A COMPARATIVE STUDY OF THE VOCATIONAL INTERESTS OF BLACK AND WHITE SCHOOL-LEAVING BOYS IN SOUTH AFRICA.

Thesis

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ABSTRACT

This is an exploratory study to compare the vocational interests of Black and White school-leaving boys in South Africa. The aim of the study is, first, to test the hypothesis that the samples hold similar stereotypes of vocations and that they structure interest fields in a similar way; and, second, to test the hypothesis that the vocational interests of the samples are different.

The samples comprise four hundred and ten matriculants from schools in Johannesburg and Soweto. The methodological requirements for conducting cross-cultural research are adhered to as far is practically possible.

The main findings provide general support for the hypotheses. It is found that the Black and White samples have similar vocational stereotypes and that they structure interest fields similarly, and in a way which closely approximates the reported structures characteristically found in Western culture. The Black and White samples differ in their vocational interests, although there are also similarities.

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1. INTRODUCTION

The Black people in South Africa are being absorbed into the economy on all levels. This trend is likely to increase as economic pressures highlight the importance of improving productivity by resourceful utilization of manpower.

One issue that is often overlooked is that the Black people are having to adapt to Western cultural norms and value systems. This often causes confusion and resentment on the part of the Blacks, and the subsequent development among Whites of negative attitudes towards them. It is therefore necessary to make a careful study of cultural differences, in order to facilitate the transition of the Black groups to Western culture. The resulting improvement in the self-concept and vocational adjustment of the Black, and in interpersonal relations across the colour line, would be among the benefits accruing from studies of this nature.

An increasing number of career possibilities is coming within the reach of the Black school-leaver. The result is a growing need for vocational counselling services for this section of the population. One way in which their cultural adaptation could be facilitated, would be by developing these services.

It is only recently that research in the field of vocational counselling for Blacks has been initiated. This has been done on a relatively small scale, and mainly in the field of ability testing. Very little is known about the Black man's needs and aspirations in a Western technological environment. Basic issues such as the way he conceptualises work have been largely neglected. The result has been a tendency to utilise Western models of behaviour in assessing this population group, and either to ignore the possible effects of social and cultural differences, or to assume an equivalence to the Western norm.

Research on vocational choice and interests is of fundamental importance for the development of counselling procedures. This field has been severely neglected on the local scene. It was against this background of the rising importance of vocational counselling for Blacks in South Africa, that an exploratory study was undertaken to compare the perception of vocational interests by Black and White school-leavers, and their vocational preferences. It was hoped that some basic insight would be achieved which could be of practical use for vocational counselling - especially in its application to the Black population.

2. INTERESTS: DEFINITION AND THEORETICAL CONSIDERATIONS

2.1 Introduction

In a review of influences on the development of a concept of "vocational interests" Gaddes (1959) makes the point that advances in theory in any scientific field usually rely on the development of measuring instruments and on theories in related fields. He adds that because of the dynamic and psychologically complex interaction between the individual and his environment, an understanding of interests and the way they develop must take cognisance of all possible sources of information, for example, the psychometric, clinical and sociological.

As background to the present study some theoretical considerations are presented: the nature of interests, their role in vocational choice theory, and the way in which they are grouped.

2.2 Definition of Terms

Super's (1949) differentiation of interests into four types has, over the years, proved helpful to the vocational psychologist, in that it has provided a practical and conceptually appropriate means for approaching the study of interests. Prior to Super's synthesis and ordering of the concept, there were many and varied definitions. The result was to hamper progress in the development of theory in this field (Carter 1940, Darley and Hagenah 1955, Crites 1969).

Super's differentiation has continued to be useful despite developments in the field over the last two decades, and the definitions in the present study were based upon it. The four types which Super defines are: expressed interests, manifest interests, tested interests and inventoried interests.

Expressed interests are verbal professions of interest in objects, activities, tasks or occupations. The individual simply states whether or not he likes or dislikes something. For example, a girl may say that she is interested in music or nursing.

Manifest interests are expressions of preference for activities or occupations by active participation. Thus a boy who participates actively in the drama club at school is said to be manifesting literary and artistic interests.

Tested interests are those measured by objective tests of knowledge in a particular subject. The assumption underlying tested interests is that someone who has an interest in a particular subject or field is likely to accumulate information about the topic. Thus interest in astronomy should cause someone to read about and retain more information on this topic than others who do not have this interest.

Inventoried interests are those which have been ascertained on the basis of responses to standardised questionnaires. They are essentially subjective self-estimates. Individual preferences for particular activities or vocational fields are expressed as scores - often in the form of a profile. Item formats include positive/negative and order-of- preference responses.

Expressed and inventoried interests can be more readily assessed than the others and provide the researcher with the most appropriate data. Very little work has been done on manifest and tested interests mainly because of the many difficulties encountered in assessing them. Thus for the present study only expressed and inventoried interests are assessed. The following definitions, based on Super's differentiation apply:

Expressed vocational interests are an individual's professions of preference for particular occupations or occupational fields.

Inventoried vocational interests are subjective self-estimates of an individual's preferences for particular occupations or occupational fields, as measured by an interest blank where the pattern of interests is reflected by scores based on the ranking of preferences.

2.3 The Role of Interests in Vocational Choice Theory

Developments in the field of vocational psychology can be roughly categorised into three "eras" (Crites 1962). These are the "observational", the "empirical", and the "theoretical". During the "observational era", (from the turn of the century to the first world war) the "trait and factor" school of thought was born. (Parsons 1909). The essence of their thinking was that the key to successful occupational choice is the matching of an individual's abilities and interests with an appropriate vocation.

The "empirical era" between the world wars was the inevitable result of the earlier thinking on the subject. The necessity to develop objective methods for appraising the attributes of man and the world of work was recognised. In addition to the construction of a wide range of ability tests and work evaluation methods, this era saw the initiation of interest measurement, with the emphasis on the production of standardized interest inventories (Thorndike 1912, Kelly 1914, Yoakum 1921, Miner 1922, Ream 1924).

It was Strong in 1927 who made the first enduring contribution to the field of interest measurement with the development of his interest blank. A feature of his work was the introduction of empirical keys for different occupational fields and research into the reliability and validity of these keys. He also conducted longitudinal studies of interests. G F Kuder produced his Preference Record in 1934. Whereas Strong measured interests by eliciting patterns

of ordered preferences and comparisons. Kuder used the forced-choice method and obtained measures of the relative strength of interest within an individual.

Despite their age these tests have endured through the years and remain amongst the most popular of interest measures. They were, however, developed from the original "trait and factor" point of view, and thus contributed minimally to the development of vocational choice theory.

Since the time of Strong and Kuder a wide range of instruments for the assessment of interests has been developed. Some have evolved from specific theoretical orientations (Holland 1959, Rothwell-Miller 1968), while others have been based on the original "trait and factor" approach (Thurstone 1947, Lee and Thorpe 1956). These have become an integral part of the vocational counsellor's range of counselling aids.

The greatest advances in vocational psychology and vocational choice theory have been made since the second world war. Crites calls this period the "theoretical era" as it was characterised by the formulation and testing of hypotheses and theories. The determinants of vocational choice were seen in a much wider perspective than in the past. The importance of many psychological, sociological and economic factors were recognised. Interest had come to be regarded as one determinant of choice.

Osipow (1968) distinguishes four theoretical approaches to career development theory. He acknowledges oversimplification, and a great amount of overlapping.

The trait-factor theories, as intimated, stimulated some of the major contributions to interest testing. This theoretical orientation has been largely absorbed by other approaches, and there are few, if any, pure trait-factor adherents today.

The second approach, most prominent in the work of Ginzberg (1951) and Super (1957), is the self-concept theory. Super's theory, for example, evolved from the self-concept theory which was being expounded by writers like Carl Rogers and Bordin in the early nineteen forties. It was also influenced by the developmental psychology of Charlotte Breuhler, who viewed life as a series of stages through which individuals pass - each stage presenting the individual with different life-tasks. Super suggests that people choose careers which they feel will provide the most opportunity for implementing their self-concepts. The course of action selected depends on the individual's stage of life development. According to Super, interests are an aspect of the individual's make-up. Implementation of the self-concept (i.e. the developing of a vocational preference and executing a plan of action) must through necessity take interests into account.

A third approach incorporates personality theory as represented by the work of Roe (1956) and Holland (1959). Holland's theory is not unrelated to that of Super, although it has a different emphasis. He conceptualises career choice as being an extension of personality, and work as providing man with a context in which certain personal behaviour styles can be expressed. He based his theory on his observation that people tend to view the world of work in terms of occupational stereotypes, which are drawn from the individual's experience. Crites (1969) defines an occupational stereotype as:

> "..... the way in which persons perceive occupations and the attributes they ascribe, more or less accurately, to their members." (p.54)

Holland feels that a person's like or dislike for a particular occupation is a projection of his preferred style, and derives from his stereotype of the occupation. His test (the Vocational Preference Inventory) was constructed on the rationale that people with certain personality characteristics are likely to make successful career adjustments within the context of a particular group of occupations. Interests, in Holland's theory, are therefore among the many variables which constitute a personality type or, to use his words, "modal orientation".

Other psychologists have also drawn attention to occupational stereotypes as an influencing factor in career choice and to their role in the development of interests (Bordin 1943, Dipboye and Anderson 1961, Fabian 1963, Banducci 1970). Osipow (1968) referring to studies of occupational stereotypes, comments as follows:

> "These investigators showed, by different methods based on different samples, that vivid occupational images are held by the majority of youth in the process of making entry decisions about careers. Their findings suggest very strongly that these stereotypes provide a large basis for the kind of occupational decisions that are subsequently made." (p 213)

Anne Roe, like Holland leans heavily on personality theory. She emphasises the relationship between genetic factors and childhood experiences, and vocational choice. Interests develop from the child's experiences and the behaviour patterns and attitudes of the parents. According to Roe (1956), the child develops certain orientations (e.g. social, cultural, organizational) for which he will attempt to find vocational expression.

> "It would appear that such experiences (i.e. life occurrences) are major factors in the development of interests and in the choice of a career." (p 117)

The fourth approach is the sociological one, which is based on the premise that factors beyond the control of the individual (e.g. environmental circumstances) make the most significant contribution to career choice. Miller and Form (1951), Caplow (1954) and Blau (1956) assume this point of view in their writings.

While Blau and his associates (1956) do not propose a theory of occupational choice, they do describe a conceptual framework as a basis for systematic research. Briefly, they submit that a double chain of events determines occupational choice and entry. The one chain includes the biological factors (e.g. native endowment) and psychological factors (e.g. personality development, sociopsychological attributes) which characterise the individual and thus mould his interests. The second chain includes factors in the environment which can affect choice. These include labour demand and policies, opportunities for mobility, and cultural conditions. The interaction of the two chains determines the development of the individual and by so doing influences his occupational choice. Choice is ultimately the result of a series of compromises which the individual makes as his experiences affect his expectations and preferences. Interests in this context are perceived in dynamic terms as they are an integral part of the occupational choice process. While they develop within the individual, their ultimate expression is determined by a wide range of factors, both inherent and environmental. The appeal of Blau's point of view lies in its eclectic yet extensive conceptualization of the determinants of occupational choice.

One factor which characterises most of the theories of occupational choice which have been described, is the relative lack of commitment on the part of the theorist to the role of interests in choice. They do, however, attempt to place interests into perspective in career choice theory. In the main, the integration of the role of interests into theories has not been achieved in an entirely satisfactory manner (Roe 1956 and Osipow 1968), although all theories do acknowledge them as a determinant of vocational choice.

2.4 The Grouping of Vocational Interests

It is generally accepted that occupations can be differentiated in terms of interest content (Roe 1956, Crites 1969). This means that people who are engaged in an occupation have different likes and dislikes to people in other occupations. This is the rationale on which many interest inventories have been constructed. However, in order to bring some structure to the wide range of interests and thus render measurement and diagnosis more practical, the practice has been to group interests into a limited number of categories or dimensions. Some psychologists have relied on the subjective identification of the groups (e.g. Kuder 1934). Others have established the groups empirically by means of different statistical methods (e.g. Strong 1943, Holland 1966).

The question of the universality of the groupings as defined and measured by the different inventories has been the subject of a fair amount of research. For example work has been done on comparing the categories in the different inventories in order to determine both the extent to which they are similar and the most parsimonious way of grouping them. A number of studies to illustrate the work being done in this field is described below.

One of the earliest studies on the grouping of interests was a factor analytic study by Thurstone (1931) on the Strong Vocational Interest Blank (SVIB). He extracted four factors, namely, science, people, language, and business. Strong did a similar study in 1943 and extracted essentially the same factors with two additions. A bipolar factor which he called things vs people, and a breakdown of the business factor into system and contact.

In 1950 Cottle investigated the dimensions underlying the SVIB, Kuder Preference Inventory and Bell Interest Inventory. The emphasis of the study was on dimensions common to all three inventories. The five major interest factors he identified were: work with things and objects vs people and ideas; business contact vs scientific-technical activities; routine, concrete and organised work vs abstract and creative work; social

situations vs non-social; desire for prestige and esteem vs tangible or productive rewards.

Guilford, Christensen, Bond and Sutton (1954) identified eight interest fields in a study done on a sample of Air-Force officers and enlisted men. These were: scientific, social welfare, mechanical, outdoor, clerical, business, aesthetic-expression, aesthetic-appreciation.

Holland (1959, 1966) postulated six of what he called " occupational environments", which accounted for occupational variations in American society. These he called: realistic, intellectual, social, conventional, enterprising and artistic. Holland's classification was developed by grouping occupations on the basis of stereotypal similarities, as commonly perceived by Americans. They are therefore not characterised solely by interest content, but also by personality factors which influence the development of stereotypes.

Cherry (1974) using the Rothwell-Miller Interest Blank did a component analysis on the responses of over 5 000 British school children. She extracted three components. These were: clerical and administrative occupations vs action; arts vs sciences; and ambition. In this she differentiated between occupations requiring a number of years of schooling and those which could be entered upon leaving school.

Super (1949), and Super and Crites (1969), attempted to classify the basic vocational interest dimensions as postulated by Thurstone, Allport-Vernon, Lurie, Strong and Kuder. The following table reflects the dimensions described by the different writers, and Super's classification.

Table 1

Interest Factors Revealed by Six Studies and Logical Synthesis (Super and Crites p. 318)

Thurstone	Allport-Vernon	Lurie	Strong		Kuder	Synthesis
			Unrotated	Rotated		
Science	Theoretical	Theoretical	Science	Science	Scientific	Scientific
People	Social	Social	People	People	Social-Service	Social-Welfare
Language			Language	Language	Literary	Literary
			Things vs People	Things vs People	(Mechanical)	Material
Business	Economic / Political	Materialistic	Business	System	(Clerical) Computational	System
				Contact	Persuasive	Contact
	Aesthetic				Artistic	Artistic
	Religious	Religious				
					Musical	Musical

Super's work revealed agreement amongst writers on the nature of most factors. The characteristic feature of all the studies which have been referred to is the limited number of similar interest groups which are described.

Robinson, Athanasiou and Head (1969) point out that the identification of interest fields or factors provides information concerning the major differences between occupations "at least as the differences are defined by the item content of the most popular occupational interest inventories" (p 423). However, very little, if anything, is known about the contiguity of occupations. Information in this regard would be of special value to the counsellor in recommending alternative occupations. Since Robinson and his associates made their observation, a few important works on the contiguity of interest fields have appeared. An earlier contribution which must, however, be mentioned, is that of Roe (1956), which has the contiguity of occupational groups as a fundamental aspect of its rationale.

Roe describes eight occupational groups according to primary focus of activity. These are similar to the interest factors which most writers identify. In her model, the groups are arranged in such a way that the more closely related ones are placed contiguously. She thus arranges her groups in a circular ordering - group 1 being contiguous to group 8. Her groups, presented in order are: service, business contact, organisation, technology, outdoor, science, general culture, and arts and entertainment. By inspection it is evident that the groups involve varying degrees of contact with people - from the service and entertainment groups to the technological and scientific.

