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DEVELOPMENT AND VALIDATION OF A
T A T - TYPE PROJECTIVE TEST FOR USE
AMONG BANTU-SPEAKING PEOPLE

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DEVELOPMENT AND VALIDATION OF A TAT-TYPE PROJECTIVE

TEST FOR USE AMONG BANTU-SPEAKING PEOPLE



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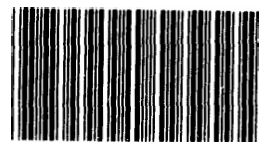
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ABSTRACT

The aim of this project was to develop a novel TAT series for use among Bantu. At the outset the practice of modifying existing Western tests for cross-cultural use was criticised and a more acceptable procedure formulated. In line with the favoured strategy, three pilot studies were undertaken prior to the construction of the TAT. Their objective was to gain information which would facilitate the creation of the TAT. Once the TAT was designed, a further study was conducted to examine the stimulus properties of each picture. It was concluded that the pictures examined the areas they purported to measure. In order to validate the series further however three hypotheses were set up: (i) that urban groups have a more developed awareness of their identities when compared with rural populations; (ii) that urban groups have higher achievement motivation as compared with their rural counterparts; and finally (iii) that urban groups are less field-dependent than their rural counterparts. It was expected that results on the latter perceptual dimension would correlate with the two personality variables examined in (i) and (ii) by means of the TAT. The major validation study then proceeded to examine the tenability of the hypotheses.

Findings supported the predictions: urban groups obtained consistently higher scores on measures of ego identity and n Ach and lower scores on measures of field-dependence. Males were less field-dependent than females. However there was little evidence of McClelland-type achievement themes or of ego identity as Erikson has conceptualized it. The evidence suggested that the signs of striving behaviour were really indicative of the desire to actively cooperate with the social structure. Findings on the ego identity dimension suggested that a distinction should be made between the sense of personal isolation and personality integration. The greater self-awareness among the urban groups was seen as indicative of a greater sense of isolation among this group.

SAMEVATTING

Die doel van hierdie projek was om 'n nuwe TAT-reeks vir gebruik by Bantoe te ontwikkel. Die gebruik om bestaande westerse toetse vir tussenkulturele doeleindes aan te pas, is aanvanklik gekritiseer en 'n meer aanneembare prosedure is geformuleer. Die loodsstudies is op grond van die strategie waaraan daar voorkeur verleen is, onderneem, voordat die TAT voltooi is. Die doel van hierdie studies was om inligting in te win wat die ontwikkeling van die TAT sou vergemaklik. Nadat die TAT ontwerp is, is 'n verdere studie onderneem om die stimuluseienskappe van elke prent te ondersoek. Die gevolgtrekking is bereik dat die prente die gebiede wat hulle bedoel is om te meet, ondersoek het. Om die geldigheid van die reeks egter verder te bepaal, is daar drie hipoteses gestel: (i) dat verstedelike groepe oor 'n meer ontwikkelde identiteitsbewustheid beskik wanneer hulle met landelike bevolkingsgroepe vergelyk word; (ii) dat verstedelike groepe in vergelyking met landelikes hoër prestasie-motivering aan die dag lê; en ten laaste (iii) dat verstedelike groepe minder veldafhanklik as landelikes sou wees. Daar is verwag dat die resultate op die laasgenoemde perseptuele meting met die twee persoonlikheidsveranderlikes wat in (i) en (ii) deur middel van die TAT ondersoek is, sou korreleer. In die hoof geldigheidstudie is daar dan gepoog om die aanneembaarheid van dié hipoteses te ondersoek. Die bevindings het die voorspellings gestaaf: verstedelike groepe het konsekwent hoër tellings op maatstawwe van egoïdentiteit en n Ach (prestasiebehoefte) behaal en laer tellings op metings van veldafhanklikheid. Mans was minder veldafhanklik as vrouens. Daar was egter min aanduiding van McClelland-tipe prestasietemas of van egoïdentiteit soos Erikson dit verstaan het. Die inligting suggereer dat die tekens van strewensgedrag in werklikheid aanduidings is van 'n begeerte om aktief met die maatskaplike struktuur saam te werk. Bevindings op die egoïdentiteitsdimensie dui daarop dat 'n onderskeid tussen 'n sin van persoonlike afsondering en persoonlike integrasie gemaak behoort te word. Die groter mate van selfbewustheid wat by die verstedelike groep aangetref is, word as 'n aanduiding van 'n groter isolasiegevoel by dié groep beskou.

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SUMMARY

The central purpose of the present study was to develop and validate a novel TAT series for use among Bantu-speaking people. On the basis of a critical analysis of the traditional practice of modifying the Western TAT, it was decided to adopt a 'grassroots' approach to the design of the present series. Thus four pilot studies were undertaken prior to the design of the Bantu TAT. The objective of these preliminary studies was to garner basic data which would facilitate the creation of the TAT. Three pilot studies were conducted to this end. Once the picture series was designed a further validation study was undertaken. For purposes of the latter, four hypotheses were set up for examination by means of the novel TAT. The three personality dimensions selected for particular attention were: Achievement Motivation (n Ach); Sense of Separate Identity (SSI); and Acceptance of Authority (AA). Urban and rural groups were to be compared on these three variables. The final hypothesis was concerned with comparing these subgroups on the perceptual dimension of field-dependence. Thus a valuable by-product of the strategy was the fact that it made possible an examination of the process of acculturation, in particular the extent to which perceptual/personality patterns are influenced by the urban versus the rural way of life.

A basic distinction made in the present study is that between behavioural patterns and psychological processes. The distinction was made in order to establish precisely what kind of behaviour may be expected to be general under diverse circum-

stances: in other words it was formulated in an attempt to make explicit the possibilities and limitations of cross-cultural comparability. The meaning attached to these concepts - behavioural patterns and psychological processes - was not derived from systematic or consistent usage in the literature but was specially formulated to clarify the position taken on the behaviour examined in the present study. The phrase 'behaviour patterns' was thus used to refer to the habits generated by and acquired in specific environmental circumstances: psychological processes are seen as basic mechanisms responsible for the acquisition of behaviour patterns. It was suggested that processes be regarded as more general properties of human behaviour and that patterns (particularly personality patterns) as specific to the environments in which they were acquired. In these terms, physiological functioning may be regarded as fundamental processes, universal to man: personality patterns are viewed as specific to the societies in which they are acquired. For this reason it was decided to construct a TAT de novo from indigenous material induced from the Zulu-speaking people.

In Chapter 1, the problems associated with the administration of tests to non-Western cultures are discussed. The practice of modifying existing Western-based tests is heavily criticised and it is argued on both logical and statistical grounds that the only valid method of examining personality variables among foreign

groups is one which employs measures constructed de novo from indigenous source material. Reference is made to the recent article of Berry (1969) which defines the problems inherent in cross-cultural comparability in similar terms and specifies the kind of strategy which would meet these difficulties adequately. The present investigation is an attempt to implement the conditions considered admissible.

In Chapter 2, a review of empirical work conducted in the areas explored by the present study is presented. The two broad categories explored - Perception and Personality - are separated and these were further subdivided into: Perception (a) General, (b) Cross-Cultural; Personality: (a) Cross-Cultural Projective Techniques, (b) Achievement, (c) Sense of Separate Identity.

In line with the theoretical analysis, the presentation focusses on the methodological strategy of the studies selected for review: no attempt is made to provide a comprehensive coverage of the field or to convey its scope. Studies which are described in detail are presented with the specific aim of highlighting methodological adequacy and reflecting the extent to which they stand up to the criteria considered essential for claims of validity. It is observed that the kind of studies favoured by Berry and the present author are uncommon in the literature. The first two chapters conclude by noting that the strategy of the present investigation was governed by the theoretical analysis of the first chapter and the paucity and limitations of empirical work in the field to date.

In Chapter 3, three of the four pilot studies are presented. The objective of these studies was to gather information which would facilitate the creation of one of the major measures of the investigation, namely the TAT. Since all three studies were concerned with the construction of the TAT series, they were regarded as a unit and presented in the same chapter. The strategy adopted in these studies progressed from an exploratory approach to the standard practice of hypothesis-testing. The first study was highly unstructured and comprised items primarily

intended to induce verbal material of the sort which is elicited by TAT stimuli. The second study was somewhat more structured and involved a questionnaire schedule which was to be flexibly administered. The second study was still exploratory in the sense that verbal flow was encouraged and not inhibited by any desire to meet the requirements of 'standard test conditions'. Finally, the third study followed the form of the traditional experiment: it examined the validity of two hypotheses generated by the first two studies and compared differences among populations by means of clear-cut statistical tools.

In Chapter 4, the final pilot study is presented. Since this study was concerned with the properties of the TAT once it was devised, it is presented separately from the others. The Semantic Differential technique was used to determine the stimulus pull of each picture. This was done separately for each of the groups. Three conclusions were drawn from the fourth pilot study:

- (i) the stimuli appeared to be examining the psychological areas they were devised to measure;
- (ii) there appeared to be sufficient ambiguity to allow for individual differences; and
- (iii) the four sets could be considered parallel versions of the series.

In Chapter 5, the major investigation is described. Its objective was two-fold: (i) to determine group differences on indices of field-dependence and its personality correlates and (ii) to tease out and compare the clustering of these variables among four subcultures of the Zulu-speaking people. Before the interrelationships among the variables were examined, the reliability of each measure was determined. The Kuder-Richardson formula 20 and the Spearman-Brown split-half estimates of reliability were the main techniques used. The overall order of reliability of the measures was as follows:

- (i) Rod-and-Frame: .70
- (ii) Culture Stereotype: .88
- (iii) Pattern Reproduction: .80 (rural groups); .62 (urban groups.)

(iv)	Draw-a-Person:	.90
(v)	Child-Rearing Practices:	.89
(vi)	Picture Arrangement:	.90
(vii)	TAT (a) SSI:	.84
	(b) n Ach:	.74
	(c) AA	.75

The two broad statistical tools used to examine differences on the four major variables studied - Field-Dependence, n Ach, Sense of Separate Identity and Cultural (Sex-Role) Stereotype - were Analysis of Variance and Factor Analysis. It was observed that statistical techniques which yield only a significance value are inadequate since they do not enable one to disentangle the contribution of experimental effects to differences in performance among the groups. In order to make this possible, it is necessary to carry out tests capable of determining the magnitude of significant effects. This can be done by deriving 'correlation-like estimates of association' (Fleiss, 1966). It is noted that a disconcerting number of investigators are still content to treat the significance value as meaningful and important. The attainment of an admissible confidence level for the p value yielded by a Variance Analysis is invariably treated as the basis for far-reaching conclusions. In the present study, obtained differences were subjected to tests of significance as well as tests of magnitude. The formula recommended by Fleiss (1966) for an Analysis of Variance model comprising fixed effects was adapted for the present study.

Factoring procedures were undertaken in order to obtain a picture of the clustering of the variables among the groups. The first attempt at factorization was guided by Kaiser's decision rule which stipulated the extraction of five factors. This proved to be too high and was abandoned. On a more intuitive basis, it was decided to extract two factors.

The trends revealed by each technique were as follows:

A. ANALYSIS OF VARIANCE

Hypothesis I: Field-Dependence

- (i) The urban groups obtained higher scores on the indices of field-independence than did the rural groups. This was true of performance on the RFT, the chief measure of field-dependence, as well as the DAP and the Pattern Reproduction Test. (Findings on the latter measure were not given much credit, due to its low reliability for the urban groups).
- (ii) In every case, it was the male groups who contributed most to the urban/rural differences.

These findings lent support to Hypotheses I and IVb.

Hypothesis II: n Achievement

- (i) On a general level, it was noted that the achievement motive should be viewed in terms of the total work configuration, as well as the broader industrial and social context. Thus responses to the measures concerned with n Ach, Acceptance of Authority (AA) and WO were analysed in relation to each other. (The conviction that variance findings on these three measures should be taken together was supported by the patterns yielded by the factor analysis where it was found that these same three variables loaded on the factor identified as 'Initiative in the Work Situation').
- (ii) The urban groups obtained higher scores on n Ach than the rural groups - as measured by the TAT. Here again it was the male groups who contributed most to the urban/rural differences.
- (iii) The urban groups obtained higher scores on the TAT indices of Acceptance of Authority. The evidence suggested that the manner in which an individual relates to authority strongly governs the extent to which he would give expression to achievement needs in the work situation.

Hypothesis III: Sense of Separate Identity

The chief measure of this dimension was derived from the TAT protocols. Urban groups produced a significantly higher number of SSI indices than rural groups, as predicted. Additional evidence of this trend was obtained from the CRP questionnaire where responses indicated greater self-awareness on the part of the acculturated groups.

The DAP test was also considered relevant to this dimension since it examined the extent of articulation of body parts - on the assumption that graphic articulation is indicative of a deeper level of self-articulation. On this measure it was also found that the urban male groups produced the most sophisticated or articulated drawings. This was treated as further support for the hypothesis concerned with Sense of Separate Identity.

Hypothesis IV: Cultural Stereotype

All four subcultures produced substantial evidence of the Male/Independent - Female/Dependent stereotype. This finding lent support to Hypothesis IV which postulated a relation between Field-Dependence and the Cultural Stereotype of the Sexes. The greater field-independence of the males among both cultures correlated with the assertive and independent rôle assigned to males by these cultures.

B. FACTOR ANALYSIS

The factor analytic technique was a supplementary statistical procedure undertaken in an attempt to derive further information from the data. The objective of the factor techniques was two-fold: (a) to obtain a picture of the correlations among the variables, and (b) to compare the factor structures of the four sub-groups. It was stressed that the findings yielded by these procedures should be treated with caution. Caution was prompted by two considerations: firstly, the reliability of several of the tests was not as high as is desirable for factoring techniques, and secondly, since the tests used in the battery were not chosen with a factor analysis in mind they could not be regarded as the best reference markers for the factors which emerged.

The following broad trends were discerned from the factor analysis:

- (i) Males appeared to be more differentiated than females. This was suggested by the fact that whereas two distinct factors could be identified among the male factor patterns, this was not possible in the case of the female factor structures.
- (ii) The two factors identified were 'Locus of Control' and 'Initiative in the Work Situation'.
- (iii) Factor II was comprised of all the variates which concerned the individual's response to the work situation. The grouping of these factors reinforced the decision to treat these variables as interrelated (cf. discussion of Analysis of Variance findings).

