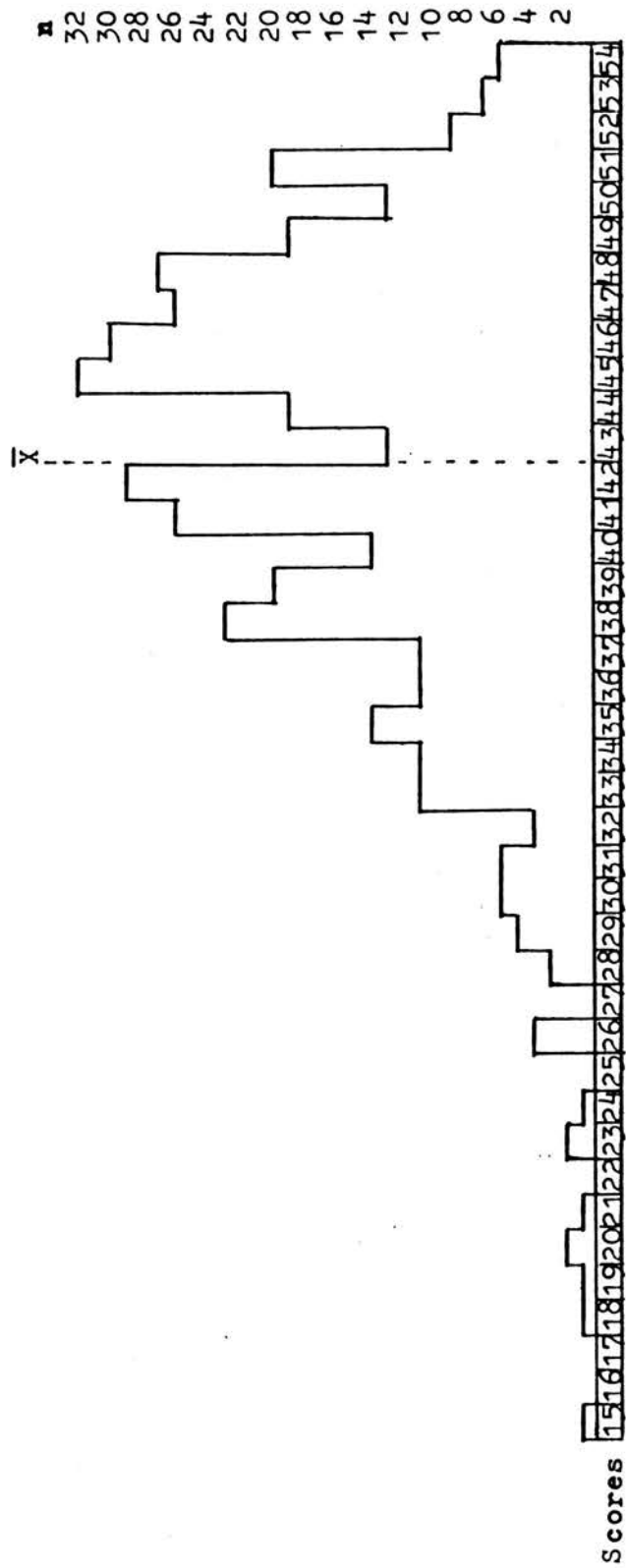


TABLE 7

HISTOGRAM OF CAMBRIDGE TOTAL SCORES

(n = 435)



SECTION TWO : CAMBRIDGE AND CLOZE RESULTS

As a test of the hypothesis that there would be an association between reading ability as measured by the cloze tests and success in school on the criterion of performance on the Cambridge Examination, correlation coefficients were calculated, first using the raw clozentropy scores and the Cambridge scores. Table 8 shows the results of these correlations using Kendall's Tau and Spearman's Rank-Order Correlations. While no correlation is strong enough to predict from, all reach significance with the exception of both cloze tests with French (small n) and the Setswana cloze with History. It should also be noted that the Setswana test is generally weaker in its relationship to the Cambridge results than is the English cloze. Finally, using the Spearman figures, 34% of the variance on the Cambridge English Language test and 26% of the variance on the Cambridge total is explained by performance on the English clozentropy alone. Table 9 shows the results of correlations of the cloze deciles as described in Section One of this chapter, with the Cambridge scores, which are substantially the same as for the raw scores. A cross-tabulation was performed on the same figures to apply the chi-squared test. Table 10 shows the result of this treatment. Again, the English test turned out to be more closely related to the Cambridge than did the Setswana test. No cross-tabulations were performed with the total Cambridge scores since a comparison of a large number of total score groups with the small number of cloze deciles would have produced a spurious result. To test the strength of the relationships indicated by chi-squared, contingency coefficients and Cramer's V were calculated. The contingency coefficient is equivalent to ρ as an indicator of the strength of relationship, except that the maximum value of C is a bit less than unity - in the case of a 9 x 9 table, the upper limit of C is .943 (Guildford, 1956: 339) and the value of C should be corrected, as has been done in Table 10 (e.g. $C = .58 \div .943 = .62$). Cramer's V shows the amount of variance accounted for by the chi-squared relationship (Nie, Bent and Hull, 1970: 276 ; Blalock, 1972: 297). The general picture in Table 10 is that the better one did on the clozentropy, the better he tended to do on the Cambridge.

Table 8
CORRELATIONS BETWEEN CLOZE TESTS AND CAMBRIDGE SCORES

Correlations	Kendall	Spearman
English Cloze/Cmbrg. Lg.	.44+	.58+
" " / " Lit.	.26+	.35+
" " / " Tswana	.21+	.29+
" " / " French	.20 NS	.24 NS
" " / " Maths	.19+	.24+
" " / " Biology	.24+	.31+
" " / " History	.18+	.24+
" " / " Total	.36+	.51+
Tswana Cloze/Cmbrg. Lg.	.22+	.29+
" " / " Lit.	.07-	.10-
" " / " Tswana	.20+	.28+
" " / " French	.12 NS	.15 NS
" " / " Maths	.14+	.18+
" " / " Biology	.09+	.12+
" " / " History	.03 NS	.04 NS
" " / " Total	.17+	.25+

+ = $p < .01$ - = $p < .05$ NS = Not Significant

Table 9
CORRELATIONS OF CLOZE DECILES WITH CAMBRIDGE SCORES

Correlations	Pearson	Spearman
Eng. Deciles/Cmbrg. Lg.	.58+	.57+
Eng. Deciles/Cmbrg. Lit.	.35+	.35+
Tsw. Deciles/Cmbrg. Tsw.	.29+	.29+

+ = $p < .01$

Table 10

CROSS-TABULATIONS OF CLOZE DECILES WITH CAMBRIDGE SCORES

	χ^2	d.f.	sign.	V	C	Corrected C
Eng. Dec./Cmbrg. Lg.	219.4	64	+	.25	.58	.62
" " / " Lit.	115.1	64	+	.19	.47	.50
" " / " Tsw.	111.8	64	+	.19	.48	.51
" " / " Maths	73.1	48	+	.16	.38	.40
" " / " Bio.	129.3	56	+	.21	.49	.52
" " / " Hist.	61.9	56	NS	.16	.38	.40
Tsw. Dec./Cmbrg. Lg.	107.1	64	+	.18	.44	.47
" " / " Lit.	68.3	64	NS	.15	.38	.40
" " / " Tsw.	89.2	64	-	.17	.43	.46
" " / " Maths	61.7	48	NS	.15	.35	.37
" " / " Bio.	66.3	56	NS	.15	.37	.39
" " / " Hist.	49.0	56	NS	.14	.35	.37

V = Cramer's V

C = Contingency Coefficient

To enable further exploration of this relationship, the cloze and Cambridge scores were collapsed as shown in Table 11, the English cloze recoded in 10-point intervals, the Setswana cloze in 5-point intervals, the Cambridge subtest scores recoded as Credit, Pass and Fail, and the Cambridge Total as First, Second, Third Class and Fail. Table 12 shows that, as a result of recoding the relationships do not seem as strong as before, as measured by C, although the amount of variance accounted for is a bit more, as shown by V.

The recoded scores were used in the creation of expectancy tables, looking at the relationship of cloze performance to passing or failing the Cambridge. Tables 13 to 17 show the expectancy on Cambridge Language, Literature, Setswana and total, based on various scores on the English and Setswana cloze tests. For example, on Table 13 it can be seen that 65% of those who scored below 32 on the English cloze failed the Cambridge Language paper, while Table 15 shows that anyone who scored below 52 on the English cloze was definitely in danger of failing the Cambridge. Once again, the Setswana cloze failed to perform as well as the English, but Table 17 shows that anyone scoring less than 82 on the Setswana test was in danger on the Cambridge. Each of the Tables shows the Phi coefficient which is another indicator of the strength of overall relationship.

Finally, Table 18 shows the percentage of subjects who scored below certain levels on the English and Setswana cloze tests who also failed the Cambridge tests. For example, the data given in earlier tables suggested that, on the English cloze, a score of 52 was the optimum dividing line between the passes and failures on the Cambridge, while the optimum on the Setswana was 82 - i.e. anyone scoring below those levels stood a fair chance of failing the Cambridge Examination. Table 18 bears this out - 89% of those who scored below 52 (64%) on the English cloze failed English Language, while 83% of those who scored below 82 (90%) on the Setswana cloze failed Cambridge Setswana. Thus, the tests could

Table 11
RECODED TEST AND EXAMINATION SCORES

New Cloze	Score	Range	New Cmbrg.	Score	Range
Recoded English	1	81.482 - 72.107	Recoded Cmbrg.	1	1 - 6 Credit
	2	71.710 - 62.038		2	7 - 8 Pass
	3	61.869 - 52.013		3	9 Fail
	4	51.983 - 42.148			
	5	41.954 - 32.321			
	6	31.879 - 10.030			
Recoded Tswana	1	91.506 - 87.033	Cmbrg. Total	1	0 - 24 First Class
	2	86.982 - 82.002		2	25 - 34 Sec. Class
	3	81.987 - 77.045		3	35 - 41 Third Class
	4	76.999 - 72.015		4	42+ Fail
	5	71.967 - 67.219			
	6	66.842 - 36.181			

Table 12
CROSS-TABULATION OF RECODED SCORES

Cross-tabulations		χ^2	d.f.	sign.	V	C
New Eng. Cloze Score with:	New Cmbrg. Lg.	130.0	10	+	.39	.48
	" " Lit.	47.8	10	+	.24	.33
	" " Tsw.	26.9	10	+	.19	.26
	" " Maths	34.4	10	+	.20	.27
	" " Hist.	22.2	10	+	.18	.24
	" " Total	126.0	15	+	.31	.47
New Tsw. Cloze Score with:	New Cmbrg. Lg.	32.0	10	+	.19	.26
	" " Lit.	13.6	10	NS	.13	.18
	" " Tsw.	35.4	10	+	.22	.29
	" " Maths	18.2	10	NS	.15	.20
	" " Hist.	4.6	10	NS	.08	.11
	" " Total	44.6	15	+	.18	.30

+ = $p < .01$

- = $p < .05$

NS = Not Significant

Table 13

EXPECTANCY TABLE: ENGLISH CLOZE WITH CAMBRIDGE LANGUAGE

Eng. Cloze Score	N. obtaining Score	% Passing Cmborg. Lg.	% Failing Cmborg. Lg.
1 81-72	9	100%	0%
2 71-62	52	100	0
3 61-52	138	94	6
4 51-42	150	80	20
5 41-32	69	64	36
6 31-10	17	35	65
Totals	435	83%	17%

$$\chi^2 = 71.2 \quad \text{d.f.} = 5 \quad \text{Sign.} = p < .01 \quad \text{Phi} = .41$$

Table 14

EXPECTANCY TABLE: ENGLISH CLOZE WITH CAMBRIDGE LITERATURE

Eng. Cloze Score	N. obtaining Score	% Passing Cmborg. Lit.	% Failing Cmborg. Lit.
1	9	100%	0%
2	49	92	8
3	129	78	22
4	134	69	31
5	64	55	45
6	14	64	36
Totals	399	73%	27%

$$\chi^2 = 26.1 \quad \text{d.f.} = 5 \quad \text{Sign.} = p < .01 \quad \text{Phi} = .27$$

Table 15
 EXPECTANCY TABLE: ENGLISH CLOZE WITH CAMBRIDGE TOTAL

Eng. Cloze Score	N. obtaining Score	% Passing Cmbrg. Total	% Failing Cmbrg. Total
1	10	90%	10%
2	53	74	16
3	139	59	41
4	153	35	65
5	69	13	87
6	17	6	94
Totals	441	44%	56%

$\chi^2 = 90.0$ d.f. = 5 Sign. = $p < .01$ Phi = .45

Table 16
 EXPECTANCY TABLE: SETSWANA CLOZE WITH CAMBRIDGE SETSWANA

Tsw. Cloze Score	N. obtaining Score	% Passing Cmbrg. Tsw.	% Failing Cmbrg. Tsw.
1 91-87	32	97%	3%
2 86-82	109	94	6
3 81-77	122	83	17
4 76-72	66	86	14
5 71-67	30	77	23
6 66-36	24	92	8
Totals	383	88%	12%

$\chi^2 = 12.3$ d.f. = 5 Sign. = $p < .05$ Phi = .18

Table 17

EXPECTANCY TABLE: SETSWANA CLOZE WITH CAMBRIDGE TOTAL

Tsw. Cloze Score	N. obtaining Score	% Passing Cmbrg. Total	% Failing Cmbrg. Total
1	35	60%	40%
2	124	58	42
3	138	44	56
4	78	32	68
5	36	19	81
6	30	23	77
Totals	441	44%	56%

$$\chi^2 = 32.0 \quad \text{d.f.} = 5 \quad \text{Sign.} = p < .01 \quad \text{Phi} = .27$$

Table 18

EXPECTANCY TABLE: CLOZE TESTS WITH CAMBRIDGE TOTAL

Cloze Cambridge	English Below 64%	Setswana Below 90%
Language	89%	81%
Literature	70	69
Setswana	77	83
Total	71	73

* Per cent of those scoring below indicated cloze level who failed the Cambridge subtest or total examination.

have been useful predictors of students for whom extra help was needed to improve their Cambridge performance. As a measure of success in School, then, Table 18 shows that 71% of those who scored below 64% on the English reading test failed the Cambridge Examination.

SECTION THREE : COMPARISON OF INTERVIEW RESULTS OF HIGH AND LOW
ENGLISH READING GROUPS

An examination was made of results when cast into subgroups according to scores on the English test. Forty-seven variables were examined to look for differences between the high and the low scoring groups. First, account was taken of the direction of difference, noting the cases where the difference was in the expected direction. For example, one would expect the high group to have read more different newspapers than the low group, but more of the low group to have read no newspaper. On 193 values over the 47 variables studied, 68% were in the expected direction, the rest showing either no difference between the groups or an unexpected difference. The figure of 68% is significant at the 1% level by chi-squared. As an example of an unexpected difference, in magazine reading over three days, out of 22 values 16 were cases of the low group having read more than the high group. On the entire interview there were 18 values, covering 12 variables which showed differences significant to at least the 5% level, and on 9 of these, to the 1% level. There follows a more complete analysis of the results.

First, some of the personal variables. The high group were younger than the low group by an average of 1.6 years; high group mean age was 18.4 years, the low group mean age was 20. This difference is not statistically significant. The high group standard deviation of 1.4 takes in about 80% of the population, while the low group's of 1.9 takes in only 55%. This would suggest that the low group was a much more mixed lot than the high group, and more evidence pointing in this direction will appear from time to time. Regarding the national development interest indicators, for example, the low group tended to give more varied responses than did the high group. As a result, the low group registered 13% 'strong interest', compared with 6% for the high group (not significant) and the low group had a slight advantage over the high group on 'some interest'. In terms of indicators actually mentioned, however, the high group had a slightly higher average of 1.3 per person, compared with the low group's 1.2, but not significantly so. In fact, the data on this

variable is so conflicting as to be useless in the way it was intended.

As a first choice of employment, science and medicine, labour and industry were the two most popular choices for the high group, each with 30%, compared with 13% and 16% of the low group, respectively. The low group had no choice involving more than 16% of them. Generally speaking, the more technological of the jobs and those requiring a lot of further training were chosen by the high group and those jobs which could be entered soon after leaving school were chosen by the low group: when the jobs are categorised into those which require a lot of further training and those which do not, 73% of the high group preferred the former, compared with 29% of the low group ($p < .01$ by chi-squared). The employment of the fathers of the groups usually followed a pattern, too: 49% of the fathers of the high group were in 'white collar' jobs compared with 19% of the fathers of the low group ($p < .05$). More of the fathers of the low group were in agriculture or labour than were those of the high group and more of the low group fathers were deceased, but neither of these differences is significant statistically. A similar, non-significant difference existed between parents of the groups who were reported able to speak English - 76% of the high group parents could compared with 55% of the low group parents.

Regarding the linguistic abilities of the subjects themselves, there were no significant differences in the groups, although the high group registered more languages: 55% of the low group knew no other language besides Setswana and English, while only 33% of the high group claimed none; 12% of the high group could read at least 3 other languages, none of the low group. The best single indicator of the high group was knowledge of French: 24% of them claimed to be able to read it (at least to having studied it), compared with 3% of the low group.

Similarly, there was no significant difference in where the members of the groups came from, although more of the high group came from towns than did the low group: 30% and 10%, respectively. There were significant differences in the schools the groups attended for

their Junior Certificate (in most cases this is the same school they attend at present). For example, if the schools are categorised on the basis of 1974 Cambridge Examination performance into 'good' and 'poor', 82% of the high group attended the 'good' schools while 39% of the low group did so ($p < .01$). In the same way, when schools are recast into 'urban' - those in or near the urban centres of Gaborone and Francistown - and 'rural', the top group had 64% in the urban schools compared with 32% of the low group ($p < .05$).

Looking now at questions about reading habits, 88% of the high group said they read the 'Daily News' every day, while only 61% of the low group said so ($p < .05$). The high group claimed to read Kutlwano more than the low group, as well, but not significantly so, nor was the difference in book reading significant. Regarding the time spent reading different kinds of material, the low group spent more time, they said, on magazines and newspapers (and, incidentally, on studying) while the high group spent more time reading books - 5.8 hours/week compared with 4.9 hours for the low group. It would be interesting to know whether these differences are due to the low group's preferring to read ephemeral material and needing to study longer hours than the high group, but since the differences are not significantly great, further data would be necessary to see if they are real or not.