Robinson and his associates, themselves, did a number of studies in which they portrayed maps of occupational similarity in two dimensions, and thereby accounted for most of the variance in a number of interest inventories. Analysis of the SVIB resulted in the following dimensions:

'business and social orientation (doers) contrasted with artistic and scientific outlook (thinkers); object orientated occupations constrasted with people-orientated occupations; and business and commercial orientated occupations contrasted with social and abstract orientations'.

Cole and Hanson (1973) reported a similar though more extensive study of the internal structural relationships of the scales from the Strong Vocational Interest Blank, Kuder Occupational Interest Survey, Holland's Vocational Preference Inventory, the Minnesota Vocational Interest Inventory and the new American College Testing Program Vocational Interest Profile. A comparison of configurations of the scales from all the inventories is found to be similar to, and to conform to, the circular configurations of interests which Roe and Holland propose. Cole and Hanson argue that the similarities between the proposed categories of occupational interests, and the relations amongst these categories (e.g. Roe 1956 and Holland 1966) suggests that "..... the inventories may be sampling interests from a common underlying interest domain" (p 59).

Very little has been done on stereotypes as a possible basis for the structuring of interests. Kuder (1960) and Holland (1966) did, however, suggest that stereotypal similarities were fundamental to the content of interest categories.

It appears that in general there is close agreement amongst workers in the field of interest assessment on the way in which they differentiate among major interest fields, and the way in which they relate them to each other.

2.5 Summary and Conclusion

No one theory of vocational choice has emerged as the most comprehensive in the field. There appears to be a move towards a more eclectic approach to the subject. While most theories acknowledge that interests play a part in vocational choice, their actual role is still largely ill-defined. It is generally accepted however that the interests are determined or influenced by a large number of factors. These are biological and psychological on the one hand, and environmental on the other.

Studies on the grouping of interests have revealed mostly standard differentiations which can be meaningully described in relatively parsimonious terms. While the concept of stereotypes in the structuring or grouping of interests has not been given much attention, a number of writers have suggested that the homogeneous categorization of interests is characterised by stereotypal similarities.

3. COMPARING INTERESTS CROSS-CULTURALLY

3.1 Introduction

This discussion on cross-cultural research is presented in order to convey the rationale on which the present study is based.

In the broadest terms, cross-cultural research is concerned with behaviour which is conditioned by cultural factors. The main objective is to compare the behaviour of different cultures. Brislin et al (1973) suggests the following definition of cross-cultural psychology which they compiled from an extensive review of a large number of studies in the field.

> "Cross-cultural psychology is the empirical study of members of various culture groups who have had different experiences that lead to predictable and significant differences in behaviour." (p 5)

Brislin and his colleagues further indicate that in the majority of studies of a cross-cultural nature the groups speak different languages and are governed by different political units.

Very often studies which are, in fact, intra-cultural, are included within the cross-cultural context as their concern is with the effects of culture on a psychological mechanism (Frijda and Jahoda 1966, Baran 1971).

In the present study, Brislin's definition applies in that two different culture-groups are compared. For the purpose of the study, "culture" will be understood in terms of Kroeber and Kluckholm's (1952) definition;

> "Culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas and especially their attached values; culture systems may on the one hand be considered as products of action, on the other as conditioning elements of further action." (p 180)

Biesheuvel (1958) distinguishes three main objectives in cross-cultural psychology. First, he sees it as a means to an understanding of the behaviour of people from other cultures. Second, it is a way of determining the degree to which psychological theories and concepts are universal. The third objective of cross-cultural psychology is to study the degree to which behaviour is modifiable. Here the emphasis is on establishing which environmental factors significantly influence behaviour; and on determining the magnitude of the effects.

The second aim is of most relevance to the present study. As Biesheuvel states, it is within the context of Western culture that scientific psychology developed, and within the Western frame of reference that hypotheses were formulated. Cross-cultural studies thus highlight differences between cultures and often necessitate a reformulation of Western concepts.

In work of this nature one question would be whether behaviour in the non-Western cultures can be accounted for in terms of the theories developed within the Western context. For example Piaget's concept of the "principle of conservation.", has been widely studied cross-culturally. By conservation he means that the properties of objects do not vary, despite rearrangement of their observable characteristics. According to Piaget, without

conservation there can be no rational thought. Cross-cultural experiments have, for example, been carried out on the conservation of "substance" and "weight" (Georgie-Hyde 1970).

McClelland's need achievement theory has also been widely studied. For example, Rosen (1962) studied family structure in relation to socialisation and achievement motivation in Brazil.

It can be seen, therefore, that the study of interests cross-culturally falls within the scope of the broader issue of the universality of Western concepts. It is important to establish the extent to which the Western concept of interests is universal, and whether it can thus serve as a basis for vocational counselling among non-Western peoples.

The body of this chapter contains a discussion of relevant theoretical and methodological considerations and a review of work which has been done in this field. The main issues concern the comparability of behaviour, the problem of assuring functional equivalence of behaviour and equivalence of test materials, and the procedural requirements for conducting cross-cultural research.

3.2 Theoretical and Methodological Considerations

An important consideration which confronts the cross-cultural psychologist is the nature of behaviour and the degree to which it is universal. The anthropologists were probably the first to recognise the problems of comparability in this context.

> "Malinowski was most insistent that every culture be understood in its own terms; that every institution be seen as a product of the culture within which it developed. It follows from this that a cross-cultural comparison of institutions is essentially a false enterprise, for we are comparing incomparables." (Goldschmidt 1966, p 8)

Berry (1969) adopts Malinowski's point of view and translates the dilemma into behavioural terms:

> "For us as cross-cultural psychologists, the Malinowskian dilemma may be translated into behavioural terms; each aspect of behaviour must be viewed in relation to its behaviour setting (ecological, cultural and social background). It follows from this that the comparison of behaviour from different behaviour settings is essentially a false enterprise, for we are comparing incomparables." (p 122)

Berry's viewpoint is essentially one of "radical cultural relativism" in that no psychological universals across behaviour systems can be assumed.

Kroeber (1948) takes a different stand in his concept of the "psychic unity of mankind". Frijda and Jahoda (1966) and Poortinga (1971) support this notion of the universality of behaviour, and state that qualitative differences in the basic properties of behaviour do not exist, and that differences are largely dependent on the "behavioural repertoire" of a person in any particular situation (Poortinga 1972).

Baran (1971) distinguishes between psychological mechanisms or processes, and behavioural patterns, in her idea as to what is general in behaviour. She states:

> "In the context of cross-cultural work, the important distinction is that between the adaptive process and patterns of adjustment. Since individuals survive in vastly different environments, it may be safely assumed that the adaptive process is general. However, since their circumstances differ, patterns of adaptation are likely to differ. Processes may be seen as the formal component of psychological systems: logically, therefore,

> they may be expected to be universal. Behavioural patterns can be seen as the content component of the system: since they are produced within specific situations, they cannot be expected to be universal." (p 7)

Baran, by proposing that behavioural processes are universal but that the content of the behaviour is not necessarily so, offers a pragmatic solution for the cross-cultural psychologist whose main concern is with practical applications. The task of the psychologist is thus to compare the content of behaviour in different cultures. By adopting this point of view the study of the generality of, for example, Western concepts and theories relating to particular behaviours in non-Western settings, is entirely feasible.

Another problem in the cross-cultural comparison of behaviour, which is emphasised, is that of ensuring functional equivalence of the behaviours (Frijda and Jahoda 1966, Berry 1969, Poortinga 1971).

Berry (1969) defines the concept thus:

> "..... functional equivalence of behaviour exists when the behaviour in question has developed in response to a problem shared by two or more social/cultural groups, even though the behaviour in one society does not appear to be related to its counterpart in another society." (p 122)

It is evident that similar activities which have different functions in different cultural settings would be of little value for comparative research.

If one adopts Berry's cultural/relativistic point of view, the question arises of how the behaviour of members of a culture can be meaningfully described in the context of that culture and at the same time permit valid comparison between that behaviour and behaviour in another culture.

Berry utilises Pike's so-called 'emic-etic' distinction as a basis for describing a way of overcoming the dilemma. Pike coined the terms from the linguistic distinction between phonemics (the study of the sounds in a particular language) and phonetics (the universal study of language). Therefore, in the behavioural context, 'emics' are behaviours which apply in a particular society or culture, whereas 'etics' are culture-free behaviours. Berry (1969, p 123) exemplifies the distinction as follows:

Table 2

The 'Emic-Etic' Distinction

Emic Approach	Etic Approach
Studies behaviour from within the system.	Studies behaviour from a position outside the system.
Examines only one culture.	Examines many cultures, comparing them.
Structure discovered by the analyst.	Structure created by the analyst.
Criteria are relative to internal characteristics.	Criteria are considered absolute or universal.

Berry recommends that the problem of functional equivalence be overcome by entering a behaviour system by way of something external to the system (e.g. an 'emic' from the culture of the researcher or an assumed 'etic' which, it is felt may be of use in understanding the system of behaviour being studied).

He terms this an imposed 'etic' approach and strongly warns against its being used indiscriminately without consideration for the fact that it could be modified from within the culture being studied. Berry did, however, state:

> "If we enter into the system knowing that our point of entry (be it 'etic' or 'emic') is only a poor approximation to what we wish to have, then the first major hurdle is passed." (p 124)

Modification of the imposed 'etic' must, then, be made in such a way that an 'emic' description of the behaviour within the culture is ultimately achieved. The 'emic' description is made by progressively altering the imposed 'etic' until it becomes an 'emic' point of view. In this progressive manner a derived 'etic' can be established which would be valid for making comparisons between cultures. It is on the basis of the derived 'etic' that measuring instruments can then be constructed.

The value of this approach is highlighted, for example, in the study of field-dependence where studies often assume that a universal dimension is being examined, and can therefore be compared cross-culturally. Wober (1967) puts forward the argument that different cultures may, in fact, receive most of their sensory information in different modalities. Therefore, in some cultures, differentiation may occur in one modality, while in another, a quite different one may be required. The result may be different behavioural patterns in different cultures. This highlights the necessity, in terms of Berry's approach, for an 'emic' understanding of perceptual and behavioural skills developed in each society. For this understanding a derived 'etic' comparative framework can be used for making valid comparisons.

If, however, one accepts that there are no qualitative behavioural differences across cultures, or that the adaptive process may be universal yet behavioural patterns variable, the approach is somewhat different to that of Berry.

The emphasis becomes one of ascertaining that the same content areas of behaviour are, in fact, being compared or assessed by the instruments being used.

According to Poortinga (1971) a test can be regarded as being functionally equivalent if it "measures the same attributes of behaviour in culturally different groups" (p 15). He proposes that the functional equivalence of tests be assessed by means of correlational or factor analytical methods, the criterion of equivalence in the latter technique being similar factor structures for the two populations.

Another major problem which confronts the cross-cultural psychologist is that of meaning or equivalence of test materials. The problem of comparing performance cross-culturally is that a test developed in one culture may elicit "inappropriate" responses from the members of another culture. The culture-free test aims therefore to overcome this problem by measuring the universal behavioural processes independently of cultural interference. The problem in constructing a culture-free test is that it is difficult to avoid measuring the processes through behaviour which is culturally dependent.

Today it is generally accepted that the possibility of constructing culture-free tests is fairly remote (Frijda and Jahoda 1966). Instead, culture fairness is sought, in an attempt to eliminate bias in favour of one of the culture groups.

Baran (1971) argues that even striving for culture fairness has problems, as Western culture tends to be the defining one, and other cultures are therefore studied at second hand. She feels that it is preferable, in certain circumstances, to construct culture-bound tests in order to ensure conceptual equivalence.

Frijda and Jahoda (1966) similarly suggest that culture fairness can be achieved by constructing culturally 'appropriate' tests so that the psychological attribute or dimension is assessed in such a way that the medium will be familiar within the cultures being studied.

> "..... the aim is to create optimal conditions at the cost of literally identical procedures." (p 40)

The problems of this approach are first, that a sound knowledge of the cultures is required, in order to devise a culturally appropriate instrument as described by Frijda and Jahoda. Second, it is difficult to compare the cultures empirically on culture-bound instruments which, by necessity, have to be different.

While Baran's and Frijda and Jahoda's point of view is relevant, it should be borne in mind that cultures in transition are moving towards the Western norm. For practical reasons assessment in terms of Western concepts should thus be acceptable. This viewpoint is also taken by Cronbach and Drenth (1972) who state:

> "Problems arise less in assessing the person's ability to function within his own culture or subculture than in assessing the ability of the person to fit into a middle-class or Westernised culture that wishes to employ his skills and offers inducements and pressures to get him to make the transition." (p 484)

It is, however, necessary that the tests be culture-fair for the groups being studied. Van der Vlier (1972) recommends a number of ways in which culture-fairness in this context can be achieved. He suggests that conclusions about the capacities of subjects can only be arrived at from their

performance, if skills used in doing the test, but not being measured by it, are controlled in such a way as not to produce substantial variance in test scores (e.g. by overlearning). Some of these skills are physiological and relate to such factors as being able to discriminate between colours, and being able to hear oral instructions. Other skill elements are more directly influenced by environmental and cultural factors. Van der Flier mentions as examples, the ability to use a pencil, understand instructions and work with numbers.

One way of achieving fairness would be by expanding instructions and adding more practice items - thus reducing the influence of, for example, uncertainty as to what is required - a factor which could affect performance and which is not related to the attribute being assessed.

Another way of overcoming the problem of peripheral skills influencing test performance is by limiting interpretation to only a selected part of the population. Drenth (1975) for example, states:

> "Sometimes the population to be tested will be restricted in such a way that one can assume certain skills to be overlearned. Thus, in testing sixth graders, there will generally be no need to select them in advance on skills which are relevant to schoolwork. In Western societies the educational system usually justifies assumptions such as these, but in developing countries one can expect more variance in skills." (p 18)

It is submitted that the test performance of a relatively highly educated sample from a population in transition would not be appreciably influenced by peripheral skills. Once the education system has been based on Western concepts and methodology, the skills involved can be assumed to be overlearned for this section of the population.

Drenth sums up the culture-reduced test approach by stating that the intention is not to reduce all possible differences between the groups being studied. The attribute in question may be dependent upon the cultural environment, which may not be as effective in developing the particular attribute in the different populations. He states that the only condition for a culture-reduced test is that:

> "..... it should not reflect skill differences determined by cultural factors." (p 18)

A culture-fair test is thus one that is culture-reduced for the particular groups being studied.

Other problems which confront the cross-cultural psychologist tend to be more procedural in nature. Factors which should be taken into consideration in the planning and execution of research in this field, include a uniform method of task presentation, the establishing of similar rapport between respondents and tester and presenting similar motivating influences. It is important to minimise the possible effects on the respondents of these extraneous variables. Similarly it is important that the timing of the data collection be such that intervening events do not influence characteristics which would otherwise be regarded as stable. Care must be taken in the analyzing and reporting stages, as well. A centralised operation is favoured. All data should be subjected to the same statistical procedures (Fabian 1963).

3.3 A review of the literature

A review of the literature has revealed that, while there has been a great deal of work on the determinants of vocational choice and vocational interest measurement, most of it has been in the West, using Western samples. There has been a paucity of work in the cross-cultural field, very little of it with the emphasis on the comparison of interests and even less on basic concepts.

This discussion is therefore not limited to studies on the cross-cultural comparison of interests. The scope is extended to include work in the field of cross-cultural psychology with general implications for vocational counselling. Special attention is paid to studies conducted in Africa and in countries where populations are in a state of transition.

Not all studies reported are strictly cross-cultural. A number of intra-cultural studies which are concerned with the effects of culture on psychological mechanisms, is included.

Most vocational psychologists recognise the importance of the effects of cultural factors on an individual's personality, and the consequences for vocational choice. Osipow (1968) sums up this point of view as follows:

> "It seems likely that a comprehensive approach to career development theory must include the effects of the social organisation on the individual's personality characteristics." (p 214)

Rogers (1951), Patterson (1958), Williamson (1961), and Barry and Wolf (1962) argue similarly both as regards the importance of culture for a general philosophy of counselling, and within the more limited context of cultural factors as determinants of occupational choice.