However these inferences were made with considerable reservation. A further investigation designed with a factor analysis in mind would be required in order to make any assertion regarding the 'invariance' of the factor patterns found in the present study. The summary will conclude by highlighting the general points which emerged from the study:

- (a) All instruments except the Pattern Reproduction Test were stable and sufficiently reliable to examine the areas selected for study. (At the same time it may be valuable to recall Wober's criticism of Witkin's visually oriented indices of field-dependence. It was recommended that a comparative study be made of auditory versus visual measures of field-dependence. It may well be that the former are more suited to the examination of this dimension among African people).
- (b) It was suggested that the fact that urban groups obtained higher scores on the measure of n Ach may be indicative of a greater capacity to conform to the demands of Western society - one of these being the ability to provide evidence of striving tendencies - and not necessarily of n Ach as McClelland conceived of it.

- (c) The bulk of the evidence suggested that females are less differentiated than males and that experiences associated with one's sexual grouping are more fundamental than those related to culture.
- (d) The TAT was found to be an acceptable research instrument for purposes of studying Zulus on the variables examined.

PROBLEMS ASSOCIATED WITH THE MEASUREMENT OF AFRICAN PERSONALITY

1.1 Introduction

"The measurement of personality integration and adjustment presents considerable difficulties at all times, but especially so in African cultures. The core problem is to determine the dimensions of normal personality development in the numerous distinct African cultures, many of them in a state of rapid transition Personality testing is, however, a domain in which, despite much effort, little progress has been made towards the production of satisfactory measuring devices."

Biesheuvel's analysis of the status of research among Africans is as relevant in 1970 as it was in 1961. Most of the problems associated with the measurement of African personality are attributable to the fact that the investigator is himself culture-bound and tends to bring his own modes of functioning into the test situation. In recent years, a number of research workers, disturbed by the culture-bound nature of their techniques, have turned to the projective techniques as a means of penetrating foreign cultures in an unbiased fashion. The latter techniques were favoured largely because of the fact that they involve no 'right or wrong' responses to the stimuli they present. Thus the typical cross-cultural use of projective techniques was prompted by an exploratory motive. However an unfortunate by-product of this unstructured exploratory approach was the tendency to ask global questions of the type "what is personality like in this culture?" This kind of question is usually implicit and has therefore not been subjected to the kind of cautions it would receive if more explicitly stated. As a result, questions of sub-group variations within the culture, sampling problems, and perhaps most important, the construct validity of test items have been seriously neglected.

The present study was an investigation of four personality variables - Field-Dependence, the Achievement Motive, Sense of Separate Identity and Attitude towards Authority - among four sub-groups of the Zulu-speaking people. A secondary concern was with

the process of acculturation and how it influences the growth and expression of these variables. In order to examine these variables it became necessary to devise appropriate instruments. The TAT was the main technique chosen to explore the personality variables and for various reasons (described below) it was decided to create a novel series of pictures.

1.2 Problems of Cross-Cultural Comparability: the desirability of creating tests de novo

Most scientific instruments were conceived and produced within a Western setting. The scientific method itself and the technology flowing from it are Western by-products. Probably because of this historical circumstance most studies of non-Western groups have tended to treat existing tests as the point of departure. Almost invariably, one finds that even when a test is adapted in great detail, the basic form of the test is retained. It is argued here that such cultural translations may render the new test literally comparable but not necessarily operationally. In other words, it may not have construct validity. The argument may be summed up thus: formal equivalence does not ensure conceptual equivalence. It is submitted that test constructors should strive more assiduously for the latter. In order to achieve this, it may be necessary to produce tests which are singular to each culture. In other words, it is sometimes desirable to make tests culture bound. Stated in this way, the argument appears to go against the tradition of culture-free/fair testing. However, this is not the intention: the argument has merely attempted to show up a fallacy in the so-called culture-fair tests. It is argued that because Western culture is treated as the defining

culture, alien cultures are examined at second remove. And because of this, instruments devised to explore the second culture are inappropriate. The essence of the argument is that each culture should be defined in its own terms.

For the above reasons it was decided to devise a novel TAT from indigenous material gathered from the culture under investigation.

Four pilot studies were to be undertaken prior to the major study. This preliminary work was devoted to collecting material which would facilitate the design of the TAT. The first was an exploratory study designed to generate hypotheses; the second was a more structured attempt to explore the meaning of specific stimuli in the environment for the Zulu; and the third examined two hypotheses generated by the first two. The fourth pilot study was concerned with the stimulus value of the test once it was devised. However before the studies are described a review of the literature is given. The limitations of previous work in this field are highlighted in order to convey the basis of the present study.

1.3 Review of Work in this Field

1.3.1 Cross-Cultural Projective Techniques

As already observed, investigators have favoured the use of projective instruments in their attempts to examine the personality patterns of non-literate cultures. Among these, the TAT appears to be the most commonly used. Before the present TAT was devised, six series of TATs for use among non-literates

were in existence (Henry's (1947), Lessa's (1954), that of Gladwin & Sarason (1953); Lee's series (1953); Sherwood's (1957) for use among the Swazi-speaking people; and de Ridder's (1961) for urban Africans.) Thus before the present TAT series was undertaken, the value of existing sets was assessed.

A close inspection of each set revealed that insufficient attention had been paid to methodological issues. Related to this was the fact that the paucity of information supplied prevented the reader from knowing precisely what was done or what sort of rationale governed the procedure, giving the impression that the pictures were the result of the investigator's stereotype regarding the foreign group. In the absence of explicit statements regarding rationale, this impression could not be rectified. Striking examples of this type of investigator bias can be found in the series designed by De Ridder (1961), whose study is described below.

The above are problems of cross-cultural methodology. Other flaws were bound up with projective methodology. The concept of "ambiguity" in projective techniques appeared to be responsible for considerable misunderstanding. Several of the tests gave the impression that the test constructor had taken ambiguity to mean vagueness. As a result it was often difficult to actually identify the content of the picture. This is not to say that haziness has no place in the series. Where the investigator is keen to evoke responses to vague or uncertain experiences, vaguely defined pictures are desirable. In this case, the test constructor is specifically interested in the effects of the kind of stimulus on fantasy. However, it is argued here that ambiguity was not intended to denote vagueness in the orthodox usage. Thus, where vagueness was found to characterize an entire series, the present author took this to be the result of an oversimple view of the rationale of the TAT.

The above comments have been included in order to convey the theoretical background against which existing TAT studies were assessed. The most pertinent studies can now be described. In

1953, Sidney Lee collected the fantasies of a group of Bantu inmates of a mental hospital, and used scenes from these productions as the bases of his pictures. The series does not appear to suffer from the major methodological defect defined above, namely the translation of stereotypes into pictures. It is suggested that this is due to the manner in which the pictures were devised: Lee used imagery generated within the indigenous culture. He did not simply adapt the Murray series. It may be objected that since the sample was so specific - only inmates being used - other types of bias are built-in. In fact, there was evidence of this. At least five of his themes (Cards M1, M5, M6, MW1 and MW3) seem, on an impressionistic basis, to be singular to the real life situation of these subjects. Lee supplies the reader with 'some common responses' but states that these cannot be treated as norms. Since he provides no frequency figures, he can be taken at his word. Finally, it may be observed that without a statement of the rationale of each card, future test users cannot be sure of the "stimulus pull" of the pictures. The absence of quantitative norms aggravates this difficulty. (The present series attempted to come to grips with the problem of establishing the "stimulus pull" of the pictures, cf. Chapter II).

De Ridder's TAT series appeared in 1961. The latter series is considered most vulnerable to the charges laid above. Despite his comments regarding validity, de Ridder provides almost no validation evidence. Moreover, his pictures appear to the present writer to be striking examples of the tendency to build stereotypes into the stimulus material. It is small wonder that these stereotypes were confirmed in the responses evoked.

De Ridder designed 9 cards for purposes of selecting bus-drivers for a Bus Corporation. He reports that TAT predictions were successful against objective criteria of accident liability and disciplinary record. Unfortunately, no information is supplied; quantitative data is completely absent and information regarding his procedure is minimal. Furthermore, the interpretations of the protocols are cast in the form of global generalizations, stereotypes and even facile clichés, e.g. "the urban African retains within

himself a great deal of uninhibited, uncontrolled primitive" (p. 158). Even less acceptable scientifically is the following statement: " ... the type of presentation that one has come to expect of the better educated African, a literary presentation full of interest, information, emotion and vivacity" (p. 117) (italics mine). Such a statement is almost a frank admission to a methodology which builds expectations into the experimental design.

De Ridder's study raises another important question concerning design. This issue is best exemplified by picture D6: A Hand Holding Money. It is submitted that the design of this picture almost guaranteed the emergence of the stories induced. The emergence of attitudes should be provided for rather than actively stimulated. In the case of the series under discussion, the plots appear to be supplied more by the pictures than by the subjects. De Ridder notes that he observed a significant number of stories revealing dissatisfaction with the African's financial position. This may well be the case, but he has based his conclusion on responses to the picture D6. This picture is subject to a significant technical fault. The way in which it is drawn may almost be said to be a symbolic rendering of dissatisfaction: African custom has it that Africans are expected to acknowledge gratitude for a gift with both hands.

Sherwood's series (1957) is by far the most sophisticated methodologically. Of all the TAT studies reviewed, his is the only one which provides a detailed account of his procedure. It is clear that his procedure was governed by carefully thought out rationale. Moreover, he combines an uncluttered knowledge of psychodynamic theory with experimental rigour. As a result, his instrument is governed by basic principles of depth psychology rather than preconceptions concerning the group investigated.

Sherwood set up 13 criteria to act as guide lines for his procedure. One of these is quoted in order to illustrate the manner in which he turned his theoretical understanding to experimental use. Sherwood quotes Freud's comments on condensation in dreams.

"The dream is meagre, paltry and laconic in comparison with the range and copiousness of the dream-thoughts. The dream, when written down, fills half a page: the analysis which contains the dream-thoughts, requires six, eight, twelve times as much space." (p. 175).

Bearing in mind the affinities among free-associating processes, he set up a criterion which would allow for compression of the sort Freud refers to. As a result, his stimulus pictures were contrived in such a way that condensation was made possible. Criterion 3 is formulated as follows:

"Criterion 3. Compression. Except where other criteria forbid, stimuli must be compressed into each picture to elicit associations to a wide range of relationships, values, attitudes and important themes auxiliary to the specific area at which the picture is 'aimed'" (p. 14).

By design, therefore, each picture attempts to raise psychologically related themes. Picture 1 of the series illustrates this point clearly. This picture has a youth with a bicycle, a girl, three huts, a flag on a pole and a child.

"The results of these many valences is that while the subject is responding to the main theme he is sensitive also to the peripheral ones and weaves into his story something of the emotional significance they hold for him." (p. 175).

These issues belong more properly to the discussion of design, to be dealt with more fully later (Chapter II). They were introduced here merely to illustrate the approach of a more rigorous worker in this field, and one whose approach influenced the strategy of the present study.

1.3.2 Field Dependence

Witkin et al (1954) laid the experimental background of his concept of field-dependence. The concept may be introduced by describing the two key tests which are assumed to measure it: the Rod-and-Frame (RFT) and the Tilting-Room-Tilting-Chair (TRTC). Individuals have been found to behave in characteristic ways in tackling these perceptual tasks. Those individuals whose judgements are relatively unaffected by the frame or the complexity of the

figure are called field-independent; those who are easily displaced by field effects are considered field-dependent. Two general findings which have emerged are pertinent to the present study: Firstly, in his original findings Witkin observed a pronounced sex difference, women being more field-dependent than men. In his later work (1962) he reported socialization differences in the families of field-dependent and field-independent children. These findings are highlighted here because they provide the empirical basis for the hypotheses determining the present investigation: it will be seen that Sex and Culture are the Independent Variables of the present study.

The literature reviewed suggests that Witkin has had more impact than any other theorist interested in personality-perception models. His contribution is perhaps more conspicuous because it includes instruments of hardware to measure so nebulous a trait as "style". The fact that such apparatus makes possible precise measurement of a personality variable is probably an important reason for its appeal to workers in this field. As a result, the actual measures have accumulated an impressive amount of reliability evidence. At the same time the theory has been considerably refined - in any cases by Witkin himself.

Several workers have attempted to replicate Witkin's findings on non Euro-American groups, i.e. cross-culturally. The present review will refer only to studies conducted in Africa, generally francophone Africa. The studies of Dawson (1967) and Wober (1966 and 1967) are prominent in this area.

Dawson (1967) was the first worker to apply Field-Dependence theory to findings in Africa. His work was motivated by the observation that the disciplinary pattern of tribal life in Sierra Leone is in line with Witkin's hypotheses concerning the child-rearing practices which are likely to limit "psychological differentiation". Witkin described two extreme practices in the socializing of children. The first tends to produce a conformist child through strict punishment and by preventing the assumption of individual responsibility. These children are said to perceive globally. They do not structure the perceived world actively and tend not to deal

skillfully with problems of visual analysis. The other extreme in child-rearing practices is claimed to produce an analytic individual who tends to structure his environment.

Dawson used Witkin's indices on a Sierra Leone sample (n is not given). His findings were in the expected direction. There was a significant relation between degree of maternal discipline and performance on measures of field-dependence.

Dawson also compared Temne and Mende groups. The Temne mother is extremely dominating. The Mende mother, on the other hand, encourages individual initiative to a considerable extent. Results were again in the expected direction. The Temne groups were more field-dependent: they had low Kohs scores and low EFT means.

Wober argued that the American test was devised in a visual medium and is therefore biased. His concept of "sensotypes" refers to the fact that each culture differs in the way in which it 'proliferates information', and that this difference depends on which sense modality is given prominence in the culture. He submits that Africans are brought up in a culture emphasizing the proprioceptive and auditory modalities. He therefore attempted to examine the hypothesis that in certain West African cultures

"proprioceptivity is relatively more elaborated with respect to visuality than would be the case in Western cultures" (p. 184).