On preferred subjects for reading, significantly ($p < .01$) more of the high group said they liked spy and detective stories, and more of them also said they liked reading about famous people of the present, sport and recreation, love and romance and adventure. The low group spread their preferences over a larger number of topics, appearing less sure of their interests than the high scorers. The differences in the preferences of the low group and the high group is significant ($p < .01$), that is, they form two sets unlikely to have occurred by chance, but the cause of the relationship is difficult to tell, unless it is explained by the tendency for the low group to be less homogeneous than the high group.

Newspaper reading showed the usual pattern of the high group doing

more than the low. Over a month, 64% of the high group claimed to read at least 3 papers, while only 32% of the low group did ($p < .05$); 36% of them read at least 4, compared with 7% of the low group ($p < .01$). The 'Rand Daily Mail' produced the only significant ($p < .01$) difference in which paper was read in a month: 64% of the high group read it, while only 29% of the low group did. A possible explanation of this may be that this paper is the only one of a 'hard news' character read by substantial numbers of either group; the difference in readership of the other possible candidate, the 'Sunday Times', while not quite reaching the 5% level of confidence ($p < .06$), is very near to it. This result could suggest, then, that the high group were interested in factually reported news than were the low group, but further data would be necessary to prove this.

Comparison of the high and low groups on magazine reading caused a break in the expected pattern: the low group often read more magazines than the high group in the three-day category: in 16 out of 22 cases the low group exceeded the high group in numbers of readers; 56% of them claimed to have read Kutlwano in the last three days compared with 19% of the high group ($p < .05$).

Fifteen per cent of the low group said they had read no magazine in the last three days, while 25% of the high group had read none. The low group read 1.9 magazines per person, the high group 1.6. For some reason, this result was nearly reversed when subjects said what they had read in a month. Now, 16 out of 24 cases were in favour of the high group; all of them said they had read at least one magazine during the month, while 19% of the low group said they had not ($p < .05$). Only one magazine showed a significant difference in readership - Drum was read by 94% of the high group and only 36% of the low ($p < .01$). There were also significant differences ($p < .05$) between the numbers of each group who said they read at least 2 and at least 3 magazines, in the expected direction.

Data on reading opportunities show the expected tendency for the high group to utilise more time for reading: 61% of them found at

least three chances to read in three days, compared with 29% of the low group ($p < .05$). More, but not significantly more, of the high group used weekends for reading than the low group - 92% compared with 65% - and 21% of them said they read during free class periods - only 7% of the low group said this. About half of each group read during the afternoon free time - which is when, in most schools, they were supposed to go to the library. Sources of reading material were utilised more freely by the high group as well, though none of the differences was statistically significant. In book sources an interesting difference emerged: the high group tended to use more sources outside of school - the national library or branch library, buying in shops, and the USIS reading room - than did the low group. More of the low group used the school library for books, however. As with other examples, more research would have to be done to find out if this is a real difference.

CHAPTER EIGHT : DISCUSSION OF RESULTS

THE CLOZE TESTS

The results indicate that clozentropy performed better as a test of English as a second language than as a test of native language proficiency, whether in English or Setswana. A comparison of the reliability figures (Tables 1 and 2) shows that both native-speaker tests had lower reliability coefficients than the use of the English cloze as a test of second-language proficiency. The low figures are probably the lower limits of higher true reliabilities, due to the probability that the tests are in fact composites of several 'subtests' testing different things, thus giving a low estimate of homogeneity (Pilliner, personal conversation). This fits in with the view put forward in Chapter Four that the cloze test is a global one, testing several skills at once. This raises the question, however, of why the ESL test had such a satisfactorily high reliability, since, presumably, it too was testing a global skill. The answer may be that the test was more difficult for non-native speakers, thus producing a higher coefficient as has been suggested by Darnell (1970 and personal communication).

Regarding the new binary scoring system (Table 11, Chapter 5), compared with the Reilly scoring system (and certainly with the Darnell system) there is every reason to use it in future. Giving a point to every response given by at least two people retains an essential feature implied by the use of logarithms - that at least two members of the criterion group must agree on the validity of a response, since the log of 1 is zero - and speeds scoring immensely. Of course, a feature of the logarithmic scale is lost - namely that differences between those at the top are minimized while those at the bottom are maximized. This feature is hailed by Reilly as a highly desirable one in language testing, but this has yet to be proven empirically. The binary system works because it amounts to an averaging-out of the clozentropy scores - logs which scale from just over 2 down to .301 (See the scoring sheets in the Appendix).

The item analysis of the two tests is an interesting theoretical problem but has little practical application, since one cannot throw 'bad' items out of a cloze test on grounds of facility criteria or failure to discriminate. This would disturb the contextual constraints on blanks remaining, so that the item analysis from a cloze test revised in this way would show values for 'untouched' items different from those obtained in the first version. Although, as explained in Chapter Four, one of the reasons for using 10th-word deletion was to minimize the influence of one blank on another, and a standardized cloze-type test - standardized, presumably, by manipulating items - uses approximately 10th-word deletion (McLeod and Unwin, 1970). A close look at the patterning of item facility on Table 5, Chapter 5 however, brings this reason for 10th-word deletion into question. The items tend to 'bunch-up' into 'easy' and 'hard' groups: on the English test, items 3 - 11 and 35 - 38 are easy, items 12 - 16 and 42 - 45 are hard; on the Setswana test, items 10 - 18, 20 - 23 and 47 - 50 are easy items, while 43 - 46 are hard. This would suggest that there is a carry-over effect from one item to the next. On the other hand, it is probably a feature of discourse that there are difficult and easy sections in a passage and this is reflected in the clozentropy patterns. Further experimentation is needed on this, and to discover if the carry-over is in fact greater when deletions are closer together.

The concept of an 'easy' or 'hard' item in the context of clozentropy is rather unique. The scores, it will be remembered, are really 'popularity' indices (Darnell, personal communication), so a facility value is really an indication of how easy it was for the subjects to agree on the responses.

The comparison of mean facility values of the two cloze tests indicates that as far as can be determined, the tests are of equal difficulty for their respective native-speaker groups. This was by design, of course, although there was no way of determining beforehand how close in difficulty the two passages were, except by intuition and practical experience. The exciting thing about the fact that the two tests are equal is that a single bilingual subject can

be compared with a native-speaker criterion in each of his two languages. For example, Subject X, who scored 74 on the English cloze and is in the first decile, scored 35 on the Setswana cloze and is in the second decile. This is no different from any test results, but since the two tests are equal in difficulty, as proven by their respective groups of native-speakers, it is possible to say with some confidence that Subject X is nearly as competent in English reading ^(raw score 74) as he is in Setswana ^(raw score 35). Such a measure would be a useful tool in the study of degrees of bilingualism (ref. Jacobovits, 1970). Even if the two tests had not been of equal difficulty, the scores of each subject show his relationship in language proficiency to a criterion group of native-speakers of the target language of a group of which he is a member, in his mother-tongue.

The discrimination index of a test item is a key to judging its efficiency - discriminating between subjects is what testing is all about. The two cloze tests, it can be seen from Table 5, Chapter 5 are not exceptionally efficient - the greatest difference between the high and low thirds on either test is 62% and the average is 33% on the English and 27% on the Setswana. It is difficult to compare these figures to the standard $E_1 - 3$ discrimination index figures, where 40% is the usual lowest acceptable mean discrimination (Ingram, 1968), however, it may be that the two systems are equivalent, as is discussed below.

In both the standard facility value and the standard discrimination index, the criterion upon which the figures are based is one of right-wrong answers. The facility of an item is the percentage of Ss who get an item right, while its discrimination index is the difference between the number in the upper third and the number in the lower third who get it right. The criterion upon which the clozentropy item analysis is based is not one of right and wrong, but of maximum agreement. However, this principle of analysis is the same - relative approximation to the criterion. The interpretation of the figures indicating this approximation depends upon how much toleration for inefficiency one is going to allow.

There are standard conventions. In the present case, however, one standard deviation from the mean was used as a guide in rating the efficiency of the tests. Tables 6 - 8, Chapter 5, show the results of applying this standard: nearly half of the English items and over a quarter of the Setswana items failed to fall within the acceptable facility value, while only 10% of the items on either test failed to discriminate according to the criterion. Efficiency in the sense of getting maximum value for each item, then, is not a feature of cloze tests. The efficiency of cloze is in its ease of construction and marking, and, more important, in its validity.

It might reasonably be asked, however, what makes a good cloze-entropy item. Nineteen items on the English test which discriminated fairly well (above 40%) were examined to see what pattern, if any, emerged. The items tended to be of low entropy (few possible choices) and consequently easy rather than difficult for the native speakers. Although the 19 items included nouns, pronouns, adjectives, verbs, adverbs and determiners, about half of them were modifiers of some kind. The pattern of low entropy items suggests that the native speakers were relatively certain about what was required in the blank. Thus, the better discriminating items for second language learners would appear to be those which native speakers find more or less predictable. Items which the native speakers found difficult were too difficult for the second language subjects and thus failed to discriminate well. It is instructive to note in this regard that both Darnell (1970) and Oller (1972) found that the more difficult of their test passages discriminated better than the easier ones. The passage used in the present research was only slightly easier than Oller's most difficult, and it was found that the items which the native speakers found easier discriminated the second language subjects better. The conclusion is, as was suggested in Chapter Two, that there is an optimum level of difficulty for a cloze test of second language proficiency.

Carroll, Carton and Wilds (1959: 52) found in their experimentation with cloze testing, that the ability to perform cloze tests in the second language was 'substantially correlated' with the ability to

do so in the native-language, and postulated the existence of a 'cloze factor'. This factor meant that subjects might score in a certain way on a cloze test because they were or were not good at completing cloze items, somewhat independent of language proficiency. No such relationship between first and second language proficiency on the cloze task was found in the present data. Table 10, Chapter 5 shows a very weak relationship between performance on the cloze tests in English and Setswana, and no evidence for a 'cloze factor' can be suggested. The reasons for the difference between the findings of Carroll et al and the present study may be 1) that Carroll et al used a very small sample (22), 2) all of whom were said to be of near-native proficiency in both their languages and 3) the 'substantial correlations' (.8 - .9) Carroll et al report are for performance on letter-cloze tasks (p. 48) - those for word-cloze are lower - .5 and .06 (p. 51). In fact, they write, "The results... indicate clearly that for both groups of bilinguals (English-French and English-German) there are high correlations between letter-cloze scores in two languages, but much lower correlations between word-cloze scores in the two languages" (p. 48). Thus, their statement about 'substantial correlations' between languages is somewhat misleading. Further experimentation is needed in this area of the relation between cloze scores across languages.

The purpose of these cloze tests was to measure reading ability among the Form Five pupils in Botswana. What then is the result of the measurement? Looking first at the two tests of native-speaker ability, which have been shown to have equal difficulty levels for their respective native speakers, the Botswana pupils may be said to be able to read in Setswana as well as the Scottish pupils can read in English. This is somewhat surprising, for as has been seen in Chapter Six, the Botswana subjects do not read much in the mother-tongue. Thus, this proficiency in Setswana reading is a resource which Botswana, in her development mobilisation, can ill afford to ignore. This becomes even more clear when one compares the Botswana results on the English and Setswana cloze tests since what is being compared is the Botswana group's approximation to native-speaker reading ability in English and

in Setswana. The means of 51 and 79 should be directly comparable, since the two tests are of equal difficulty. If the native-speaker means are said to be the maximum possible for their groups, on those passages, at that time (and this must be so - nevermind about generalisability), then the subjects were comprehending only about $\frac{2}{3}$ as much in English as they were in Setswana. This suggestion, which certainly requires further research, must in any case be balanced against the demands for English made by a developing society: two-thirds comprehension in a world-language for an elite group may be worth, in cost-benefit terms, one hundred per cent in the local language. This is especially true if the local language resource is utilised wherever possible.

In conclusion, the cloze tests, considered alone, are acceptable measures. Their internal statistics, while not quite of professional standard, are good enough to give confidence in the tests in the research for which they were designed. If they are not as efficient as one would have liked, this is more than offset by the ease which they were prepared and administered and by the interesting questions they raise about first and second language proficiency.

CAMBRIDGE EXAMINATION RESULTS

The Form Five pupils cannot be said to have done very well on the Cambridge Examination: 53% failed to obtain a School Certificate. Looking at the subjects' averages in Table 5, Chapter 7, it can be seen that the average mark is only just at the pass level - between 7 and 8, with the exception of the Setswana test, which has an average of 6. The mean score for the Cambridge total is 42, which is below the acceptable pass level. Detailed internal statistics on the Examination were not available from the Cambridge Examinations Syndicate at the time of writing (H. S. Otter, Asst. Secretary, personal communication), but as Tables 1 - 7, Chapter 7 show, a considerable amount of data was made available, in confidence, both by the Cambridge Syndicate and by the Botswana Ministry of Education. The percentage passed by each school shows a great amount of variation - from 70% to 11% (the school with an 11% pass level had had

administrative difficulties, which were in the process of being rectified during the 1974 school year). It is not the purpose of this thesis to comment upon these results further, except to say that everyone involved would no doubt like to see them improved.

The comparison of the Botswana results in certain subjects with the world results on the Cambridge show that in Arts subjects, Botswana competes successfully with other nations, but in science is somewhat below the standard. That the Cambridge School Certificate Examination is internally a good one is not disputed. That it is a good choice for Botswana's educational needs is not the business of this thesis. It is the criterion which is accepted in Botswana to judge success in school. A central question in this thesis is how much reading ability contributes to success in school and the discussion in the next section concerns the results of a comparison of the reading tests with the criterion.

THE INTERRELATION OF THE CLOZE TESTS AND THE CAMBRIDGE EXAMINATION

The correlation of the English cloze test with the Cambridge Total suggests that 26% of the variance on the Cambridge is accounted for by performance on the cloze. This is encouraging when one considers that the Cambridge score is made up of the results of 6 subtests, each presumably testing a different subject, for it indicates how important is the ability being measured by the English cloze test. English reading ability is pervasive in the Cambridge Examination - this is not too surprising since the examination contains a large amount of written instructions and multiple choice items which may require many of the same skills as reading. Particularly when compared with other correlational studies involving reading comprehension - e.g. Thorndike (1973) and Somerset (1968) - the figures produced in the present study are impressive. The correlation of .53 between the English cloze and the Cambridge English Language paper is most encouraging - over $\frac{1}{3}$ of the variance on a paper devoted to grammar, usage, structure, composition, comprehension and vocabulary is accounted for by a reading test of 50 items. The expectancy table, Table 13, Chapter 7 (also overleaf), makes

Table 18 (from Chapter 7 - repeated here)

EXPECTANCY TABLE: CLOZE TESTS WITH CAMBRIDGE TOTAL

Cloze Cambridge	English Below 64%	Setswana Below 90%
Language	89%*	81%
Literature	70	69
Setswana	77	83
Total	71	73

* Per cent of those scoring below indicated cloze level who failed the Cambridge subtest or total examination.

the association between reading ability and success in school clearer: there is an optimal level of literacy required, beyond which little additional benefit is gained. This optimum in English is indicated by a cloze score of about 64,5 and in Setswana by about 90% - near-native proficiency, as should be expected. The fact that the tests are much better at predicting who will fail than who will pass - for example, although 89,5 of those who scored below 67,5 on the English cloze failed the Cambridge English Language paper, only 53,5 of those who scored above that level passed - shows that a certain level of ability is necessary but not sufficient for success. This is possibly the most important finding in the present research. It suggests that great efforts to improve general English abilities above a certain level - in this case very close to the mean English cloze score - will pay progressively diminishing returns. By this criterion, about half the Form Fives in Botswana have sufficient reading ability to enable them to succeed - intelligence, background, industry, motivation and many other features being equal. The main value of the data provided by the cloze tests, then, is in pointing out that group of pupils for whom extra work is needed to bring them up to a standard to compete with their colleagues. Bringing them up to this level, as has been pointed out, will not ensure that they will pass the Cambridge Examination - reading proficiency is not all that is involved in that - as Elizabeth Ingram (1970) puts it, in discussing the relationship to academic achievement of performance on the English Language Battery at Edinburgh University: "It is self-evident that adequate knowledge of English is not a guarantee of passing examinations; if it were, no native-speaking student would ever fail." The hope is that those who need the extra help will get it, to enable them to make fuller use of the intelligence and ability they have, and which is so dependent upon effective reading skills for success.

THE INTERVIEW RESULTS

The purpose of the interviews was to gain an idea of the sort of reading done by the Botswana school-leavers, how much they read and how frequently. The teachers and administrators with whom the

question of their pupils' reading habits was discussed were generally of the opinion that the Form Five pupils did little reading outside the syllabus, especially since they spent so much time studying for the Cambridge Examination. Further, they thought that what reading was done was, for the most part, trash - comics and the like. The interviews show that in fact, students did quite a lot of reading outside the syllabus, that they read a great variety of material and spent quite a lot of time doing it. This is corroborated by Jenkinson's finding in 1940 that British school pupils read more books outside of class in a month than in class in a year. Also, the NATE (1968) survey found that it was the senior students who read most of the light, escapist literature, and certainly the pupils in the present study, far from spending all their free time studying for the examination, seem to need to read to 'get away from it all' for a while. Usually, the time spent was in small chunks, and the reading matter tended to be whatever they had to hand, so reading 'habits' is probably a misleading term - reading behaviour would be more the point. No specific question was asked about the reading of comics - the pupils read great numbers of them certainly. But the salient point is that they read other material too - indicating a motivation, which, if picked up by the teacher and encouraged, could lead to much better school-leavers in terms of breadth of knowledge, ability to make sense of experience, ability to communicate.

There was evidence in the interviews of a change in the traditional aspirations of school-leavers for future employment. "In the past... students have concentrated chiefly upon arts subjects..." (Bots. Nat. Dev. Plan 1973 - 78: 114), and the most sought-after job was one in Central Government with the Public Service, as a clerical officer. The Central Government is still the biggest single employer in Botswana, and arts subjects are still the mainstay of Botswana's Cambridge results, but the interviews show that a substantial number of Form Five pupils want to enter industrial and technical employment when they finish their education. This is due, no doubt, to the recent upsurge of development in the diamond and copper-nickle industries. This motivation schools would do well to take advantage

of in their efforts to improve performance in mathematics and science, as is a stated aim in the Botswana National Development Plan.