Esen (1972) takes this point even further and relates it directly to the African context. In a most penetrating paper he states:

> "Modern Africa's youth need guidance. But to be effective, guidance practice must be based on philosophies that reflect African thinking. Foreign models will be inadequate." (p 792)

He continues by giving a detailed description of what he feels are the important dimensions of the African experience which should be given close attention. He recommends, for example, that the values of the African peoples be carefully studied, with special emphasis on philosophical considerations which have been found to be of relevance in non-African guidance practices. He suggests that this would involve an analysis of African viewpoints to identify essential aspects of the culture to use as a basis for an African philosophy of guidance.

Esen's recommendation is very similar to Berry's imposed 'etic' approach (see 3.2). It strengthens the argument for approaching the study of behaviour from within a culture, while accepting that it may be necessary to use as a point of departure a frame of reference from without the culture.

A further point which Esen makes concerns the role of guidance in Africa when viewed against the fact that African peoples are in a state of transition. He sees guidance in this context as trying to reconcile two seemingly conflicting states:

> ". . . . . to help people consolidate their roots in the traditions that give them their identity, and yet at the same time help them move without guilt and excessive conflict toward new perceptions of themselves in a fast changing society." (p 797)

The general theme of Esen's writing is apparent in the work of a number of psychologists. As far back as 1940 Carter appreciated the part played by cultural factors and the transitional process in influencing interests and adjustment to the Western world of work.

> "In the process of trying to adjust to a complex culture, the individual finds experiences which offer some basis for the integration of personality. The pattern of vocational interests which gradually forms becomes closely identified with the self . . . . . The pattern of interests is in the nature of a set of values which can find expression in one family of occupations but not in others." (p 185)

Blau et al (1956) also specifically mention the possible effects of cultural values on occupational choice. Other writers who draw attention to the relevance of cultural factors in determining vocational interests, as well as in determining vocational choice, include Super (1957), Roe (1964), Brammer and Shostrom(1968) and Osipow (1968).

Kearney's (1969) findings from a study of the vocational choice and aspirations of students at the University of Papua and New Guinea led her to the conclusion that interests are not merely inherited or derived from social evaluation. They are to a large degree determined by opportunity and successful adaptation to experience which, in the case of peoples from many developing countries, can not be readily acquired. She points out that in

advanced countries children are raised in fairly stable social environments where interest patterns tend to be fixed and where there is time for try-out, and assessing of group approval of a particular choice. This developmental process facilitates the formation of a self-concept and the clarification of interests in a relatively independent way by the person himself.

The result is usually a fairly permanent pattern of interest by the time the person reaches late secondary school. However, individuals who do not have the benefit of the developmental process are often expected to clarify interests and make career decisions when they reach school-leaving age.

This further underlines the importance of counselling for people from developing countries. It is also essential to produce instruments which fall within the range of their experiences, and which provide the information necessary for making career decisions in an environment which may still be largely foreign to them.

Danskin (1957) and Murphee (1973) also adopt this point of view. Biesheuvel (1962) emphasises it strongly from his experiences in the use of tests for personnel selection and vocational guidance in Africa. He states:

> "Neither of these tests (Strong Vocational Interest Blank and Kuder Vocational Interest Inventory) commends itself for current African conditions. The range of activities presented is so inappropriate in terms of the experience and expectations of the majority of persons in most African regions, as to render the task presented by the tests quite unreal." (p 146)

A fairly consistent pattern has emerged from studies on vocational interests and aspirations which have been conducted among peoples of developing countries in Africa and elsewhere..

The most consistent finding has been the high aspiration of school-leavers. Biesheuvel (1962) reports that 83% of the African scholars in South Africa in their final year at school indicated a preference for professional occupations. Clignet (1967), in studies conducted in Senegal and the Ivory Coast also reports high aspiration among school-leavers. Tunmer (1972) reports similar findings from a study conducted among school-leavers in Soweto, South Africa, as does Perry (1970) in Durban, and Murphee (1973) in Rhodesia.

According to Murphee (1973) the phenomenon is in contrast to the results of studies in the United States and Great Britain, where children from lower socio-economic backgounds generally appear to have lower aspirations and tend to be apathetic in their attitude to education.

A number of studies report a constent pattern of occupational preferences and interests among higher secondary school students from developing countries. The medical, teaching and legal professions have been most consistently chosen (Biesheuvel 1962, Clignet 1967, Irvine 1969, Kearney 1969, Tunmer 1972, Murphee 1973).

A characteristic feature of the most preferred occupations is their social-service orientation. It is also of interest that there tends to be a general community orientation amongst developing peoples regardless of occupational preference (Danziger 1958, Bloom 1960). Tunmer 1972 reports on the popularity of clerical occupations. A notable feature in most of the studies mentioned is the limited variety of occupations chosen.

Very few cross-cultural studies on vocational interests and aspirations appear in the literature. A number of old studies have been reported, where mainly Negroes and Whites in America are compared (Witty, Garfield and Brink 1941, Gray 1944). More recent studies are those of Hager and Elton (1971) who compare Black and White college freshmen

in America, and Shah (1971) who compares the interests of Pakistani and American physicians and engineers. In these studies it has been the custom to utilise existing instruments for assessing interests. For example, the Strong Vocational Interest Blank was used in the more recent studies cited above. The process of acculturation and integration of the Negro population has been under way for a longer period of time, and at a more accelerated pace, in America than in developing countries. The implications of these studies for local conditions are therefore limited.

Geist (1968) realises the problems associated with using verbal tests for cross-cultural comparisons of interests. He developed a pictorial interest inventory which has been adapted for use in various cultures. The verbal instructions were translated and the pictures were changed to suit the cultures of the respective countries.

Probably the most relevant work for the present study is that of Meir, Sohlberg, and Barak (1973) on a cross-cultural comparison of the structure of vocational interests of Arab and Jewish students in Israel. The concern here is not where the interests of the two groups lie, but the more fundamental question of whether the interest-structures are similar. The authors base their study on the work of Cole and Hanson (1973) as described in a previous chapter (see 2.4). They make the point that while a standard structure of interests appears to have emerged from the West it is impossible to generalise the finding to all cultures. They do, however, conclude from their results that nearly the same ordering of occupational fields is found among both the Jewish and Arab samples, and that the ordering resembles that reported by Cole and Hanson.

Fabian (1963) in a study of the personal values, vocational interests and job needs of South African and American school-leavers, also finds consistent patterns of inter-relationships among vocational interests which are common to all his samples, (which are, however, all White).

No cross-cultural studies of the basic structures or grouping of interests appear to have been done in South Africa, and no studies comparing interests of the major population groups have been published in the last decade. However, a number of instruments for assessing interests have been developed locally for use with the different population groups. For example, van Vuuren (1962) and Lourens (1970) have compiled interest inventories for use with Whites, and Wolfaardt (1973) and Msimeki (1973) for use with the Coloured and Black populations.

Very little work has been done in the general field of vocational counselling for Blacks. For example, Shandling (1967), in a bibliography of vocational guidance in South Africa from 1920 to 1965, quotes only four references out of three hundred and thirteen which relate to the Black group. These are concerned with opportunities in a limited range of occupations. No work on vocational guidance practice is reported by her, in relation to Blacks. Similarly, Andor (1966), in her bibliography, which includes all countries in Sub-Saharan Africa, quotes few studies in this field. Evans, in her review of psychological research on children in Africa (1970), reports no more than one or two studies in this general field.

3.4 Summary

Theoretical and methodological considerations which confront the cross-cultural psychologist, which are of relevance to the present study, have been outlined in this chapter. The rigorous requirements for cross-cultural comparability has been described, and the problems of complying with them discussed.

A review of the literature revealed a pucity of work in the cross-cultural comparison of interests, although a number of intra-cultural studies has been conducted. A few writers have made valuable contributions on theoretical issues relating to the general need for counselling techniques to be developed and derived from the philosophies of the cultures in which they are te be practised. Very little work of this nature, either theoretical or practical, has been done in South Africa. The major point of view to have emerged is that theories and concpets developed in Western cultural settings cannot be assumed to be relevant or meaningful for use in non-Western cultures. Most relevant to the present study was a small body of evidence relating to the universality of the structure of interests.

4. AIMS AND SCOPE OF THE STUDY

The main purpose of the present study is to attempt to clarify certain basic issues fundamental to vocational counselling for non-Western groups living in Western environments. While it is hoped that some contribution will be made toward the determination of the universality of a particular behaviour, of greater relevance is the practical implication for vocational counselling.

A review of the literature reveals that there is strong agreement in the research of vocational psychologists as to the differentiation and grouping of occupations in terms of interest content. However, the most significant research in this respect has been done in Western countries, with mainly Western samples, which were assessed in terms of Western concepts. The present study was prompted by the fact that there has been limited research among non-Western samples, into the effects of cultural factors on vocational preferences and the perception of occupations.

The approach adopted has been to compare a Western with a non-Western group. In this instance, Black and White South Africans comprise the samples. Their historical origins, traditional behaviour and value systems are such that they must, for purposes of psychological research be regarded as different cultures.

The Black peoples are generally in a state of transition from traditional tribal to Western technological culture, and the sample selected for the study has been drawn from among the most Westernised sections of the population. However, traditional influences (as manifested in language, kinship patterns, music, art, and religious practice), and the unique township life-styles which have evolved (Biesheuvel 1974) still differentiate the two groups in terms of the criteria for cultural

differentiation (see 3.1). Certain requirements for the cross-cultural comparability of behaviour have had to be taken into consideration in the planning and execution of this study.

The research aim of the study may be divided into two parts:

A. To determine whether Black and White school-leaving boys similarly perceive vocational interests as assessed by an interest inventory developed according to western concepts of the grouping of occupations, and whether their structuring of interest fields is similar.

B. To study possible differences in the vocational interests of the samples.

While it is regarded as a useful exercise to compare the vocational interests of the two groups it is of more importance to determine whether these preferences have arisen from similar basic perceptions of the world of work. In Berry's terminology, this amounts to an assessment of the functional equivalence of a certain behaviour (i.e. the perception of vocational interests) in different behavioural settings.

Baran's (1971) distinction between psychological processes and behavioural patterns is regarded as the most meaningful for the study. Thus the approach which has been adopted is to compare the content areas of a certain behaviour assuming the universality of the behaviour. The problem thus becomes one of ascertaining functional equivalence of the instrument used for assessing the behaviour. Poortinga's (1971) recommendation for testing the functional equivalence of tests by means of factor analytic methods has been adopted.

5. DESCRIPTION OF THE STUDY

5.1 Hypotheses

The two research hypotheses are formulated on the basis of the findings of the literature surveys. The body of research which supports the universality of the "Western" grouping of vocational interests as well as the characteristics of the Black sample (i.e. urban matriculant), suggest a hypothesis of no difference for the first part of the study.

A number of factors suggest a hypothesis of difference for the second part of the study.
First, the cultural influences, as well as the social and economic limitations which exist for Blacks.
Second, the small number of vocational choices which are repeatedly referred to in studies conducted in developing countries.
Third, the comparatively unrestricted choice and opportunity for Whites.

The two hypotheses formulated for testing this study are thus:

Hypothesis One:
a) Black and White school-leaving boys similarly perceive vocational stereotypes as represented in the Rothwell-Miller Interest Blank.
b) Black and White school-leaving boys structure interest fields in a similar way.

Hypothesis Two:
Black and White school-leaving boys differ in their vocational interests.

5.2 The Samples

It was decided, for the purpose of this exploratory study, to keep the samples as homogeneous as possible, and to avoid introducing sample characteristics which would detract from its main aims. The study was thus restricted to Black and White boys in their matriculation year at school. Matriculants were chosen, as scholars in their final year usually have an immediate

need to make a career decision. It was felt that this group would therefore best assist the aim of the study which was to contribute to the body of knowledge needed for the development of vocational guidance techniques, at this level.

It was decided to study only males as the study of both sexes would have introduced variables outside the scope of the study. The White sample was restricted to English-speakers for the same reason.

All pupils in the matriculation classes of 5 schools in Soweto and 4 schools in Johannesburg, were included in the sample.

The White sample was chosen according to socio-economic standard, as it was felt that socio-economic factors might influence vocational preferences. In order to try and determine the extent to which this might be the case, two samples of Whites drawn from different backgrounds were selected:

a) relatively privileged (W 1)
b) middle to lower middle class (W 2).

Due to the costs involved in testing large samples and processing of data, and the inability of many schools to accomodate the experimenter, it was not possible to test larger samples of the subjects and then classify them on different criteria of socio-economic level. The method employed was thus to select schools on the basis of residential location (one of the indices of socio-economic level as mentioned by Warner, Meaker and Eells 1949). Information on two further indices mentioned by Warner et al was collected during the testing to clarify the extent to which the groups could be socio-economically differentiated. These were the bread-winners' occupational and educational level.

As socio-economic variations in the Black population are generally minimal, further differentiation of the Black group was not considered. In Soweto there is no differentiation between schools on socio-economic grounds. Furthermore, the Black population tends to be relatively homogeneous in terms of economic standard, and the numbers of individuals of comparatively high socio-economic and educational standing is small (Horrell, Horner and Hudson 1974).

5.3 The Instruments

An interest blank was administered to the subjects, together with a biographical questionnaire and a vocational need scale. The former was used to test the first hypothesis and provide additional infomation for the second. The latter were used to ascertain expressed vocational interests for testing the second hypothesis and to obtain demographic information for interpreting results. Both were administered in English. As indicated, the White sample was English-speaking. The instruments were deemed appropriate for the Black sample as all subjects had studied English up to matriculation level and at least fifty percent of their school subjects had been studied through the medium of English (Horrell and Horner 1973).

5.3.1 The Rothwell-Miller Interest Blank (R-MIB)

The Rothwell-Miller Interest Blank (R-MIB) is a verbal test suitable for group administration. It was designed as an aid for counselling scholars in secondary schools.

The R-MIB was developed in Australia in 1947 and has been used extensively and successfully in many contexts over the years (Miller 1960, 1968, Nelson 1968, Kearney 1969).

It has also been revised and improved a number of times, translated into a number of languages and modified to suit local conditions (Miller 1958, 1968).

The basic rationale of the Blank is that

> "..... many persons hold stereotyped conceptions about the nature of occupations, and base their choice of occupations on them, although such stereotypes may be relatively independant of knowledge of the occupation." (Miller, 1968 p 1)

Miller makes the point that while a person's "stereotype" of an occupation may not be accurate, what is of importance is the fact of its existence and its influence on the person's conception of that occupation.

In chapter two the grouping of occupations by interest content was discussed. It was concluded that a limited number of relatively homogeneous categories exists, each of which, is characterised by stereotypal similarity (Kuder 1958).

Miller (1968) maintains that the twelve stereotype categories used in the R-MIB provide a reasonable coverage of the occupational interests of most people. The R-MIB comprises nine cells in each of which twelve occupations representative of the twelve categories are presented. The task of the subject is to rank the occupations in each cell in order of preference, one being the most preferred and twelve the least. Theoretically, the subject ranks the occupations according to stereotypal preferences, and this ranking should be consistent for occupational categories within each cell.

The R-MIB was designed in such a way that occupations from a particular category do not appear more than once in the same position. For example, in the first cell, the outdoor category heads the list. In the second cell it appears at the bottom of the list and all the others move up one. This pattern is repeated for all nine cells.

The ranked scores of the occupational titles in each category are totalled. A subject's preference-pattern is thus reflected in the final ranking of the occupational categories.

Definitions of some of the less common occupations are presented on the reverse side of the R-MIB. There are different forms of the R-MIB for use with male and female subjects. The occupational categories (with definitions), the representative occupations as presented by Miller (1968, p 2 - 4), and an example of a cell are reflected in appendix 1.

The reliability of the instrument has been studied by test-retest and split-half methods. For example, reliability information includes findings from 4 samples (third-form male and female pupils, and two groups of engineering apprentices) who were tested and retested over a period of three months. The range of reliabilities for the individual categories was 0,33 to 0,84 with median 0,63 (Miller 1968). Split-half reliabilities on 4 samples (fourth-form-technical-grammar school pupils - male and female) ranged from 0,56 to 0,91 (Miller 1968).

The most relevant validity information is that on the instrument's construct validity, which was computed by correlating the R-MIB categories with corresponding categories on the Kuder Preference Record. Miller (1968) reports results from studies where a number of different samples were used. Results of most relevance to the present study are presented in the table below.