In other words, proprioceptivity is the dominant sensotype. He compared the mean scores for South Nigerian and American subjects. He found that where proprioceptive information (body tilt) is more prominent than visual, the Nigerians were in fact more accurate. He concluded that:

"..... style of cognitive function is not so uniform throughout all fields of an individual's expression as had originally been supposed by Witkin" (p. 194).

This finding appears to be the most consistent amongst diverse kinds of studies.

1.3.3 n Ach

Of all the motives studied experimentally, the Achievement motive is the most conspicuous. In a recent Nebraska Symposium on Motivation (1968) the literature on Achievement Motive Research occupied a prominent position. In his excellent review of this field, Heckhausen (1968) comments thus:

"The Achievement Motive by McClelland, Atkinson Clark & Lowell (1953) is responsible for starting a veritable avalanche of investigations. In fact it is an avalanche which is still rolling ..."
(p. 103),

and concludes that "a survey has become an ever more difficult undertaking." (p. 103).

On the basis of both his theoretical convictions, as well as his survey of the literature in this field, Heckhausen argues for "a renewed interest in such subjective and seemingly elusive phenomena as people's imagery, even if this area is still of somewhat low respectability for research" (p. 104).

The empirical measures adopted in the present study entail a similar conviction. The "thought samples" induced by TAT stimuli are considered to provide evidence of an individual's preoccupations. It has been argued that imagery and symbolic behaviour is compensatory, and that the very occurrence of such imagery indicates a deficiency in the area concerned (Lazarus, 1961). However, empirical studies of the achievement motive have provided overwhelming evidence that in the area of n Ach the relationship between thought and action is positive and direct rather than inverse.

This motive has also been heavily explored cross-culturally. Price-Williams (1969) observed that the concept of Achievement Motivation is the most culturally pursued idea in cross-disciplinary research, other than the superordinate concept of personality itself. More significant for present purposes is the fact that it is now recognized as a kind of socialization system.

McClelland (1953), who was responsible for elaborating the concept of n Achievement, also pioneered the method of measuring it. Considering the problems of subjectivity associated with the TAT, his method for measuring n Achievement is relatively clear-cut. However, as Price-Williams points out, when the concept of achievement is taken outside the context of a competitive culture such as the United States, difficulties arise. The concept of Achievement Motivation is so deeply embedded in the Western way of life that investigators examining it in other cultures are bound to be influenced by preconceptions. Price-Williams has emphasized the importance of determining the relationship between achievement motivation and other socializing processes. One of the objectives of the present study was to examine its co-variance with other (socializing) variables associated with the adjustment of Western society.

1.3.4 Sense of Separate Identity (SSI)

In a study which attempts to maintain an operational methodology this variable presents special difficulties. These difficulties are probably inherent in the attempt to explore the dynamics of behaviour and to maintain a psychometric approach. These two methods of examining behaviour are generally assumed to be mutually exclusive. It may be useful to make explicit the premises which govern the two approaches: Depth Psychology and Psychometric theory.

The following three premises are fundamental to Depth Psychology:

- (a) The broadest premise assumes the existence of a personality, a self. Each individual is considered an autonomous and purposeful entity with a tendency to evolve and maintain its identity.
- (b) Following from this is the assumption of self-regulation. (In psychoanalytic thinking, the ego is considered to be responsible for the self-regulatory functions of the organism.)
- (c) A third premise assumes personality to be a system with higher-order constructs regulating the lower ones.

All these premises assume that the individual can only be properly understood as an organic unit. The unique patterns of each individual are considered to be the subject of inquiry rather than general behavioural norms. The former approach invariably denigrates the importance of overt behaviour; an individual's overt responses are not studied per se but mainly as a clue to his inner organization. It is implied that the focus on overt behaviour may lead to an over-simplified understanding of the conditions of its occurrence.

The psychometric approach with its focus on the measurement of behaviour is diametrically opposed to that described above. The following quotation from Zubin et al (1965) captures the essence of Test theory. It goes so far as to question the need for the concept of an underlying personality altogether:

".... Viewing the matter historically, personality is apparently another example of a shrinking universe which contracts as measurement expands. As we all know in the beginning, personality as a field of study had everything; then it lost its intelligence, and before it could recover, it lost its interests and attitudes. It still feels, aspires and has sentiments as long as they remain unmeasurable. Once they too fall under the psychometrician's axe, personality will be extinct or will it?" (p. 52) (italics mine).

A considerable portion of the present study was devoted to the study of internal states. At the same time, the psychometric approach was adopted for the examination of performance. In other words, the psychometric approach was treated as a method and not as a theory. Psychometric analysis can only define performance: it cannot account for it. Theories which attempt to account for behaviour require concepts dealing with motives and their interplay. Such concepts belong to Depth Psychology and cannot be arrived at directly.

It is generally believed that the kind of material which taps internal states - typically projective material - is not amenable to objective measurement. Abt (1950) said: "To demand these things of the projective methods is to require something that simply cannot be met." (p. 64). In a later section (Section 5),

an attempt will be made to indicate the possibilities and limitations of information derived from TAT productions in an empirical investigation.

A primary "hypothetical internal state" assumed in this study is the "sense of separate identity" (SSI). In a sense, the concept of field-dependence involves what one might call the "primary locus of experience". Witkin argues that individuals can be distinguished according to whether their "source" of experience is derived from "within" or from an external frame of reference.

On his view, an individual with a well-developed sense of separate identity is capable of functioning with relatively little support from others, does not require his context for self-definition and can maintain his own direction in the face of contradicting judgements of others. In contrast, the individual with an under-developed sense of separate identity requires guidance from others, and is generally more susceptible to external influences. The latter individual is also more dependent on the external context for his self-definition.

It was felt that Witkin's analysis of SSI refers primarily to the product of a developmental process. A theoretical framework for this dimension was therefore sought in the work of Erikson (1960) whose work is concerned with the question of "ego identity" and its development. However, since Erikson's theory was formulated in a Western setting it could not be adopted as it stood. The question explored in the present study may be put thus: Do Zulus reveal evidence of a sense of separate identity in the sense that Westerners are said to develop it? A basic premise of the study was that experience of the tribal way of life is unlikely to lead to an awareness of self as delineated by Erikson. This is assumed because of the fact that individual differences are institutionalized in traditional tribal societies, to a large extent. Tribal child-rearing is directed towards preparing individuals in detail for the rôle they will be expected to perform. On the other hand, experience of the Western way of life tends to produce a measure of ego awareness among individuals. Thus, it was expected that

greater self-awareness would be evidenced among urban Zulus than among their rural counterparts. The group affiliation fostered in the tribal environment and the personal coping required in city life differentiates the two groups on an a priori basis. At the same time, it was considered unlikely that the social circumstances in the urban townships provide the conditions for the development of ego identity as Erikson understands it. Erikson's developmental analysis treats childhood as the gradual unfolding of the personality through a sequence of "psychosocial crises". He states that these are systematically related to each other and depend on the proper development at the proper time of each. " individual make-up and the nature of society determine the rate of development of each." (p. 52) (italics mine). It is possible to go systematically through each stage and illustrate how the requisite conditions for successful resolution of the psychosocial crises are not met. According to Erikson, unsuccessful resolution leads to mistrust, shame, identity diffusion, isolation, disgust and despair. It is submitted that the circumstances in which the urban Zulu is reared may well lead to these psychological states, in particular identity diffusion and a sense of isolation. For Erikson, these are indicative of the absence of ego identity. However, Erikson's analysis is more applicable to stable societies than to groups in transition. The latter are required to develop distinctive patterns of adaptation, probably at an accelerated pace. For Erikson, the individual with a mature ego is one who is capable of trust, intimacy and autonomous functioning. Characteristics like these clearly refer to an ideal state of health possible for individuals who have been reared in highly conducive circumstances. When one considers the African's experience in terms of learning theory, it would seem that reinforcement is so unsystematic and inconsistent that the value and patterns he may attempt to adopt cannot become introjected or conditioned. Biesheuvel (1959) has conveyed the urban African's situation very well:

"For the mass of the people living in urban locations, most of the positive features of traditional life have vanished ... Furthermore, the institutions which

in Western societies are the means of imposing conformity are either lacking for many township dwellers or function in a feeble way. Most important among these is the family, for as the child loses the web of kinship which enmeshes it in every way in the tribe, the family unit begins to assume greater importance. The township family is, however, much attenuated. There may be an occasional grandparent, aunt or uncle, but only too often there is no father and the mother is left with the sole responsibility for the education of the children. In general, neither parent has sufficient knowledge concerning the diversified requirements and the value system of Western society, nor of the means to make such knowledge real to the child. ... This means that most parents are quite incapable of establishing that internalized control on which Western people depend for their adjustment to society. And for many children who have no family worth speaking of, the very mechanism for doing so is lacking ... because this society is so different from that of the townships, and because there is no effective participation in the life of the white man's world, it is extremely difficult to make these values real." (pp. 15-16) (italics mine).

Biesheuvel's analysis conveys incisively the difficulties of forming a personal identity under these conditions. His comments also underline the extent to which Erikson's analysis is inapplicable.

For the above reasons, Erikson's analysis was used primarily as a point of departure. His model for Westerners suggested that far more primitive signs could be expected to provide evidence of ego identity among urban Zulus. Thus, for instance, evidence of introspection in an urban individual was considered to distinguish him from his rural counterpart who, it was predicted, was unlikely to introspect. Such signs of self-awareness in the material were to be rated positively, even if they indicated "isolation and distrust" (negative indicators for Erikson).

The dimension of Sense of Separate Identity was one of the more important personality variables used in the present study to distinguish between individuals at different points on the Acculturation Index. Very little research has been conducted in this field to date. A study conducted by Albino, R.C. & Thompson,

V.J. (1969) on the effects of sudden weaning on the Zulu child has some bearing. It examines the effects of child-rearing practices on psychological states, in particular the development of the ego. The findings reported by Albino and Thompson cast some doubt on the conditions considered essential by Erikson for ego development. From Erikson's analysis one may infer that rejection of the child at an early age would be disruptive and damaging to the ego and the development of autonomy. In fact, dramatic sudden weaning (p. 345) and rejection by the mother did lead to hostility on the part of the child. But it also led to his giving up his close dependence on the family. As Albino and Thompson have put it, he was "forced by this hostility to isolate himself and to become an independent being." They conclude tentatively from this:

"it may be that the child in adapting to the effects of weaning undergoes a sudden increase in ego development. That is, he becomes more aware of himself as an independent entity separated from his environment, and takes active steps to adapt himself to his environment, and it to him." (p. 345) (*italics mine*),

and further:

"it is important to emphasize here that weaning after a preliminary disturbance may at the age of 18 months be a most powerful stimulus to ego development." (p. 347) (*italics mine*).

It may be that the same applies to a Western sample, but in the absence of such a study, one can only speculate. Albino and Thompson's study is valuable because it serves to moderate the tendency to accept stereotypes concerning the "dangers" of the traditional customs of non-Western cultures. It also curbs the impulse to apply theories formulated in a Western setting to foreign cultures.

This section may usefully be concluded with a summary. The present study set out to examine the proposition that the urban Zulu has more identity awareness than his rural cousin. This proposition was based on three factors. Firstly, social circumstances in the city throw the individual back on his own

resources more than they do in tribal communal life. Added to this is the fact that respect for initiative and personal growth (upward mobility) are deeply embedded in and essential for participation in the industrial order. And finally, it was noted that the urban Zulu was exposed to the Western value-system in such a way that he was likely to find difficulty in assimilating it. It was pointed out that such conditions are likely to engender an awareness of self but cannot be said to foster integrated identities. Therefore, it was concluded that it was self-awareness which distinguished the urban Zulu from his rural counterpart. It was noted that the usage "Sense of Separate Identity" for this variable was inappropriate for individuals in a state of transition. The conditions Erikson considers necessary for healthy ego development appear to be absent in groups in the process of acculturation.

CHAPTER 2

FOUR PILOT STUDIES: AN ATTEMPT TO ESTABLISH THE CONSTRUCT
VALIDITY AND FUNCTIONAL EQUIVALENCE OF THE TAT SETS

2.1 Introduction

The discussion presented in Chapter 1 was concerned with the importance of undertaking pilot studies in a cross-cultural investigation. The rationale of the present investigation is based on the conviction that novel measures - particularly those concerned with personality patterns - can only claim construct validity if they are devised from information garnered at first hand within the cultural group concerned. It is argued further that such information is most effectively obtained from studies undertaken prior to the major investigation. In the literature review it was observed that existing cross-cultural projective techniques suffered from serious flaws from the validity point of view. Most of these appeared to be attributable to the fact that the test constructor tended to build stereotypes into his test material. It was proposed that in order to avoid these dangers tests should be designed de novo within each culture. Only by conducting exploratory pilot studies which effectively induce relevant information, can one ensure that the research programme is not based on preconceptions. The present investigation was governed by this reasoning.

Since the TAT was one of the major instruments used, some considerable effort was made to achieve construct validity for it. Four pilot studies were carried out prior to the major investigation. The first three were concerned to collect data which would facilitate the design of the pictures. The TAT was then to be devised from the material yielded by these studies. The fourth study was concerned with the stimulus properties of the TAT after it had been constructed.

Before the studies are described, it will be useful to make explicit the understanding of culture and acculturation adopted here. Broadly, the term culture may be understood in two distinct senses: Firstly as a term denoting a heritage of shared values

transmitted (essentially) by language and subtly moulding the experiences of the individuals sharing this linguistic bond. This usage of the term culture may be seen as the extra-situational dimension which creates the Zeitgeist of a group.

The second usage refers to the members of a cultural or subcultural group of people who are bound by a similar set of conditions and pressures (within the broader cultural Zeitgeist). In this case, the bond between people depends more on their similar circumstances than on handed down experiences.

The concept of 'acculturation' refers to the change resulting from contact between two cultures as understood in the first sense described above. Prior to contact these groups are distinguishable in terms of their exclusive history and value-system. The outcome of contact is the creation of subcultures, invariably hybrids of the 'orthodox' cultures. The assumption of a hypothetical orthodox baseline is implicit in the approach of anthropology. Psychology, however, adopts a more relative approach. Barbu (1960), for instance, has stressed the importance of the 'sociological relativity of mental phenomena'.