The results of questioning about the reading of the Botswana Daily News showed a great amount of interest in this publication, due no doubt to its topical, local interest, and its concisely-written articles. It may be that there is a suggestion here for materials selection.

One very interesting finding in the interviews came from the questioning about actual reading done in the previous month's issue of Kutlwano - nearly 50% of those who had read the issue had not read any article in Setswana, while all had read at least one in English. This tendency not to read in Setswana even when material is available seemed to be a feature of the interview data. The causes are not clear - it may be that the choice of content for the Setswana articles had a dampening effect on interest; it may be that students preferred to practise their English. This finding, however, supports that of Gorman (1974: 383) who found in Kenya that "...76. 8% of the rural sample and 82. 7% of the urban sample said, in answer to a question about reading habits, that they seldom had occasion to read books, papers or notices in their mother-tongue." The reasons for both this and the present findings are very likely most complex, and further research is certainly indicated. (Note: Kutlwano is now published in a bilingual edition, with all articles in both languages.)

Newspaper reading in general, apart from the Daily News, is not too wide-spread: the highest percentage of readership in three days was for the Sunday Times (of Johannesburg) - 16%. This is no doubt due to there being no commercial newspaper in Botswana. When subjects were asked what papers they had read in a month, the figures leap - now 50% claim to have read the Sunday Times. It may be that, given a longer period of time to range over in making a response, subjects tended to report items they felt they should have read or at least recognized. Even if this is true, it is of interest to note that,

for example, no one mentioned the Times of Malawi or the Tswana Times of South Africa. In contrast to the readership of foreign newspapers, magazines from outside southern Africa account for about 22% of readership. This is a reflection of the different sort of context and style, perhaps. Note, though, Jordan's (1975) finding about interest in book subjects that pupils preferred to read about either their own country and people or about some far-away place - not a near-by country or city. It may be that a similar feeling guides the choice of periodical literature as well as that of books. Incidentally, the findings of Jenkinson (1940), Wall (1948) and NATE (1968) that British children do not read many 'serious' papers and seem to go for the 'sensational' type, would appear not to be true of the Botswana pupils. They do read 'serious' newspapers when they can get them - they are able to get the sensational ones more often perhaps. It is ^{less} likely that the Sunday Times (which is the South African equivalent of a 'serious' paper) was reported most often because it was felt that would be a desirable answer to the question, on aesthetic grounds, than that the Sunday Times was in fact read more often than some of the more lurid possibilities. In this regard, however, it would be of interest to find out just what the term 'newspaper' covers semantically among these pupils. It may be that the papers of the 'sensational' type do not count as 'newspapers' since what is read (or looked at) is the pictures, which may be treated on the same level as the photo-comics read so widely in schools. Finally, on the topic of periodical reading, the findings of Williams (1951), that the average number of periodicals read per British pupil was over 2, is supported by the present data: during the three-day period prior to the interviews, the subjects said they had read 196 papers and magazines - about 2 each.

The results on book-reading suggest, not unexpectedly, that it is much less casual and haphazard than newspaper and magazine reading - 72% were able to remember the title of a book they were reading. An interesting comparison can be made between the subject of the book currently being read and the stated favourite topic. For example, of the 12 people who were reading about politics or history, 10 listed this as one of their favourite subjects. This indicates

that some amount of thought goes into choosing a book. The fact that pupils reported a significantly greater time spent in reading books than either newspapers or magazines suggests that they attach greater importance to the reading of books. The findings of Jenkinson (1940) and Jordan (1975) that the preferred subject of reading was Adventure stories was not supported by the evidence in the present survey. Politics and history was the area favoured in Botswana, followed by love and romance. Of the books actually being read, Africa and Africans topped the list, followed by spies and detectives. Adventure stories figured only in a small way either as an indicated preference or as a subject currently being read. It may be, though, that the fault, if fault there is, lies in not providing an example of each of the subjects mentioned in the interview list: it is possible that the pupils were unsure of the distinctions between categories such as adventure and spies and detectives. The whole problem of assigning information to categories in different ways is one which demands much further research, for it is at the heart of such survey work that is carried out in developing countries.

In general, then, the findings of the interviews suggest a great amount of private or leisure reading. The subjects reported experience of a great variety of materials from a variety of sources. This reading, however, is often very sporadic and haphazard - pupils read whatever is at hand for a short time. There seems to be a great amount of motivation to read, which is being ignored by teachers for the most part. Their excuse is usually that pupils are too busy studying for examinations, but the evidence does not show this. Further, some of the evidence cited in earlier chapters indicates that reading of the sort of material considered in this thesis can lead to improved reading in other areas (e.g. Fader and McNeil, ^{in D'ARCY} 1968). Finally, it is sad in a way that the overall impression gained by the interviewer was that the Form Five pupils were intensely interested in improving their own outlook and knowledge of the world by reading, but were so seldom encouraged by their teachers in an organized way. A bit of guidance in the area of materials and subject matter would find reward in increased enthusiasm and motivation on the part of pupils in many facets of school life - and later life as well.

THE INTERRELATION BETWEEN THE CLOZE AND INTERVIEW RESULTS

To test the hypothesis that there was a difference in reading habits according to reading ability in English, analysis of the interview data included a division of response into high and low groups on the English cloze test and differences between the groups tested for significance by the chi-squared method. The result is a list of characteristics of the high group, and by reverse implication, the low group, but no causality is implied at all - the list is merely one of associations, which were caused, certainly, by a complex variety of factors. The high reading group, then, said they preferred jobs which required a lot of training after school, and had fathers who were themselves in 'white-collar' jobs. They attended the schools which came out best on the Cambridge results, and which were located near one of the urban centres. More of them claimed to read at least four different newspapers, and more of them read the Daily News and the Rand Daily Mail. They claimed to read at least one magazine a month, and more of them read Drum. Their favourite books were spy and detective stories, and they claimed to have more opportunities to read than did the low group. These results are all in the expected direction. They are generally in line with the findings of the NATE (1968) survey which also categorised subjects into 'high' and 'low' achievement groups (based on anticipated GCE performance). This survey found that the greatest distinction between the high and low groups in magazine reading was between those who read one or more and those in the low group who read none at all. Further, members of the high group read more magazines of the adult or educational type. Finally, the low group in the NATE study read fewer books than did the high group. These results are not directly comparable with those of the present study, but their similarity is encouraging: both studies indicate a definite relationship between reading habits and academic success. There was only one case in the present study where the expected pattern was broken: the low group claimed to have read Kutlwano significantly more often in three days than the high group. As reported in Chapter Seven, however, this little jog in the pattern is reversed again when the subjects were asked about reading in the

month. The fact that this is the only such case is encouraging, though its existence could possibly be traced to a somewhat low reliability of the interview technique.

The interviews do support the hypothesis of an association between English reading ability and reading habits. A similar analysis was attempted between Setswana reading ability and the interview data, but on 113 values covering 18 variables, only one was found to show a significant difference between the high and low groups: more members of the low group read Kutlwano - the same variable mentioned above as deviant. This failure to find an association between Setswana ability and reading habits was not entirely unexpected, because the Setswana scores themselves show a smaller amount of variance than do the English scores, so subjects grouped on the basis of the Setswana scores should show fewer differences.

On the whole, then, these results are fairly encouraging for a survey-type analysis. A more sophisticated correlational analysis or a factor analysis would be required to explore the associations in depth, although even these are far from conclusive (viz. Thorndike, 1974). The question of what makes a good reader is most complex one, and the most that can be hoped for, in our present state of knowledge and technique, perhaps, is a greater awareness of the importance of extensive reading in the educational process.

A word is necessary about the relationship of the interviews to the Cambridge Examination results. A computer run was done on certain variables from the interviews to see their relation to the Cambridge total and some of the subtests - no significant relationships were found. Presumably this was because the Cambridge is a test of 'academic knowledge' while the interviews dealt with experience outside, or at least adjacent to, the academic life. Further explorations in this area would be of interest.

It is necessary, finally, to return to the question of the place of literacy in national development and to look at what the Botswana data suggest in this area. In Chapter Two, the case was

made that development is planned social change; that literacy is a resource both in individual development and in national development; that the key to advanced literacy is not one merely of 'reading ability', but also of participation in the life of society; and finally, that pupils must be given both access to a variety of written media and the ability to use it well.

Considering first the view of literacy as a national resource, in Botswana it was found that 26% of the variance on the Cambridge Examination was due to reading ability. This suggests that advanced literacy is an important resource in the main measure of success in Botswana's educational system. Further, it was found that while Botswana's school leavers could read as well in Setswana as could their British peers in English, they were able to do only two-thirds as well in English. This would suggest the importance of Setswana as a 'multiplier of information' in the development effort. Yet, there were indications that Setswana was under-utilized among school leavers - owing perhaps to a lack of relevant material in Setswana. Thus, it would seem that an important resource in Botswana's development is being neglected, the correction of which situation is a matter both of educational policy in providing relevant material, and of good pedagogy in preparing pupils to use the material effectively.

Another dimension of development is the individual one, and there is evidence that in Botswana the school leavers used their literacy for their personal development: they read, at every opportunity, a wide variety of material, were able to articulate personal preferences for types of reading, and demonstrated an awareness of degrees of quality in types of newspapers.

Concerning the relationship of reading ability to participation in society, two points are salient in the Botswana data. First, it was found that reading ability was a necessary, but certainly not sufficient, ability for success in school. There is an optimum level of proficiency required, especially in English, beyond which

there would be diminishing cost-benefit returns. Second, in the direction of participation in society and the benefit of advanced literacy to Botswana's development plans, it was found that the better readers were the ones who expressed most desire to go into technological employment, high among Botswana's priorities for further training. These two points suggest, then, that a policy of bringing as many pupils as possible to an optimum level, but not necessarily the highest possible level, of reading ability, would produce school leavers who were not only better equipped, but more willing to seek the kind of training most needed in the development effort.

Allusion has already been made to the complementary problems of access to, and ability to use effectively, print-media: pupils in Botswana read a great variety of material in English, but very little in Setswana. Apparently, then, the school children had access to English materials, but were not much encouraged or guided in their use. This is primarily a problem of pedagogy, although a positive policy encouraging more use of available material in school reading programmes would contribute much. In the case of Setswana, it seemed that pupils did not even have access to the sorts of materials they wanted. They exhibited an interest in national development areas, but apparently found very little available to read in these areas in Setswana. Clearly, there is a need both for a policy of presenting and encouraging the use of Setswana development-oriented materials, and for a pedagogical dedication to guiding pupils in their reading. As was pointed out in Chapter Two, there is a great need for advanced literacy programmes in which extensive reading is combined with active, positive instruction by teachers in the school setting. Too often, 'extensive reading' is equated with the ubiquitous 'library period', in which pupils are encouraged to browse and even to choose a book to borrow and read, but where no teaching takes place.

In sum, the Botswana data confirm the view of advanced literacy as an important resource in development, both individual development

and national development. In general, the data suggest the need for the establishment of an advanced literacy programme characterised by definite goals of proficiency and the use of a wide variety of already existing materials in English and of a more positive use of Setswana as a multiplier of development information. The results of such a programme would be varied. For one thing, it would be less costly than a programme requiring either the importation of special intensive reading materials, such as the SRA kits, or the development of a culturally more suitable equivalent. Secondly, an 'other-worldliness' about education, due in part to the lack of locally produced texts and materials, and in part to the colonial heritage, would be reduced by a programme involving the use of magazines, newspapers, pamphlets, reports and books published in Botswana or nearby. Thirdly, such a programme would increase pupils' awareness (and that of their teachers) in several areas: that of the uses and relationship of English and Setswana in Botswana - a more effective use of both languages in a variety of ways would be the result; that of the aims of the national development programme; that of the potential for development of the various facets of industry and agriculture; that of national and regional politics and cooperation. This awareness, linked with skills and abilities to participate in the areas mentioned, is a vital concern of education in a developing nation.

CHAPTER NINE : CONCLUSIONS, SUMMARY OF FINDINGS, SUGGESTIONS
FOR FURTHER RESEARCH

The general aim of the research reported on in this thesis was to explore in a developing country the relationship of reading ability with reading habits and success in school. More specific aims included the construction of equivalent reading ability measures in two languages, Setswana and English; the construction of an instrument to gather data on reading habits; an analysis of the relationship of English and Setswana reading ability to reported reading habits and to performance on the Cambridge School Certificate Examination. A further aim was the gathering of background data on the availability of reading material to the secondary school pupils in Botswana. All this adds up to a characterization of literacy in a developing nation, with special reference to the school system at one of its terminal points - Form Five.

The subjects were the Form Five secondary pupils in Botswana, located in nine schools throughout the country. They were considered to be an optimal group for the study of advanced literacy since they represent a relatively high level of education in sufficient numbers to have a real impact upon national development. The scope of the project was limited to an analysis by correlation and by chi-squared association, giving it the effect of an exploratory survey, since a more detailed analysis would require much more sophisticated techniques.

In summary, the findings were that there is a relationship between reading ability in English and in Setswana, as measured by cloze tests, although not as substantial as previous research had indicated; that reading ability in English accounts for a relatively high percentage of variance on the Cambridge Examination, but that Setswana reading ability accounts for rather less; that English reading ability is related to reading habits, but in a very complex way, the examination of which was beyond the scope of this study. An important finding was that there is an optimum level of English

proficiency required for success, beyond which there are diminishing returns. In other words, the goal of second-language instruction need not be 'native-speaker proficiency'.

There were five hypotheses to be tested by reference to the present data: 1) that there is a substantial relationship between English reading ability and Setswana reading ability; 2) that there is a substantial relationship between English reading ability and reading habits, and 3) between Setswana reading ability and reading habits; 4) that there is a substantial relationship between English reading ability and success in school, and 5) between Setswana reading ability and success in school. The null hypotheses relating to Hypotheses 1), 2), 4) and 5) were rejected. The null hypothesis related to Hypothesis 3) was retained.

Further research in the area of the relationship of reading ability to reading habits and success in school should include more sophisticated techniques of analysis such as factor- or cluster analysis to discover the nature of the relationships more clearly. The tool of clozentropy deserves wider attention in the field of second-language-medium education. Specifically, the relationship of the binary scoring system to the exact-word method merits research to discover if, in fact, anything new is being measured by the former. Another fruitful area of research on cloze testing would be the relationship between cloze item difficulty and discourse to see if the apparent 'bunching' of difficult and easy items reflects inter-item influence or patternings of the discourse. More research is needed, too, on the usefulness of cloze testing as a measure of degree of bilingualism, and on the question of the existence of the 'cloze factor' in the use of cloze as a test of second-language proficiency.

In the area of reading habits, much more of value could be learned from the pupils about the kind of reading programme that might be productive in terms of extensive reading, breadth of knowledge, concept-building and success. Particular attention should be paid to reading habits in the mother-tongue, and to discovering, if

possible, the domains of language use in each of the pupils' languages. In this regard, the whole issue of data-gathering needs evaluation, especially the problem of interviewer and subject assigning information to categories differently. It may be that the sociolinguist has much to learn in this regard from the anthropologist. Finally, the question of the relationship of reading habits to success in school needs further study. To suggest, as was done in Chapter Eight, that the failure to find any significant relationship between the reading habits and the Cambridge performance was due to the Cambridge being a measure of 'academic' knowledge while the interviews dealt with 'para-academic' experience, is no real answer. A more precise measure of reading habits is necessary to discover the relationship that must exist, since it has been shown that reading ability is so much a part of success in school.

BIBLIOGRAPHY

- Alexander, H.W. (1968) An Investigation of the Cloze Procedure as a Measuring Device Designed to Identify the Independent, Instructional, and Frustration Reading Levels of Pupils in the Intermediate Grades. Unpublished Doctoral Dissertation, University of Illinois.
- Amove, R.F. (1973) "Literacy - Power or Mystification?" Literacy Discussion 4.4: 309 - 414.
- Anderson, J. (1972) "The Application of Cloze Procedure to English Learned as a Foreign Language in Papua-New Guinea." English Language Teaching 27.1: 66 - 72.
- Bechuanaland Protectorate. (1960) Report for the Year 1959. London: HMSO.
- _____. (1964) Report for the Year 1963. London: HMSO.
- _____. (1966) Report for the Year 1965. London: HMSO.
- Belson, W.A. (1962) Studies in Readership. London: Business Publications Ltd. (Reported in Corlett, 1964)
- Berger, A. (1974) "Review of R.L. Thorndike, Reading Comprehension Education in Fifteen Countries (Thorndike, 1973)". Research in the Teaching of English 8.1: 27 - 39.
- Blalock, H.M. (1972) Social Statistics, 2nd ed. Tokyo: McGraw-Hill Kogakusha.
- Bloor, T. (1973) "Editorial," Teaching English in Botswana August:1.
- _____. (1974) Personal Interview. 9 May.
- Boadi, L.A. (1971) "Education and the Role of English in Ghana," in Spencer, 1971: 49 - 65.
- Bormuth, J.R. (1962) Cloze Tests as Measures of Reading Ability and Reading Comprehension Ability. Unpublished Doctoral Dissertation, Indiana University.
- _____. (1969) "Factor Validity of Cloze Tests as Measures of Reading Comprehension Ability," Reading Research Quarterly 4.3: 358 - 365.
- Botswana, Republic of. (1970) National Development Plan, 1970 - 75 Gaborone: Ministry of Finance and Development Planning.
- _____. (1972) Report on the Population Census, 1971. Gaborone: Central Statistics Office.
- _____. (1973) National Development Plan, 1973 - 78. Gaborone: Ministry of Finance and Development Planning.