Table 3

Correlations between R-MIB and Kuder Preference Record (Miller 1968, p 70)

R-MIB Categories	Kuder Categories	14 - 17 year old boys Australia	4th Form boys England	4th Form girls England
Outdoor	Outdoor	0,94	0,53	0,47
Mechanical	Mechanical	0,51	0,73	0,46
Computational	Computational	0,37	0,61	0,24
Scientific	Scientific	0,53	0,68	0,77
Persuasive	Persuasive	0,81	0,77	0,58
Aesthetic	Artistic	0,21	0,66	0,80
Literary	Literary	0,47	0,58	0,78
Musical	Musical	0,59	0,60	0,82
Social Service	Social Service	0,17	0,31	0,55
Clerical	Clerical	0,42	0,48	0,87
Practical	Mechanical	0,35	0,50	0,13
Medical	Scientific	0,28	0,25	0,44

Correlations in most cases are significant. Exceptions are the low 'aesthetic/ artistic', 'social service' and 'medical' correlations in the case of the Australian boys; 'medical' and 'social service' in the case of the English boys; and 'computational' in the case of the English girls. Except for the 'medical' category, there are significant correlations between all categories for at least two of the three samples. In the absence of a 'medical' category in the Kuder, the 'scientific' was correlated with the 'medical' of the R-MIB, and this has probably resulted in the low correlations in this instance. In the absence of a 'practical' category, the Kuder 'mechanical' was correlated with the R-MIB 'practical'. In this case the correlations are generally higher.

Miller (1960) reports construct validity data on the use of the instrument with adult groups (male and female university students). The R-MIB and Kuder were correlated. The coefficients range from 0,32 (for 'social service') to 0,88 (for 'musical'). All are significant.

Miller (1968) also reports results on studies of the instrument's content validity and criterion related validity. In the former instance, matrices of intercorrelations between the scales were computed. Miller ascribed the many low intercorrelations to the independence of the scales. There were, however, exceptions. For example 'outdoor' with 'practical' for boys (0,45), 'computational' with 'clerical' for both sexes (0,59 and 0,67), 'mechanical' with 'practical' for both sexes (0,61 and 0,58) and 'medical' with 'scientific' for both sexes (0,50 and 0,42). These high correlations are probably due to overlap in job content and in interests.

Criterion related validity data based on response patterns of members of different faculties at universities and schools yielded positive results (Miller 1968). Nelson (1968) reports on the predictive validity of the instrument. He concludes from his findings on the longitudinal study of the vocational lives of 5 000 young people from the British National Survey, that the predictive validity has been suitably demonstrated. In general the validity of the instrument appears to compare favourably with that obtained for other tests of interests (Heim 1972, Jones 1972).

Features of the test which render it especially suitable for the present study are:

1. It is felt that the wide range of generally familiar occupations represented, contributes towards the tests being culture reduced for the samples. As was indicated in a previous chapter, a problem of interest questionnaires developed in Western and used in non-Western settings, is the incongruous

and, at times, foreign stimuli with which the subjects have to contend (e.g. Biesheuvel 1962). This inevitably renders any results questionable. The stimuli in the R-MIB range from factory operative and blue collar occupations through to the professions. They can thus be assumed to be within the experience of the average school-leaver. This is an important consideration in the present study where the samples come from both Western and non-Western backgrounds. In addition to its application in the West, the instrument has been used with success among the populace of Papua-New Guinea, in a study conducted by Kearney (1969).

2. The simple instructions and method of completing the test (i.e. ranking according to preference) are seen as factors contributing towards its being culture-reduced, and hence culture-fair, for the samples. Van der Flier's (1972), Cronbach and Drenth's (1972) and Drenth's (1975) statements on criteria for assuming culture-fairness of tests were borne in mind when selecting the instruments (see 3.2). It is felt that the advanced educational level of the Black sample and the fact of their living in a Western environment, would permit the assumption of overlearning of any peripheral skills which might influence performance. Also it is felt that the nature of the exercise is within the scope of their general school work.

3. The R-MIB is a group test which is easy to administer and score, and can be completed in a relatively short time-period. The range is 15 to 25 minutes. This is an important factor to be considered in the future by counsellors who may wish to use the instrument, especially in circumstances where many scholars have to be assisted and where time and facilities are at a premium.

4. The rationale of the test (see 5.3.1) renders it especially relevant to the present study.

The main limitations of the R-MIB which have to be kept in mind - especially with regard to statistical analysis and interpretation of results - is that the scores obtained are essentially ipsative in nature. This is a weakness of many interest inventories and a problem which confronts all psychologists who wish to construct an instrument to measure interests.

Ipsative scores impose a ceiling on the use of the instrument for investigations with a psychometric emphasis. However, in studying the structure of interests an indication of their qualitative nature is sought and psychometric sophistication is not the main consideration. In this circumstance the use of an instrument of this nature is considered useful especially in view of the exploratory nature of the study. Cherry (1974) in using the R-MIB in the longitudinal study of the British National Survey of Health and Development, recognised the problem of 'ipsative' scores, and demonstrated that meaningful results could be obtained, but should be interpreted with caution when subjected to statistical analyses.

5.3.2 The Biographical Questionnaire

The Biographical Questionnaire was designed to furnish a wide range of information for several different purposes. These are:

- to gain insight into certain demographic characteristics of the samples.
- to verify the index of socio-economic level on which selection of the White sample was based.
- to gauge the expressed interests of the subjects.
- to provide information which could be used for interpreting results.

The following information was collected:

Personal Data

Name, age, home language and tribe.

Home Background

Age, educational standard, and occupation for each member of the immediate family.

Vocational Interest Information

Three vocational preferences (listed in order of preference).
Indication of intention to study further.
Place of intended study.
Vocational preference of parents for children.

The questionnaire is presented in appendix 2.

5.3.3 The Vocational Need Scale

The vocational need scale was based on that produced by Rosenberg (1957). The scale consists of twelve statements, each of which describes a different job need. The task of the subject is to categorise each statement as

A - very important
B - somewhat important
C - not important

to him in his vocation. All items which are given an "A" rating have then to be ranked in order of importance. The scale appears on the biographical questionnaire (Appendix 2).

5.4 Testing and Scoring Procedure

The procedural requirements for conducting cross-cultural research (see 3.2) were adhered to in that:

- uniform method of presentation was followed.
- the testing was conducted simultaneously for the two samples and completed in six weeks.
- all scoring and analyses were performed by the writer.
- data from all samples were subjected to the same statistical procedures.

5.4.1 Testing Procedure

All subjects were tested in groups which varied in size from 20 to 60. When groups larger than 30 were tested, the experimenter was assisted by one or two invigilators who were familiar with the instruments. In order to ensure a standard presentation, the experimenter administered all the instruments himself. Black invigilators assisted at the schools in Soweto. On a few occasions they clarified in the vernacular certain factors which caused confusion. These related to the type of information which was required in the biographical questionnaire. (For example, what to fill in if an item of information was not known to the subject.)

Testing was on all occasions done in classrooms. Each subject was comfortably seated and could work independently. Lighting and ventilation was on most occasions adequate. Conditions in Soweto tended to be less suitable. On one occasion lighting was poor, and seating arrangements were not always adequate. These were unavoidable circumstances, which were however not unfamiliar to the subjects concerned.

The total testing time was approximately one hour with no intervals.

At the start of each testing session the experimenter introduced himself. The contribution being made by the subjects to the study was acknowledged and their full co-operation requested. They were told that the purpose of the exercise would be explained after the testing.

The Interest Blank was administered first, followed by the biographical questionnaire. This order was decided upon so that responses to the Blank would not be influenced by thinking put into the biographical questionnaire, particularly regarding expressed vocational preferences. The subjects followed the instructions on their answer-sheets while the experimenter read them aloud. Subjects were then given the opportunity to ask questions. The biographical questionnaire was handed out after all subjects had completed the Blank.

After the testing, the subjects were thanked for their co-operation and then given a brief outline of the purpose of the exercise. Questions raised by the subjects were then answered.

5.4.2 The Scoring of the Instruments

The Rothwell-Miller Interest Blank

The rankings of the occupational titles in each cell are translated on to a scoring schedule at the foot of the test in such a way that all titles from the same occupational category fall on the same horizontal line. The rankings for each category are then totalled. Lowest totals (i.e. highest rankings) indicate most-preferred interest categories. The totals are ranked and the interest profile of each subject is thus derived. As the ranking in each cell ranges from 1 to 12 the total of each interest category must fall between 9 and 108. The sum of all categories is thus a constant (702). This constant was used as a check-sum for scoring each blank. For the purposes of the present study, raw score totals of the interest categories were used.

The Biographical Questionnaire and Vocational Need Scale

The information collected from the Biographical Questionnaire and Vocational Need Scale was coded according to a format which would render it suitable for computer analysis. It was then transcribed on to data sheets in preparation for the analyses.

5.5 Summary

In this chapter general methodological background to the study was presented. A statement of the hypotheses was given, and the rationale on which the samples were selected was presented. The instruments were described, and reasons given for their being chosen. Finally the testing and scoring procedures were detailed.

6. CHARACTERISTICS OF THE SAMPLES

This chapter is intended to give an overview of the general background of the samples. Characteristics of the samples on the indices of socio-economic position are presented. This information is needed to determine whether or not the White samples are representative of different socio-economic sections of the population. It also provides some insight into the characteristics of the Black sample and assists in the interpretation of the findings. Except where otherwise stated, all data are presented in terms of frequencies (f) and percentages (%).

6.1 General

The total sample tested was 420 subjects, of whom 211 were Black pupils (B) from 5 schools in Soweto, and 209 were White English-speaking pupils from 4 schools in Johannesburg. Of these, 107 were from schools located in the upper socio-economic areas (W 1), and 102 were from schools in the lower socio-economic areas (W 2).

Six of the Black, and four of the White subjects were excluded from the sample for the following reasons:

1. Incomplete responses on the R-M I B. The titles in one of the cells had not been ranked, or the full ranking for one or two cells had not been done.

2. The same rank had been allocated to more than one title in the same cell.

The following table represents the samples retained:

Table 4

The Samples

	White	Black	Total
1	105	-	
2	100	-	
	-	205	
Total	205	205	410

The largest proportion of the Black sample is of Nguni (Zulu/Swazi, Xhosa) and Sotho (South Sotho, Tswana, Pedi) origin. These ethnic groups form the greatest percentage of the South African Black population (Department of Statistics, 1970). All subjects are now domiciled in Soweto.

Table 5

Tribal Affiliation of the Black Sample

Tribe	f	%
Zulu/Swazi	52	25,4
Tswana	64	31,2
Xhosa	17	8,3
South Sotho	34	16,6
North Sotho (Pedi)	20	9,8
Malawi	1	0,4
Tsonga/Shangaan	12	5,9
Venda	5	2,4
Total	205	100,0

6.1.1 Age

The age range of the total sample is 16 to 23. The table below reveals the large difference between the Black (B) and White (W) samples. There is no appreciable difference in age between the higher White socio-economic sample (W 1) and the lower (W 2).

Table 6

Age Distribution of Sample

Age	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
16	33	31,4	16	16,2	49	24,0	-	0,0
17	59	56,2	59	59,6	118	57,9	2	1,0
18	13	12,4	19	19,2	32	15,8	28	13,7
19	-	-	4	4,0	4	1,7	62	30,2
20	-	-	1	1,0	1	0,5	61	29,8
21	-	-	-	-	-	-	39	19,0
22	-	-	-	-	-	-	10	4,8
23	-	-	-	-	-	-	3	1,5
Total	105	100,0	99*	100,0	204	99,9	205	100,0
Mean	16,8		17,1		16,9		19,7	

* There was one case for which this information was missing.

6.1.2 Number of Children in the Family

The number of brothers and sisters in the family (including the subject) ranges from one to eleven. The largest differences in family size occur between the Black and White samples. There is little difference between the W 1 and W 2 samples.

Table 7

Number of Children in the Family

No of Children	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
1	5	4,8	3	3,0	8	3,9	2	1,0
2	27	25,7	29	29,0	56	27,3	15	7,3
3	44	41,8	25	25,0	69	33,6	25	12,2
4	23	21,9	22	22,0	45	21,9	27	13,2
5	5	4,8	12	12,0	17	8,2	38	18,5
6	-	-	4	4,0	4	1,9	38	18,5
7	1	1,0	3	3,0	4	1,9	34	16,6
8	-	-	2	2,0	2	0,9	16	7,8
9^{+}	-	-	-	-	-	-	10	4,9
Total	105	100,0	100	100,0	205	100,0	205	100,0
Mean	3		3,5		3,2		5,3	

6.2 Educational and Ocupational Level of Parents

6.2.1 Education and Occupation of Father

Chi square tests of significance of differences between the education and occupational levels of the W 1 and W 2 samples revealed differences at the 1% level. This supports the differentiation of the two samples in terms of socio-economic level. However, the proportion of missing responses could have influenced the findings, which will thus have to be interpreted with caution.

Table 8

Educational Level of Father

Educational Level	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Post-matric graduate	64	64,6	31	39,2	95	53,4	4	3,4
Post-matric non-graduate	8	8,1	7	8,9	15	8,4	-	-
Upper-secondary	23	23,2	30	38,0	53	29,8	18	15,5
Lower-secondary	4	4,0	11	13,9	15	8,4	61	52,6
Primary	-	-	-	-	-	-	30	25,9
No education	-	-	-	-	-	-	3	2,6
Total	99	99,9	79	100,0	178	100,0	116	100,0
Missing information	6		21		27		89	

In both White samples fathers have attained much higher educational levels than in the Black sample. 96% of the fathers of the W 1 sample and 85% of the W 2 fathers have attained upper secondary education and higher. 18,9% of the Black fathers have attained similar standards.

Table 9

Occupational Level of Father

Occupational Level	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Managerial/Professional	92	94,8	52	59,1	144	77,9	9	6,7
White Collar	5	5,2	17	19,3	22	11,9	17	12,8
Blue Collar	-	-	19	21,6	19	10,2	9	6,8
Semi-skilled	-	-	-	-	-	-	43	32,3
Unskilled	-	-	-	-	-	-	55	41,4
Total	97	100,0	88	100,0	185	100,0	133	100,0
Missing information	8		12		20		72	

Major differences in occupational level are evident between the Black and White samples. Over 70% of the fathers in the Black group are either labourers or semi-skilled workers (e.g. factory workers, machine operators, drivers) compared with none in the total White sample. However, the percentage of Black fathers of managerial/professional and white collar status (19,6%) is high in comparison with the general Black population (Department of Statistics, 1970), as is the percentage of those with upper-secondary and university education (18,9%) (Department of Statistics, 1970).

The occupational levels were difficult to code due to the wide range of occupations which fall within the professional/managerial category. It is not possible to differentiate in terms of seniority or level of responsibility. For example "managing director" may apply to a large organisation or a small family business. The numbers coded in this category tend therefore to be disproportionately high and any conclusions must be regarded as tentative.

6.2.2 Education of Mother

Chi square comparison between the education level of the W 1 and W 2 samples shows differences at the 1% level. This further supports the socio-economic differentiation of the two samples. Both White samples have a much higher educational standard than the Black sample. The large amount of missing information for the Black sample is an indication that these figures should be treated with caution and should not necessarily be regarded as characteristics of the sample population.

Table 10

Educational level of mother

Educational Level	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Post-matric graduate	17	18,1	6	8,3	23	13,8	3	2,1
Post-matric non-graduate	12	12,8	5	6,9	17	10,2	2	1,4
Upper-secondary	60	63,8	43	59,7	103	62,1	15	10,4
Lower-secondary	5	5,3	15	20,8	20	12,1	72	50,0
Primary	-	-	3	4,2	3	1,8	47	32,6
No education	-	-	-	-	-	-	5	3,5
Total	94	100,0	72	99,9	166	100,0	144	100,0
Missing Information	11		28		39		61	

In the table below, the proportions of working mothers and non-working mothers are reflected.

Table 11

Working Status of Mothers

Mother working	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Yes	33	32,4	49	51,5	82	41,6	108	63,9
No	65	63,7	45	47,4	110	55,8	61	36,1
Homecraft	4	3,9	1	1,1	5	2,6	-	-
Total	102	100,0	95	100,0	197	100,0	169	100,0
Missing Information	3		5		8		36	

The number of working mothers increases in inverse proportion to the socio-economic level.