As already observed, acculturation is the outcome of a meeting of two cultures. The contact usually takes place in surroundings in which (not necessarily representative) members of one society interact with the indigenous members of the other. As a result of the contact the more powerful social system induces the weaker to adjust to its social order and values. The society adapting to the dominant one is considered to be in a process of acculturation. And it is the latter society which is usually studied for the information it yields concerning adaptive behaviour. (The implicit assumption is that a culture produces the personalities that are adapted to its requirements).

In South Africa, adaptive behaviour is generally a function of a shift from the rural to the urban environment. Thus to a large extent urbanization in Africa is tantamount to acculturation. The patterns produced in this way have inspired most of the research in this area.

One can list the factors which characterize the Western industrial system: the use of the machine, the organization of labour based on a wage system producing cash payments for work done; the existence of a managerial group who organize the system; and, in the civil service, the rise of the professional bureaucrat and legal systems. Fundamental to this social system is the principle of rationality. An attempt is made to maintain control as far as possible and with this in mind not much can be left to chance. It is assumed that proper coordination and a rational appreciation of the universe are prerequisites for mastery over the environment. (Max Weber (1947) has presented a penetrating analysis of the extent to which this grand coordination stretches even into religion and the arts.)

The assumptions governing orthodox tribal culture are diametrically opposed to those described above. The tribal system is based on a belief in the spirituality of all living and material things and the determination of events by magical forces. Such beliefs run counter to the sense of personal responsibility fostered by Western civilization. In the rural environment tradition and ritual are components of the belief in spirituality. Most areas of experience are governed by prescribed forms of behaviour. Such behaviour invariably involves strong irrational aspects and is inimical to the expediency and planning revered by Western societies.

The three pilot studies described below were part of an attempt to determine the extent to which the experience of Western culture has altered the notions and values transmitted by the orthodox Zulu heritage. It was assumed that a group which is bound by a common language, history and circumstances is likely to attach similar meanings to shared events. In order to uncover these "shared meanings" it was necessary to elicit the kind of material which is generated by shared circumstances. It was also desirable that this material have affinities with TAT productions. Bearing these objectives in mind it was observed that a number of writers have commented on the affinities between TAT responses, dreams and folklore. They are all seen to be symbolic in a similar sense: they render psychological states by means of metaphor. The

similarities between these modes of expression encouraged the belief that dreams and related symbolic material would supply culturally significant fantasy material.

It may be noted that Zulus place particular importance on dreams. According to the traditional folklore, dreams are considered an important medium of communication with the ancestors. It is believed, for instance, that the ancestors convey their attitudes towards the behaviour of their descendants in dreams. The fact that dream material has significance for Zulus was considered to have methodological value since it implied that subjects were practised in relating their dreams and stories to others.

A brief comment on the stand taken on fantasy material may be in order here. It is believed that needs which are not expressed overtly are given expression in some other form, i.e. symbolically (in TAT responses, stories, dreams etc.). For convenience this kind of material will be referred to as fantasy material. The distinction between conscious and unconscious processes is avoided. The material induced is simply assumed to provide evidence of psychological preoccupations, regardless of whether or not the individual understands the significance of what he communicates. On a broad scale, folklore has been assumed to have psychological significance for the group in question. The reasons for the reluctance to adopt psychodynamic terms wholesale are probably obvious: in general they are the upshot of much speculation but little research.

The approach has attempted to remain as closely tied to psychometric analysis as possible. There is no attempt at depth interpretation. The focus is on the fact that a theme is raised and its frequency of occurrence. No attempt is made to develop a psychodynamic picture of individual subjects. This approach was adopted for both the material gathered in the pilot studies and that elicited by the TAT in the major investigation (described in Chapter 3).

2.2 First Pilot Study

2.2.1 Rationale

The first study was a large-scale attempt to induce fantasy material. TAT pictures are intended to tap the significant areas of the individual's experiences. It was hoped that the material elicited by the present study would suggest hypotheses concerning the significant areas for Zulus. It is typical of the exploratory strategy recommended by Stroatbeck (1969) as a means of generating hypotheses.

2.2.2 Sample

A sample of 200 urban Zulus of both sexes was tested. The female sample was drawn in a random manner from the Soweto complex by selecting one female from every fourth house in the areas of Diepkloof, Meadowlands and Orlando. The male subjects were factory workers in a secondary industry situated in Heriotdale, Germiston. Female subjects were mainly domestics. Workers in factories were not recruited for practical reasons. In general female Africans are not employed on a shift basis in Johannesburg factories. The functions performed by the males ranged from the simple unskilled type to those involving the operation of complex machinery. They were involved in 'shift' work and were tested during their breaks. The ethnic composition of factory workers is typically mixed. However, because the major investigation was to be concerned with Zulus, this preliminary sample was restricted to Zulu-speaking subjects. It was not considered necessary to control for education, and in this sense the sample may be considered heterogeneous. However, the dimension of literacy was controlled for in the sense that subjects who could not express themselves in writing were screened out before testing began. This criterion was used for both sexes. As a result of this screening only subjects who had undergone 6 (or more) years of formal schooling were retained. The age range of the sample was 19 - 52 with a mean of 28.83 and a standard deviation of 7.22.

2.2.3 Method

The subjects were interviewed by two trained African

interviewers fluent in Zulu. All subjects were required to write out their responses to the four items comprising the schedule described below.

Before the interview actually began, special care was taken to establish rapport with subjects. In the case of the males, subjects were assured that their performance had no bearing on their jobs. They were also assured that their responses would be confidential. No time limit was imposed. The interviews varied from 60 - 90 minutes according to the output of the subjects.

2.2.4 Test Materials

The selection of each item was determined by its capacity to evoke verbal material. The resulting items may be seen as triggers for responses rather than stimuli. This kind of approach was adopted in order to ensure that no preconceptions were built into the test material. The schedule comprised the following four items: Story, Song, The Hero and Dreams.

Story and Song

It was felt that both the story and song which stand out most in the Zulu's memory would provide significant fantasy material.

Hero: in fact or fiction

This item was selected on the basis of the assumption that an individual's hero-concept is determined by (a) wishful thinking, the extent to which a character represents one's own ego-ideals, and (b) the hero-stereotype fostered by the culture. In line with the general approach adopted, it was decided that since the concept of the hero may be a Western product, it should not be imposed. Thus the instructions were framed in such a way that the hero concept was not suggested but could emerge (see Appendix).

Dreams

Freud referred to dreams as "the royal road to the unconscious". This item was expected to be the most fertile source

of information, a speculation which was given empirical support by the work of Sidney Lee (1969), also among Zulus.

Subjects were told that this was a test of imagination. Testers took pains to stress the fact that it was not a typical test in the sense of requiring 'right' or 'wrong' answers. It was considered especially important to emphasize this with Africans who are easily intimidated by the test situation. The objective of this study was to gather as much spontaneous material as possible and anxiety would have inhibited the flow.

2.2.4 Scoring Procedure

In general, the results lent themselves readily to classification and quantitative treatment. Commenting on a comparable finding in his own study, Lee (1969) speculates that

"it would be next to impossible to secure this degree of limitation and uniformity in dreams collected from any sections of a complex Western society." (p. 309).

Lee's dream material was classified into just under 50 main headings. The classificatory system adopted in the present study differed from his in one important respect. Whereas Lee classified specific content, in the present study stories were categorized in terms of the 'area of experience' raised by the story. The material was supplied to four judges who were told to code the themes they discerned in terms of the broadest categories into which they could be placed. The four judges were sophisticated in the sense that they were honours graduates in psychology. Two were Western and two were Zulu-speaking. After some discussion they arrived at a similar understanding of the categories into which the material could be classified. (Prior to discussion the categories independently created were similar but formulated somewhat differently.) The categories dealt with responses to only three items of the schedule; responses to the item concerning Hero-figures were unusable and therefore abandoned.

The following categories were agreed upon: Community Orientation; Respect for Authority; Relation to the Supernatural; Group Affiliation (improve status of group rather than self); and Death (pride rather than fear of death).

2.2.5 Results

In order to quantify the observations made, every story which could be paraphrased was classified into one of the categories. This procedure made it possible to calculate the percentage of stories which fell into each category. These percentages will be found in the Table below. Ninety-two percent of the stories could be categorized. In order to clarify the Table the discussion will convey the essence of the themes contained in each category.

TABLE 1
CATEGORIZATION AND PERCENTAGES OF STORIES ELICITED IN FIRST PILOT STUDY

Categories	Percentages of stories classifiable in each category
Community Orientation	38%
Respect for Authority	22%
Relation to the Supernatural	14%
Group Affiliation	10%
Death	8%

Note: 8% of the material was unclassifiable under these headings.

2.2.6 Discussion

It will be recalled that a decision was made to avoid depth interpretations of the material. Since the study was essentially exploratory, the most that could be derived from the material were hypotheses for further investigation. The qualitative analysis presented here is an attempt to characterize the trends observed in the material.

2.2.6.1 Community Orientation

The impression was gained that the subjects referred their behaviour to group prescriptions rather than internal standards. In other words, group-acceptance appeared to be more important than self-acceptance. Furthermore, reprehensible behaviour invariably resulted in feelings of shame rather than guilt.

Prompted by these impressions, a distinction was made between shame and guilt as follows: whereas guilt is the upshot of introspection and internalized group norms, shame relies more on an audience. In other words, the distinction depends on the extent to which norms have been internalized.

Although the analysis is not definitive, it was felt that even at this stage it would be valuable to speculate about its implications for the TAT. The observations described above, for instance, suggested that the Self-Acceptance/Self-Rejection dimension is not as significant for Zulus as it is for Westerners. This prompted the hypothesis that some kind of outcast situation would be more appropriate to a TAT series designed for Zulus.

(Thirty-eight percent of the stories were placed in this category).

2.2.6.2. Respect for Authority

The term authority is used here in a broad sense to refer to: those in power, the prescribed, the written word and ancestral beliefs. The material suggested that prescriptions were considered relevant to the individual's private life as well as his public behaviour. In this connection, it is interesting to note the comment contained in 'Indaba, my Children' (1964) to the effect that the exercise of a critical faculty is an insult to the gods. Mutwa's authority has been severely discredited: however, his comment does link up with the impressions gained in the present study.

(Twenty-two percent of the material was placed in this category).

2.2.6.3 Relation to the Supernatural

The material suggested that Zulus are strongly aware of and even feel familiar with supernatural forces. Related to this was the impression that individuals actually feel continuous with nature. It was postulated that Zulus feel part of a larger whole which must be understood and revered. Such an hypothesis, if valid, has important implications for the study of personality. It implies that Zulus have a relatively primitive awareness of themselves as separate bounded egos, as active agents in the environment. This links up with the previous observation that the

individual does not stand out as a distinctive, idiosyncratic member of his community. It also lends support to Hypothesis III, concerned with 'Sense of Separate Identity' (see Chapter 5). (Fourteen percent of the stories were placed in this category).

2.2.6.4 Group Affiliation

Although this category is obviously linked with those already described, it is felt that it warrants separate discussion. Stories found in this group prompted the hypothesis that individuals consider the status of the group to be more important than personal striving. In fact the impression was gained that initiative at the expense of the group is actually deplored. If this is a valid indication of the cultural ethos, it is highly alien to the Western capitalist ethic which is characterized by competitive self-enhancement.

(Ten percent of the material was placed in this category).

2.2.6.5 Death

The majority of stories dealing with death described heroic individuals who took pride in dying nobly. Not a single story gave any indication of anxiety concerning death. This trend was considered to link up with previous indications that events are treated as group activities rather than as personal experiences. The tendency to glorify death would appear to have an audience in mind.

However it was felt that these mores were unlikely to have psychological force and that TAT pictures dealing with this theme would evoke anxieties about death. Thus these impressions gave some indication of the problem to be explored by pictures designed to tap attitudes towards death (cf. Appendix B, Cards 4.1 and 4.2).

(Eight percent of the stories were placed in this category).

2.2.7 Conclusion

In conclusion the following observations were considered pertinent to the TAT series:

- (a) The individual's sense of integration with his group appeared to be more important to him than personal integration. For TAT purposes, this implied that individuals would be more disturbed by group rejection than self-rejection. Card 3BM of the Murray series was therefore to be replaced or supplemented by stimuli which explored fears of being an outcast from the group.
- (b) The wealth of material dealing with the supernatural suggested that it would be fruitful to depict the supernatural in some form or another. It was speculated that stimuli of this kind would evoke themes of anxiety concerning retribution for taboo'd behaviour.
- (c) Evidence of a profound respect for authority and the prescribed suggested that the commonly-held stereotype regarding 'the African's lack of initiative' might have some basis. It follows from cultural mores of this sort that resourceful behaviour would be deplored as deviate and even presumptuous. Since the stereotype regarding the African's submissiveness is so strongly held, it is important to determine its validity on scientific grounds. For purposes of the present study, it was decided to design pictures which would provide scope for resourceful and/or passive behaviour, particularly in the work situation.
- (d) It was considered necessary to devise pictures which would tap the individual's reaction to death. These pictures were to be designed in such a way that the individual's confrontation with death could be seen as either challenging or frightening (or both).
- (e) The above observations were believed to be more applicable to individuals reared in the tribal setting than in the urban environment. On logical grounds it was argued that urbanized individuals are less affiliated to their group, and develop more pronounced ego boundaries than their rural cousins. Social circumstances are likely to have broken down the sense of communal life among urban people.

- (f) On a more general level, these findings were considered to lend empirical support to the third major hypothesis of this study, formulated before this pilot study was undertaken. Hypothesis III was framed as follows: The urban Zulu has a significantly greater Sense of Separate Identity (or isolation) than his rural counterpart.
- (g) It was hypothesized that groups in a process of acculturation develop conflicts regarding group affiliation. Thus pictures were to be designed to explore the question of group identification.
- (h) The absence of information regarding the love triangle, the Oedipal situation, and sibling rivalry suggested that these are not powerful tendencies in the culture. However, since interpersonal relationships may be assumed to be a universal aspect of human experience, pictures concerning these areas were to be included in the series.