- _____. (1968) National Development Plan, 1968 - 73.
Gaborone: Ministry of Finance and Development Planning.
- _____. (1973) Presidential Commission on Localisation and Training in the Botswana Civil Service: Report. Gaborone: Government Printer.
- "Botswana Daily News," 14 January, 1975:1.
- _____, 6 December 1974: 1.
- Botswana National Library Service. (1974) Personal Communication, 7 February.
- Bowen, J.D. (1969) "A Tentative Measure of the Relative Control of English and Amharic by Eleventh Grade Ethiopian Students," Workpapers in ESL (UCLA) 2: 69 - 89.
- Bradshaw, J.L. (1975) "Three Interrelated Problems in Reading," Memory and Cognition 3.2: 123 - 134.
- Brewer, W.F. (1972) "Is Reading a Letter-by-Letter Process?" in J.F. Kavanaugh and I.G. Mattingly, eds., Language by Ear and Eye, Cambridge, Mass.: MIT Press: 359 - 365.
- Briere, E.J. (1971) "Are We Really Measuring Proficiency with Our Foreign Language Tests?" Foreign Language Annals 4: 385 - 391.
- British Committee on Literacy. (1975) "U.K. Facilities for Promoting the Education and Training of Illiterate Adults in Developing Countries, Part 1: The Illiteracy Problem in Developing Countries," Brighton Conference Background Document B, Leonora Stettner, ed. (Mimeo).
- Broadbent, S. (1964) "Computers and Media Schedules," in Proceedings: ESOMAR Seminar on Media Research. Oxford.
- Brown, J.Tom. (1971) Setswana-English Dictionary, Preface by J.D. Jones (1965). Gaborone: Botswana Book Centre.
- Bryan, M.A. (1959) Bantu Languages of Africa. Oxford: OUP.
- Campbell, A.C. (1972) "100 Tswana Proverbs," Botswana Notes and Records 4: 121 - 132.
- Carroll, J.B. (1972) "Defining Comprehension: Some Speculations," in Carroll, J.B., and R.O. Freedle, eds., Language Comprehension and the Acquisition of Knowledge. Washington: Winston.
- Carroll, J.B., A.S. Carton, C.P. Wilds. (1959) An Investigation of Cloze Items in the Measurement of Achievement in Foreign Languages. Cambridge, Mass.: Harvard Graduate School of Education.
- Chomsky, C. (1970) "Reading, Writing and Phonology," Harvard Educational Review 40.2: 287 - 309.

- Chomsky, N. and M. Halle. (1968) The Sound Pattern of English.
New York: Harper and Row.
- Cole, D.T. (1955) An Introduction to Tswana Grammar. London: Longman.
- Corlett, T. (1964) "The IPA National Readership Survey: Some Problems and Possible Solutions," Journal of Advertising Research 4.4: 4 - 10.
- Crawford, A.N. (1970) Cloze Procedure as a Measure of Reading Comprehension of Mexican-American and Anglo Children. Unpublished Doctoral Dissertation, UCLA.
- D'Arcy, P. (1973) Reading for Meaning, Vol. 2: The Reader's Response. London: Hutchinson Educational for the Schools Council.
- Darnell, D.K. (1970) "Clozentropy: A Procedure for Testing English Language Proficiency of Foreign Students," Speech Monographs 37.1: 36 - 46.
- Davies, A. and H.G. Widdowson. (1973) "Reading and Writing," University of Edinburgh: Department of Linguistics. (Mimeo).
- Davies, A., A. Moller, D. Adamson. (1975) The English Proficiency of Foreign Students in Higher Education (Non-University) in Scotland. A Report to the Scottish Education Department. (Mimeo).
- Durbin, J. and A. Stuart. (1951) "Differences in Response Rates of Experienced and Inexperienced Interviewers," Journal of the Royal Statistical Society A114: 163 - 195.
- Durrell, G. (1972) Catch Me a Colobus. London: Collins.
- Edwards, E.O. and H.P. Todaro. (1974) "Education and Employment in Developing Countries," in Ward, F.C., ed., Education and Development Reconsidered. Bellagio Conference Papers. New York: Praeger: 3 - 32.
- Elvin, H.L. (1971) "World Reappraisals," in Lowe, J., N. Grant, T.D. Williams, eds., Education and Nation-building in the Third World. Edinburgh: Scottish Academic Press: 1 - 25.
- Flesch, R.F. (1951) How to Test Readability. New York: Harper.
- Gardner, R.C. and W.E. Lambert. (1972) Attitudes and Motivation in Second Language Learning. Rowley, Mass.,: Newbury House.
- Gilliland, J. (1979) "Readability," Reading 3.1: 16 - 21.
- Goode, W.J. and P.K. Hatt. (1952) Methods in Social Research. London: McGraw-Hill.
- Goodman, K.S. (1970a) "A Psycholinguistic Guessing-game," in Gunderson, D.V., ed., Language and Reading: An Inter-Disciplinary Approach. Washington: Centre for Applied Linguistics.

- _____. (1970b) "Psycholinguistic Universals in the Reading Process," Journal of Typographical Research 4: 103 - 110, quoted in Smith 1973: 22 - 27.
- Goody, J. (1968) "Introduction," to J. Goody, ed., Literacy in Traditional Societies. Cambridge: CUP: 1 - 26.
- Goody, J. and I. Watt. (1968) "The Consequences of Literacy," in Goody, 1968.
- Gorman, T. (1971) "Sociolinguistic Implications of a Choice of Media of Instruction," in Whitely, W., ed., Language Use and Social Change. Oxford: OUP: 198 - 220.
- _____. (1974) "Patterns of Language Use Among School Children and Their Parents," in Whitely, W., ed., Language in Kenya. Oxford: OUP: 351 - 393.
- Gough, P.B. (1972) "One Second of Reading," in Kavanaugh and Mattingly, 1972 (see Brewer, 1972).
- Gradman, H.L. (1973) "Reduced Redundancy Testing: A Reconsideration," Paper presented at the First International Conference on Testing in Second Language Teaching; Dublin. (Mimeo).
- Guildford, J.P. (1956) Fundamental Statistics in Psychology and Education, 3rd ed. New York: McGraw-Hill.
- Huey, E.B. (1908) The Psychology and Pedagogy of Reading. New York: Macmillan.
- Inayatullah. (1967) "Toward a Non-Western Model of Development," in Lerner, D. and W. Schramm, eds., Communication and Change in the Developing Countries. Honolulu: East-West Centre Press: 98 - 102.
- Ingram, E. (1968) "Item Analysis," appendix to Davies, A., ed., Language Testing Symposium. Oxford: OUP.
- _____. (1970) "English Language Battery," University of Edinburgh: Department of Linguistics. (Mimeo).
- Jahn, J. (1972) "African Systems of Thought," in Irvine, S.H. and J.T. Sanders, eds., Cultural Adaptation within Modern Africa. New York: Center for Education in Africa, Columbia University.
- Jakobovits, L.A. (1970) Foreign Language Learning. Rowley, Mass.: Newbury House.
- Jenkinson, (1940) What Do Boys and Girls Read? London: Methuen. (Quoted in D'Arcy 1973).
- Joint Industry Committee for National Readership Surveys. (1968) The National Readership Survey. London: JICNARS.

- Jones, J.D. (1972) "Mahoko a Becwana - The Second Tswana Newspaper," Botswana Notes and Records 4: 111 - 120.
- Jordan, R.R. (1975) "The Reading Interests of Lower Secondary School Children in Africa and Asia," Paper presented at the IATEFL Conference, London.
- Kgasa, M.L.A. (1972) "The Development of Setswana", Botswana Notes and Records 4: 107 - 110.
- Krige, E.J. (1946) "Individual Development," in Schapera, I., ed., The Bantu-speaking Tribes of South Africa. London: Routledge.
- Kuper, A. (1970) Kalahari Village Politics. Cambridge: CUP.
- Kutlwano (1971) "Molemi wa Merogo," 10.6: 20 - 21.
- _____. (1971) "A New Idea for a Press in Botswana," 10.10: 16 - 17.
- Lerner, D. (1958) The Passing of Traditional Society. Glencoe, Illinois: The Free Press.
- Lytton, H. (1972) "Some Psychological and Sociological Characteristics of 'Good' and 'Poor' Achievers in Remedial Reading Groups: Clinical Case Studies," in J. Reid, ed., Reading: Problems and Practices. London: Ward Lock: 264 - 278.
- McLeod, J. and D. Unwin. (1970) GAP Reading Comprehension Test. London: Heineman Educational.
- McLuhan, M. (1964) Understanding Media. London: Routledge and Kegan Paul
- Massoglia, E. T. (1972) Cloze Procedure as a Predictor of Course Grade Point Average. Unpublished Doctoral Dissertation, North Carolina State University.
- Mendez, A.D. and F.B. Waisanen. (1964) "Some Correlates of Functional Literacy," Paper Presented at the Ninth Congress of Inter-American Society of Psychologists, Miami. (Quoted in Rogers, 1969: 70).
- Miller, G.A. (1956) "The Magical Number Seven Plus or Minus Two: Some Limits on Our Capacity for Processing Information," Psychological Review 63: 81 - 97.
- Miller, J. (1971) McLuhan. London: Fontana.
- Millikan, M.F. and D. Blackmer (1961) The Emerging Nations Boston: Little, Brown. (Quoted in Schramm, 1964: 26 - 27).
- Moser, C.A. and Kalton, G. (1972) Survey Methods in Social Investigation. London: Heineman Educational.
- Motsepe, C.A.R. (1974) Personal Interview, 7 May.

- Moyle, D. (1971) "Readability - The Use of Cloze Procedure," in Merritt, J., Reading and the Curriculum, UKRA.
- Muller, J. (1973) Final Report of the International Symposium on Functional Literacy in the Context of Adult Education. Berlin.
- Myrdal, G. (1972) Asian Drama. London: Penguin.
- National Association of Teachers of English, Warwickshire Branch. (1968) A Survey of Childrens' Reading. (Reported in D'Arcy, 1973).
- Nie, N.H., D.H. Bent and C.H. Hull. (1970) Statistical Package for the Social Sciences. New York: McGraw-Hill.
- Oller, J.W. (1972a) "Scoring Methods and Difficulty Levels for Cloze Tests of Proficiency in English as a Second Language," Modern Language Journal 56.3: 151 - 158.
- _____. (1972b) "Controversies in Linguistics and Language Teaching," Workpapers in ESL (UCLA).
- _____. (1973) "Cloze Tests of Second Language Proficiency and What They Measure," Language Learning 23.1: 105 - 118.
- Oller, J.W., J.D. Bowen, T.T. Dien and V.W. Mason. (1972) "Cloze Tests in English, Thai and Vietnamese: Native and Non-Native Performance," Language Learning 22.1 (Offprint).
- Oller, J.W. and C.A. Conrad. (1971) "The Cloze Technique and ESL Proficiency," Language Learning 21.1: 13 - 195.
- Oller, J.W. and N. Inal (1972) "A Cloze Test of English Prepositions." TESOL Quarterly (Offprint): 315 - 326.
- Oller, J.W. and J.R. Tullius. (1973) "Reading Skills of Non-native Speakers of English," IRAL 11.1: 69 - 80.
- Osgood, C.E. (1952) "The Nature and Measurement of Meaning," Psychological Bulletin 49: 197 - 237.
- Pilane, A.K. (1973) "Notes on Early Educational Efforts Among the Bakgatla," Botswana Notes and Records 5: 120 - 122.
- Pilane, A. and N. Mitchison. (1974) "Riddles of the Bakgatla," Botswana Notes and Records 6: 29 - 36.
- Plumer, D. (1972) "A Summary of Environmentalist Views of Language Deprivation and Reading Failure," in Reid 65 - 76.
- Powdermaker, H. (1962) Coppertown. New York: Harper and Row.
- Radio Botswana (1974) "Programme Guide: July - September."
- Rankin, E.F. (1957) An Evaluation of Cloze Procedure as a Technique for Measuring Reading Comprehension. Unpublished Doctoral Dissertation, Michigan University.

- _____. (1959) "The Cloze Procedure - Its Validity and Utility," in O.S. Causey and W.E. Eller, eds., Starting and Improving College Reading Programmes. Fort Worth, Texas: TCU Press: 131 - 138.
- Rao, J.L. (1972) Communication and Modernization in Three Indian Villages. Unpublished Doctoral Dissertation, Michigan State University.
- Rapoport, A. (1966) "What is Information?" in Smith, A.G., ed., Communication and Culture. New York: Holt, Rinehart and Winston: 41 - 54.
- Reilly, R. (1971) "A Note on 'Clozentropy'," Speech Monographs 38.4: 350 - 353.
- Riesman, D. (1956) "The Oral Tradition, the Written Word, and the Screen Image," Antioch College Founder's Day Lecture, Number One. (Quoted in Powdermaker, 1952: 280.)
- Rogers, E.M. (1969) Modernisation Among Peasants: The Impact of Communication. New York: Holt, Rinehart and Winston.
- Ruddell, R.B. (1969) "Psycholinguistic Implications for a Systems of Communication Model," in Goodman, K.S. and J.T. Fleming, eds., Psycholinguistics and the Teaching of Reading. International Reading Association: 61 - 78.
- Sandilands, A. (1972) "The Ancestor of Tswana Grammars," Botswana Notes and Records 4.101 - 106.
- Sasnett, M. and I. Sepmayer. (1966) Educational Systems of Africa. Berkeley: University of California Press.
- Schapera, I. (1970) Tribal Innovators. London: Athlone Press.
- Schlesinger, I.M. (1968) Sentence Structure and the Reading Process. The Hague: Mouton.
- Schramm, W. (1964) Mass Media and National Development. Stanford: Stanford University Press.
- _____. (1967) "Communication and Change," in D. Lerner and W. Schramm, eds., Communication and Change in the Developing Countries. Honolulu: East-West Centre Press: 6 - 32.
- Shannon, C.E. (1948) A Mathematical Theory of Communication. Monograph B-1598, Bell Telephone Systems Technical Publications.
- Sillery, A. (1974) Botswana: A Short History. London: Methuen.
- Smith, F. (1971) Understanding Reading. New York: Holt, Rinehart and Winston.
- _____. (1973) "Psycholinguistics and Reading," in F. Smith, ed., Psycholinguistics and Reading. New York; Holt, Rinehart and Winston: 1 - 9.
- REID, J.F. ed. (1972). Reading: Problems and Practices. London: Ward Lock Educational.

- Somerset, H.C.A. (1968) Predicting Success in School Certificate. East African Studies, No. 31. Kampala: Makerere Institute of Social Research.
- South Africa Institute of Race Relations. (1973) Survey of Race Relations in South Africa. Johannesburg.
- Spencer, J. (1971) The English Language in West Africa. London: Longman.
- Spolsky, B. (1967) "Attitudinal Aspects of Second Language Learning," Language Learning 19.3 & 4: 271 - 283.
- _____. (1968) "What does it Mean to Know A Language, or How Do You Get Someone to Perform His Competence?" (Quoted in Jakobovits, 1970: 49).
- _____. (1969) "Reduced Redundancy as a Language Tool," in Applications of Linguistics. Papers from 2nd International Congress of Applied Linguistics, Cambridge: 383 - 390.
- Spolsky, B. et al. (1968) "Preliminary Studies in the Development of Techniques for Testing Overall Second Language Proficiency," Language Learning, Special Issue 3: 79 - 101.
- Stephens, R.G. (1971) Cloze Procedure as a Criterion for Evaluating the Applicability of Reading Formulas to Science Reading Materials. Unpublished Doctoral Dissertation, Indiana University.
- Stuart, A. (1952) "Reading Habits in Three London Boroughs," Journal of Documentation 8.1: 33 - 49.
- Syson, L. (1972) "Social Conditions in the Shoshong Area," Botswana Notes and Records 45 - 66.
- Taylor, W.L. (1953) "A New Tool for Measuring Readability," Journalism Quarterly 30: 415 - 433.
- _____. (1954) Application of Cloze and Entropy Measures to the Study of Contextual Constraints in Continuous Prose. Unpublished Doctoral Dissertation, University of Illinois.
- _____. (1957) "Cloze Readability Scores as Indices of Individual Differences in Comprehension and Aptitude," Journal of Applied Psychology 41: 19 - 26.
- Taylor, W.L. and I.N. Waldman. (1970) "Latency and Focus Methods of Cloze Quantification," Yearbook of the National Reading Conference. 19: 241 - 262.
- Thema, B.C. (1968) "The Church and Education in Botswana During the 19th Century," Botswana Notes and Records 1: 1-4.
- _____. (1970) "Moeng College - A Product of Self-help," Botswana Notes and Records 2: 71 - 74.

- _____. (1971) "Education in Botswana: Its Aims and Objectives, Review and Forecast," Speech to Botswana National Assembly, 3 December, Gaborone: Government Printer.
- Thomson, M. (1972) "Secondary Education in Botswana," Botswana Notes And Records 4: 95 - 100.
- Thorndike, R.L. (1973) Reading Comprehension Education in Fifteen Countries: An Empirical Study. New York: John Wiley and Sons, A Halsted Press Book.
- Tlou, T. (1971) "The History of Botswana Through Oral Tradition," Botswana Notes and Records 3: 79 - 90.
- UNESCO. (1964) World Survey of Education. (Quoted in Report on the Supply of Secondary Level Teachers in English Speaking Africa - Botswana. Institute for International Studies in Education, Michigan State University, 1963).
- _____. (1965) World Conference of Ministers of Education on the Eradication of Illiteracy: Final Report. (ED/ 217) Paris: UNESCO.
- _____. (1972) Learning to Be. London/Paris: Harrap/UNESCO.
- Upshur, J.A. (1968) "Measurement of Oral Communication," (Quoted in Jakobovits, 1970: 49 - 50.)
- Ure, J. (1968) "The Mother-tongue and the Other Tongue," Ghana Teachers Journal 4:38 - 49.
- Van Rensburg, P. (1974) Report from Swaneng Hill. Stockholm: Dag Hammarskjold Foundation.
- Viscusi, M. (1973) "Functional Literacy in the Context of Life-long Education," in Muller, 1973: 67 - 107.
- Wall, W.D. (1948) "The Newspaper Reading of Adolescents and Adults," British Journal of Educational Psychology 18: 26 - 40; 87 - 104.
- Weaver, W.W. and A.J. Kingston. (1963) "A Factor Analysis of the Cloze Procedure and Other Measures of Reading and Language Ability," Journal of Communication 13: 252 - 61.
- Williams, A.R. (1951) "The Magazine Reading of Secondary School Children," British Journal of Educational Psychology 21: 186 - 198.
- Young, B.A. (1966) Bechuanaland. London: HMSO.

ENGLISH CLOZE

PLEASE READ THE INSTRUCTIONS BEFORE YOU BEGIN

Look at the passage below. You can see that 50 words have been left out. First, read through the whole passage to get the idea of its content. Then, in the same way as you did the practice exercise, write one word that fits best in each blank. Use the answer sheet for your answers. Don't worry about spelling, but try to fill in all the blanks. If you cannot think of a word for a blank, go on to the next and come back to the hard ones at the end. Work as quickly as you can. When you finish, put up your hand.