Missing information in this section (6.2) is mainly the result of subjects not having known the necessary details. In a few cases it was, however, the parents being deceased, retired or unemployed.

6.3 Vocational Aspirations and Needs of the Sample

6.3.1 The vocational aspirations of the subjects (i.e. the wish to study further and the desired level of study) are reflected in Tables 12 and 13.

Table 12

Intention to Study Further

Study Further	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Yes	103	98,1	87	90,6	190	94,5	199	98,0
No	2	1,9	5	5,2	7	3,4	4	2,0
Not sure	-	-	4	4,2	4	1,9	-	-
Total	105	100,0	96	100,0	201	100,0	203	100,0
Missing Information	-		4		4		2	

Table 13

Level of Desired Study

Level of Study	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
University	97	95,1	58	67,4	155	82,5	183	92,4
College	5	4,9	28	32,6	33	17,5	15	7,6
Total	102	100,0	86	100,0	188	100,0	198	100,0
Missing Information	3		14		17		7	

Over 90% of the subjects in each sample indicated a desire to continue studying after matriculating. More W 1 and Black subjects indicated this preference than W 2 subjects.

In addition, over 90% of the W 1 and Black samples as against 67% of the W 2 sample, indicated a desire to study at university level. This difference is significant at the 1% level. 32% of the W 2 sample (compared to under 10% of the W 1 and Black samples) indicated a preference for studying at college level.

The high aspiration level of the more privileged White group is consistent with a background where there is an emphasis on academic achievement. The high aspirations of the Black school-leavers have been frequently reported (Biesheuvel 1962, Clignet 1967, Tunmer 1972). This is understandable in view of the fact that under 3% of Blacks who start school reach matriculation level (Department of Statistics, 1970).

6.3.2 Table 14 gives a breakdown of the proportion of subjects who gave "A 1" and "A 2" ratings to the different vocational needs. Almost all subjects gave at least two preferences an "A" rating and the figures in the table reflect both first and second choices.

Table 14

Vocational Needs

Need	W 1	W 2	Total W	B
	%	%	%	%
Allow me to use my best abilities and aptitudes.	22,2	20,8	21,5	23,2
Provide me with the opportunity of earning a great deal of money.	9,7	7,6	8,6	12,2
Permit me to be original and creative.	8,2	8,1	8,1	6,1
Give me social status and prestige.	1,4	1,0	1,2	2,2
Enable me to work with ideas and theories.	5,3	7,1	6,2	5,1
Allow me to be physically active.	6,3	8,6	7,5	1,7
Assure me a stable and secure future.	29,0	25,9	27,5	13,7
Enable me to work with people rather than with things.	3,4	5,1	4,5	6,1
Leave me free from supervision by others.	4,8	1,0	2,9	5,8
Give me a chance to exercise leadership.	1,4	2,0	1,7	1,2
Provide me with adventure and excitement.	4,8	7,1	5,9	1,7
Give me an opportunity to be helpful to others.	3,4	5,6	4,5	21,0
Total	99,9	99,9	99,9	100,0
Number	207	197	404	410
Missing Information	3*	3*	6	-

*One W 1 subject did not give any "A" ratings. One W 1 subject and three W 2 subjects had only one "A" rating.

The characteristic feature of the table is that two of the twelve needs dominate the preferences of all three samples.

For both the W 1 and W 2 samples the most important are the need for security and the need to utilise abilities and aptitudes.

In view of the relative economic security of the South African White population it is noteworthy that so high an emphasis should be placed on the need for occupational security. The priorities ascribed to the other needs by the W 1 and W 2 samples tend to be similar. One or two trends might be mentioned. Action and adventure are regarded as being important by more of the subjects in the W 2 sample. The same sample is also more inclined to working with and being of help to others. The W 1 sample places a slightly higher emphasis on money and on the need to be free from supervision.

The dominating needs of the Black sample are to utilise ability and aptitudes and to be of help and service to others. In the former case the Black sample resembles the White. However, it is in respect of the latter that the Black sample differs most markedly from the White samples, where very few subjects regard this need as being of importance. The Black sample reflects their general community orientation which has been reported and referred to by a number of writers (Danziger 1958, Bloom 1960). It is interesting that the need to work with people is not generally regarded by the Blacks as being important. This suggests that being of service to people does not necessitate having to be in contact with them.

The needs for stability and money are regarded as being of importance by a fairly large proportion of the Black sample. Very few subjects regard the remaining needs as being of great importance. A few trends emerge when comparing them to the White samples. The Black sample resembles

the W 1 sample in the need to be free from supervision. Very few of the Blacks regard adventure and excitement as being of importance, whereas this need is more marked among the Whites.

The status and leadership needs are regarded as being of importance by not more than 2% of any of the samples.

6.4 Summary

In this chapter biographical information on the subjects is presented. General characteristics of the samples are described. These include: numbers tested in each race group; tribal affiliation of the Black subjects; age range of the sample; and size of family of the subjects.

Information relating to socio-economic level is presented. This includes education and occupational level of fathers of the subjects. Educational level of the mothers is also described as is the proportion of those who work.

The needs and vocational aspirations of the subjects are discussed.

Major differences occur between the Black and White samples in most of the characteristics described. There are significant differences between the two White samples on the indices of socio-economic level.

7. A COMPARISON OF THE PERCEPTION OF VOCATIONAL INTERESTS AND THE STRUCTURING OF INTEREST FIELDS - FIRST HYPOTHESIS

In this chapter the methods, results and discussion relating to the testing of the first hypothesis, are presented.

Hypothesis One:

a) Black and White school-leaving boys similarly perceive vocational stereotypes as represented in the Rothwell-Miller Interest Blank.

b) Black and White school-leaving boys structure interest fields in a similar way.

The testing of the first hypothesis comprises two stages. Intra-individual response consistency of subjects has to be ascertained before the second part of the hypothesis can be tested.

7.1 Intra-individual Consistency

A test of consistency of response to the instrument is necessary to determine whether or not each subject is adopting a standard frame of reference, in other words the stereotypes of the interest categories.

While consistency is to be anticipated among the White subjects (in view of the evidence of standard occupational stereotypes in the West, see 2.3, 2.4) - it can not be assumed for the Black sample. A random response pattern by the Black group would indicate the unsuitability of the instrument for testing the second part of the hypothesis.

Kendall's test for concordance (W) is used to assess intra-subject response consistency. According to Siegel (1956) the test is especially useful for assessing the degree of association among three or more variables. In this instance it serves as a useful measure of intra-judge/intra-test reliability.

The 5% level was chosen as the criterion for response consistency.

The following table reflects the number of subjects who were consistent in their responses.

Table 15

Subjects who satisfied the criterion for response consistency at the 5% level.

Sample	Number consistent	Total sample
White	195	205
Black	195	205

On inspection of the table it can be seen that the same number of Black and White subjects (95%) responded in a consistent way to the instrument. Miller (1968) draws attention to the fact that a percentage of respondents can be expected to be inconsistent in their responses. He does not, however, provide figures, but does state that this can be put down to atypical or uncrystallised interest patterns, careless or unco-operative responses, and chance fluctuations. Kuder (1960) reports inconsistencies of between 5% and 10% for high school and college students in responding to the Kuder Preference Record (N = 2 500).

It is concluded that the percentage of consistent responses demonstrates that both samples are responding to the instrument according to the stereotypes of the interest fields.

7.2 Comparison of Interest Structures

A comparison of component structures is the method adopted to test this stage of the first hypothesis. A component analysis is initially performed. The components derived for the two samples are then compared by means of the coefficient of congruence.

For this part of the study the White sample is treated as a whole. The literature provides evidence of a standard structuring of interests among Western populations (see 2.4) and this is regarded as adequate justification for doing so.

7.2.1 Component Analysis

Because of the ipsative nature of the scores derived from the Rothwell-Miller Interest Blank, it is not possible for this study to utilise the more rigorous factor-analytic techniques. Therefore, the method of principal components was chosen, as it is a descriptive technique which makes no assumptions about the data.

The method of principal components or component analysis (Hotelling 1933) is one whereby a large body of data can be condensed empirically and thus be more readily interpreted than in its original form.

Anderson (1963) recommends the use of the principal component method in exploratory studies where reduction of data is desirable. He states that a study of the data is facilitated if a small number of uncorrelated linear combinations of the original variables is generated in such a way that most of the variance is accounted for.

The uses of the method and its rationale are thought to render it particularly appropriate for the present study, in that a parsimonious representation of interest categories as representative of a perceptual frame of reference is required.

Cherry (1974) reports the use of the method in her British study with the R-MIB. She chose to use it despite its psychometric limitations. She drew attention to the fact that correlations derived from ipsative scores might be spurious, but nonetheless concluded that the components represented real differentiations in the minds of the sample tested.

The component analysis conducted in the present study was based on the method used by Cherry (1974). Scores from the Rothwell-Miller Interest Blank were "standardized" to have a rectangular distribution and a range from 1 to 20, in the following manner:

For each category the scores (i.e. the sum of the rankings given the titles in the category) for all subjects were ranked. The ranked scores were then divided into twenty equal groups which were assigned code values from 1 to 20 in ascending order with the scores of greatest magnitude given a code of 20.

These recorded scores, together with the correlation matrix derived from them were used as input to the component analysis programme.

The analysis was computed separately for the two samples using the NIPR NF21 programme.

While it is generally an arbitary decision as to which components to retain, there is some evidence for regarding a 5% contribution to the total variance as a lower limit (Harman 1967). An eigenvalue greater than one is a further criterion for retaining components (Harman 1967, Edwards 1970). For the purpose of this study, both criteria were applied.

In view of the size of the sample (N = 205 in each case), loadings greater than 0,30 and smaller than -0,30 were regarded as meaningful. Component loadings falling just below these limits are considered in circumstances where their inclusion is justified for interpreting the component.

7.2.2 Comparison of the Component Structures

As indicated in chapter 4 Poortinga's criterion of similar factor structures has been adopted to test the present hypothesis. Numerous writers have recommended approaches to the study of factor similarities (Harman 1967). One method is the "coefficient of congruence".
Quay (1966) describes it thus:

> "This coefficient is obtained by dividing the sum of the crossproducts of the loadings by the square root of the product of the two sums of squares. It is essentially a correlation coefficient, uncorrected for origin." (p 105)

The formula is as follows (Cattell 1966): $r_c = \frac{\Sigma xy}{\sqrt{\Sigma x^2 y^2}}$

x and y are loadings of the same variables on two given factors.

Lätti (1972) describes a number of instances where the coefficient was chosen as the most appropriate for comparing factor structures. The consensus of opinion appears to be that the method is one of the most feasible for approaching what Harman describes as:

> "..... a clasical problem in the theory of statistical sampling." (p 271)

One drawback of the method is that the mathematical distribution of the congruence coefficient has not been researched to the point where confidence limits can be laid down. The setting of limits has been arbitrarily done by different writers. The range appears to have been between 0,70 to 0,80 (Lätti 1972). Madge (1972) in a cross-cultural study of personality factors refers to a number of instances where values of 0,75 and higher were acceptable. For the purpose of the present study congruence coefficients of 0,80 and higher are regarded as meaningful.

7.3 Results

Four components contributed more than 5% to the total variance and have eigenvalues greater than one in the case of both samples. They therefore satisfy the criteria for being interpreted.

These components are reflected in the following tables. The loadings of the interest categories in each component are given. Those which satisfy the criterion of meaningful loading are underlined. Each component's contribution to total variance, is also reflected.

Table 16

Components and loadings of interest categories for the Black sample, and the variance contribution and eigenvalues of the components.

Category	Component 1	Component 2	Component 3	Component 4
Outdoor	0,35	-0,11	0,58	0,30
Mechanical	0,57	0,36	0,39	-0,10
Computational	-0,36	0,76	-0,23	-0,13
Scientific	0,75	0,14	-0,44	0,04
Persuasive	-0,77	0,21	0,08	-0,14
Aesthetic	0,08	-0,39	0,16	-0,74
Literary	-0,34	-0,62	-0,24	0,01
Musical	-0,24	-0,62	0,02	-0,22
Social Service	-0,41	-0,40	-0,14	0,64
Clerical	-0,72	0,52	0,10	0,06
Practical	0,27	-0,00	0,77	0,14
Medical	0,70	0,06	-0,58	0,06
Variance Contribution	26,4%	17,9%	14,9%	9,8%
Eigenvalue	3,17	2,15	1,78	1,18

Table 17

Components and loadings of interest categories for the White sample, and the variance contribution and eigenvalues of the components.

Category	Component 1	Component 2	Component 3	Component 4
Outdoor	0,66	-0,25	0,20	0,39
Mechanical	0,73	0,06	0,34	-0,27
Computational	-0,25	0,79	0,08	-0,28
Scientific	0,54	0,03	-0,59	-0,30
Persuasive	-0,52	0,36	0,41	0,08
Aesthetic	-0,27	-0,57	0,21	-0,28
Literary	-0,68	-0,47	0,01	-0,09
Musical	-0,62	-0,49	-0,02	-0,16
Social Service	-0,32	-0,08	-0,38	0,75
Clerical	-0,29	0,78	0,27	0,17
Practical	0,71	-0,20	0,46	0,19
Medical	0,20	0,25	-0,80	-0,14
Variance Contribution	26,9%	19,5%	14,9%	9,5%
Eigenvalue	3,23	2,34	1,79	1,14

The following coefficients of congruence were obtained when comparing the retained components of the Black and White samples.

Table 18

Coefficients of Congruence

Components	Coefficient of Congruence
1	0,80
2	0,89
3	0,80
4	0.73

The first three components thus satisfy the criterion for factor structure similarity between the Black and White samples.

7.4 Interpretation and Discussion of Results

Interpretation and naming of the components involves inspection of magnitudes of positive or negative loadings of the interest categories which comply with stated criterion magnitudes on each component. Harman's (1967) recommendation for naming a bipolar factor by choosing terms where opposite characteristics are recogniseable, was adopted.

The nature of each component is further studied by examining the component scores of the subjects with different vocational interests. The method involves allocating each subject to one of the twelve interest categories on the basis of his first expressed vocational preference as indicated in the biographical questionnaire. The mean component score of subjects in each category is computed. The categories are then ranked according to magnitude of the means. It is hoped that clarification of the underlying dimensions of each component, and possible support for the interpretation of the components, will be achieved (Cherry 1974). The technique amounts to a test of the concurrent validity of the instrument. It is, however, recognised that results will have to be treated with caution and regarded at best as a rough indication because of the low frequency of subjects in many of the categories, and the resulting instability of the means.

7.4.1 Component 1

Table 19

Loadings of the Interest Categories on Component One

Category	Loadings	
	Black	White
Outdoor	0,35	0,66
Mechanical	0,57	0,73
Computational	-0,36	-0,25
Scientific	0,75	0,54
Persuasive	-0,77	-0,52
Aesthetic	0,08	-0,27
Literary	-0,34	-0,68
Musical	-0,24	-0,62
Social Service	-0,41	-0,32
Clerical	-0,72	-0,29
Practical	0,27	0,71
Medical	0,70	0,20

This component satisfies the criterion of structural similarity (coefficient of congruence of 0,80). On inspection of the loadings it can be seen that no appreciable differences occur for the two groups in the direction in which the categories have loaded, and that differences (with the exception of the aesthetic category) are a matter of magnitude. In one or two instances there are loadings on the component of the Black sample, but not on the component of the White sample, which have met the criterion (± 0,30). The reverse also occurs . The overall pattern of the loadings is generally the same for both samples.

The component for both samples explains more than 26% of the total variance, to which the four components which were retained contribute, in total, 69% in the case of the Black and 70% in the case of the White sample. The contribution of this component therefore distinguishes it as the major dimension in which the two samples differentiate interest categories. Further evidence of this is the relatively large number of categories, for both samples, which meet the criterion, and those which almost satisfy the criterion.

A study of the loadings in the first component suggests that it most closely approximates to the "Things vs People" factor which Strong (1943) proposes. It is also similar to Roe's (1956) differentiation in terms of degree of contact with people. Crites (1969) also regards this dimension as the basic one along which occupations are differentiated.

On inspection of the table of loadings (table 19) it can be seen that the "things" categories load positively on the dimension, and the "people" categories, negatively.

The "things" pole includes the scientific, technical and practical occupations and those with an emphasis on outdoor activities.