2.3 Second Pilot Study

2.3.1 Rationale

The second study was undertaken with the same aim as the first, namely to garner information concerning the psychological areas which could be explored by means of the TAT. However the latter was more conventional in its approach: whereas the first study attempted to acquire a large volume of spontaneously elicited information, the second focussed on definite aspects of the Zulu's environment. Thus in the case of the latter a questionnaire was devised. Responses could therefore be compared and quantified in a manner which comes closer to standard practice than was possible in the exploratory study. Briefly, then, the second study was an attempt to discover which features of the environment have come to assume special significance for Zulus.

2.3.2 Sample

A sample of 200 Zulus of both sexes was tested (male n = 100, female n = 100). The female sample was drawn in a random manner from the Soweto complex. Most of these subjects worked as

domestics in the suburbs of Johannesburg. Male subjects were mine recruits. It was a typical mine sample in that it was culturally heterogenous. The mean number of years of formal schooling was 1.36 years (SD = 2.13). Approximately 80% of the sample had never been to school at all. The mean age of the sample was 34.12 years (SD = 8.47).

2.3.3 Procedure

For purposes of this study, the environment was subdivided into (a) the Animal World, (b) Natural Phenomena, and (c) Supernatural Forces. A wide range of stimuli was selected from these areas. This was not done because of an intrinsic interest in each stimulus: it was a means of inducing those which have acquired significance. An interview schedule was designed comprising items for each category. This schedule was not to be closely adhered to but used flexibly. The interview was conducted in Zulu by two Zulu-speaking members of the NIPR. Each interview took $1\frac{1}{2}$ - 2 hours. Subjects were given scope for spontaneous comments as well as direct responses to specific questions. The Interview Schedule will be found in Appendix A.

2.3.4 Results

The material elicited by this study also lent itself readily to classification. Very broadly, the stimuli could be classified into three categories: Egocentric Responses, Technical Responses, and Symbolic Responses. The material was given to three coders who categorized the responses. The frequency of similar responses to each item was then tallied. The inter-rater agreement was of the order of .84 established by means of correlational techniques. This high agreement was not surprising considering the fact that a minimal amount of subjective assessment was required to classify each response. (A measure of interpretation enters the qualitative analysis to be presented in the discussion to follow). Table 2 summarizes the results:

TABLE 2

PERCENTAGE OF RESPONSES WHICH COULD BE CLASSIFIED INTO THE
THREE BROAD CATEGORIES

	Universe	Egocentric Responses	Technical Physical Properties	Symbolic Response
Literate Males N = 50	Animals	69.03%	27.65%	3.32%
	Natural Phenomena	81.76%	18.24%	-
	Mythology	74.46%	25.54%	-
Literate Females N = 50	Animals	65.55%	26.05%	8.40%
	Natural Phenomena	67.88%	31.87%	.25%
	Mythology	74.35%	15.39%	10.26%
Illiterate Males N = 50	Animals	90.27%	6.83%	2.90%
	Natural Phenomena	84.97%	14.26%	.77%
	Mythology	100.00%	-	-
Illiterate Females N = 50	Animals	90.92%	7.45%	1.63%
	Natural Phenomena	89.52%	10.48%	-
	Mythology	82.23%	11.11%	6.66%

It will be observed from the above Table that a larger percentage of responses were classified in the Egocentric category than in any of the others. It was decided to analyze the data further in order to determine whether the trends observed within the groups were statistically significant. Specifically, it was predicted that literate groups produced technical responses significantly more often than illiterate groups in respect of the three categories studied. For these purposes, t-tests of significance were calculated on the following:

(a) Animals

Literate and Illiterate Males	:	$x^2 = 92.71$	$p < .001$
Literate and Illiterate Females	:	$x^2 = 107.10$	$p < .001$
Literate Males and Females	:	$x^2 = 14.98$	$p < .001$
Illiterate Males and Females	:	$x^2 = 2.17$	not significant

Statistical tests calculated on the first three groups revealed that the literate groups produced significantly more Technical responses on this questionnaire than the illiterate groups, whose responses were more Egocentric. There was also a significant difference between literate males and females, the males producing the more technical responses. Illiterate males and females were not significantly different from each other in respect of these variables.

(b) Natural Phenomena

Literate and Illiterate Males	:	$x^2 = 5.05$	not significant
Literate and Illiterate Females	:	$x^2 = 48.75$	$p < .001$
Literate Males and Females	:	$x^2 = 25.34$	$p < .001$
Illiterate Males and Females	:	$x^2 = 23.02$	$p < .001$

Statistical tests calculated on the data relating to Natural Phenomena revealed that males tend to produce significantly more technical responses than do females, and that literate females tend to produce more technical responses than their illiterate counterparts. The difference between literate and illiterate males was not statistically significant.

(c) Mythology

Literate and Illiterate Males	:	$x^2 = 19.10$	$p < .001$
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Literate and Illiterate Females:	$x^2 = 0.77$	not significant.
Literate Males and Females	: $x^2 = 5.88$	not significant.
Illiterate Males and Females	: $x^2 = 12.80$	$p < .005$

Note: Since the information found in this category was insufficient (note blank cells), the results should be treated with caution.

Literate males tended to produce significantly more technical responses than their illiterate counterparts. Illiterate males tended to produce significantly more technical responses than their female counterparts.

The results may be summarized briefly as follows:

The most general finding was that Egocentric Responses are found significantly more often among the Zulus tested on this questionnaire than Technical Responses.

Statistical tests conducted to determine the significance of the trends observed among the subcultures indicated that where technical responses do occur, they are produced significantly more often by the Literate group, usually the males.

2.3.5 Discussion

2.3.5.1 Egocentric versus Technical Responses

It has already been noted that a non-significant percentage of the responses were of a technical nature or referred to the physical properties of the stimulus presented. An example may help to elucidate this point. The sun was almost invariably seen as "helpful to me because it gives me light" (92% of the responses were classified in this way). Rain was also described as something helpful rather than as, say, accumulated moisture. In fact, 98% of the subjects responded to at least three of the stimuli with the word 'helpful'.

These findings have interesting theoretical implications. At the outset, it is argued that the material yielded by this study does not provide evidence for the speculations of Levy-Bruhl (1926), Carothers (1953) and Ibarrola (1951) that Africans are unable to think abstractly and that their thought processes are 'concrete'. It is suggested that none of these writers base their assessment

on appropriate evidence. The present study as well as that of Haward & Roland (1954) and Wintringer (1955) are concerned with personality and perceptual patterns. Haward & Roland used the Goodenough Draw-a-Man test and considered their information relevant to an understanding of thought processes. It is argued here however that responses to a Draw-a-Man test tell us little about a group's capacity to form concepts.

Their findings do however afford relevant support for the developmental theories of Werner and Piaget. Werner (1961) has noted affinities between the perceptual habits of children and preliterates. For both groups, the awareness of objects depends on the extent to which these can be responded to by motor behaviour. Gantschewa's (1930) experiments on clay-modelling lent empirical support to this claim for children. She interprets her findings thus:

"A dog, for the child, is not an objective structure possessing objective shape and parts. The dog is something that 'bites' or 'barks'". (p. 375).

Thus, it is not the dog's technical attributes but his personal impact which is appreciated. A similar tendency was noted among the preliterate (and literate non-Western) groups studied here. The evidence suggested that most things were appreciated mainly via behavioural contact and understood in terms of their practical utility. This generates a particular type of perception of an object. It means, for instance, that lifeless objects appear animate. Such perception differs radically from the perception of the (adult) Westerner who responds more typically to objects in terms of their 'geometrical-technical' qualities (Ombredane, 1952). For the latter, objects exist 'out there'. The important point is that in prescientific thinking there appears to be no split between object and subject.

Piaget (1960) has also commented on the tendency to merge subject and object. His concept of 'egocentrism' describes a perceptual approach in which the perceiver sees the world from his point of view only. This was strikingly evident in the material elicited in the present study. The material suggested that the Zulu

is not typically an analytic spectator of his environment: It is almost as though he participates too closely with it to observe it. (This observation links up with the reference made earlier in this chapter to his sense of continuity with the environment (cf. p.26). For these reasons, this category of responses was termed 'egocentric'.

The majority of egocentric responses referred to objects as 'helpful' (78%), 'nourishing' (67%) and 'protective' (57%). It would appear that in those cultures where a subsistence economy obtains, the environment is perceived essentially in terms of self-preservative needs. Even among the urban subjects where there is no longer any direct link with the animal kingdom, this pragmatic approach was evident. In his analysis of 'the historic apathy of African people to civilization' Biesheuvel (1956) makes a similar observation:

"..... certain communities, even today, 'show no desire to meddle with things in order to turn them to greater advantage, or to produce some device such as the wheel or sail which reduces the burden of toil and enlarges man's scope for action. The balance with nature had apparently been struck at too elementary a level" (p. 385) (italics mine).

2.3.5.2 Symbolic Responses

The purposes of the myths and symbols ~~is to offer explanations~~ of the universe: the myths of a culture are therefore the store-house of its philosophy. Society's search for understanding varies: it may be philosophical, scientific, religious or narrative. Thus the objective of mythology is the same as that of the scientist: both attempt to account for universal events. But their methods are different: whereas the scientist strives for rigour of control and precise usage, the mythmaker attempts to render his meaning vividly and symbolically. Myths will be defined here as the reduction of collective experience to visual and classifiable form, a view which stresses their symbolic meaning for the culture in question.

An attempt was made to relate the material elicited in this study to traditional myths recorded in African literature*. It was

* Folktales, mythology and legends will be discussed more or less interchangeably. This was because the literature itself maintained no distinctions. An incident described in the mythology often passed into the folklore somewhat transmuted or became enshrined in a legend (again slightly modified). Mythological ideas in primitive society represent the fundamental views of the people and these ideas are represented by concrete and tangible examples in folktales and legends. Thus the content of mythology, folktale and legend are largely the same and material flows from one to the other.

immediately apparent that the distinctions which had been set up between aspects of the environment were artificial. The literature makes it clear that the African himself has not divided his environment in this way. The impression was gained that supernatural forces are felt to be intimately bound up with the physical and animal world and that each is understood as an organic whole. It was decided therefore that the divisions set up here were preconceived in terms of Western thought and that they were invalid and misleading in the attempt to grasp the Zulu's understanding of the environment.

The most pervasive feature of the responses was the tendency towards 'animistic' thinking. Piaget (1929) who is largely responsible for the modern interest in animistic thinking in the child, proposed that in civilized man it disappears at about 12, or shortly thereafter. Mature adults, he claimed, believe that only plants and animals are animate. The important feature of animistic thinking is the failure to distinguish the organic from the inorganic. According to Piaget, the child attributes biological and psychological characteristics to entities which the scientist classifies as inorganic matter.

It is generally believed that animistic thinking is characteristic also of preliterate societies. In fact, there is substantial support for this belief. Wayne Dennis (1957) quotes evidence to indicate that in preliterate groups the percentage of individuals who 'animate' the sun and other natural objects is close to 100. The present study corroborated this finding among Zulu-speaking subjects.

Another prevalent belief holds that Western cultures are enlightened about such matters. Dennis (1953, 1957) has shown, however, that the stereotype which considers animistic thinking to be typical only of primitive cultures is fallacious. His own studies as well as those of C.R. Bell and D.C. Lowrie (1954) have shown that highly Westernized groups also hold animistic beliefs. Apparently, in the absence of specific instruction, 'educated' persons in modern societies have conceptions of the world that are identical with those of the child and the uneducated.

However, in the case of the Westerner, it is essentially a question of ignorance of what constitutes the criterion of life. The African, on the other hand, has a tradition of animistic thinking. In the present view, it is this institutionalized animistic heritage which accounts for the tendency to see the total environment as continuous and animate.

2.3.6 Conclusion: Trends noted in the Second Pilot Study

2.3.6.1 Animistic Thinking

One hundred percent of the sample attributed life to one or more inanimate objects. This finding lent support to the work of Wayne Dennis who found a significantly higher frequency of animistic responses in preliterate as compared to American literate groups.

2.3.6.2 Egocentric Perceptions

Subjects produced a high percentage of egocentric perceptions. (68% of the material could be classified under this heading).

2.3.6.3 Pragmatic Approach

There was a paucity of visual or aesthetic-type responses, suggesting that the Zulus tend to appreciate the environment pragmatically rather than aesthetically. This finding would justify more systematic exploration.

2.3.6.4 Supernatural versus Natural Environment

The Zulus tested did not appear to distinguish the Animal and Natural universe from Supernatural forces as does the Westerner. Thus rain and cattle have similar meanings for the former: both are 'helpful'.

2.3.6.5 Supernatural versus Scientific Explanations

In his desire for understanding, the Zulu theorist does not appear to accumulate a body of lawful relationships as does the Western scientist, but generates a rich store of legends to explain natural events, e.g. ancestors may be embodied in snakes and sent to execute justice and retribution among the living; a storm is interpreted as the wrath of the ancestors rather than a natural

physical event. Even conflicts in a social setting are explained in terms of supernatural forces rather than in terms of personality dynamics.

2.3.6.6 Religious Beliefs

Zulus appear to conceive of God in concrete rather than in vague or metaphysical terms. Their comments on the subject were anthropomorphic rather than philosophical.

2.3.6.7 Animals in the Mythology

The following animals have assumed prominence in the literature on symbols and myths (the figures in brackets are the percentage of subjects who verbalized these legends in the present study):

Snakes (mamba, python): incarnation of ancestors; symbols of power and aggression (70%).

Birds: The spirit of a murdered person may return in the shape of a bird, to expose the murderer and make the crime known (62%).

Baboon: Witches are thought to ride baboons at night; baboons are also believed to act as familiars to witches (71%).

Owl: The owl is associated with witchcraft: it is believed that they are used by witches only at night, not by day (30%).

Praying Mantis: This is believed to bring good luck (45%).

Frog: Fire creature sent by witches to kill victims with fire which it spits (42%).

Tokoloshe: Associated with witchcraft: believed to strangle its victim (usually its owner) (65%).

2.4 Third Pilot Study

2.4.1 Rationale

The material elicited by the first two pilot studies generated two hypotheses which, it was felt, justified further investigation. The third pilot study was an attempt to substantiate these hypotheses.