ARRIVAL AT THE MINING VILLAGE

The road seemed to wind on forever, and the dust to become thicker and thicker. Occasionally, we would pass through a palm-leaf thatched village and all the young children would run out, eyes shining, teeth glistening, to wave pink palms to us in greeting as we passed. Sometimes a pair of hornbills would fly across the _____ 1. _____, their wings flapping madly, their long beaks making them _____ 2. _____ top heavy. One got the impression that they had _____ 3. _____ flap their wings so wildly since otherwise the weight _____ 4. _____ their beaks would make them nose-dive instantly to the _____ 5. _____.

After some hours of driving, we reached the village _____ 6. _____ Bambawo. The chrome mines lay in the hills behind _____ 7. _____, but it was in the village itself that we _____ 8. _____ supposed to pick up the caretaker who had the _____ 9. _____ to the various houses. This we duly did. Then _____ 10. _____ branched left and wound up into a low range _____ 11. _____ hills which lay behind the village. As we climbed _____ 12. _____ the road got worse and worse, but the forest _____ 13. _____ more magnificent because this was real forest, not secondary _____ 14. _____; gigantic trees standing on huge buttress roots covered with _____ 15. _____ and various epiphytes, and great waterfalls of giant ferns. _____ 16. _____ the forest grew thicker, my thoughts on what type _____ 17. _____ accommodation we were liable to find up there got _____ 18. _____ and more gloomy. Then we rounded

a corner and 19. were the chrome mines. They were completely and utterly 20. . First there was quite a large administration block. We 21. past this and saw that there was a swimming-pool - 22. , of course, and full of dead leaves, but a 23. nevertheless. The road wound up a little and 24. , spread out along the tip of the hillside, were 25. seven or eight beautiful little villas, each one tucked 26. amongst the trees, and each commanding the most magnificent 27. down over the plain in which the village of 28. lay, and across hundreds of miles of thick forest 29. the Liberian border. A lot of the houses had, 30. course, been allowed to go to wrack and ruin 31. we discovered two, both commanding magnificent views, quite close 32. and in excellent condition.

While our things were being 33. and stacked in the house, I discovered from the 34. that the administrative block contained a dynamo to produce 35. for this little village, and that, if we cared 36. obtain the necessary oil and petrol to work this, 37. electricity man would be only too happy, for a 38. sum of money, to come up and run the 39. for us. So this was organized, and I also 40. for two stalwarts from the village to clean out 41. swimming pool and fill it. Long John and I 42. the rest of the day unpacking our things and 43. them in heaps in various parts of our spacious 44. , and then, that evening, we sat down to an 45. curry which Sadu had produced.

'You know, this was 46. part I was dreading most,' said Long John, sipping 47. cold beer appreciatively. 'The grass shack stuff, you know, 48. in the roof and the spiders, warm beer...'

'You 49. shut up and concentrate on your food,' I said. '50. been damned lucky. I've never had a camp as luxurious as this one.'

ENGLISH CLOZE SCORING SHEET

	n	log n		n	log n
1. sky	72	1.857	9. keys	111	2.045
road	24	1.380	key	4	.602
path	4	.602	∅	1	
village	4	.602	+5		
horizon	3	.477	10. we	115	2.061
track	3	.477	the road	2	.301
trees	2	.301	+4		
+9					
2. look	42	1.623	11. of	116	2.065
seem	33	1.519	behind	2	.301
appear	14	1.146	+3		
very	13	1.114	12. higher	48	1.681
extremely	4	.602	up	33	1.519
almost	2	.301	them	12	1.079
them	2	.301	upwards	10	1.000
∅	1		steadily	3	.477
+10			on	3	.477
3. to	115	2.061	gradually	2	.301
∅	1		further	2	.301
+5			+8		
4. of	109	2.037	13. became	61	1.785
on	5	.699	grew	24	1.330
in	2	.301	was	13	1.114
∅	1		looked	11	1.041
+4			got	6	.778
5. ground	114	2.057	seemed	2	.301
earth	2	.301	appeared	2	.301
∅	1		+2		
+4			14. forest	29	1.462
6. of	85	1.929	woods	16	1.204
called	30	1.477	woodland	11	1.041
near	2	.301	wood	8	.903
+4			growth	7	.845
7. it	54	1.732	stuff	5	.699
us	48	1.681	trees	5	.699
Bambawo	14	1.146	type	4	.602
∅	2		rubbish	3	.477
+3			vegetation	3	.477
8. were	118	2.072	scenery	3	.477
+3			class	3	.477
			bush	2	.301
			scrub	2	.301
			∅	6	
			+14		

		n	log n			n	log n
15.	moss	50	1.699	21.	drove	43	1.634
	leaves	23	1.362		went	30	1.477
	grass	7	.845		walked	18	1.255
	fungus	6	.778		then	7	.845
	creepers	6	.778		had	4	.602
	vines	4	.602		soon	3	.477
	earth	3	.477		looked	2	.301
	mosses	3	.477		just	2	.301
	lichen	2	.301		+12		
	flowers	2	.301	22.	empty	71	1.851
	weeds	2	.301		dry	18	1.255
	∅	2			there	4	.602
	+11				nearby	3	.477
16.	as	66	1.820		small	2	.301
	gradually	10	1.000		but	2	.301
	when	9	.954		dirty	2	.301
	then	8	.903		wet	2	.301
	the	6	.778		∅	3	
	suddenly	5	.699		+14		
	soon	4	.602	23.	pool	62	1.792
	slowly	2	.301		swimming-pool	40	1.602
	still	2	.301		luxury	6	.778
	+9				∅	3	
17.	of	120	2.079		+10		
	+1			24.	there	41	1.613
18.	more	111	2.045		then	38	1.580
	dull	2	.301		higher	10	1.000
	∅	1			eventually	7	.845
	+7				soon	5	.699
19.	there	119	2.076		it	3	.477
	+2				steeper	3	.477
20.	deserted	33	1.530		suddenly	3	.477
	ruined	6	.778		wider	2	.301
	modern	5	.699		narrower	2	.301
	magnificent	5	.699		stopped	2	.301
	fantastic	5	.699		∅	2	
	desolate	5	.699		+3		
	amazing	4	.602	25.	about	61	1.785
	ugly	3	.477		some	25	1.398
	derelict	3	.477		six	9	.954
	empty	3	.477		roughly	3	.477
	broken-down	2	.301		houses	2	.301
	beautiful	2	.301		approximately	2	.301
	abandoned	2	.301		there	2	.301
	devastating	2	.301		either	2	.301
	amazed	2	.301		situated	2	.301
	astonishing	2	.301		∅	3	
	∅	3			+10		
	+29						

		n	log n			n	log n
26.	in	53	1.724	33.	unloaded	61	1.785
	away	43	1.634		unpacked	27	1.431
	neatly	8	.903		taken	9	.954
	snugly	3	.477		carried	8	.903
	comfortably	2	.301		moved	4	.602
	nicely	2	.301		brought	3	.477
	well	2	.301		put	2	.301
	+8				+7		
27.	view	114	2.057	34.	caretaker	86	1.935
	panorama	2	.301		noise	7	.845
	sight	2	.301		plan	3	.477
	+3				natives	3	.477
28.	Bambawo	115	2.061		villagers	2	.301
	Taga	2	.301		guide	2	.301
	∅	2			size	2	.301
	+2				people	2	.301
					∅	1	
					+13		
29.	to	30	1.477	35.	electricity	93	1.969
	lay	25	1.398		power	16	1.204
	was	23	1.362		light	7	.345
	towards	11	1.041		∅	1	
	along	5	.699		+4		
	near	5	.699	36.	to	111	2.045
	land	3	.477		could	5	.699
	into	2	.301		we	2	.301
	stood	2	.301		∅	1	
	+15				+2		
30.	of	110	2.041	37.	the	85	1.929
	in	3	.477		an	30	1.477
	+8				∅	2	
					+4		
31.	but	69	1.839	38.	small	79	1.898
	then	16	1.204		reasonable	15	1.176
	and	16	1.204		large	13	1.114
	as	3	.477		certain	2	.301
	although	3	.477		considerable	2	.301
	until	3	.477		+10		
	though	2	.301	39.	dynamo	85	1.929
	when	2	.301		thing	6	.778
	however	2	.301		generator	5	.699
	+5				machine	5	.699
32.	together	57	1.756		electricity	2	.301
	by	51	1.708		it	2	.301
	too	4	.602		engine	2	.301
	nearby	2	.301		place	2	.301
	∅	2			∅	2	
	+5				+10		

		n	log n			n	log n
40.	asked	50	1.699	45.	Indian	58	1.763
	arranged	24	1.380		excellent	22	1.342
	sent	19	1.279		exotic	5	.699
	paid	9	.954		African	5	.699
	looked	6	.778		appetising	5	.699
	organised	3	.477		beef	3	.477
	∅	1			delicious	3	.477
	+9				exquisite	2	.301
41.	the	117	2.068		oriental	2	.301
	our	3	.477		hot	2	.301
	+1				enjoyable	2	.301
42.	spent	109	2.037		enormous	2	.301
	had	4	.602	46.	the	116	2.065
	for	3	.477		one	2	.301
	took	3	.477		+3		
	+2			47.	his	77	1.887
43.	putting	42	1.623		some	16	1.204
	placing	16	1.204		a	10	1.000
	piling	15	1.176		the	8	.903
	arranging	11	1.041		ice	4	.602
	stacking	9	.954		+6		
	dumping	4	.602	48.	holes	31	1.491
	laying	4	.602		up	12	1.079
	sorting	3	.477		snakes	12	1.079
	put	3	.477		rats	5	.699
	stacked	3	.477		is	5	.699
	taking	2	.301		birds	4	.602
	∅	1			hole	3	.477
	+8				insects	3	.477
44.	villa	22	1.342		was	3	.477
	house	21	1.322		leaks	3	.477
	room	15	1.176		lingered	3	.477
	rooms	14	1.146		that's	2	.301
	quarters	7	.845		from	2	.301
	hut	6	.778		∅	6	
	villas	5	.699		+28		
	cupboards	4	.602	49.	just	54	1.732
	houses	4	.602		should	38	1.580
	accomodation	4	.602		can	7	.845
	cupboard	3	.477		better	7	.845
	bungalow	2	.301		bloody	3	.477
	surrounding	2	.301		must	3	.477
	bedrooms	2	.301		fool	2	.301
	∅	2			∅	2	
	+8				+5		

	n	log n
50. we've	71	1.851
you've	37	1.568
we'd	3	.477
I've	3	.477
we	2	.301
you're	2	.301
∅	1	
+2		

CRITERION GROUP

Total n = 121
Maximum possible = 92.444
Group mean = 76.980
High score = 88.071
Low score = 35.141

BALA DITAO PELE GA O SIMOLOLA

Leba tshetla e e fa tlase. O ka lemoga gore mafoko ale 50 a tlogetswe. Pele bala tshetla yotlhe go tshwara mogopolo wa yone. Mme fela jaaka o ne wa dira Practice Exercise, kwala lefoko lele tswanelang mo phatheng nngwe le nngwe. Dirisa Answer Sheet go kwale dikarabo. O seka wa tlhokomela thata ka spelling, mme leka go tlatsa diphatla tsotlhe. Fa o se kake wa gopola lefoko lele tsenang mo phatheng, tswelala kwa go e nngwe o tlaa boela tse di thata kwa morago. Dira ka bofefo jaaka o ka kgona. Fa o fetsa, tsoletsa seatle.

MOREMI WA MEROGO

Rre Peter Rakhudu wa Mahalapye ga kitla a tlhola a ya masimo. O solofela fa a bonye tsela e nngwe e e ka mo tshedisang go feta temo ya mabele. Rre Rakhudu o lemile tshingwana ya merogo fa 1. wa Mahalapye, mme o tshela ka yone.

"Ke yone 2. bame. Ke bua jaana ke tlhobogile temo ya mabele. 3. go na sepe se sengwe se ke tla tlholang 4. se dira. Ke ikepetse fa."

Mogatse, Kelaegile Rakhudu, 5. a o dumalana le mogopolo o?

"Ga ke na 6. epe," one a bolela. "Ga ke riana, ga nke 7. tlhoka peni mokgetsing ya me, jaaka ke ne ke 8. fa re ne re sa ntse re lema mabele." 9. ya ga Rre Rakhudu e simologile ngwaga tse tharo 10. di fetileng fa a latlhegelwa ke tiro ya gagwe 11. boagi.

O ne a re a sena go tlogela 12. a ya masimo, mme a lema. E ne e 13. ngwaga wa leuba mme a seka a bona sepe 14. masimo. "Ke ne ka buisanya le molemisi wa rona 15. pelo e e botlhoko mme o ne a nthaya 16. re, rona batho ba Mahalapye re a itira. Re 17. le noka e tona mme ga re e dirise.

"18. ne a nnaya mogopolo wa go itirela tshimo ya 19. fa thoko ga noka, mme ka mo utlwa."

O 20. a ya go kopa setha fa thoko ga noka, 21. morafeng, mme a fiwa diekere di le tharo. Ho 22. sone o ne a jwala ditlhatshana tsa ditamati di 23. 300. O ne a thusiwa ke mosadi, ba di 24. ka tlhogo. Ditamati tsa di ne tsa tla sentle, 25. ungwa, a di rekisa mme

a bona madi a 26. kana ka R300.

Ka nako eo o ne a 27. a kopanye le Ngaka Alan Ivemy, maitseanape wa nosetso 28. dijwalo wa lephata la Temo. Ngaka Ivemy o ne 29. mo gakolola go dirisa madi a gagwe go reka 30. e e tla gogang metsi mo motlhabeng wa noka, 31. a isa kwa tshimong. O ne a mo thusa go 32. madi mo go ba Banka ya Tlhabololo ya Morafe 33. reka terata, mme a mo kaela ka fa a 34. tsweledisang temo ya gagwe ka teng.

"O ne a 35. go ala tshimo ya me, a epa mesele e 36. ne ke tla jwala dijwalo tsa me teng. Re 37. re bereka mmogo, gore e tle e re 38. ke kgone go itirela ka nosi. Morago o ne 39. kwala kgato nngwe le nngwe e ke ne ke tshwanetse 40. e tsaya ngwaga le ngwaga, go re ke godise 41. ya merogo."

O ne a mo gokolola gore 42. age ntlo fa thoko ga tshimo. O dirile jalo, 43. a fudugela teng le ba losika lwa gagwe fela 44., tota le mmagwe le kgaitsadie. O agetse kgaitsadie le 45. ba gagwe ntlwana fa thoko ga ya gagwe.

Lapa 46. fela le thusa mo tirong ya tshimo. Ka e 47. e godile fela thata, o hirile monna yo o mo 48. go bereka ditiro tse ba lelapa ba sa di kgoneng. 49. ya ga Rre Rakhudu gompiono e na le merogo 50. sekgowa e le 6,000. Fale le fale o jwetse setlhat-sana sa namune mo gare ga merogo.

+++++

TRANSLATION OF THE SETSWANA CLUZE PASSAGE

The Vegetable Farmer

Mr. Peter Rakhudu, of Mahalapye, will never work on a farm again. He thinks he has found a better way of earning a living than growing corn. Mr. Rakhudu has planted a vegetable garden near the Mahalapye River, and this is his only source of income.

"This is the only way I can live. I have totally given up crop farming. I do not want to do anything else - I have put my roots down here." Does his wife, Kelagile Rakhudu, agree with this idea?

"I have complete confidence in this," she said. "Now I always have some money, unlike the old days when we were still growing corn."

Mr. Rakhudu's conversion began three years ago when he lost his job as a builder. When he left his job he went to his farm to plough. It was a very bad year for crops and he did not get any yield.

"I discussed this with our District Agricultural Officer, very sadly, and he said to me, 'You people from Mahalapye have a big river but you do not use it.' He advised me to start a vegetable garden near the river, and I took his advice."

He asked the tribe for a piece of land near the river and was given a site measuring 3 acres. On this site he planted 300 tomato seedlings. His wife helped him and they carried water on their heads from the river to water the seedlings. The tomatoes came on well - they bore fruit and he started selling them. He made R300.

At this time he had already met Dr. Alan Ivemy, an expert in the watering of seedlings in the Department of Agriculture. Dr. Ivemy advised him to buy an engine to pump the water from the river to the garden. He helped him to get a loan from the National Development Bank to buy fencing material and he also showed him other methods of improving his garden.

"He helped me lay out the plots. We worked together, so that I could learn to do the work by myself later. Then he listed the tasks I had to do every year to improve my garden."

He also advised him to build a house near the garden. He did this and then moved his family, including his mother and sister, into the house. He built a hut for his sister and the children near his own.

The whole family help work on the garden. Because the garden has grown tremendously, he has hired a man to help with jobs which the family are unable to do.

Today, Mr. Rakhudu's garden has about 6,000 heads of cabbage. Here and there he has planted orange trees among the vegetables.