The "people" pole includes occupations with varying degrees of involvement with people. A wide range of categories have substantial negative loadings and many qualities of contact with people appear to be accounted for. These include service occupations, business contact and supervision, and also the more "arts"-oriented occupations (e.g. musical and literary). The negative loadings of the "arts" categories could be due to the categories of the R-MIB where contact with people or people involvement is characteristic of many of the occupations presented (e.g. music shop assistant, music teacher, dance band musician, journalist, librarian, radio script writer).

The high positive loading of the medical category in the case of the Black sample is the only seemingly atypical loading, as the medical professions are both science and people orientated. It is thus of interest that for the White sample this category does not load significantly in either direction.

A tentative explanation lies in the general service or community orientation of the Black peoples (Esen 1972). The desire to be of help to the community or his fellowman appears to be a basic need of the Black regardless of interest preference (Danziger, 1958, Bloom 1960). An interest field like the medical one would be perceived in terms of the actual work content, service oreintation being a basic underlying characteristic of the population in general.

In the following table, the mean component scores of the subjects with stated preferences for occupations in the twelve categories have been ranked. Support for the interpretation of the component arises from polarisation of the subjects according to their preference for "people" or "things" involvement.

Table 20

Mean Component Scores of Expressed Interest: Component 1

Black			White		
Category	Score	N	Category	Score	N
Persuasive	+5,72	11	Musical	+8,16	2
Computational	+3,90	13	Clerical	+3,61	2
Clerical	+3,78	9	Persuasive	+3,32	14
Literary	+2,65	26	Literary	+2,43	23
Musical	+2,45	4	Computational	+2,28	31
Social Service	+1,46	23	Aesthetic	+0,78	13
Outdoor	-0,28	3	Social Service	+0,03	5
Mechanical	-2,61	20	Medical	-0,43	30
Aesthetic	-2,69	16	Practical	-2,63	4
Medical	-3,17	56	Scientific	-2,68	17
Practical	-3,20	5	Outdoor	-3,13	19
Scientific	-3,63	18	Mechanical	-3,58	39

On inspection of the table it can be seen that in the main, the interpretation is generally supported, although this should be regarded as a rough indication only. The major inconsistency is the mean score of the social service category for both samples. It is lower than might be expected for supporting the interpretation of the component.

7.4.2 Component 2

Table 21

Loadings of the Interest Categories on Component Two

Category	Loadings	
	Black	White
Outdoor	-0,11	-0,25
Mechanical	0,36	0,06
Computational	0,76	0,79
Scientific	0,14	0,03
Persuasive	0,21	0,36
Aesthetic	-0,39	-0,57
Literary	-0,62	-0,47
Musical	-0,62	-0,49
Social Service	-0,40	-0,08
Clerical	0,52	0,78
Practical	0,00	-0,20
Medical	0,06	0,25

The second component satisfies the criterion of structural similarity (congruence coefficient of 0,89). The pattern of loadings for both samples is very similar. In one or two instances loadings of categories meet the criterion on the component of one sample but not on that of the other.

This component is very similar to one of those postulated by Cottle (1950) who investigated common dimensions underlying the SVIB, Kuder and Bell Interest Inventory. He called the factor "abstract and creative work vs routine, concrete and organised work".

The differentiation is generally applicable to this component in that the three main arts categories (aesthetic, musical, and literary) have negative loadings which meet the criterion, and the computational and clerical categories have positive loadings which meet the criterion.

While the component in the present study satisfies the criterion of similarity for the two samples there are qualitative differences in the loadings of the categories.

In the component of the Black sample, but not of the White, the mechanical category has a high positive loading, thus extending beyond the clerical and computational context the idea of work involving concern for detail and structure. The social service category shows high negative loading for the Black sample, but not the White. A possible reason is that the social sciences are usually associated with the arts rather than with commerce or science. Also a number of occupations in the category in the R-MIB could have been viewed from an "arts" point of view especially if academic qualifications were taken into consideration (e.g. teacher, educational psychologist, headmaster).

The persuasive category has a high positive loading for the White sample, but not the Black. This loading suggests a broader interpretation of the "routine, organised" pole of the component. The idea of contact with people in the business and commercial world is included.

The interpretation of the component is fairly well supported when the mean component scores of subjects with expressed preferences are ranked. This is evident on inspection of the following table.

Table 22

Mean Component Scores of Expressed Interests: Component 2

Black			White		
Category	Score	N	Category	Score	N
Musical	+6,29	4	Aesthetic	+4,86	13
Social Service	+3,27	23	Literary	+3,73	23
Literary	+1,21	26	Musical	+3,07	2
Aesthetic	+0,18	16	Social Service	+3,06	5
Medical	+0,30	56	Persuasive	+2,80	14
Outdoor	-1,53	3	Scientific	+2,42	17
Scientific	-1,57	18	Medical	+2,15	30
Clerical	-2,67	9	Outdoor	+0,71	25
Persuasive	-2,82	11	Mechanical	-1,26	39
Mechanical	-2,95	20	Practical	-1,29	4
Practical	-3,51	5	Computational	-2,90	31
Computational	-5,37	13	Clerical	-4,30	2

For both samples the "arts" interpretation is well supported by the criterion. However, in terms of the interpretation, a higher mean component score for the Black sample in the clerical category, might have been expected. The "commercial" interpretation is well supported in the case of the White sample.

7.4.3 Component 3

Table 23

Loadings of the Interest Categories on Component Three

Components	Black	White
Outdoor	0,58	0,20
Mechanical	0,39	0,34
Computational	-0,23	0,08
Scientific	-0,44	-0,59
Persuasive	0,08	0,41
Aesthetic	0,16	0,21
Literary	-0,24	0,01
Musical	0,02	-0,02
Social Service	-0,14	-0,38
Clerical	0,10	0,27
Practical	0,77	0,46
Medical	-0,58	-0,80

The third component satisfies the criterion of structural similarity with a congruence coefficient of 0,80.

In general terms this component can be seen as a further breakdown of the "things" pole of the first component. It can be interpreted as being a natural science vs technological science dichotomy. This categorisation has been described by a number of writers (Strong 1943, Roe 1956, Kuder 1960).

For both samples the scientific and medical categories have negative loadings that meet the criterion. An interesting feature is the significant loading of the social service category in the case of the White, but not of the Black sample. This could indicate that Whites with a more specialised scientific interest (i.e. medical) show more concern for the humanitarian or "people" aspects of their work. . On the other hand, because of the general community-orientation of the Blacks the social service category would not neccessarily be expected to load on this pole, as occupations are more in terms of work content, than application.

The positive loadings of the practical and mechanical categories meet the criterion in the components of both samples. These categories well represent the technological sciences.

An alternative interpretation (which supplements rather than contradicts the above) is that the component is similar to that which Cherry (1974) calls "ambition". She describes the component as contrasting types of work which can be entered straight from school (i.e. practical, technical) with those requiring further extensive study (i.e. professional, scientific).

The high outdoor loading in the case of the Black sample on the "non-ambition" pole is consistent with this interpretation. The loading of this category does not meet the criterion on the component for the White sample, although it is in the direction to support the interpretation.

The high positive loading of the persuasive category on this component for the White sample is difficult to explain. A possible explanation lies in the fact that a number of the occupations in this category, as presented in the R-MIB, require little, if any, formal qualifications (e.g salesman, traveller, publicity officer, interviewer). The category thus loads on the 'hon-ambition" pole of the dichotomy.

The interpretation is generally supported when the mean component scores of subjects with preferences on both dimensions of the dichotomy, are ranked.

Table 24

Mean Component Scores of Expressed Interest: Component 3

Black			White		
Category	Score	N	Category	Score	N
Medical	+5,36	56	Medical	+6,27	30
Social Service	+3,64	23	Musical	+3,80	2
Persuasive	+2,94	11	Scientific	+3,47	17
Literary	+2,44	26	Social Service	+2,04	5
Scientific	+2,07	18	Literary	+0,98	23
Mechanical	+0,97	20	Outdoor	+0,86	25
Aesthetic	+0,88	16	Practical	+0,75	4
Computational	+0,43	13	Clerical	+0,40	2
Clerical	-0,27	9	Mechanical	+0,36	39
Musical	-0,30	4	Aesthetic	-1,04	13
Practical	-1,02	5	Computational	-1,16	31
Outdoor	-1,36	3	Persuasive	-2,05	14

The interpretation of this component is least supported by the criterion. There is more clarity for the White sample than the Black on the scientific aspect. The technological aspect is reasonably well supported for the Black sample but not the White. What can be regarded as a provisional interpretation, that of "natural science vs technological science", still, however, appears to be the most appropriate.

7.4.4 Component 4

Table 25

Loadings of Interest Categories on Component Four

Components	Black	White
Outdoor	0,30	0,39
Mechanical	-0,10	-0,27
Computational	-0,13	-0,28
Scientific	0,04	-0,30
Persuasive	-0,14	0,08
Aesthetic	-0,74	-0,28
Literary	0,01	-0,09
Musical	-0,22	-0,16
Social Service	0,64	0,75
Clerical	0,06	0,17
Practical	0,14	0,19
Medical	0,06	-0,04

The fourth component does not satisfy the criterion for structural similarity (congruence coefficient of 0,73). However, there is an obvious similarity between the components. The outdoor and social service categories have positive loadings which meet the criterion, on the components of both samples. On the other hand, the aesthetic category has high negative loading in the case of the Black sample, as does the scientific in that of the White sample.

Inspection of the occupations in the social service category on the R-MIB reveals that many have a direct or indirect involvement with the outdoors (e.g. scout organiser, youth club worker, social worker). This could be the reason for its loading with the outdoor category.

It therefore appears that the most meaningful interpretation of this component would be in terms of an aesthetic/social service differentiation in the case of the Black sample, and a scientific/social service differentiation in the case of the White sample.

The interpretations are, however, not very meaningful. The mean component score criterion was therefore not computed.

7.5 Summary and Conclusion

All subjects were tested on the Rothwell-Miller Interest Blank. The response consistency of each subject was tested by means of Kendall's Coefficient of Concordance. Ninety-Five percent of the subjects in each sample were shown to have been consistent in their responses. This was taken as an acceptable proportion for supporting the first part of the hypothesis.

Principal components were extracted separately for both samples. Four components, in both cases satisfied the specified statistical criteria for being retained. Tests for congruence between the components of the Black and White samples were computed. Three of the four satisfied the criterion for congruence. Support for the second part of the hypothesis was thus partially demonstrated.

On interpretation, the components were found to be similar to those described by other writers. The first component was tentatively labelled "things vs people", the second "abstract and creative vs routine, concrete and organised work" and the third "natural science vs technological science". The criterion applied in each case, supported the interpretations in a general although by no means definitive way. The fourth component could not be interpreted satisfactorily.

It is, therefore, submitted that occupations are generally perceived by the Black school-leaving sample according to the characteristic Western stereotypes, at least as they are presented in the Rothwell-Miller Interest Blank. In addition, the Black sample structures interest categories in a way which is similar to that of the White sample.

8. A COMPARISON OF THE VOCATIONAL INTERESTS OF THE SAMPLES

In this chapter the method, results and discussion relating to the testing of the second hypothesis, are presented.

Hypothesis Two: Black and White school-leaving boys differ in their vocational interests.

8.1 Method

In testing the second hypothesis, the aim was to achieve insight into the vocational interests of the samples as a whole. The information was obtained from two sources:

- The inventoried preferences (as obtained from responses on the Rothwell-Miller Interest Blank) are compared. In this instance the medians scores of each sample for each interest category are computed and the ranking of the medians compared across the samples by means of Kendall's coefficient of concordance. The 5% level of significance is chosen as the criterion for congruence.

- The expressed vocational interests of the samples (as indicated on the biographical questionnaire), are compared. These are categorized into the twelve occupational interest categories described by Rothwell-Miller. The chi-square test for independent samples is used to test for different patterns of preference of the samples. The 5% level is chosen as the criterion for difference.

It is recognised that expressed interests are generally regarded as being unreliable predictors of vocational preference (Darley and Hagenah 1955). However, they are regarded as being appropriate in this context where they are used, not for individual counselling purposes, but rather to determine

characteristic preferences of the samples. This analysis is done to supplement the information obtained from the inventoried interests, and to provide some indication of the degree to which expressed and inventoried interests are similar. It is not intended in the testing of this hypothesis to do a detailed study of the relationships between expressed and inventoried interests. Comparisons are made with a view to achieving a greater understanding of the vocational preferences of the samples. The evidence for socio-economic difference between the two White samples, although not definitive was regarded as sufficient for treating them separately for the testing of this hypothesis (see 6.2).

8.2 Results

The following coefficients of concordance and values of chi square are those obtained when comparing the expressed and inventoried interests of the samples.

Table 26

Degree of Similarity between Samples on Inventoried Interests

Samples compared	Kendall's coefficient of concordance
W 1/W 2	0,974*
W 1/B	0,685
W 2/B	0,725
Total W/B	0,717

Table 27

Comparison of Expressed Interests of the Samples

Samples compared	Chi square values		
	First Vocational Choice	Second Vocational Choice	Third Vocational Choice
W 1/W 2	10,76	30,82**	11,19
W 1/B	36,06**	30,44**	47,98***
W 2/B	40,67***	49,01***	39,58***
Total W/B	50,61***	41,91***	59,88***

* significant at 5% level

** significant at 1% level

*** significant at ,01% level

The concordance analysis done on the ranked medians of the categories as derived from the inventoried interests reveals a significant degree of agreement in the ranking of the White samples. No significant agreement is found between the White and Black samples. This finding supports the hypothesis..

The total White sample and the sub-samples (W 1 and W 2) differ significantly from the Black sample in their expressed preferences at the 1% level for the first, second and third choice of occupation. This further supports the hypothesis..

No significant differences between the preferences of the W 1 and W 2 samples are found for the first and third choices. However, the samples differ from each other at the 1% level for the second choice.

In the following tables the medians computed from responses to the Rothwell-Miller Interest Blank are reflected. Tables with the frequencies and percentages of subjects in each sample, with preferences for occupations in the different categories, are included, as well as those reflecting preferences by occupational title. In the last-mentioned instance, titles for which at least three percent of subjects indicated a preference, are given.

Table 28

Inventoried Interests: Category Medians and Ranks

Category	W 1		W 2		B	
	Median	Rank	Median	Rank	Median	Rank
Outdoor	45	2,5	51	4,0	78	11,0
Mechanical	58	6,0	59	6,0	61	9,0
Computational	66	8,5	67	9,0	55	4,0
Scientific	39	1,0	40	1,0	42	2,0
Persuasive	51	4,0	55	5,0	59	7,0
Aesthetic	53	5,0	50	3,0	60	8,0
Literary	66	8,5	59,5	7,0	48	3,0
Musical	77	12,0	69,5	11,0	69	10,0
Social Service	65	7,0	65,5	8,0	57	5,0
Clerical	69	10,0	68	10,0	58	6,0
Practical	73	11,0	79	12,0	88	12,0
Medical	45	2,5	45	2,0	38	1,0

Table 29

First Expressed Vocational Preference (by category)

Category	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Outdoor	11	10,6	8	8,3	19	9,5	3	1,5
Mechanical	21	20,4	18	18,3	39	19,6	20	9,8
Computational	12	11,7	19	19,8	31	15,7	13	6,4
Scientific	8	7,8	9	9,5	17	8,6	18	8,8
Persuasive	9	8,7	5	5,2	14	6,9	11	5,4
Aesthetic	5	4,9	8	8,3	13	6,6	16	7,8
Literary	14	13,6	9	9,5	23	11,5	26	12,6
Musical	0	0,0	2	2,1	2	1,0	4	2,0
Social Service	3	2,9	2	2,1	5	2,5	23	11,3
Clerical	2	1,9	0	0,0	2	0,9	9	4,4
Practical	1	1,0	3	3,2	4	2,1	5	2,5
Medical	17	16,5	13	13,6	30	15,0	56	27,5
Total	103	100,0	96	99,9	199	99,9	204	100,0
Missing *	2		4		6		1	

* Missing information is due to subjects not indicating any preferences.