2.4.2 Hypotheses

Hypothesis I: Zulus tend to be more concerned with the status of the group than personal self-enhancement.

Hypothesis II: Rural Zulus are more group-oriented than urban Zulus.

2.4.3 Sample

Seventy urban subjects were tested (male $n = 34$, female $n = 36$). The males were drawn mainly from schools in Soweto, but also contained some operators recruited from a factory near Johannesburg. Female urban subjects were also drawn essentially from schools (20 of these): the remainder were nurses working at a hospital in Johannesburg. All the urban subjects were literate.

Eighty rural subjects were tested (male $n = 40$, female $n = 40$). Male subjects were obtained from a Mine Depot (Wenela) in Johannesburg. Female subjects were domestics. The rural subjects were illiterate.

2.4.4 Procedure

Only one test measure was administered. It comprised a Story Completion Test, devised specifically for this study. The test was administered to the literate sample as a group test and subjects were required to write out their responses themselves. It was administered to the illiterate sample in the form of an interview. In the case of the latter the testers (Zulu-speaking NIPR staff members) read out each item and then noted each subject's response. The testing of the urban sample was completed in three afternoons; it took two weeks to test the rural sample.

2.4.5 Scoring Procedure

Each response was scored in terms of whether it merited a rating of Group Orientation (GO) or Self-Enhancement (SE). Means and Standard Deviations for each group were then calculated.

2.4.6 Results

TABLE 3

MEANS AND STANDARD DEVIATIONS OF THE FOUR GROUPS
ON GROUP ORIENTATION (GO) VS. SELF-ENHANCEMENT (SE)
SCORES

	GO		SE	
	Mean	S.D.	Mean	S.D.
Urban Males	45	5.72	50	6.15
Urban Females	55	4.92	45	4.18
Rural Males	70	3.16	27	8.54
Rural Females	85	4.17	10	3.12

t-tests were calculated to determine the significance of differences between responses.

- (a) The difference between GO and SE responses was significant for each group at the .001 level. This finding lent support to Hypothesis I.
- (b) The differences between urban and rural subjects on both variables were significant at the .01 level. This finding supported Hypothesis II.

2.4.7 Conclusions

The results suggested that Zulus tend to be more group-oriented than achievement-oriented as indicated by their responses to the measure devised. Rural groups were found to be significantly more group-oriented than the urban subjects tested. The urban group was significantly more prone to the expression of personal strivings on this measure than its rural counterpart. All these findings were in the expected direction.

2.5 The Value of the Pilot Studies for the Design of the TAT

On the basis of the conclusions drawn from all three pilot studies, the framework for the construction of the TAT series was set out as follows:

2.5.1 Relation to Authority and the Work Situation

Issues explored: latent personal strivings; willing submission to authority; sense of loyalty to boss and work. (Relevant to Hypothesis II of the major investigation, this hypothesis being concerned with n Ach, cf. Chapter 3).

2.5.2 Relation to the Group

Issues explored: sense of integration into the group and anxiety concerning rejection of group (outcast dimension); group ego versus sense of separate identity; do group demands take precedence over personal strivings? (Also relevant to Hypothesis II of the major investigation).

2.5.3 Relationship to Parents

Issues explored: respect for authority versus personal assertion; dependence versus autonomy. (Relevant to Hypothesis II, concerned with Sense of Separate Identity).

2.5.4 Death

Issue explored: anxiety re death versus pride in dying nobly.

2.5.5 Self concept

Issues explored: sense of separate identity and awareness of self. (Also relevant to Hypothesis II); ego boundaries; degree of introspection versus superficial awareness of self.

2.5.6 Sexual Themes (Heterosexual and Homosexual Relationships)

Issues explored: are strong emotional bonds established or essentially sexual contact? Do feelings of guilt and anxiety accompany sexual experience?

2.5.7 Relationship with the Supernatural: the bizarre, the unreal, the unknown, the uncontrollable (forces within and without)

Issues explored: does the subject feel anxiety re the unknown, a sense of continuity with the natural universe, a sense of awe and reverence for the elements? What is the nature of anxiety: is it due to inherent malevolence of impersonal forces, or powerlessness in face of them? Relationship with the id: is the subject overwhelmed by forces within?

2.6 Fourth Pilot Study: An attempt to determine the stimulus properties
of the TAT
2.6.1 Statement of the Problem and Rationale

A further study was conducted on the TAT after the pictures had been designed, in order to determine the stimulus properties or 'pull' of the pictures, as far as this is possible. A study conducted by Goldfried and Zax (1965) on the stimulus value of TAT pictures influenced the strategy of the present study. The findings of the former led them to conclude that individual projection could only be determined once one had 'weighted' the contribution of each picture eliciting the story.

In a sense, the study to be described in this chapter was concerned with the question of validity - the extent to which a stimulus taps what it purports to. However it is not in line with the traditional methods of validation which examine correlations between given measures and external criteria. The intensive concern with the properties of the instrument was influenced by the stand taken by Bechtoldt (1959). Bechtoldt distinguished two stages in the validation process: stage A, concerned with the properties of the measure or operation per se; and stage B, which proceeds to determine the relations between operations.

The importance of determining the stimulus value of the pictures became clear during the course of designing the series. It will be useful therefore to convey the procedure adopted for the design of each picture.

- (i) Firstly, the area of concern was stated, e.g. the work situation.
- (ii) The issues of interest in this area were conceptualized by the writer, e.g. does the individual display initiative or passivity in the work situation?
- (iii) Discussions were then conducted among a group comprising two Zulu-speaking psychologists, a Zulu-speaking artist, and the author. The object of these discussions was to formulate the best means of rendering the specified areas into pictures.

(iv) Once these were agreed upon, tentative specifications were put to the artist who attempted to translate the verbal conception of the situation into pictorial form.

The drawback of this procedure was the fact that no matter how faithfully the specifications were translated into a picture which made logical and intuitive sense, it did not follow that the result was the best means of tapping the dimension psychologically. In other words, the discussions generated pictures which were logically feasible, but not necessarily psychologically so. The best method of establishing psychological validity is by empirical means. Thus each picture was tested out on readily available subjects in order to gauge its aptness. During the course of these preliminary testing sessions two sources of invalidity were discerned: (a) The first concerns what Henry (1956) has referred to as the Latent Stimulus Demand. It refers to how effectively a stimulus card taps the underlying emotional area explored. (b) The second type of invalidity is more superficial. In respect of the latter one may find that a picture taps the psychological dimension effectively, but contains misleading cues on the surface. For convenience this will be referred to as 'Technical Invalidity'. This will be best clarified by referring to an example.

FIGURE 1: Picture of Two Waiters



This picture is concerned with attitudes towards work. One of the waiters is depicted as contented and the other (was intended to be seen) as discontented. However, the pre-test revealed that Waiter B was frequently seen as sick rather than unhappy. This finding highlighted the importance of determining the modal perception of the stimulus attributes of the cards - in so far as this is possible. It may be argued that this viewpoint is inimical to the rationale of projective techniques. However, it is submitted that it is possible (and desirable) to establish the 'pull' of the stimuli to a considerable degree.

For these purposes a distinction may be made between the 'perception' and the 'interpretation' of the stimuli. The technical invalidity described above refers essentially to the perceptual impact of the cards. It takes account of the fact that the interpretation of facial expression is to some extent culturally determined. (The latter was another factor which motivated the attempt to establish the modal response to the physical properties of the cards). It was felt that only when perceptual norms of this sort were established, would it be valid to refer to projection in the protocols. Such norms were to be determined separately for each group.

The broad objectives of this study, then, were as follows:

- (a) to establish whether the pictures explored the (emotional) areas they purported to measure;
- (b) to determine the 'stimulus pull' or physical attributes of the pictures insofar as this was possible;
- (c) to quantify trends observed and establish normative data on the basis of these.

2.6.2 Sample

The sample was derived from the same population as that used in the major study. Two hundred subjects were tested on this measure. The rural sample was drawn from Mtunzini, a village near Empangeni in Zululand (n = 100). The urban sample was drawn from the urban area of Johannesburg, in particular the South Western Townships (Soweto). Subjects were selected on the basis of degree

of acculturation, as measured by an Acculturation Index devised by G.V. Grant (1969). The Acculturation Index was also administered to the rural subjects, although it was not strictly necessary. All these subjects received a rural rating in terms of the index.

2.6.3 Procedure

The Semantic Differential technique originated by Osgood and his collaborators (1952) was used in order to establish the stimulus pull of the TAT. The technique was used in such a way that it could yield information concerning the two components of the stimulus distinguished above: viz. the emotional and the physical stimulus value of the cards.

The work carried out by Osgood has provided psychology with a useful new technique for the study of 'experiential meaning'. Osgood's studies are based on the premise that "any description or judgement can be conceived as the allocation of a concept to an experiential continuum" (1955, p. 326). If one accepts this assumption it may be argued that the semantic space of TAT pictures can be determined by means of the technique proposed. The technique was considered to have advantages over a direct questionnaire since it includes scales which refer to sensory qualities: ranking on such continua would elicit at least some information of an experiential kind.

Separate scales were devised for each picture as follows:

- (a) The important characters appearing in the pictures were to be ranked on scales for both physical and emotional attributes.
- (b) A standard set of scales applicable to the entire series was devised. (Four different sets were devised for purposes of the four subcultural groups studied).

Urban Group

Each polar scale was rated on a seven point continuum. In accordance with Osgood's procedure, the middle category was retained for those cases where the scale was considered inapplicable. For purposes of the urban group, the pictures were made into slides and projected onto a screen. This was done to enable group administration of the test. Subjects were simply required to rate each

picture by placing an x in the cell which approximated their response most closely. They were told to respond as quickly as possible.

Rural Group

Administration among the rural group took the form of a structured interview. Administration to this group posed several problems: on the one hand, it was important to convey the meaning of the scales to the subjects so that both groups were exposed to a comparable test. On the other hand, the nuances of tone and tricks of speech of the interviewer may well have influenced subjects' reactions. These problems were pointed out to the interviewers who were then entrusted with the difficult task of achieving clarity in as neutral a manner as possible.

The Semantic Differential procedure was the first of two techniques used to establish the modal response. The second method was even simpler. For purposes of the latter, each picture was dichotomized in terms of the two broadest alternative interpretations possible. These were formulated by the writer and clarified with the raters involved. The raters were then required to rate the stories elicited in terms of these dichotomies. In some cases it was felt that the stories were unratable: a miscellaneous category was created to accommodate these difficult cases.

2.6.4 Results

It was not possible to exploit fully the possibilities of the Semantic Differential since subjects invariably rated at the extreme poles and avoided the finer distinctions. The intermediary categories were therefore abandoned and a three-point scale remained, comprising the extremes and the neutral scale at the centre. Used in this way the instrument provided an effective means of differentiating individual responses to pictures. It was also possible to establish group norms in this way.

The quantitative data presented will include only those adjectives which reached significant levels (5% level of confidence)

as estimated on Binomial Tables. It was decided that it would be best to summarize and present all the data garnered in this study alongside each picture. In this way the reader is able to see at a glance how the pictures were perceived by the sample. Each group is presented separately in this way. These results can be found in Appendix B.

2.6.5 Conclusion

At this point, it will be useful to draw some conclusions concerning the value of the four pilot studies to the major investigation. The first three studies were undertaken in order to induce verbal material from native speakers which would facilitate the selection of areas for study by means of TAT stimuli. These studies succeeded in their purpose: the material pointed to definable areas of importance. Moreover since the findings of the third study lent support to the hypothesis generated by the first two, it was felt that the inferences drawn from the data were not misguided. The fourth study was an attempt to ensure that the stimuli did in fact examine the areas selected for study. Findings indicated that not only were the areas adequately tapped but there was also sufficient ambiguity to enable individual differences to emerge. Moreover results indicated that the four sets were parallel versions and could be considered to have functional equivalence. It was therefore felt that the TAT was a satisfactory device for purposes of studying the (three) dimensions it was devised to investigate in the fifth and major study.

CHAPTER 3

MAJOR STUDY

THE RELATION BETWEEN FIELD-DEPENDENT PERCEPTION AND PERSONALITY
VARIABLES AMONG ZULUS AT DIFFERENT POINTS ON THE ACCULTURATION
SCALE

3.1 Introduction

Ever since he began working on spatial orientation (1948) Witkin was impressed with the tendency of individuals to be self-consistent in their perceptual behaviour. After conducting a considerable number of perceptual studies involving 'determination of the upright' he crystallised his impressions in the concept of field-dependence. The essence of this concept is the notion that perception is a function of both field conditions and individual differences. Furthermore, individual differences in respect of the dimension may be characterized in terms of two general types: firstly, a mode of perception which is characteristically determined by cues residing within the individual; and secondly, a mode which is more strongly influenced (and invariably displaced by) external cues. The first type of perceiver is termed field-independent and the second field-dependent. For present purposes two aspects of Witkin's contribution have been singled out: (a) his empirical attempt to illustrate that mode of perception is congruent with personality organization; and (b) his experimental illustration of the fact that even highly disparate tasks can elicit the individual's characteristic bias. Much of the experimental work generated by the construct of field-dependence has been concerned to demonstrate its generality across a wide variety of task requirements. The fact that individuals have been repeatedly shown to be self-consistent as well as the findings in respect of sex differences led Witkin to believe that field-dependence is a universal psychological phenomenon. This belief was probably responsible for the large number of studies of this dimension which have been conducted cross-culturally.

It was assumed by the present writer that perceptual-personality correlates would differ among different cultural groups. Thus it was not only the magnitudes of variables which were assumed to differ, but also the way in which they tend to cluster. It follows from the argument regarding the culture-bound nature of personality (cf. Chapter I) that different subcultures will tend to generate different patterns. The study was also governed by the conviction that more precise scientific information would be gained from a focussed study of the correlates of field-dependence. It was therefore limited to an examination of the factors which co-vary with field-dependence among four subgroups within a single linguistic group.