SCORING SHEET

Setswana

	n	log n		n	log n
1. motsing	53	1.724	6. ngongorego	17	1.230
molapong	35	1.544	pelaelo	17	1.230
nokeng	9	.954	puo	17	1.230
motse	3	.477	kganetso	8	.903
thoko	2	.301	tiro	8	.903
thoko ga molopo	2	.301	thata	7	.845
noka	2	.301	megopolo	6	.778
4∅			kgopolo	4	.602
+11			kitso	4	.602
			kgang	3	.477
2. botshelo	78	1.892	kakanyo	3	.477
bana	5	.699	mafoko	2	.301
temo	5	.699	karabo	2	.301
beng	4	.602	mogopolo	2	.301
tiro	4	.602	6∅		
tshimo	3	.477	+16		
boswa	3	.477			
tshingwana	2	.301	7. ke	117	2.068
5∅			1∅		
+12			+3		
3. ga	109	2.037	8. tlhoka	23	1.362
jalo	3	.477	dira	19	1.279
jaanong	2	.301	motlhoka	13	1.114
2∅			ntse	10	1.041
+5			etlhoka	10	1.000
			tle	4	.602
4. ke	118	2.072	a tle	3	.477
ka	2	.301	tshela	3	.477
+1			nna	2	.301
			re	2	.301
5. ene	27	1.431	tlhwaetse	2	.301
mma	14	1.146	3∅		
wena	10	1.000	+26		
a	10	1.000			
o	7	.845	9. temo	41	1.613
ga	5	.699	tshingwana	31	1.491
are	5	.699	tshimo	29	1.462
le ene	5	.699	tiro	10	1.000
tota	4	.602	3∅		
mme	3	.477	+7		
kare	2	.301			
one	2	.301	10. tse	118	2.072
ruri	2	.301	1∅		
11∅			+2		
+14					
			11. ya	120	2.079
			+1		
			12. tiro	74	1.869
			boagi	35	1.544
			goaga	6	.778
			1∅		
			+5		

	n	log n		n	log n
13. le	108	2.033	24. nosetsa	30	1.477
ka	5	.699	rwala	27	1.431
e le	2	.301	nosa	20	1.301
+6			jwala	7	.845
14. mo	59	1.771	tlhokomela	5	.699
kwa	53	1.724	jala	5	.699
sa	9	.954	dira	3	.477
15. ka	117	2.068	lema	3	.477
1∅			bala	3	.477
+3			thotha	2	.301
16. a	114	2.057	gela	2	.301
are	5	.699	4∅		
+2			+10		
17. na	83	1.919	25. tsa	104	2.017
bapile	24	1.380	go	4	.602
gaufi	10	1.000	le	2	.301
nna	2	.301	ka	2	.301
+2			4∅		
18. o	107	2.029	+5		
one	4	.602	26. a	93	1.969
mme	3	.477	le	16	1.204
molemisi	2	.301	kanna	3	.477
+5			a a	2	.301
19. merogo	91	1.959	mantsi	2	.301
me	17	1.230	1∅		
ka	4	.602	+4		
ne	3	.477	27. setse	41	1.613
mabele	2	.301	ise	9	.954
+4			ya	9	.954
20. ne	104	2.017	tle	8	.903
na	3	.477	ne	4	.602
ile	3	.477	santse	4	.602
one	3	.477	bo	4	.602
o	2	.301	dira	3	.477
2∅			ba	3	.477
+4			tla	3	.477
21. mo	91	1.959	kile	3	.477
kwa	20	1.301	thusega	2	.301
ya	4	.602	a	2	.301
4∅			bile	2	.301
+2			ntse	2	.301
22. go	114	2.057	dikile	2	.301
tsone	2	.301	8∅		
1∅			+12		
+4			28. ya	93	1.969
23. le	115	2.061	tse	11	1.041
feta	3	.477	wa	5	.699
+3			le	3	.477
			4∅		
			+5		
			29. a	118	2.072
			+3		

	n	log n		n	log n
30. pompo	50	1.699	36. ke	80	1.903
engine	26	1.415	e	16	1.204
enjine	11	1.041	fa	2	.301
phaephe	8	.903	keneng	2	.301
pipe	4	.602	mo	2	.301
tractor	2	.301	13∅		
machine	2	.301	+6		
motshine	2	.301	37. ne	101	2.004
metswedi	2	.301	re	3	.477
koloi	2	.301	thusana	2	.301
4∅			santse	2	.301
+8			ntse	2	.301
31. e	73	1.863	tshwanetse	2	.301
go	33	1.519	2∅		
a	4	.602	+7		
mme	3	.477	38. morago	36	1.556
e a	2	.301	fa	12	1.079
3∅			kamoso	11	1.041
+3			a seyo	11	1.041
32. adima	72	1.857	gongwe	8	.903
boloka	16	1.204	a tsamaya	3	.477
baya	10	1.000	nokongwe	3	.477
kopa	4	.602	le nna	2	.301
bona	4	.602	motlhamonge	2	.301
isa	4	.602	a	2	.301
tsaya	3	.477	thuse	2	.301
+8			a tsamaile	2	.301
33. go	79	1.898	bofelong	2	.301
a	23	1.362	fa a seyo	2	.301
mme	3	.477	6∅		
le go	3	.477	+17		
ka go	2	.301	39. a	111	2.045
gore	2	.301	wa	2	.301
4∅			kwala	2	.301
+5			1∅		
34. ka	101	2.004	+5		
tla	7	.845	40. go	114	2.057
aka	4	.602	ke	3	.477
tla a	2	.301	1∅		
tshwanetsengr go	2	.301	+3		
1∅			41. tshimo	49	1.690
+4			temo	32	1.505
35. ya	29	1.462	tshingwana	21	1.322
nthusa	20	1.301	tlhwatlhwa	6	.778
simolola	12	1.079	thobo	2	.301
nthuta	9	.954	1∅		
tla	9	.954	+10		
thusa	9	.954	42. a	110	2.041
leka	8	.903	ke	4	.602
rata	2	.301	2∅		
9∅			+5		
+14					

	n	log n		n	log n
43. mme	76	1.881	48. thusang	90	1.954
fa	14	1.146	ngwe	5	.699
aba	7	.845	duelang	3	.477
one	6	.778	mothusang	3	.477
morago	6	.778	thusa	2	.301
a tlhoga	2	.301	Mahalapye	2	.301
2∅			4∅		
+8			+12		
44. botlhe	65	1.813	49. tshimo	91	1.959
lotlhe	28	1.477	tshingwana	26	1.415
jalo	8	.903	1∅		
teng	4	.602	+3		
mme	2	.301	50. ya	115	2.061
mmogo	2	.301	1∅		
7∅			+5		
+5					
45. bana	84	1.924			
ba	7	.845			
bangwe	6	.778			
batsadi	5	.699			
mmagwe	3	.477			
batho	2	.301			
batlhogolo	2	.301			
5∅					
+7					
46. lotlhe	66	1.820			
la	16	1.204			
lone	7	.845			
le	5	.699			
lwa	3	.477			
la gagwe	2	.301			
le le lengwe	2	.301			
7∅					
+13					
47. ne	76	1.881			
setse	20	1.301			
bile	6	.778			
e	3	.477			
4∅					
+12					

CRITERION GROUP

Total n = 121
Maximum Possible = 93.868
Group Mean = 77.835
High Score = 90.900
Low Score = 40.692

Q1	ID	List 1	1-4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q2	Sex	Male: 1 Female: 2	5	<input type="checkbox"/>			
Q3	Opp	a.	6-7	<input type="checkbox"/>	<input type="checkbox"/>		
		b.	8-9	<input type="checkbox"/>	<input type="checkbox"/>		
		c. List 2	10-11	<input type="checkbox"/>	<input type="checkbox"/>		
		d.	12-13	<input type="checkbox"/>	<input type="checkbox"/>		
		e.	14-15	<input type="checkbox"/>	<input type="checkbox"/>		
Q4	NP	a. List 3	16-17	<input type="checkbox"/>	<input type="checkbox"/>		
	Lg	a. List 4	18	<input type="checkbox"/>	<input type="checkbox"/>		
	NP	b.	19-20	<input type="checkbox"/>	<input type="checkbox"/>		
	Lg	b.	21	<input type="checkbox"/>	<input type="checkbox"/>		
	NP	c.	22-23	<input type="checkbox"/>	<input type="checkbox"/>		
	Lg	c.	24	<input type="checkbox"/>	<input type="checkbox"/>		
	NP	d.	25-26	<input type="checkbox"/>	<input type="checkbox"/>		
	Lg	d.	27	<input type="checkbox"/>	<input type="checkbox"/>		
	NP	e.	28-29	<input type="checkbox"/>	<input type="checkbox"/>		
	Lg	e.	30	<input type="checkbox"/>	<input type="checkbox"/>		
Q5	NP-No	a.	31-32	<input type="checkbox"/>	<input type="checkbox"/>		
		b.	33-34	<input type="checkbox"/>	<input type="checkbox"/>		
		c. List 3	35-36	<input type="checkbox"/>	<input type="checkbox"/>		
		d.	37-38	<input type="checkbox"/>	<input type="checkbox"/>		
		e.	39-40	<input type="checkbox"/>	<input type="checkbox"/>		
Q6	TNP	List 5	41	<input type="checkbox"/>			
Q7	Source	a.	42	<input type="checkbox"/>			
		b. List 6	43	<input type="checkbox"/>			
		c.	44	<input type="checkbox"/>			

ID	Repeat Q1		1-4
Q14	Bk Ever	Yes: 1 No: 2	5
	Bk Now	Yes: 1 No: 2	6
	Title	Yes: 1 No: 2	7
	Subj	List 8	8-9
	Lg	List 4	10
Q15	TBk	List 5	11
Q16	Source a.		12
	b.	List 6	13
	c.		14
Q17	Subj a.		15-16
	b.	List 8	17-18
	c.		19-20
Q18	TTBk	List 5	21
Q19	Place a.		22
	b.	List 6	23
	c.		24
Q20	Dev Knowl	None: 1 Some: 2 Strong: 3	25
Q21	Ch Agent	None: 1 Trad: 2 Mod: 3	26
Q22	Fut Job a.		27
	b.	List 9	28
Q23	Age	Code second digit of age	29
Q24	Dist	List 10	30-31
Q25	JC	List 1	32-33

Q26 P Job List 9 34

Q27 F Lg Eng Yes: 1 No: 2 35
Tsw 36

Q28 S Lg a. 37
b. List 4 38
c. 39

Q29 Rank Eng 40-41-42

--	--	--

Tsw 43-44-45

--	--	--

Card 2 80

INTERVIEW CODING LISTS

List 1 Secondary Schools

GSS: 01	Seepapitso: 05	Moeng: 09
St. J.: 02	Swaneng: 06	K. Sechele: 10
Moeding: 03	Shashe: 07	Other: 11
Molefi: 04	Mater Spei: 08	

List 2 Opportunities for Reading

Early morning before class: 01	Afternoon prep: 05	Before bed: 09
Free class period: 02	Afternoon free time: 06	On exit: 10
Tea break: 03	Just before dinner: 07	Weekend: 11
Lunch time: 04	Evening prep: 08	Other: 12

List 3 Newspapers

Daily News: 01	Tswana Times (S.A.): 08
World: 02	Christian Science Monitor (U.S.): 09
Rand Daily Mail: 03	Guardian Weekly (U.K.): 10
Mafeking: 04	Herald Tribune (U.S.): 11
Chronicle (S. Rhodesia): 05	Sunday Times (S.A.): 12
Daily Times (Malawi): 06	Local Paper: 13
Times (Zambia): 07	Other: 14

List 4 Languages

Setswana: 01	Zulu: 06
English: 02	Xhosa: 07
Kalanga: 03	French: 08
Sesotho: 04	Other: 09
Afrikaans: 05	

List 5 Frequency Scales

Q6, 10, 15: 0:0 1-2:1 3-4:2 5-7:3 8-10:4 11-15:5 More:6 DK:9

Q12: 0:0 1-2:1 3-4:2 All:3 DK:9

Q13: 0:0 1-4:1 5-6:2 Almost All:3 DK:9

Q18: 1-2:1 3-4:2 5-6:3 7-8:4 More:5 DK:9

List 6 Sources

National Library (Gbne): 01	Buy from shop: 05
Local Public Library: 02	Borrow from friends: 06
Mobile Library: 03	British Council/ USIS Rdg. Rms.: 07
School Library: 04	Other: 08

List 7 Magazines

Kutlwano: 01	Z (Zambia): 07	Tswele Lopele: 13
Time: 02	Africa: 08	Transition: 14
Newsweek: 03	African Digest: 09	Encore: 15
National Geographic: 04	Reader's Digest: 10	Woman and Home: 16
Drum: 05	Ebony: 11	Agrinews: 17
Bantu: 06	Orbit: 12	Other: 18

List 8 Subjects

Famous people of the past: 01	Africa and Africans: 09
Famous people of the present: 02	Foreign Travel: 10
Politics and History: 03	Home-making: 11
Science and Technology: 04	Love and Romance: 12
Health and Hygiene: 05	Adventure: 13
Problems of Society: 06	Spies and Detectives: 14
Religion and Philosophy: 07	Other: 15
Sport and Recreation: 08	

List 9 Employment

None, DK: 0 or Dead, in case of P Job	Service, Police, Hotel, Tourism, Information: 5
Science, Medicine: 1	Business, Sales: 6
Law, Administration, Politics: 2	Farming, Hunting, Fishing: 7
Teaching, Religion: 3	Industry, Labour: 8
Civil Service, Clerical: 4	Other: 9

List 10 Districts

South-East: 01	Ghanzi: 07	Gaborone: 13	Outside Botswana: 19
Ngwaketse: 02	North-East: 08	Serowe: 14	
Kweneng: 03	Ngamiland: 09	Kanye: 15	
Kgatleng: 04	Chobe: 10	Mochudi: 16	
Kgalagadi: 05	Lobatse: 11	Palapye: 17	
Central: 06	Francistown: 12	Molepolole: 18	

NAT DEV: 0:0 1-2:1 3:2 4+:3

Day/ Boarder: Board: 1 Day: 2

WHAT WAS SAID IN THE INTERVIEWS

Hello. Come in. How are you today? Have a seat. Have you heard from the others what I'm doing? Well, all I'm doing is asking questions about reading - the kind of reading you do for yourself - not school work - things like newspapers, magazines, books. I chose people to talk to just by chance - I put everyone's name into a box and pulled some out - that's how I got you - nothing very exciting about how you were chosen. I just want to talk to some Form Five students in Botswana to see what they read, what they like to read, what they think about reading.

Q1 Notice that I'm just using numbers, not names, so no-one will ever know who tells me these things - that's your number and no-one else has it, and no-one else knows who that person is except you and me.

Q2 (No comment)

Q3 What I want you to do first is to think about the last three days - say Sunday, Monday and Tuesday of this week - and try to remember some opportunities you've had to do some reading of your own - books, newspapers, magazines - I'm interested now in when you read - we'll talk about what you read later. Perhaps this list will help you to think of some times when you actually did some reading. Perhaps you found yourself with a few minutes early in the morning before classes to do some reading of your own, or perhaps on the weekend, or some other time during the day. See if you can think of some times in the last three days when you actually did some reading. ... Any other times?

Q4 Now, during the times you've mentioned, just in the last three days, did you read any newspapers - any of these? ... Anything else?

Q5 Now go back for a whole month - are there any others of these newspapers that you usually read - ones that you haven't mentioned?

Q6 How much time would you say you spend in a whole week reading newspapers - if you totalled all the times you read newspapers in a whole week, how much would it be - how many minutes or hours?

Q7 Where do you get most of your newspapers? Any other places? Do you ever buy any of them?

Q8 OK, let's talk about magazines. Just in the last three days again, did you read any magazines - any of these? ... Any others?

Q9 Now go back for a whole month - are there any other magazines that you usually read that you haven't mentioned?

Q10 How much time do you think you spend reading magazines in a whole week - is it more than newspapers, or less, or about the same?

Q11 And where do you get most of the magazines you read?

Q12 How many days a week do you read the Daily News? And do you usually read it in English or in Setswana?

Q13 Have you read this Kutlwano? Can you show me which articles you read - just go through the magazine. OK. Kutlwano comes 12 times a year - once each month. How many of those would you say you read - almost all, or less than half? In a whole year.

Q14 Do you ever read books for pleasure - novels and other books - not school books? ... Are you reading one now? ... Can you remember the title of that book? And what is it about - can you find the subject of the book on this list? And was it written in English?

Q15 How much time would you say you spend reading books like this in a whole week - total time - is it more than magazines and newspapers, or less or about the same?

Q16 Where do you get most of the books you read? Any place else?

Q17 Take a look at this list again and see if you can tell me two or three of your favourite subjects for reading - when you're looking for a book, what do you look for?

Q18 How much time every day do you spend doing school work - studies - outside of class, but including prep times? Do you spend any other times besides prep - how about early in the morning or late at night?

Q19 Have you visited any of these places in the last week - the National library, the school library, the British Council or the American Embassy libraries - have you bought any books or newspapers or magazines in a shop, or borrowed any?

Q20 Have you ever looked at this? (Nat. Dev. Plan, 1973) Why don't you look through the list of contents and tell me some of the things you would like to read if you had time - some of the interesting things .

Q21 Thinking about your own future plans - your own educational plans or your own employment plans - do you ever ask people for advice about these things? Who do you usually ask for advice like that?

Q22 What sort of job do you think you want - when you finish all of your education - perhaps even university - what would you like to do? ... Do you have a second choice - if you can't be a... what would you be?

Q23 How old are you?

Q24 What district do you come from in Botswana?

Q25 And where did you do your JC? Are you a boarder or a day student?

Q26 What sort of work does your father do?

Q27 Does either your father or your mother speak English?
Do they both speak Setswana?

Q28 Are there any languages besides English and Setswana that you
can read - say a newspaper? Any Kalanga or Sesotho? Any French?

Well, that's all the questions I have - Thank you very much,
you've been very helpful.

THE HEADMASTER PART II

By C.G. Mararike

One of the headmasters under whom I worked used to tell his staff that "he was the headmaster of that school and whatever he said was law. To him the school was his. I do not like this and that is my school." That is what he used to announce to both his teachers and pupils.

I must mention here that he was one of the bad headmasters. He did not know that the school does not belong to anybody; least of all the headmaster. The headmaster has an obligation towards the community to run the school together with other teachers and pupils so that it becomes a good place for all where learning can be carried out successfully.

What type of man must the headmaster be? Must he be a "good" man who allows his teachers to do their work as they please? Or must he be that "strict" man who strives to make a school a happy place for both teachers and children?

Let me mention here that it is not possible to lay down universally accepted qualities of a good headmaster. Therefore what I am going to list down are some of the points which headmasters may find useful.

1. As a leader of professional people, the headmaster must quickly know his staff as well as his entire school.
2. The headmaster must be firm, fair and consistent in the administration of discipline. But he must avoid doing anything that may embarrass any member of his staff.
3. He must not heap all school duties on his own head. He should let every staff member help in the running of the school.

4. He must be very careful with all matters that involve money. He should keep accurate records of all the financial transactions. If possible he should appoint a finance committee to help him in this aspect.

5. The headmaster's behaviour matters more than what he says. Therefore he must always bear this point in mind anywhere.

6. He must pay special attention to new teachers for they need more help than those who have been with the school for some time.