Table 30

Second Expressed Vocational Preference (by category)

Category	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Outdoor	9	8,9	10	11,0	19	9,9	3	1,5
Mechanical	17	16,8	22	24,2	39	20,5	19	9,3
Computational	7	6,9	17	18,7	24	12,8	18	8,8
Scientific	16	15,9	2	2,2	18	9,0	20	9,8
Persuasive	9	8,9	5	5,5	14	7,3	12	5,9
Aesthetic	7	6,9	7	7,7	14	7,3	14	6,9
Literary	10	9,9	1	1,1	11	5,5	20	9,8
Musical	2	2,0	2	2,2	4	2,1	5	2,5
Social Service	7	6,9	6	6,6	13	6,7	32	15,7
Clerical	0	0,0	5	5,5	5	2,8	20	9,8
Practical	1	1,0	3	3,3	4	2,1	2	1,0
Medical	16	15,8	11	12,0	27	13,9	39	19,0
Total	101	99,9	91	100,0	192	99,9	204	100,0
Missing*	4		9		13		1	

* Missing information is due to subjects not indicating a second preference.

Table 31

Third Expressed Vocational Preference (by category)

Category.	W 1		W 2		Total W		B	
	f	%	f	%	f	%	f	%
Outdoor	11	12,1	8	9,2	19	10,7	3	1,5
Mechanical	17	18,6	17	19,5	34	19,1	17	8,4
Computational	8	8,8	12	13,8	20	11,3	14	6,9
Scientific	12	13,2	11	12,7	23	12,9	18	8,9
Persuasive	8	8,8	5	5,7	13	7,3	6	3,0
Aesthetic	6	6,6	1	1,1	7	3,8	8	3,9
Literary	8	8,8	7	8,1	15	8,4	19	9,4
Musical	1	1,1	4	4,6	5	2,8	4	2,0
Social Service	5	5,5	7	8,1	12	6,7	34	16,7
Clerical	2	2,2	1	1,1	3	1,7	26	12,8
Practical	0	0,0	3	3,4	3	1,7	12	5,9
Medical	13	14,3	11	12,6	24	13,5	42	20,6
Total	91	100,0	87	99,9	178	99,9	203	100,0
Missing*	14		13		27		2	

* Missing information is due to subjects not indicating a third preference.

Table 32

Expressed Vocational Preferences (by title): White 1

Choice 1			Choice 2			Choice 3		
Occupation	f	%	Occupation	f	%	Occupation	f	%
Civil Engineer	12	11,6	Doctor	11	10,8	Civil Engineer	9	9,8
Auditor/Accountant	9	8,7	Lawyer	7	6,9	Auditor/Accountant	7	7,6
Lawyer	9	8,7	Civil Engineer	6	5,9	Farmer	6	6,5
Doctor	9	8,7	Auditor/Accountant	6	5,9	Doctor	6	6,5
Electrical Engineer	5	4,8	Farmer	5	4,9	Biologist	4	4,3
Businessman	4	3,8	Mechanical Engineer	5	4,9	Scientist	4	4,3
Architect	4	3,8	Geologist	5	4,9	Businessman	4	4,3
Farmer	3	3,0	Natural Scientist	5	4,9	Vet. Surgeon	4	4,3
Vet. Surgeon	3	3,0	Game Ranger	4	3,9	Architect	3	3,2
Dentist	3	3,0	Hotelier	4	3,9	Lawyer	3	3,2
Others*	42	40,9	Architect	4	3,9	Other	41	46,0
			Ecologist	3	3,0			
			Teacher	3	3,0			
			Other	33	33,2			
Total	103	100,0	Total	101	100,0	Total	91	100,0
Missing**	2		Missing	4		Missing	14	

* "Other" represents occupations chosen by less than 3% of the subjects.

** Missing information is due to subjects who did not register preferences.

Table 33

Expressed Vocational Preferences (by title): White 2

Choice 1			Choice 2			Choice 3		
Occupation	f	%	Occupation	f	%	Occupation	f	%
Auditor/Accountant	15	15,6	Auditor/Accountant	10	10,9	Technician	7	8,0
Lawyer	7	7,2	Civil Engineer	9	9,8	Doctor	6	6,8
Technician	7	7,2	Technician	7	7,6	Lawyer	6	6,8
Scientist	6	6,2	Pilot	6	6,5	Surveyor	5	5,7
Architect	5	5,2	Surveyor	5	5,4	Natural Scientist	5	5,7
Doctor	5	5,2	Dentist	5	5,4	Game Ranger	4	4,5
Vet. Surgeon	5	5,2	Architect	4	4,3	Geologist	4	4,5
Pilot	3	3,1	Teacher	4	4,3	Drama/Music	4	4,5
Civil Engineer	3	3,1	Pharmacist	4	4,3	Pilot	4	4,5
Mechanical Engineer	3	3,1	Farmer	3	3,2	Auditor/Accountant	3	3,4
Reporter	3	3,1	Clerk	3	3,2	Teacher	3	3,4
Other*	34	35,8	Other	31	35,1	Mechanic	3	3,4
						Computer Programmer	3	3,4
						Other	30	35,4
Total	96	100,0	Total	91	100,0	Total	87	100,0
Missing**	4		Missing	9		Missing	13	

* "Other" represents occupations chosen by less than 3% of the subjects.

** Missing information is due to subjects who did not register preferences.

Table 34

Expressed Vocational Preferences (by title): Black

Choice 1			Choice 2			Choice 3		
Occupation	f	%	Occupation	f	%	Occupation	f	%
Doctor	34	16,7	Doctor	23	11,3	Teacher	22	10,8
Civil Engineer	14	6,9	Teacher	22	10,8	Doctor	16	7,9
Teacher	13	6,4	Civil Engineer	11	5,4	Pharmacist	13	6,4
Auditor	12	5,9	Auditor	10	4,9	Clerk	12	5,9
Lawyer	12	5,9	Clerk	10	4,9	Bank Manager	11	5,4
Pharmacist	12	5,9	Architect	9	4,4	Civil Engineer	10	4,9
Architect	10	4,9	Social Worker	9	4,4	Natural Scientist	9	4,4
Scientist	8	3,9	Lawyer	8	3,9	Electrician	9	4,4
Social Worker	8	3,9	Bank Manager	8	3,9	Reporter	8	3,9
Reporter	8	3,9	Pharmacist	8	3,9	Social Worker	7	3,4
Broadcaster	8	3,9	Broadcaster	7	3,4	Surveyor	6	3,0
Health Inspector	6	3,0	Surveyor	6	3,0	Mechanic	6	3,0
Other*	59	28,8	Natural Scientist	6	3,0	Other	74	36,6
			Mechanic	6	3,0			
			Laboratory Assistant	6	3,0			
			Other	49	26,8			
Total	204	100,0	Total	204	100,0	Total	203	100,0
Missing**	1		Missing	1		Missing	2	

* "Other" represents occupations chosen by less than 3% of the subjects.
** Missing information is due to subjects who did not register preferences.

8.3 Discussion of Results

8.3.1 The White Sample

From the ranking of sample medians of preferences assessed on the R-MIB, it can be seen (table 28) that the scientific and medical categories are ranked first and second. The outdoor (among the W 1 group) and the aesthetic (among the W 2 group) are also among the preferred categories.

The pattern of expressed preferences of the W1 and W 2 samples do not differ significantly for the first choice of occupation. The mechanical, computational, medical and literary categories are preferred by over 60% of the subjects in both samples. On inspection of table 29 it can be seen that there are differences in the extent to which one or two of the categories are preferred by the W 1 and W 2 samples. The main difference is the greater preference of the W 2 group for the computational category and of the W 1 group for the literary category.

There are few variations from this dominant trend for the second choice. Both groups maintain the high preference for the mechanical and medical occupations. The W 1 group gives prominence to the scientific category and the preference for the literary occupations is maintained. The W 2 group on the other hand shows very little preference for the scientific, but maintains preference for the computational category. There is also greater preference for the clerical category. The statistically significant difference in preferences between the samples for the second choice (table 27) is primarily due to this pattern.

Although the preferences for the third choice tends to be more widely spread across the categories, the trend most resembles that of the first choice.

The least popular expressed first choice categories for both samples are the musical, social service, clerical and practical. This pattern changes for the second choice where more subjects in both samples indicate preference for the social service category, and, as mentioned, the W 2 group shows an increase in clerical preferences. The above mentioned categories are also the lowest ranked inventoried preferences. The outdoor, aesthetic and persuasive categories are chosen mostly by between 5% and 12% of the samples for all three expressed choices.

While generally similar, there are, nevertheless, differences between the expressed and inventoried interests. The main ones are discussed below.

The mechanical category is an expressed, but not an inventoried, preference of both samples. The computational category has a low inventoried ranking, but is a high expressed preference of the W 2 sample. The reason for these anomalies could be that the White samples generally reject low status occupations. Thus, the rejection of the low-status occupations in the mechanical and computational categories of the interest blank, would cause them to have a lower ranking than would be expected in view of the expressed preferences of the samples.

From tables 32 and 33 it can be seen that expressed mechanical and computational preferences are at the professional or technical level (e.g. civil engineer, technician, auditor, architect). In the R-MIB a number of titles would probably be perceived as being of low status (e.g. welder, watchmaker, electrician, cashier, accounts clerk, income tax clerk). This highlights a feature of the structure of the interest categories which will be discussed at a later stage. The low inventoried rankings of the practical and clerical categories is further evidence of the rejection of low-status occupations.

The actual occupations preferred by the two samples are generally similar (see tables 32 and 33). Some of the main trends are as follows:
In the medical category 'doctor' is most popular with both samples, with a few subjects favouring veterinary science or dentistry. In the scientific category the natural sciences are favoured. Law is the most common profession in the general literary field. In the computational category the accountancy professions are most favoured by both groups. An interesting difference is the comparatively high number of W 2 subjects who favour surveying, compared to very few in the W 1 group. In the aesthetic category, architecture is the most popular choice.

Occupations in the outdoor category are among the more popular expressed and inventoried preferences. A study of preferred occupations reveals a definite emphasis on professions with an outdoor appeal, although these more characteristically belong to other interest categories. Included are, for example, veterinary surgeon, geologist, biologist, architect, surveyor.

A few subjects also chose farmer, game ranger and ecologist. These expressions are possibly partly due to the emphasis in South Africa on the outdoors and the recent increased interest in problems of the environment and nature conservation.

Civil engineering is the most preferred occupation in the mechanical category among the subjects in the W 1 group. Among those in the W 2 group, the technical occupations are more preferred. This underlines the difference in the aspiration levels of the two groups. In tables 12 and 13 (see 6.3), it was shown that the W 1 group have higher educational aspirations both in terms of the numbers who wish to study further and the level of the intended studies.

The professional aspirations of the W 1 group are also shown in their occupational preferences indicated in the other categories (e.g. doctor, scientist, and lawyer). In the medical and computational fields, the W 2 group indicates preference at a more professional level (e.g. doctor, auditor, and accountant). The last mentioned could, however, be misleading as a wide range of occupations not necessarily at the higher professional level could have been intended (e.g. bookkeeper, company secretary).

The pattern of preferences of both groups is consistent with their expressed needs (see 6.3, table 14). Their primary needs are for stable occupations which would afford them the opportunity to utilise their abilities and aptitudes. One anomaly is the high medical preference and the comparatively low need to be working with and/or be of assistance to others.
A reason for this could be that the subjects are perceiving the medical professions more in terms of their prestige value than their service content.

The pattern of preferences of the White sample is similar to that reported by Fabian (1963) in a study of the vocational needs, values and interests of American and South African male school-leavers. In his study, the scientific field (which includes the medical) dominates the preferences of the South African sample. The needs for self-fulfilment and security are also prevalent. This indicates a certain general stability in the interests and needs of White South African school-leaving boys, at least in the last decade.

The subjects' idea of what they think their parents would like them to do approximates to their own preferences and aspirations. These are reflected in the following tables:

Table 35

Aspirations of White Parents for their Children

Occupational Level	Father's Aspirations				Mother's Aspirations			
	W 1		W 2		W 1		W 2	
	f	%	f	%	f	%	f	%
Professional/Managerial	56	68,3	59	69,4	55	67,9	57	66,3
White collar	0	0,0	1	1,2	0	0,0	2	2,3
Blue collar	2	2,4	7	8,2	0	0,0	4	4,7
Semi-skilled	0	0,0	0	0,0	0	0,0	0	0,0
Unskilled	0	0,0	0	0,0	0	0,0	0	0,0
Free-choice	24	29,3	18	21,2	26	32,1	23	26,7
Number	82	100,0	85	100,0	81	100,0	86	100,0
Missing	23		15		24		14	

Table 36

Vocational Preferences of White Parents for their Children: by Category

Category	Father's Choice				Mother's Choice			
	W 1		W 2		W 1		W 2	
	f	%	f	%	f	%	f	%
Outdoor	2	2,4	2	2,4	0	0,0	2	2,3
Mechanical	16	19,5	15	17,6	8	9,9	11	12,8
Computational	10	12,2	15	17,6	6	7,4	14	16,3
Scientific	2	2,4	1	1,2	4	4,9	1	1,2
Persuasive	5	6,1	4	4,7	4	4,9	2	2,3
Aesthetic	3	3,7	5	5,9	6	7,4	2	2,3
Literary	6	7,3	8	9,4	6	7,4	6	7,0
Musical	0	0,0	0	0,0	0	0,0	1	1,2
Social Service	1	1,2	0	0,0	1	1,2	3	3,5
Clerical	0	0,0	0	0,0	0	0,0	0	0,0
Practical	2	2,4	3	3,5	0	0,0	2	2,3
Medical	11	13,4	12	14,1	20	24,7	18	20,9
Free Choice	24	29,3	20	23,5	26	32,1	24	27,9
Number	82	99,9	85	99,9	81	99,9	86	100,0
Missing	23		15		24		14	

Almost 70% of both W 1 and W 2 subjects indicate that their parents would like them to be professionals. 29% of the W 1 sample and 21% of the W 2 sample state that their parents would permit them to do whatever would make them happiest. 8% of the W 2 sample and just over 2% of the W 1 sample state that their parents would like Blue-collar occupations for them. This pattern is consistent for both mothers and fathers.

The most preferred occupational categories of the fathers and mothers in both the W 1 and W 2 samples are the mechanical, computational, and medical. This pattern is almost identical to that of the expressed preferences of the subjects themselves. One difference is the low scientific preference of the parents. An interesting feature is the high number of subjects who state that they would be free to do whatever they pleased.

These findings support the general indication that parental advice has more influence on career choice than anything else (Carter 1962, Behr 1972).

8.3.2 The Black Sample

The rankings of the sample medians from the responses to the R-MIB (inventoried interests) reveal medical and scientific categories as being the most preferred. These are followed by the literary and computational.

The medical category is the dominant preference of the Black sample for the first expressed choice. This is followed by the literary and social service categories. This pattern is repeated for the second and third preferences, except that the literary category was chosen by fewer subjects. The clerical category also becomes more popular. Over 55% of the subjects prefer occupations in these four categories. A further 8% to 9% chose occupations in the scientific and mechanical categories, respectively.

The practical, musical and outdoor categories are the lowest ranked inventoried preferences. They are also the least popular expressed interests, although the practical is more popular at the third choice level. The persuasive and aesthetic categories are also not generally preferred.

There are a number of differences between the expressed and inventoried interests. First, while the social service category is an expressed preference of many of the subjects, it is not highly ranked in the inventory. A tentative explanation for this lies in the general community orientation of the Black population, which is an underlying characteristic not necessarily expressed in the context of the social service professions. The low ranking of the social service professions does not therefore necessarily contradict the high expressed preference, where only two occupations are commonly indicated i.e. teacher, social worker. The importance placed by the group as a whole on the need to be of help to others in the work situation (see 6.3.2, 7.3.1) further enchances this point of view. It is also of note that teaching and the social sciences are two professions for which studies at the advanced level are relatively accessible and for which occupational opportunities exist for Blacks.

The scientific category is not one of the more popular expressed preferences, although it is a high inventoried preference. This is possibly due to its affinity to the medical category. Thus subjects with an expressed medical preference also appear to have general scientific interest. Kuder (1960) and Lourens (1970) for example do not have medical categories in their inventories, but a single science category which includes the medical field.