There is a paucity of studies concerned with the personality patterns of groups in the process of acculturation. In his analysis of this field Herskovitz (1962) deplores the fact that studies focus too exclusively on cultural dynamics, thereby neglecting the individuals caught up in the process. In his words:

"..... (it was) accepted as axiomatic that the future of African development lay in the transfer to the continent of the knowledge and the techniques brought from the outside ... One result of this reasoning was that the African was too often lost sight of. The approach was focussed on institutions not on people; on social change without taking into account current and antecedent modes of doing, behaving and valuing, the elements that make for cultural continuity. These human factors are, however, of primary relevance in understanding both change and continuity in culture" (p. 7) (italics mine).

The human factor has not been entirely neglected, however. A study by Norman A. Scotch (1960) revealed the importance of studying the non-Western individual who attempts to adjust to city life. His study is one of the few empirical investigations of its kind. It suggested that adjustment to the urban way of life was not only demanding on the personality, but taxed physiological resources as well. Scotch made a study of blood pressure among Zulus and found that the incidence of hypertension among the urban Zulu was significantly different from that of rural Zulus from the reserves in Durban. There was a statistically significant "greater frequency of elevated blood pressure

among urban Zulus for all age groups and both sexes" while in the case of "mean blood pressure values, urban males and urban females are significantly higher for all age groups" (pp. 1001-1002) (italics mine).

The effects of acculturation on personality are less easily defined. In Chapter 1 the question of identity formation was discussed. It was argued that it is more difficult for individuals in cultural diffusion to form integrated personalities than it is for individuals adjusting to a single society. The difficulty is due chiefly to the discontinuity between the values of the dominant culture and those prevailing in the baseline culture. The disparity between the cultures is experienced very early by the growing child who becomes aware of the discrepancy between his home life and the social milieu. Furthermore, the level of education attained by the detribalising culture is invariably inadequate for full participation in a technological society.

A.H. Passow (1968) refers to the concept of 'cultural deprivation' in his discussion of 'disadvantaged' people. The term is used to denote any population whose environmental background does not equip it to participate effectively in contemporary society. It invariably refers to the extent of urbanization of a group. In Passow's view, cultural deprivation is experienced by lower socio-economic classes, racial and ethnic minorities, rural and isolated populations, and even groups whose language is inappropriate to the process of industrialization.

In his analysis of the penetration of European culture in Africa, Herskovitz (1962) suggests another basis for the sense of discontinuity experienced by the detribalized African. He compares the methods by which African and European societies educate their children and impart the values embedded in their culture. Among African groups, the narrative tale is treated as an important educational tool. The child imbibes knowledge by listening to his elders as they convey the myths and tales which attempt to explain the workings of the universe and the beliefs by which their people live. The educational system of Western society, on the other hand, involves a more formal schooling

approach comprising curricula and defined objectives. It was this schooling system which the African learned to revere in his attempt to assimilate Western values. Herskovitz concludes that:

"(these schooling institutions) set up far-reaching discontinuities between the school and the rest of the African child's social and cultural environment." (p. 223) (italics mine).

After the schooling years, the African becomes motivated to assimilate Western intellectual thought and value-systems. In these later years norm conflicts are experienced, probably more profoundly by the African intellectual. The educated urban African is required to decide which of his indigenous values it would be worth retaining and which are inappropriate in the Western setting. Thus for instance most intellectuals recognize the fact that the non-Western economic system would not equip them or their children to participate fully in the wider economy.

It is a straightforward matter to acknowledge the fact that Western technology is more powerful than the non-Western subsistence economy. However, when it comes to the non-technical aspects of one's life, the issues are less clear-cut. Norm conflicts usually involve intangibles and it is here that conflict and tension is experienced most deeply by the urban African. Herskovitz puts it thus:

"One machine can be compared to another because the end toward which both are employed - the value in each - is measurable. If one of them is faster, or produces a better finished product at a lower cost, it is the better machine. But to compare family systems, or ethical principles, or political organizations, or art, or music in this manner, is impossible, because we are here dealing with intangible values and ends about which there is no cross-cultural consensus. (p. 464) (italics mine).

In conclusion it appears that two informed writers dealing with very different regions of the world - Passow on the U.S. and Herskovitz on Africa - are in agreement concerning the problems faced by individuals in the process of acculturation. They submit that the most important psychological effect of

cultural diffusion is the sense of discontinuity it engenders in the individual. The present study is specifically concerned with this phenomenon. It is hypothesized (Hypothesis III) that the exposure to bewildering circumstances fosters an awareness of one's identity, even if it is an unintegrated and isolated identity. It is postulated that the urban Zulu is more self-aware than his rural counterpart whose experiences are more communal and public.

3.2 Aim and Scope of the Study

The aim of the study was to determine the way in which specific personality variables correlate with field-dependent perception in four subcultural groups derived from the Zulu-speaking people. A secondary objective was the development of novel measures capable of testing these variables among non-Western people. As has been seen, it was necessary to devote four studies to the development of one of the measures. Only after these preliminary studies were conducted was the measure deemed fit for use in the major investigation.

The major investigation set out to test the following hypotheses:

1. Urban versus Rural

Hypothesis I: Field-Dependence

The urban Zulu obtains significantly higher scores on measures of field-independence than his rural counterpart.

Hypothesis II: n Ach and Field-Dependence

The urban Zulu who obtains higher scores on indices of field-independence also (a) has a higher level of aspiration (n Ach) and (b) displays significantly more goal-directed activity than his rural counterpart.

Hypothesis III: Sense of Separate Identity

The urban Zulu has a significantly greater sense of his separate identity than his rural counterpart.

2. Males versus Females

- Hypothesis IV: (a) The Zulu male displays significantly greater field-independence than the Zulu female.
- (b) Performance on measures of field-dependence correlates significantly with the cultural stereotype of the sexes.

In order to clarify the experimental design it is presented as follows:

EXPERIMENTAL DESIGN

Independent Variables	Dependent Variables
Culture Sex	Field-Dependence n Ach Sense of Separate Identity

It should be noted here that the study restricted itself to Zulu-speaking people. This was done in order to limit the number of variables, where possible.

3.3 Description and Selection of the Sample

The sample chosen for testing the four hypotheses was drawn from the Zulu-speaking group of the Bantu-speaking people. The rural sample of 96 subjects (47 males; 49 females) was drawn from Mtunzini, a village situated near Empangeni in Zululand. The Zulus have occupied this region from early times and since the area is a Bantu Homeland will continue to live there. The density of the population is 218 persons per square mile (Bantu, June, 1968). Like most of the Bantu-speaking peoples of Africa, the Zulus have an extensive kinship system of social grouping. However, because of the presence in the area of missionary schools, hospitals and a University College, Western culture is beginning to alter the traditional way of life. Western influence can be discerned in the system of economy, for instance: there are a number of sawmills and sugar plantations owned by Europeans who employ local labour and sell their produce on a commercial basis.

As a result the economy is changing from the subsistence type to a money economy.

The rural sample was drawn mainly from two areas of Mtunzini: Kwadlangezwe and Port Durnford. Kwadlangezwe is under the jurisdiction of Chief Mguni and is also the area where the wealthy plantation owners may be found. However, there are also non-employed persons whose economy is of a purely subsistence kind. Port Durnford is under government jurisdiction. It contains a number of timber factories which employ a considerable number of workers. The latter live with their wives in compounds outside the factories. The bulk of the sample was drawn from these factory workers. The bulk of the male subjects was obtained from factories in the vicinity of Port Durnford. The female sample was obtained from both the factory compounds and the reserves.

An attempt was made to obtain a random group. However, the practical difficulties encountered made this an impossible task. A recent event in the lives of the people of this area left them suspicious of the motives of white people interested in conducting surveys. They came to believe that any survey which was concerned with information of a personal kind would result in their being moved from their homes. It was therefore emphasized that the material was being collected in order to gain an understanding of their customs and that it would finally be collated into a book; they were also assured that their responses would not affect their daily lives, their jobs, etc. It was especially important to assure subjects of the latter. The importance of establishing rapport and a voluntary attitude towards testing was therefore given higher priority than the acquisition of a random sample.

The ages of the rural subjects ranged from 19 to \pm 75 years, the mean of the males being 43 years and that of the females 44 years. The maximum number of years of formal schooling was 2 years.

The urban sample of 99 subjects (49 males; 50 females) was obtained from the districts of Diepkloof, Meadowlands, Mofolo and Dube in the South-Western Townships (Soweto) of Johannesburg. Subjects were obtained from the staff of the

schools in these areas. As already observed the aim of the study was to examine the effect of acculturation on specific variables. Thus degree of Westernization was the major independent variable of the experimental design. Westernization is a multi-dimensional variable comprising a host of factors including formal education, socio-economic status, technological sophistication and so on. The present study was not concerned to partial out the effects of any one of these, but with the way in which the composite experience of a tribal versus rural environment affects personality and perception. Thus the sampling procedure was governed by the cultural status of the individual. A scale which purports to provide an index of acculturation was devised by G.V. Grant (1969). The scale was used in the present study to facilitate the selection of the subgroups to be compared: those subjects who were finally retained all clustered at the extreme ends of the scale.

Thus the groups were selected in terms of their representativeness of the urban versus rural way of life. The rural groups were derived from the tribal regions and were considered to be minimally affected by Western culture. The teacher population was considered the most articulate of the acculturated groups. Thus the groups were contrasted essentially in terms of the criterion of literacy, the factor considered to be the most important component of acculturation. There was also a practical reason for the choice of teachers for the urban sample. Experience had shown that it was easier to obtain matched sex groups - matched in respect of level of acculturation - if they were derived from the same occupation. Previous attempts to obtain subjects had shown that acculturated subjects were most readily available from this occupation.

Finally, no attempt was made to match the groups for intelligence. It was felt that intelligence is not a significant factor in determining performance on either field-independence or the personality variables selected for study.

Testing conditions were satisfactory in both the rural and the urban areas. They were comparable in two respects: firstly, the testers used were the same for all the groups; and secondly, there was a standard patten adhered to by all testers. However

the conditions were not absolutely equivalent: it was sometimes necessary in the case of the rural subjects to complete the test battery in the subject's kraal. Obviously this somewhat altered the test situation for the subject involved. However although there was this flexibility in regard to the testing conditions, it is felt that it did not significantly affect obtained responses. It was realized that it would be unrealistic to strive for ideal conditions among the rural population.

The difficulties described above rarely arose among the urban sample. Urbanized subjects tend to accept the formalities of the testing situation more readily than do their rural counterparts. This is particularly true of the teacher population: among the latter group there was no thought of completing only a portion of the battery.

3.4 The Selection and Construction of the Measures

The following seven measures were chosen to examine the predicted relationships:

- 3.4.1 Rod-and-Frame Test (RFT)
- 3.4.2 Cultural Steortype (CS) (Questionnaire)
- 3.4.3 Pattern Reproduction Test (modified Kohs Blocks)
- 3.4.4 Draw-a-Person Test (DAP)
- 3.4.5 Child-Rearing Practices (CRP) (Questionnaire)
- 3.4.6 Picture Arrangement Test (PAT): Work Orientation Measure (WO)
- 3.4.7 The TAT as a Research Instrument
 - Measures derived from the TAT:
 - 3.4.7.1 Sense of Separate Identity
 - 3.4.7.2 n Ach
 - 3.4.7.3 Acceptance of Authority

3.4.1 Rod-and-Frame Test (RFT) (Hypothesis I and IVa)

A survey of the literature suggested that the test constructed by Oltman (1968) would suit the purposes of the present study most adequately. Oltman reported a correlation of .89 (n = 163) between scores on his portable apparatus and scores obtained on Witkin's original RFT. This fact as well as the

evidence presented by Oltman commended the technique for use in the present study. The instrument constructed by the Darro Corporation to meet Oltman's specifications was adapted by the present author in collaboration with Johann Schepers and Patrick Griffiths of the NIPR (Psychometric Division).

NIPR Revision of Oltman's Apparatus

Several major modifications were effected by the NIPR. Most of these were restricted to the headrest and the curtain assembly. The rationale for these changes was as follows:

- (a) It was found that the pads intended to secure the head in positions gripped the topmost portion of the head rather than the sides. Related to this was the fact that the side pads were badly coordinated with the chinrest; they were too high in relation to the latter. As a result, instead of positioning the head and providing a feeling of stability, the assembly induced an awkward posture - an unnecessary variable in the experimental situation.
- (b) It was noted that the shield assembly, which was designed to restrict the subject's field of vision left visible cues from the inside of the enclosure. Such cues were considered sufficient to facilitate perceptual judgement of the vertical. The curtain did not block out the view of the inside of the enclosure as Oltman claimed.

Therefore the following changes were effected:

- The headrest (of shield and pads) was eliminated entirely and replaced by an underwater mask. The glass of this mask was removed, and shape was maintained by a piece of steel wire. The choice of the mask was determined by the fact that its oval shape and size restricted the subject's view to the curtain. The subject would be required to place his face within the frame of the mask, while the rubber headband was placed around the back of the head to secure his position.
- A further modification was the introduction of a cord running from the level used to raise the curtain to the experimenter's end of the apparatus. This was introduced to enable the experimenter to operate the curtain from the same side and at the same time as he set the position of the Rod and Frame.

The curtain was to be lowered by a rubber band. (Note: it may be preferable to use a steel spring).