7. He must attend to all official correspondence promptly.

8. He must never use position to obtain personal material.

9. He must keep parents well informed about school activities.

10. He must talk constructively at all times. He must bear no grudges against any member of his staff. All differences of opinion must be regarded as necessary and indeed part of his administration as long as they are aimed at improving the school.

There is yet another thorny issue which most headmasters always meet. This concerns that or those teachers who will always want to find fault with everything

that goes on in the school. This is a very unfortunate thing indeed. I have however already covered this point in my "Ten Commandments."

But suppose all that has been suggested has failed and the headmaster has to report a teacher to senior authorities. How must he do it? Must he write secretive exaggerated reports? I think the headmaster should sit down with the teacher concerned and preferably in the presence of the deputy headmaster and one or more senior members of the staff. After this it may be unnecessary to report a teacher. Even if this should be, the report must be very objective. It must be free from any bias.

Finally! let me touch on one point which most headteachers will not like; but I felt it is also very important. This concerns headmasters who make love to female members of their staff. Worse still to school girls. I need not stress that such behaviour is highly unprofessional, and I only pray that it does not happen. In fact members of a school staff must behave in such a way that the profession is not brought into disgrace.

In my next article, I shall look into our teaching problems.



A class at a primary school in the Kgatleng. The author of this article encourages teachers to deal with the children with great care and love.

70-1 B. Difficult
45.5

April 10 1974 No 71

Botswana history?

By Action Ndaba

Historical sources about Botswana - mostly European - written in the colonial era when it was thought that the country was wholly occupied by the Kgalagadi Desert. Some of that period claim that the country does not have any history at all.

Assertions are untrue. Mr Pahl wrote about the country and did his homework on the villages of this country. He took Mr Ron Pahl, assistant teacher of the Seepapitso School in Kanye.

Mr Pahl is undertaking archaeological projects mostly in the north part of the country. That is where he teaches. His projects combine history and geology.

Old people, some of whom lived in the last century, what they know about the history of their villages. Mr Pahl records this information on tape and goes to what historical sources he can find at the sites.

Mr Pahl contacts the Department of Lands and Agriculture to make aerial photographs of an area. He knows the exact location of the area he wants to deal with.

On his own he collects pieces of pottery which might have been used in ancient times.

He finds fragments of pots, beads, axes, hoe-shaped stones with small holes which were used to make fire. He does not do any excavation. He concentrates on material on the surface." Mr Pahl

is a professor of a master of arts in African history from the University of California, which is where he does much of his work. Mr Pahl is interested in these tools according to their age. Some, he feels, are 100 years old.

Mr Pahl's true estimation of the history of the people who lived in Botswana even before the arrival of the white man was in Europe or any other country whose people have written their history. He started in 1969, Mr Pahl discovered more than 25 sites in the Bangwaketse

Talk to Ron Pahl!



Ron Pahl at Kanye's Seepapitso Secondary School: exploring a very real Botswana history that so many others have ignored.

One area that has an outstanding significance is the Sekule Valley near Lobatse.

According to what Mr Pahl found at the Sekule Valley the Batswana who lived there were attacked by the Matebele under Chief Mzilikazi. Defenceless, the Batswana moved uphill to build a fort which would make them safe from attack. The fort, Pitca as it is now called, stretches for about a mile on the hill.

An observation Mr Pahl made is

that the old villages were not situated far apart; in fact, kgotlas used to be joined together. Residents of these old villages moved away every five years and then returned to settle again in the same place after a similar period of time.

There are two reasons for this, according to Mr Pahl. Enemies would have difficulty with plans to attack these villages, and when they did, they might find that the village had moved. Also, by moving their cattle to new grazing grounds or to new water sources, the people would return to find new grass wells recovered and poles, cut down to build shelters, grown up again.

There is not much difference in the pattern, style and decoration of pottery from sites in Barolong,

Bamalete, Bakwena and Bangwaketse areas, indicating that these were at one time one people.

Historical sources also contain very little about the attacks on the Batswana by the Matebele. Information available only says that the Batswana were driven into the Kgalagadi Desert and what actually happened is not disclosed, perhaps due to incomplete research.

Mr Pahl says that old people may be able to tell of experiences heard from their grandfathers. In some cases, extremely elderly people may have relevant experiences of their own to tell.

All this information, according to Mr Pahl, will lead to a better and more detailed history of Botswana. If excavations could be done by

more organised bodies, and an archaeological dating system introduced, more accurate dating of these tools and implements could be made, and it could be known exactly how long man has lived in this land, Mr Pahl says. "But I am sure man is not a newcomer to Botswana."

Now in the process of applying for assistance from the Botswana Society, Mr Pahl also hopes for an exhibition of his collection at the National Museum and Art Gallery in Gaborone to show the Batswana what implements their ancestors used.

Mr Pahl has written an article on the sites he discovered in southern Botswana and interested readers may find it in a recent issue of Botswana Notes and Records.

NEWS FOCUS ON SOUTH AFRICA

Dickson reports from Gaborone for Reuter news

Report by a South African diplomat to the republic's United Nations mission and marry a West African woman has cast a spotlight on the country's unique anti-miscegenation laws - which make marriage and sex across the colour line criminal offences.

The former diplomat, Mr Melvyn Driessens, recently disclosed that he resigned his job as a secretary of the South African mission in London last year to marry a black woman.

South African law, such as the Immorality Act, which prohibits a white man and a black woman from marrying, is an anachronism, says Mr Driessens, who now lives in London with his wife Diana. He says the apartheid laws are "anachronistic."

South African authorities have recently introduced the Immorality Act, which outlaws sex across the colour line, has not been repealed.

While the 1949 measure has been applied to all mixed marriages in the country, the Immorality Act, which outlaws sex across the colour line, has not been repealed.

The government recently disclosed in the last year for which figures are available, July 1972 to July 1973, 460 people were prosecuted under the Immorality Act and 161 convicted.

A 'morality' law that exists nowhere else

This means that an average of nine people a week are accused of a crime which exists in no other country of the world and has led to suicide, marital breakdown and acute social embarrassment.

Although the vast majority of those found guilty receive suspended prison sentences, an almost indelible social stigma still sullies the names of both the convicted and the acquitted.

The latest figures show that white men make up the bulk of those breaking the law. Over 250 were prosecuted last year and 161 convicted.

Next came African women, with 156 prosecutions and 102 convictions.

But the figures also point to a marked decrease in the number of prosecutions and convictions during the past few years. In 1969-1970, 1020 men and women were prosecuted and 515 convicted, while in 1971-1972 the respective figures were 726 and 366.

The causes of this drop are not clear, but it seems unlikely to result from a dramatic wiling in the urge for sex with a person of a different race.

A more feasible explanation is that the authorities are adopting a more restrained approach to prosecutions.

This stance seems to stem from South Africa's most explosive sex scandal in recent years - the so-called "Excelsior Debacle" of 1970 to 1971.

Excelsior is a sleepy little town in the Orange Free State which for a few months came into the glare of unwelcome and inglorious world-wide publicity when seven of its most prominent white citizens and 14 African women were arrested and charged with contravening the Immorality Act.

Eventually all the charges were dropped on the grounds that state witnesses were no longer willing to testify - but not before one of the white accused committed suicide.

In the wake of the scandal, Justice Minister Petrus Pistorius said

that from then on prosecutions would only be instituted if approved by the attorneys-general of South Africa's various provinces.

But at the same time he pledged that the Immorality Act would remain on the statute book for as long as the National Party is in power.

Although the act is now being applied more circumspectly, there seems no reason to think that the Government's views have changed.

Restrictions on sex across the colour line are not new in South Africa. When the first Dutch settlers arrived at the Cape in the 17th Century they quickly found an outlet for their sexual drives in the Hottentot women of the area - liaisons which led to today's coloured (mixed race) population of over 2 million.

The situation so alarmed the Dutch East India Company that it prohibited mixed marriages between whites and slave women. The matter rested until the opening years of this century when some provinces made it illegal for a white woman to have intercourse with an

"aboriginal native," meaning a full-blooded African.

But the real forerunner of the current legislation was the 1927 Immorality Act which prohibited whites of both sexes to have intercourse with Africans.

The 1950 amendment extended the act to prevent white intercourse with Indians and coloureds - themselves the product of an earlier age of miscegenation, and made it an offence to even attempt to have sex across the colour line.

The 1927 legislation was not rigorously applied, but the 1949 measures were followed by a wave of energetic police activity. Sentences could be harsh - including terms of hard labour.

Since 1959 about 20 000 people are estimated to have been prosecuted under the act and more than half of them have been acquitted. But many committed suicide.

The most tireless campaigner against the act is Mrs Helen Suzman, the Progressive Party's only parliamentarian and one of the Government's most persistent critics.

"The ravages to individuals have been immense," she says. "It has meant broken homes, suicides, social ostracism and degradation."

"And to South Africa as a country it has meant ridicule and ugly notoriety abroad."

Information Services, P.O. Box 100, Gaborone. Maximum length 100 words. Late letters will not be considered.



Letters to the Editor

GU 'nothing to do with public theft'

Editor,
I'd like to comment on the article written by I. Epadile of Gaborone which appeared in the paper dated 7.6.74. In his letter he stated that we cannot blame thieves. This is true, the Government is losing a lot of public money stolen by the thieves. This theft of public money affects the economy of the country.

Really, Mr Epadile had something in mind about the Post Office and supporters of Gaborone United, but due to a small bottled brain he was unable to express himself. If Mr Epadile was clever enough he would have noticed that there is no relationship between the law, Post Office people and Gaborone United. He can still be sued by those concerned and find himself whipped with a cat of nine tails as he suggested that wrong doers should be done. I suggest that Mr Epadile comes to Gaborone and sees me, so that I could explain to him verbally that his brain is smaller than that of an ostrich.
Michael Samuel
Gaborone

Only soccer stars need apply for top posts

Editor,
I'd like to appeal to the Government about a new system of employment. In many Departments they do not hire people according to experience, but because of personal achievements which are totally irrelevant to the job requirements. The managers hire people who happen to be soccer stars, or relatives. This is quite unfair to us who are neither soccer

stars nor relatives of the employers, in that we never secure a job.

This form of employing will slow down the progress of the country, which is otherwise developing rapidly. In case this practice continues in future, I would appeal to our brothers who are still schooling to train hard to be soccer stars so to secure their future lives.
Brutus Baruti
Palapye.

Soccer insults

Editor,
I'd like to air my views about the behaviour of some people at soccer matches especially in Gaborone. It is common to find a fan and his family going to soccer to pass insolent remarks to supporters and players of the team they do not favour. One of the factors is that their children are told these remarks and will do something "tomorrow."

Gravediggers should wait

Dear Editor,
I have noticed that when a person dies people just go out to the cemetery, dig up a grave and leave it open overnight. The dead person is buried the following morning or in the afternoon.

Even if the dead were to be buried the following morning the grave could still be dug in the morning. If graves were sold perhaps this situation could be understood. The cemetery is ours so I do not see any reason why we should dig graves a day before burial. What can be done to stop this habit? Personally I am sick and tired of it.
Tomeletso Balaphe
Serowe

Shake-shake for barmen urged

Editor,
I'm really disappointed by many men in the country who let people of under eighteen enter bars. In some places like Palapye one finds kids occupying seats, and ladies with babies strapped on their backs. As a result barmen have nowhere to sit and they do not care.

In fact most of the assault cases are done by these kids who just sit in the bars doing nothing. I appeal to the Government to shake the barmen up and to force them to follow bar regulations.

B.M.W. Kruger
Mahalapye

Old people 'treat me like a dog'

Editor,
I'm surprised by the old people who are working with them and treat you like a dog. They say they are teaching you social life, but you do something wrong, they do not correct you or tell you if you are good or bad. They hate you and say you are a dog (what does that mean?). When they tell them that you do not like their behaviour, they reply, "We will

hate you." They do this because they know they will not be beaten. Some old people say youths of nowadays have no manners, no respect, and are uncivilised.
But they are the ones who teach us to be "skellams". Do not blame us—we need help. I am worried about these old people.
Dixon Kobozi,
Kasane.

Daily News not a soccer mirror

Dear Editor
After reading I. Epadile's letter on giving stiffer penalties, to public servants who steal money, about which I believe he was correct, my feeling is that Mr Epadile should not have written about Gaborone United.

This is not a soccer mirror or a paper in which letters of football clubs hatred are published. Why is it that people always give false and deadly examples by referring to our club? (GU). It's not your's gentlemen, leave it alone. Mention other clubs. I won't complain.

My last words are, whether you like it or not "Tse khibidu di tla iketla fela metseng wa tsone Gaborone." This applies to any one who hates this team.
Pat Mudenda Masimolole.
Mochudi

English names

Dear Editor
I wonder why most Batswana like to call themselves by English names. In future only our colour will tell that we are Batswana, not our names.

We girls can use English names because girl's names are useless but boys cannot because a man is a man by the name of his parents. We cannot find a child at school using his/her grandmother's name as a surname. In future there will be names like "Peter John."
Goitsewang Sebokile
Molepolole

Boring music

Dear Editor,
The trouble with the kind of music that Radio Botswana gives us is that it is boring and monotonous. Songs like "My Maria and Shabela" should have been long put aside. Please, Radio Botswana people, observe the kind of music you give us or else you can close your studio during music programmes.
Julius Moutsho
Gaborone

CATHOLIC SCHOOL PLAN IN KANYE IS APPROVED

From Johannes Pliane
The Southern District Council has accepted an application from the Roman Catholic Mission in Kanye to build a school in the village.

He told the council that this year his committee did not take over any of the privately-run schools in the district as the council had a shortage of teachers in its existing schools.

The announcement was made at the last council meeting held in Kanye by Councillor John Thiong who is chairman of the education committee. He also told the council that he and his committee had directed that the school be built on one of the sites allocated by the Town Planning Committee of Kanye.

The council has provided bursaries to 55 students in the district to do secondary education, with some 19 applications still to be considered. Coun. Thiong also said that since 1972, the council had spent R12 674 on books for primary schools in the district.

CALL FOR RELEASE OF 2 NAMIBIAN LEADERS

UNITED NATIONS: The U.N. Council for Namibia has called for the release of two African youth leaders now on trial in the territory, charging they had been held in solitary confinement for more than four months and probably subjected to mental and physical torture.

ory pending independence, called on "the entire international community to express its condemnation of these illegal trials and demand that the South African regime release the two accused and all other Namibian political prisoners."

The appeal was launched on behalf of Ezriel Tsapop, 20, and Joseph Kasheba, 24, of the South West African Youth League. They were arrested early this year and charged with instigating people to commit murder and to engage in public violence.

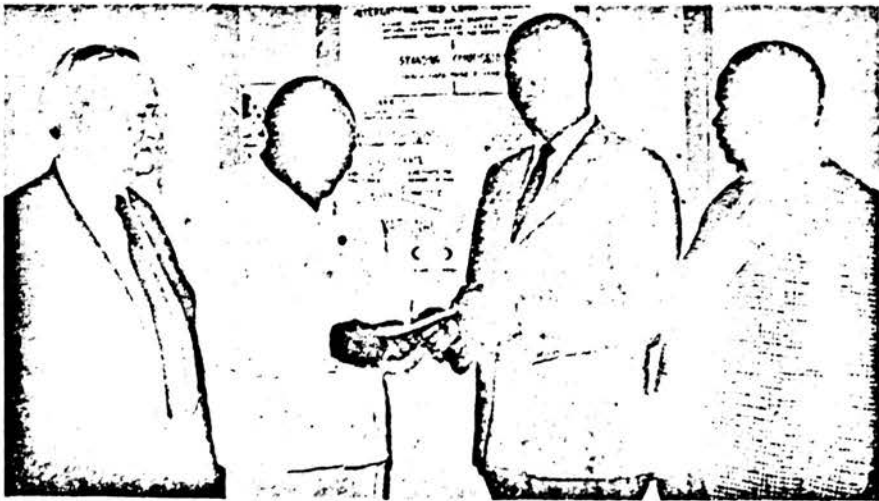
It said in a press statement that "this fresh evidence of the ruthless treatment accorded to Namibians by a regime which has no lawful jurisdiction over them whatsoever underscores the necessity for effective action by the international community to obtain South Africa's withdrawal from the territory in compliance with the demands of the Security Council."

The Council for Namibia, the U.N. body which seeks to administer the disputed South African-ruled territory.

Guide meeting

President of the Botswana Girl Guides Association Lady Ruth Khama will preside at the association's annual meeting to be held on Saturday, June 22.

All members are requested to be seated at this meeting by 9.00 a.m. at the Red Cross Hall in Gaborone.



Red Cross director Sebotho Modisi (white suit) receives a cheque from the marketing adviser of Shell Botswana C.R. Mabuse. D.M. Calvert of the same company is shown left, and Director of Community Development W. Meswele stands right.

Driving course needs submersion

L. Lubbe, a South African expert driver in motor racing, has opened a school of motoring in Gaborone. He said that the school will be established in the main centres of the country and will be called "Botswana School of Motoring."
Mr Lubbe told the Daily News that he considered his undertaking as a public service since the need for qualified drivers in the country is greatly appreciated by the public. The school will cater for beginners

who want light-duty driving licences. Although Mr Lubbe remarked that his school is not different from the common driving schools he said that he intends introducing many facilities and hiring expert instructors.
Mr Lubbe's instructing method requires "total submersion" from both the learner and the instructor since a full course lasts for only six hours.

On February 5, 1965 began the great exodus from Mafeking. For fourteen days a fleet of pantech-nicons travelled 96 miles of dusty, corrugated roads in excessive heat, moving the Capital of what was once the Bechuanaland Pro- tectorate to the new Capital, Gaborone.

A GABORONIAN LOOKS BACK

By C. Atkinson

The photograph shows one of the early features of Gaborone township. It was the huge dam in construction. The beginnings of the dam wall can be made out plus the building in the back- ground which was used as the base for the entire project.

going up in record time with a lot of the work being done by flood- light to have it ready before Inde- pendence, while all around houses were springing up like the proverbial mushroom.

Population Increased rapidly

In spite of many setbacks work prog- ressed and the Capital began to grow. As accommodation became available contractors brought their families to live in Gaborone. The population increased rapidly and traders had to increase their supplies and butchers trebled their daily kill.

The Gaborone Hotel at the station, which was the only hotel at that time, was bursting at the seams and had to order far greater quan- tities of beer to cope with the rapidly increasing population and their unquenchable thirst due to heat and dust.