Another interesting variation between the expressed and inventoried interests of the Black group is the prominence of the clerical category for the former, and the computational for the latter. Once again, the work content of the occupations in these categories is similar in a general sense. However, the occupations represented in the computational category are, with one or two exceptions, of a higher status than those in the clerical category. It is thus possible that in this instance expressed interests reflect the more realistic aspirations of the Black subjects, and the inventoried interests the more idealistic - all within the same general content area. The limited scope for Blacks in the commercial world at present supports this anomaly.

A number of occupations in the different interest fields are consistently preferred by the subjects. 'Doctor' is the most popular preference in the medical field, with 'pharmacist' also being favoured. The most popular occupations in the literary field are 'lawyer', 'reporter' and 'broadcaster'. 'Teacher', which also has a literary emphasis, is the best liked of the social service occupations. 'Social work' is the other choice in this category. Occupations chosen in the clerical and computational field include 'auditor', 'clerk' and 'bank manager'. While the mechanical category does not emerge in the first four preferences the occupation of 'civil engineer' is consistently preferred.

The general pattern of preferences of the sample is similar to what has been found in other studies on occupational preferences of African peoples - the medical, teaching and legal professions are most consistently preferred (e.g. Irwine 1969, Kearney 1969 and Murphee 1973, see 3.2).

The generally high aspirations of the Black sample (6.3.) are reflected in their expressed preferences. With a few exceptions, the trend has been to give choices at the professional level. Of interest is the fact that non-professional choices are most often listed second or third (e.g. 4,4% of the sample have clerical occupations as first choice, 9,8% as second choice and 12,8% as third choice). This poses the question of which expressed interest is most realistic - an issue of considerable concern to the counsellor.

This finding is in agreement with the findings of a number of studies of the aspirations of the peoples of Africa reported in 3.2 (e.g. Biesheuvel 1962, Clignet 1967, Tunmer 1972).

The high aspirations of the Black school-leavers are probably due to a number of factors. They have reached a privileged position in comparison to the rest of the Black community, and they appreciate the advantages of education.

The status and economic benefits which accompany higher education must be one of the primary motivators. Great emphasis has come to be placed on education by the Black population. It is commonplace for relatively uneducated parents to do all in their power to educate their children and thus provide them with the opportunity of improving their socio-economic situation.

The preferences of the sample and their high aspirations are consistent with their vocational needs (6.3.2.). The dominant needs stated are, to be of help to people,and also to use abilities and aptitudes. The first mentioned is consistent with their community spirit and is illustrated by their popular choice of occupations such as teaching, social work and medicine.

The need to use abilities and aptitudes may seem unusual for this group. In terms of the Maslowian motivation theory (Maslow 1970) a relatively unprivileged low socio-economic group should be satisfying the more basic needs, the self-actualization need being uppermost only when all others have been satisfied. In the present circumstances, the Black sample seems to have different priorities in attending to needs. This is probably due to their relatively privileged position and also to the fact that the reward of self-actualization, in their case,would be the opportunity to satisfy 'lower' needs.

The Black subjects' statements of what they think their parents want them to do is, as in the case of the White samples, similar to their own preferences. The parental preferences and aspirations are reflected in the following tables.

Table 37

Aspirations of Black Parents for their Children

Occupational Level	Father's Aspiration		Mother's Aspiration	
	f	%	f	%
Professional/Managerial	143	86,7	162	87,6
White Collar	5	3,0	10	5,4
Blue Collar	15	9,1	9	4,8
Semi-skilled	0	0,0	0	0,0
Unskilled	0	0,0	0	0,0
Free-choice	2	1,2	4	2,2
Number	165	100,0	185	100,0
Missing	40		20	

Table 38

Occupational Preferences of Black Parents for their Children: by Category

Category	Father's Choice		Mother's Choice	
	f	%	f	%
Outdoor	1	0,6	3	1,6
Mechanical	12	7,3	6	3,2
Computational	8	4,8	3	1,6
Scientific	4	2,4	3	1,6
Persuasive	8	4,8	12	6,5
Aesthetic	6	3,6	8	4,3
Literary	21	12,7	18	9,7
Musical	1	0,7	0	0,0
Social Service	30	18,2	63	34,1
Clerical	4	2,4	7	3,8
Practical	8	4,8	4	2,2
Medical	60	36,4	54	29,2
Free Choice	2	1,2	4	2,2
Number	165	99,9	185	100,0
Missing	40		20	

Over 85% of both the mothers and fathers would like their children to become professionals. The most preferred category among the fathers is the medical (36,4%) which is followed by the social service (18,2%) and the literary (12,7%). This pattern is essentially the same for the mothers who favour the social service category (34,1%), the medical (29,2%) and the literary (9,7%). Doctor, teacher and social worker are the most often mentioned.

The same question as applies to the White sample applies here, namely, the degree to which subjects are influenced in their preferences by their parents. The trends are the same as those for the White sample, and in support of the general trend.

The stated preferences of the parents indicates their somewhat 'idealistic' emphasis on the medical professions. Their limited occupational knowledge is also indicated in that professionalism is almost exclusively associated with teaching, social work and medicine.

8.4 Summary and Conclusions

A comparison of the inventoried and expressed interests revealed significant differences between the preferences of the White and Black samples. The hypothesis was thus supported. The W 1 and W2 samples have generally similar interests, although there were a few differences. There were also preferences common to all samples. A study of preferences according to category and occupational title revealed that some of the differences may be due to cultural and socio-economic factors The main trends were as follows:

The medical field tends to be highly favoured by all samples. The W 1 and W 2 samples have fairly strong scientific preferences, whereas among the Black subjects this appears to be more an adjunct to their medical preference.

Both White samples expressed a dominant preference for the mechanical category, which was not as highly favoured among the Blacks. The generally low status of occupations in this category in the R-MIB was the probable cause of its not being a highly inventoried preference. It is, however, note-worthy that the W 1 sample expressed exclusively professional preferences in this category (mainly engineering), while the dominant preference of the W 2 sample was for occupations at a more technical level. The Black sample also had a low inventoried preference for mechanical occupations and they resembled the W 1 sample in their preference for professional occupations.

The Black sample indicated a high literary and social service interest. Occupational preferences in these categories were primarily teaching, law and social work, with broadcasting and journalism also being favoured. Amongst the Whites, law was the only frequently mentioned preference.

The high computational expression of the W 2 sample was not as frequently mentioned by the other samples, allthough many W 1 subjects chose accountancy. Conversely, the clerical and computational categories were high inventoried preferences of the Black sample but not of the White.

The practical and musical categories were the least preferred by all samples. It is understandable that professions in the musical field hold little general appeal. The rejection of the practical category is probably due to its low status. The White sample rejects the clerical category probably for the same reason. The social service category also holds little appeal for the Whites.

The outdoor category was rejected by the Black sample. This is probably due to the low status of many occupations in this category. The South African outdoor orientation is inclined to be White culture-bound and this category was among the more favoured of the White subjects.

The aspirations of the subjects and their vocational needs tend to be consistent with their interests. All samples revealed high aspirations to study further and at advanced levels. The aspirations of the W 1 and Black samples are generally higher than the W 2 sample. This is probably due to socio-economic status factors (the high need to achieve among W 1 subjects) and the élitist status of the Black sample and their desire to improve themselves.

The main differences between the needs of the samples are first, that both White samples have a high security need which is not as evident among the Black sample; and second that the Blacks have a high need to be of help to others, which is not shared by Whites. This is consistent with the general community orientation of Blacks. As indicated by the subjects, parents tend to prefer for their children, vocations which approximate the interests and aspirations of the children themselves. This supports the general indications of parental influence on career choice.

9. SUMMARY AND CONCLUSION

This was an exploratory study in the field of interest assessment. The paucity of work in the cross-cultural study of interests, especially in South Africa, was the main motivation for doing the study.

The topics chosen were considered basic to the development of counselling practices in general. They are especially relevant to counselling practices for Black South Africans, for whom very little work in this field has thus far been done.

The problems associated with doing cross-cultural research were recognised and controlled as far as possible. There are, however, weaknesses in the study. This is so because of problems in meeting the rigorous cross-cultural methodological requirements in practical situations. It is necessary to compromise when the research approach has to be reconciled with the realities of the field situation.

The limitations of the Rothwell-Miller Interest Blank as a research instrument have been discussed (see 5.3). These are mainly in the area of its psychometric properties, which impose a ceiling on the nature and range of formal analyses that can be executed. These problems are, however, common to most interest tests, as the nature of the subject-matter usually restricts measurement to the ipsative.

The Rothwell-Miller Interest Blank was chosen despite its limitations, as it was felt that it best served the purpose of an exploratory study. A number of statistical analyses was conducted, and the results interpreted with caution. It is felt that although the findings may be tentative, they provide some understanding of a few basic behavioural processes of the samples studied.

The main findings of the study are:

1. Black school-leaving boys have similar stereotypes of occupations to White school-leaving boys - at least insofar as the stereotypes are represented in the Rothwell-Miller Interest Blank. Furthermore, the Black school-leaving boy structures the fields in a similar way to the White school-leaving boy. These findings may further an understanding of the structure of interests, especially as regards the universality of the structures, for which there is a small body of evidence at present.

2. Significant differences in the vocational preferences of Black and White subjects were found. Some of these can be attributed to cultural factors. The proportion of subjects in the two White samples with preferences for the different fields is generally similar, although there are some differences which can possibly be attributed to socio-economic factors. A number of dominant preferences are common to all samples. There are similarities in least preferred interest fields among all samples.

3. The aspirations of the whole sample tend to be high, with those of the upper socio-economic White sample and the Black sample being higher than the lower socio-economic White sample.

4. The vocational needs of the samples are consistent with their aspirations and interests. A notable similarity between the Black and White samples, is the common need to utilise abilities and aptitudes. There is a prominent security need among both White samples. The need to be of assistance to others is prominent among the Black subjects.

5. The preferences and aspirations of the parents, as perceived by the subjects, tend to be similar to their own.

It is felt from the findings of this study, that the Rothwell-Miller Interest Blank can be recommended for use by the vocational counsellor, when assisting clients of similar background to the samples used. In addition, certain characteristics of the instrument further recommend its use. These include the fact that it is a group test which is easy to administer and score, that it is readily understood by subjects and that it can be completed in a relatively short period of time.

Its initial application would be most appropriate in the context of a research programme, where its practical value and use for local conditions could be more fully investigated.

A number of areas for further research are suggested by the findings of the study:

1. While the Rothwell-Miller Interest Blank can be of use in its present form as a general guide to the vocational preferences of school-leavers, it would be necessary to revise it to render it more appropriate for use in South Africa. This would involve studying all occupational titles presented, and substituting others which are appropriate for use locally. This should be done separately for the different race groups.

2. The psychometric properties of the instrument can be improved by grouping occupations more closely into cells in terms of their perceived

prestige and status value. This would possibly provide a 'cleaner' assessment of interests as subjects would be less inclined to be influenced by the status value of the occupation.

3. The generality of the interest structures found in this study should be investigated in other sectors of the South African population. For example, the study could be repeated among females, Afrikaans speaking people, Indians, Coloureds and Rural Blacks.

4. The relationship between expressed and inventoried interests should be studied. Work in this field has not been done among Blacks.

5. Research on the relationship between idealistic and realistic preferences should be done. Practical ways of reconciling them should also be investigated. This is an important area in view of the overall high aspirations and idealistic preferences, especially among Blacks.

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APPENDIX 1

Occupational Stereotype Categories and Representative Occupations in the Rothwell-Miller Interest Blank (Male Version) (Miller 1968)

Category	Definition	Occupations
Outdoor	An interest in outdoor activities, with a dislike of being tied down to routine work or regularity.	farmer, forester, surveyor, explorer, prospector, gamekeeper, fisherman, transport-driver, market gardener.
Mechanical	An interest in working with machines, tools, and mechanical contrivances.	civil engineer, toolmaker, fitter and turner, electrician, motor mechanic, GPO technician, watchmaker, radio mechanic, welder.
Computational	An interest in working with figures.	cost accountant, statistician, auditor, income tax assessor, maths teacher, bank cashier, cashier, accounts clerk, income tax clerk.
Scientific	An interest in analytical and investigatory activities, in experimentation and science generally.	scientist, industrial chemist, meteorologist, biologist, agricultural scientist, botanist, astronomer, geologist, laboratory assistant.

Category	Definition	Occupations
Persuasive (Personal Contact)	An interest in talking to people, in persuading and discussing, arguing, mixing with others. Confidence in making personal contacts of all kinds.	sales manager, radio announcer, salesman, advertising agent, interviewer, commercial traveller, auctioneer, publicity officer, insurance salesman.
Aesthetic	An interest in artistic activities in colour, design and beauty, with a desire to create things containing these qualities.	artist, commercial artist, architect, interior decorator, jewellery designer, photographer, stage designer, window dresser, textile designer.
Literary	An interest in books, in reading or writing imaginative and original verbal material.	journalist, novelist, playwright, historian, librarian, magazine writer, book reviewer, radio script writer, poet.
Musical	An interest in playing musical instruments, or hearing others play, in singing or in reading about music and musicians. Musical appreciation.	concert pianist, orchestra conducter, composer, music critic, music teacher, organist, record librarian (music), dance band leader, music shop salesman.
Social Service	An interest in people's welfare, with a desire to help and guide people with their problems and worries. Desire to understand others. Having strong ideas of service.	teacher (primary), educational psychologist, headmaster, social worker, minister of religion, scout organiser, youth club worker, employment officer, social welfare worker.

Category	Definition	Occupations
Clerical	An interest in routine office work that requires precision and accuracy.	bank manager, company secretary, town clerk, insurance clerk, clerical officer, shipping clerk, office worker, postal clerk, despatch clerk.
Practical	An interest in working with one's hands, constructing, making or mending things, practical work of all kinds as compared with occupations where work is more mental than manual.	carpenter, builder, cabinet maker, house painter, bricklayer, wood machinist, plasterer, plumber, shoe repairer.
Medical	An interest in curing people, relieving the effects of disease, or illness, in healing and in medical and biological matters generally.	doctor, surgeon, veterinary surgeon, pharmacist, dentist, optician, x-ray therapist, physiotherapist, male nurse.

The First Cell of the Male Version of the Rothwell-Miller Interest Blank

	A
Farmer	
Civil Engineer	
Cost Accountant	
Scientist	
Sales Manager	
Artist	
Journalist	
Concert Pianist	
Teacher (Primary)	
Bank Manager	
Carpenter	
Doctor	

(Miller 1968)

APPENDIX 2

BIOGRAPHICAL QUESTIONNAIRE

A. Personal Data

1. Surname: . . . . . 2. First Names: . . . . . .

3. Age: . . . . . 4. Tribe: . . . . . .

B. Home Background

5. In the table below, fill in details of your parents, brothers, sisters (whether alive or deceased) and yourself.

F = Father M = Mother

B = Brother S = Sister

SB = Step Brother SS = Step Sister

X = Yourself

Indicate deceased members by D in the age column

Relationship F M S X etc.	Present Educational Std eg. Std 3, BA, etc.	Present Occupation
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .

C. Vocational Information

6. List, in order of preference, the three occupations you have considered most seriously as possible careers:

i. .....

ii. .....

iii. .....

7. Do you intend studying further? .....

8. If so, where? .....

9. What occupation would your father like you to follow? .....

.....

10. What occupation would your mother like you to follow? .....

.....

11. Below are listed 12 possible reasons for choosing a career. Encircle for each item A, B or C to indicate how important that item would be for you in selecting a particular occupation.

A - Very important
B - Somewhat important
C - Not important

I should like to enter a career which will:

A B C Allow me to use my best abilities and aptitudes.
A B C Provide me with the opportunity of earning a great deal of money.
A B C Permit me to be original and creative.
A B C Give me social status and prestige.
A B C Enable me to work with ideas and theories.
A B C Allow me to be physically active.
A B C Enable me to work with people rather than with things.
A B C Assure me a stable and secure future.
A B C Leave me free from supervision by others.
A B C Give me a chance to exercise leadership.
A B C Provide me with adventure and exitement.
A B C Give me an opportunity to be helpful to others.

Now go back and rank, in order of their importance to you, those items which you have marked "A" (very important). Put the figure 1 in the left-hand margin opposite the item which is most important to you, place 2 in front of the next most important, a 3 for the next most important, etc.