Aerial photograph of now modern Gaborone taken in early 1966. It was not possible to get hold of real construction photographs showing the foundations of - Ministerial and other massive buildings in 1964 and 1965.

was once upon mile of bush and parched earth became a hive of activity.

Disappearing Wildlife

Scaffolding, bulldozers, trucks, bricks, door and window frames, and stones were to be seen every- where while hundreds of artisans and labourers replaced the now disappearing wildlife.

Soon began the creation of the pedestrian mall. The Information Centre, Broadcast House and Civic Centre were all housed in one building. That is now the In- formation Department.

The Post Office and Barclays Bank Buildings were under construc- tion and the President Hotel was

That was nine years ago and we feel sure that majority of people living in Gaborone at present have no idea what conditions were like then.

There was very little in Gaborone in those days apart from the houses down at the village and some buildings near station. Where we now have the mall, the Govern- ment office blocks and surround- ing houses was once just bush and there were still some duiker, kudu and jackal about.

At the beginning of January, 1964 plasterers, bricklayers, carpen- ters, mechanics, office staff and labourers all congregated in Gaborone to build the new Cap- ital. The first spadeful of earth was turned on February 6 and what

Continued on the next page

A Gaboronian looks back

The stores then consisted of the Camp Cash in the village, Malan's Trading Store opposite Angamia Motors and the Gaborone Hotel store which has since become a greengrocer.

There was a small hairdressing salon, a la Mode, alongside Camp Cash. This is now a Chibuku stall. Patrons would have their hair set, go home and wait for it to dry and then return later for a comb out. There were occasions when the water was cut off just as someone had a head full of shampoo. And there were no taps in the salon but water was carried from Camp Cash in buckets.

Kudu could be seen

There was a maze of sand tracks from the village through the bush to the Health Centre and the station as well as the centre of social life, the Gaborone Club. Driving along these tracks at night sprang ghares, duiker and kudu were sometimes seen. These kudu loved roses and would jump

fences at night and have a feast of roses and any other plant which took their fancy.

The original Thornhill School was two classrooms in the village and as the population grew classes were held under the trees.

By January 1965 the construction of the dam was almost complete, the water tower, known as 'the onion' was in its final stages of erection and the power station making an effort to provide electricity.

A week before the move was to take place, overworked officials dashed frantically in all directions, carpenters hammered in the last nails, plumbers attached the last taps, electricians tested lights and plugs and building inspectors rushed from one building to another checking progress.

Keys became a nightmare. Every door in every house and office had one. Each bundle was named and numbered and handed over to the reception committee as each building was completed.

The new arrivals began to roll in and first called at the C.I.D. office which housed the reception committee and were then escorted to their respective houses to await the arrival of the pantech-nicians, with each new arrival carrying a large bunch of keys

Frustrations and anxious moments

This took place on February 5, just one year after the start of the building of the new Capital. A big job had been completed — not without its frustrations and anxious moments — and the contractors handed over three multi-storied office blocks, (now the Government offices,) several blocks of flats, a satellite police post (now the C.I.D.) the telecommunication centre and no less than three hundred and sixty houses, almost a house a day.

Things have come a long way since the old days and some of the older residents who still remain in the Capital look back and say 'Those were the days'. They had their frustrations and we really had to rough it at times but they were fun and we had plenty of laughs and wouldn't have missed it for anything.



A recent aerial photograph of Gaborone, Botswana.

CONSERVING OUR WILDLIFE RESOURCES

By Wildlife Education Unit
Department of Wildlife
and National Parks

In Chobe National Park elephants gather in the shallow river, drinking and bathing on a warm afternoon. On the vast plains of grass found in the Makgadikgadi Pans Game Reserve, and mixed herd of zebra and wildebeest, startled by an approaching vehicle, turn and run in a cloud of dust. Gemsbok and springbok gather in the centre of a pan in the Kalahari to graze and lick the mineralized soil.

wild animals, including mammals, reptiles, birds, and many other forms of life. None of these animals is able to exist without their habitats — the type of land on which they live. These habitats of soil, water, plants, together with their animals, form an interlocking system — a web of life.



National Parks and Game Reserves — in Chobe National Park, sable and roan antelope gather to drink while lick birds remove external parasites from the animals. There are 3 National Parks and 5 Game Reserves within Botswana.

This is Botswana's wildlife, these and many other animals found in our country. Wildlife does not only mean "game" animals which have economic value. Wildlife refers to all

Wildlife is one of Botswana's most valuable renewable natural resources. This resource is important in several ways. In economic terms it is worth more than R6 million annu-

ally to the people of Botswana. The meat from wild animals provides more than 50% of the meat eaten in rural areas. The skins from the 50 000 or more animals hunted each year supply the rural mat and kaross making industry as well as the trophy and game skin processing industry. Licences and fees from visiting hunters and tourists earn important revenue for Botswana.

One of the major duties of the Department is the management of Botswana's system of National Parks and Game Reserves. These areas have been set aside for the preservation of animals and their habitats. No economic development or hunting is allowed in these areas. However these areas are important for the education and enjoyment of people, for scientific research, as a reservoir of game animals that are hunted outside the parks and reserves, and they are the major basis of attraction for tourism in Botswana.

Wildlife has scientific values

Wildlife also has scientific and aesthetic values, and it is an important part of our natural heritage. Botswana receives many benefits from its wildlife. This resource cannot be taken for granted. With the pressures of National Development, wildlife can only be conserved through wise management.

The purpose of the Department of Wildlife and National Parks is to preserve and manage Botswana's wildlife resource. This requires such diverse activities as: issuing hunting licences, enforcing game laws, management of National Parks and Game Reserves as well as controlled hunting areas, scientific research, and conservation education. This Department is under the Ministry of Commerce and Industry and has its headquarters in Gaborone. Because

Hunting

Hunting is presently one of the most important uses of wildlife. Subsistence hunting provides large quantities of meat for the rural people of Botswana. Since many of the poorer people are dependent on hunting for both food and income, inexpensive tribal and state-land hunting licences are available. Animals commonly hunted for subsistence are the wildebeest, harlebeest, springbok, impala, warthog, steenbok, and duiker.

The Government realizes only a small amount of money from subsistence hunting. However, recreational hunters kill relatively few animals but provide considerable revenue in the form of higher licence fees and export duty on their trophies. Sport hunters are interested in trophies from such animals as lion, sable, roan, or a supply of biltong.

Harvesting of wildlife and a renewable resource

Since hunting is the harvesting of wildlife, it may be considered a form of agriculture. Wildlife is a renewable resource, but like other natural resources, such as grass, it can be destroyed by overuse. Therefore hunting is regulated through: the issuing of licences (licence fees vary depending on the animal), the establishment of regional quotas on animals, restrictions on hunting rate animals, and prohibiting the use of snares and traps to capture animals. The establishment of a hunting season when animals are not breeding gives additional protection to our wildlife.

Continued on next page

From previous page

The economic use of animal skins and other durable parts such as horns, hoofs, tails, etc., is known as trophy dealing. This involves a variety of businesses from curio-making to large scale tanning factories. Curio making (the preparing of mats and karosses) is an important rural industry, especially in the Kalahari.

Research

These mats and karosses are either used locally or sold to trophy dealers for resale to tourists. Large numbers of raw skins from rural Botswana are also sold to trophy dealers.

Proper management of our wildlife is possible only through an understanding of this resource. Scientific research aids in our understanding of wildlife. Employees of the Department of Wildlife and National Parks, and visiting scientists, cooperate on the study of wild animals, their populations, movements, behaviour, as well as the habitats in which these animals live. Present research includes ecological studies of the buffalo, elephant, and springhare. In the near future studies will begin on the ecology of the Okavango Delta, and the large mammals of the Kalahari.



Wildlife Education — Secondary school students on a field trip to a game reserve learn to identify animals by their spoor.



Labour officer B.E. Maswabi (standing) and K. Gabonewe (seated), secretary of Botswana Trade Union Education Centre.

Botswana in brief

—Daily News correspondents—

MAHALAPYE: Forty-six applicants have been allocated residential sites by the Mahalapye Subordinate Land Board. The board chairman E. Mabua said that there has been poor response to applications in his area due to the fact that many people did not know the board's address. He said such applications should be directed to P.O. Box 10 or Phone 23, Mahalapye. The board is accommodated in the Agriculture offices.

MOCHUDI: Lady Mitchison School PTA has been described as a "not hard working association" by the headteacher of the school, S.M. Sebegi. Since its formation last year the association has not held a single meeting, according to him. He has tried in vain to request parents to come together for discussions about the development of the school.

The headteacher said he had given up the PTA and had decided to discuss things with his staff to stamp out some of problems faced by the school.

MOCHUDI: A meeting to discuss the erection of the long-awaited Morwa village community centre was held by all voluntary organisations of Morwa village. Councillor J.M. Modisa encouraged residents to join hords and put up the building.

He said all clashes should be put aside to clear the way for development. Mr Modisa was referring to some club members who protested that they were not properly approached about the project.

It was finally agreed that a new committee be formed with representatives of all clubs to make plans for the projects. The Morwa branch of Botswana Council of Women offered to contribute over R50 towards the project and the Community Development Department has promised to give door and window-frames.

SELEBI PIKWE: A R3 000 clinic in Botshabelo village will be ready for use by the middle of April. The clinic will offer facilities like all other clinics in the country, including treatment for expectant mothers. It will be staffed by three medical officers. The clinic is being put up through joint efforts of the Selebi-Pikwe Township Authority and the local branch of Lions Club. The authority has finished installing taps in Botshabelo to relieve residents of the one-mile journey across a very busy road to fetch water.

UNITED NATIONS: The U.N. Apartheid Committee has approved a report saying recent parcel-bomb assassinations of two black South Africans living in exile had injected "a new and dangerous element in an already deteriorating situation."

The report said the deaths of Mr Ongkopotse Tiro, former acting secretary-general of the South African student organisation, and Mr John Dube, deputy representative of the African National Congress, were a willful attempt by proponents of racism and apartheid to assassinate the members of liberation movements in exile.

The South African Government has categorically denied it had anything to do with the parcel bombs, which slew Tiro at Kgale in Botswana on February 1, and Dube in Lusaka on February 12.

The apartheid committee, whose report will go to the General Assembly and the Security Council, also said it hoped the council will take up the matter urgently.

UMTATA, South Africa: Paramount Chief Kaiser Matanzima, leader of the Transkei African homeland, said today that so-called freedom fighters had no part to play in freeing anyone in South Africa. Chief Matanzima told the Transkei Legislative Assembly here that he preferred "to remain cool-headed rather than succumb to emotional calls from irresponsible elements for throwing off the so-called yoke of white oppression."

He said Pretoria's policy — under which the various homelands are being led to eventual independence — was healthy and had opened up new avenues for African development.

"It should be clear, therefore, that these so-called freedom fighters have no part to play in freeing any body in South Africa," he said.

swana's pool partners, Zambia Airways and South African Airways. If, as is anticipated, traffic continues to expand it is likely services will be increased still further before the end of 1974."

The new flights follow this year's agreement between Zambia and Botswana on bilateral air services.

Visit on aid

Mr D.J. Kirkness, Under Secretary in the British Ministry of Overseas Development, is visiting Botswana from 2 to 8 April. Mr Kirkness has responsibility in the Ministry of Overseas Development for Britain's aid to countries in Africa.

He will discuss the country's progress and problems, and to see some British aid projects. He is meeting Ministers, Government officials and others in Gaborone, and he will also visit Serowe, Selebi-Pikwe and Francistown.

MAHALAPYE: Mahalapye United Hotspurs Football Club elected its office bearers for the current year during an annual meeting held recently. B.P. Morake was elected president, K.N. Mosiakgabo (vice-president) C.M. Mpaku (manager), M. Mogalakwe (vice manager), F. Lesetedi (recording secretary), Patrick Pula (organising secretary), A.B. Lesujane (chairman), B. Kruger (treasurer) and six additional members.

After the elections the manager, Mr Mpaku said he hoped for greater improvement this year than the previous year. Hotspurs have however qualified for the Champion of Champions finals which are still to be played. He urged members to take an active part in the activities of the club.

Rollers elect office bearers

Township Rollers elected new office bearers on March 28 at a meeting at which many issues were considered.

Re-elected they are: Mokhutshwane Sekgoma, Manager; G.C. Motlhaseli, secretary; A.J. Pontsho, chairman; M. Mmipi, treasurer.

O. Mmopi was elected publicity secretary, F.C. van Vuuren, vice-manager; Shaiashala Mpopo, trainer; J. Mgorosi, vice-secretary.

According to the chairman A.J. Pontsho other officers like Captain Mothelesi and a coach still to be chosen by the players and committee in a joint meeting.

RNW A. 173 1974 No 66

Serowe on road to development

The Ministry of Local Government and Land's accelerated rural development programme will at least partly alter the structure of the villages in Botswana. Serowe, the biggest village in the country, seems to have plans that will change it to a suburban area.

By Action Ndaba

shopping area, extending from the Lady Khama Centre to the present supermarket for the time being. It will extend westwards as time goes on.

The Central District Council will build a public market in the mall, and there also will be business premises, among which will be shops and banks. Mrs Binns said that already six applications have been received by the council for business enterprises.

Batswana businesspeople will be encouraged to take up business premises in the new mall, she added.

The main road in Serowe will be tarmacked and the bend at the present shopping area will be straightened.

The mall and straightened road will force some residents of the Rakgomo and Sekgwana wards to move. However, council architect Kevin Riorden said they will be compensated and already a new site has been reserved for them. It is situated in the southern part of the village.

Mr Riorden said that the residents agreed some time ago that they would vacate the area for development purposes. Construction of the mall will start next year. Surveyors are already at work on roads that have to be gravelled.

And work is already going ahead on the extension of the Lady Khama Centre as part of the whole village plan structure. Other construction will include new police headquarters, a library and athletic facilities.

The Acting Central District Council Secretary, L.M. Sebina, said that the changes will not interfere with traditional characteristics; kgotlas won't be moved, for instance. Changes will only be sight modifications, he said.

There is a proposal to have the Central Primary School which is situated near the council offices, converted for use as council offices because the nearby area of commercial expansion could have an adverse affect on it as a school.

Chief Education Secretary M.V. Pilane said that as many children as possible will have to be absorbed into other schools.

Mrs Binns said that the concept of an administrative block could be of benefit to other centres in the district like Mahalapye and Palapye where a better working relationship between council officers and those working for government is necessary.

Serowe's main road is to be straightened at the shopping centre, in middle of composite photo above by Phagane Tiadi. Market (below) will be relocated in expanded shopping mall.



Shell Coal crew tend drill at Kgaswe location near Serowe.

Shell strikes coal even when drilling for water

A bulldozer works endlessly to push back the bush at Kgaswe, about 20 metres south of Serowe. The stretch of road it cuts, half a dozen men cut down the stumps it has left.

By Action Ndaba

Other sites will be near Molepolole in the southern region and near Foley in the north. Altogether the three regions contain about 14 000 square kilometres, with the southern region the biggest at about 9 000 square kilometres.

The company early this year signed a concession with the Botswana Government to search for coal and determine its quality and quantity and the most economic way of exploiting it, be it underground or opencast mining.

Already the company has drilled a hole for water for the camp and is busy on another hole, this time for coal.

Geologist Dr Hannes Richter said

Botswana's coal potential is great. In fact, Shell struck coal at depths of 130 and 210 feet when drilling the water hole.

Dr Richter said that coal seams also appear to be larger than in Europe, where there are seams of as little as one metre.

He said the team will have to work on each region for a period of up to six months in order to produce good results from their investigations.

At the moment there is only one drilling rig and this delays the advancement of the whole operation. But more rigs are expected in the near future, which will allow five rigs or more to be working at one time in the same region.

Dr Richter said that, even if it is not successful in finding quality coal ("although this is unlikely"), the Shell team will have spotted areas of available water resources in the country.

About 20 Batswana and the company's staff are working in the Kgaswe region.

NATIONAL DEVELOPMENT PLAN 1973-78

PART I: LIST OF CONTENTS

FOREWORD	ix
INTRODUCTION	xi
CHAPTER 1: THE COUNTRY	1
(i) Physical Features	1
(ii) The Population	3
(iii) The Economy: Structure and Projected Growth	19
CHAPTER 2: REVIEW OF PREVIOUS PLANS	29
CHAPTER 3: THE STRATEGY FOR DEVELOPMENT	37
CHAPTER 4: FINANCE FOR THE PUBLIC EXPENDITURE PROGRAMME	49
CHAPTER 5: RURAL DEVELOPMENT	57
CHAPTER 6: URBAN DEVELOPMENT	69
CHAPTER 7: MANPOWER, EMPLOYMENT, EDUCATION AND LABOUR	85
(i) Manpower and Employment	85
(ii) Primary Education	99
(iii) Secondary Education	108
(iv) Higher Education	117
(v) Vocational and Technical Education	124
(vi) Non-Formal Education	133
(vii) Trade Unions	135
(viii) Labour Department	136
CHAPTER 8: WATER	141
CHAPTER 9: AGRICULTURE	159
CHAPTER 10: MINERAL DEVELOPMENT	209
CHAPTER 11: WILDLIFE AND TOURISM	229
(i) Wildlife and National Parks	229
(ii) Tourism	232
CHAPTER 12: COMMERCE AND INDUSTRY	241
CHAPTER 13: PHYSICAL INFRASTRUCTURE	253
(i) Transport: General Review	253
(ii) Roads	255
(iii) Road Vehicles and Road Transport	260
(iv) Central Transport Organisation	262
(v) Air Services	264
(vi) Civil Aviation	266
(vii) Railways	266
(viii) Posts and Telecommunications	269
(ix) Electric Power	275
(x) Building Industry	282
CHAPTER 14: SOCIAL INFRASTRUCTURE	285
(i) Health Services	285
(ii) National Library Service	294
(iii) Community Development	296
(iv) Youth	300
(v) Sports	302
CHAPTER 15: GOVERNMENT SERVICES	303
(i) Statistics	303
(ii) Information Services	304
(iii) Broadcasting	305
(iv) Department of Surveys and Lands	306
(v) Department of Town Planning	308
(vi) Crime in Botswana: Review	308
(vii) Police	309
(viii) Administration of Justice	312
(ix) Prisons	313

Note: Underlined titles are the seven 'Development Interest Indicators.'