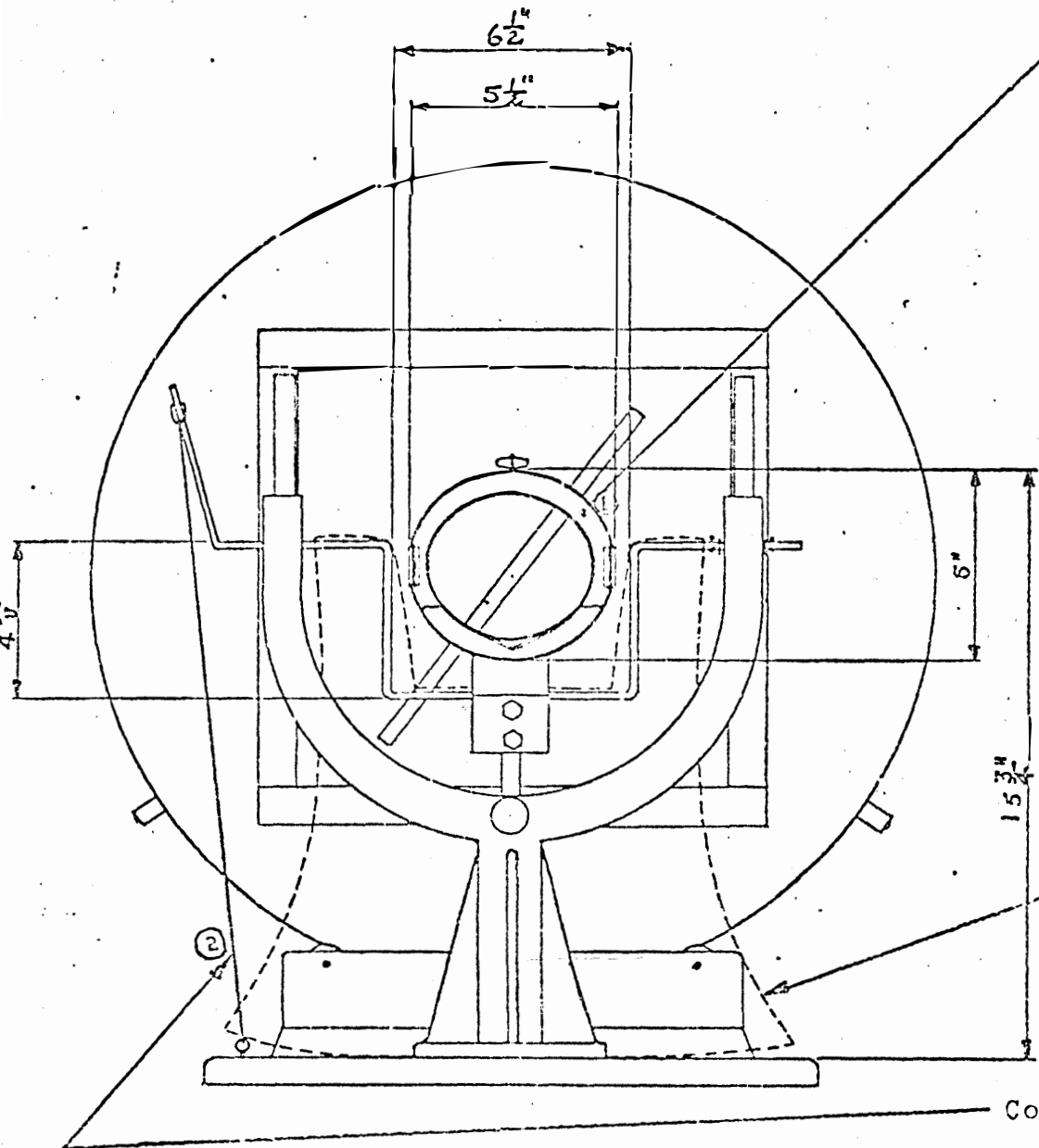
- Administration. Oltman's method of administration was adhered to in broad outline. However, an innovation was introduced for purposes of the illiterate sample. At the outset, a loose rod-and-frame was used both as a practice trial and to introduce

the subjects to the concept of the vertical. It was considered important to illustrate the notion of the constancy of the vertical, the fact that the property of verticality is absolute regardless of the context. This procedure was also adopted to establish precisely what was involved in adjusting the rod. In this pre-test trial the subject was given practice in instructing the administrator to restore the vertical under different frame conditions. It was felt that unless these points were clarified prior to the procedures, misconceptions might contaminate the findings. The use of a simulated Rod-and-Frame was determined by the conviction that it is necessary to give tangible illustration - to enact - a concept with illiterate groups. In this case it was an attempt to illustrate the concept of verticality.

The character of the apparatus should be clarified by both the picture and the diagrammatic representation which follow.

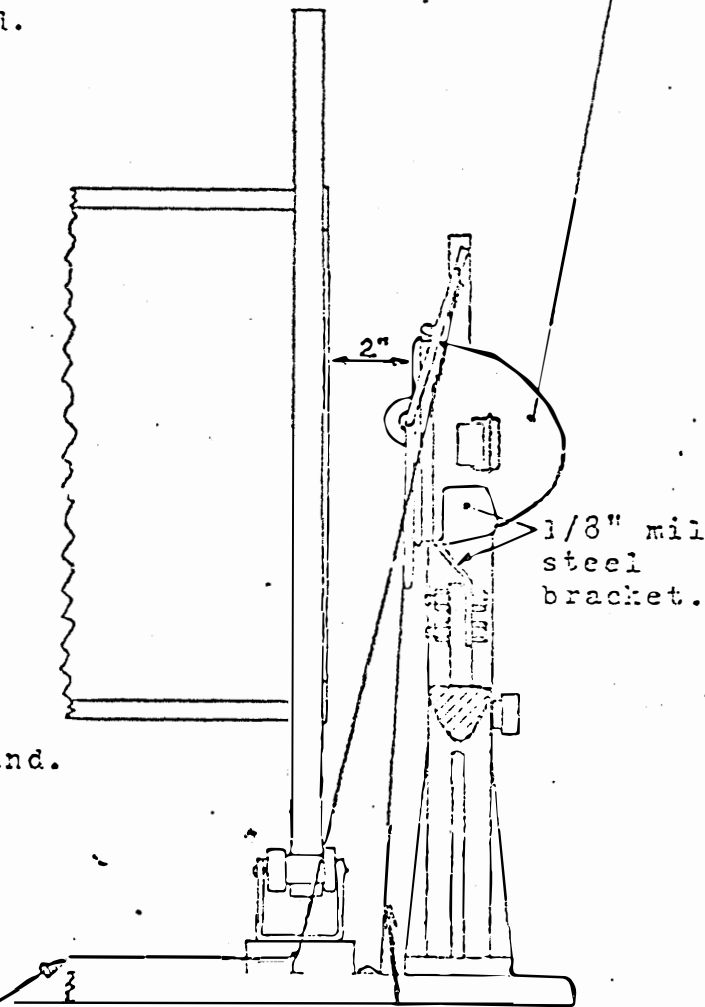


N.I.P.R version of portable Rod and Frame Test.



"Stella B" underwater mask by "Cressi Sub", Italy
 (Glass removed. Shape is maintained by a piece
 of steel wire in glass slot. Rubber headband
 not shown here.).

3/16" welding rod.



Outline of blind.

Cord to raise blind.

1/8" mil
 steel
 bracket.

Rubber band to
 return blind.

Scale: 4"=1"

Date: 16. 5. 1964

Diagram showing NIPR modifications to Darro Corporation
 portable rod & frame apparatus.

Administration. A schedule of twelve trials was devised. An inspection of Witkin's procedure reveals that he does not alternate the position of the chair from trial to trial, but keeps it constant for eight consecutive trials (1954, p. 26); the positions of the Rod and Frame are alternated. It has recently been observed, notably by Schepers (1968), that a schedule which contains a consecutive presentation of one of the variables - as is the case with Witkin's procedure - enables learning to occur. This would contaminate the results. In order to minimize this danger in the present study, a sequence was drawn up whereby both Rod and Frame positions alternated during the course of the test.

3.4.2 Cultural Stereotype (CS) (Questionnaire) (Hypothesis IVb)

Hypothesis IVb proposed that extent of field-dependence among the sexes is related to the way in which the subculture stereotypes sex roles. This hypothesis flowed from the conviction that perceptual style is an environmentally produced pattern and not a basic process.

The aim in constructing the CS Questionnaire was to develop a short and easily scored measure of the stereotype prevailing in each culture. The roles which are assigned to the sexes have become so deeply embedded in cultural behaviour that they have taken on the status of biological fact. At the same time however, these 'facts' are treated as though they require careful elucidation: thus the behaviour considered 'proper' for the sexes is fairly explicit in most cultures. This had advantages from the experimental point of view. It suggested that a direct questionnaire would enable one to garner detailed information regarding this dimension. It was decided that the best means of collecting information regarding the behaviour expected of the sexes would be to frame questions in the same way as the stereotype. In other words, items were cast in the form of questions concerning what kind of behaviour is considered 'proper' for the sex member in specific situations.

The next step was to determine the situations which would effectively highlight socially sanctioned behaviour. These

situations were to be used to define the scope of the cultural stereotype. The questionnaire attempted to cover as many relevant situations as possible such as the work domain, the domestic situation, interpersonal relationships, and public life. Thus the aim of the questionnaire was two-fold: firstly, it was concerned with the existence of stereotype in the two subcultures. At the same time it attempted to determine the character of the stereotype in some detail. In order to select these situations, group discussions were held to generate a list of situations which would bring out the 'proper' mode of behaviour of the sexes. An a priori assumption made was that the stereotype was not global: in other words, males were not expected to be seen as active and independent in all domains and females as passive and dependent in all situations. The drift of the discussions lent support to this premise.

African NIPR staff members acted as spokesmen for the situations which would yield information regarding the stereotype in the tribal environment. The questionnaire was modified in some of its details for the rural groups, but the substance was comparable and the format identical. The questionnaire was pre-tested on both literate and illiterate employees of the NIPR (n = 20 literates; n = 12 illiterates). The selection of items was determined primarily by considerations of content validity: however, those items which were found to be unsuccessful during the pre-test were discarded. The final form of the questionnaire contained 25 items and was to be administered as a structured interview. For scoring purposes, each item was to be dichotomized into active-independent (a) and passive-dependent (D) scores. (Further qualitative comments were to be noted but were obviously not quantifiable). Responses which gave evidence of a passive-female as well as those which gave evidence of an active-male stereotype were scored in the same direction. A high total therefore indicated a stereotype of 'Male-Independence/Female-Dependence'.

3.4.3 Pattern Reproduction Test (modified Kohs Blocks). Hypotheses I and IV

It has been suggested, notably by J.M. Schepers

(personal communication) that the task requirements of the Pattern Reproduction Test (NIPR modification of Kohs Blocks) are similar to those of the Embedded Figures Test (EFT). Therefore, after the attempts to administer the EFT among illiterates had failed, the Pattern Reproduction Test was selected. It was to be treated as a substitute for the EFT and additional measure of field-dependence.

3.4.4 Draw-a-Person Test (DAP) (Hypotheses I and III)

The selection of this test was governed by two considerations. Firstly, significant correlations between the primary field-dependence measures and the DAP had been reported by Witkin and other workers. It was considered worth establishing whether or not these findings would be upheld among a Zulu sample. The second and more important factor was the possibility that it would be appropriate for the examination of Hypothesis III (cf. above). Witkin's concept of psychological differentiation implies that the individual becomes progressively more aware of his body parts as he matures. The DAP was one of the measures chosen in the attempt to examine the degree of integration and differentiation achieved by the evolving ego.

The test was administered in the usual manner. Subjects were required to draw two figures: the first was a figure of choice and the second the sex figure which had not been chosen spontaneously.

Scoring Procedure. This will be discussed in some detail since the reasoning behind it governed all the rating techniques.

Witkin's scoring system makes use of a 5-point scale in order to evaluate drawings in terms of integration, differentiation and sophistication. His general framework was retained and provided the guide-lines for the present system. However, it was observed that subjects tended to vary extensively at the lower portion of the scale. For this reason it was decided to create finer distinctions at the lower extreme than Witkin had allowed for. Thus a 7-point scale was used.

Four judges rated the drawings independently. Before the rating actually began, the writer specified in detail the features which were to be considered in the rating process. The items appropriate to each scale point were made as explicit as possible. This was clarified with each judge and a consensus reached. Obviously the judge's final rating is a subjective assessment of the production. Nevertheless an attempt was made to stipulate those criteria which could be specified objectively. It should be stressed that once these specifications were clarified the raters did not meet again for further discussion. Thus consensus was reached prior to ratings. The writer submits that where discussions are permitted during the course of rating, the result is a collusion rating which levels out differences and subsequently yields spuriously high reliability values. It is important to ensure that raters work independently of each other, once the meaning of a construct has been clarified. Once the scoring procedure is made explicit in this way it virtually serves to define the construct. Since raters have a similar understanding of what they are measuring, they are equipped with what amounts to a similar scoring key.

3.4.5 Child-Rearing Practices (CRP) (Questionnaire): The Socialization of Cognitive Style (Hypotheses I, II and III)

An unpublished questionnaire devised by J. Derman (1968, personal communication) within the framework of field-dependence theory was adapted for this sample. The questionnaire was concerned with the home environment in terms of the degree of autonomy allowed the child and the quality of nurturance given. It attempted to cover a wide variety of situations experienced by the growing child and faced by the nurturant parent. Since anxiety level is likely to be an important factor underlying many of the rationalized attitudes, a subset of items designed to tap anxiety was included. The object of such items was to sort out over-protective mothers from those who were merely firm; to separate those who subscribed to an authoritarian approach from those who were more pragmatic and permissive, and so on. The child's development of autonomy is bound up with the scope he is given to pursue his curiosity and question

'the givens' - in other words to make his own mistakes. The rationale was that responses to such questions would provide a clue to the degree of independence experienced by both the parent and child.

An important component of parent-child relations is the extent to which the parent feels that his happiness is somehow bound up with his (usually her) child. Parents who feel this too strongly are invariably incapable of tolerating the child's desire to explore his environment unshielded. As a consequence, the child has a slim chance of developing autonomous behaviour and firm ego boundaries. A typical item concerned with this factor is the following:

- No. 17 I mostly agree that "A parent's happiness is entirely tied up with its child".
I do not agree that "A parent's happiness is entirely tied up with its child".

Finally the questionnaire was concerned with the 'ideology' underlying the methods adopted by the parent. It was assumed that parents can be distinguished in terms of the following criteria: is he or she concerned to rear a contented individual, or is he more interested in fostering a goal-oriented, self-actualizing child? In other words, to what extent is the child likely to introject high n Ach from his parents?

Scoring Procedure. The questionnaire was scored in such a way that a positive score (high total) would provide an index of Autonomous Functioning. Thus positive ratings on the scoring key implied that the parent had encouraged the child to explore the environment, to question what he was told, and to develop an internal locus of control. Put in this way, its relation to field-dependence becomes clear.

3.4.6 Picture Arrangement Test (PAT): Work Orientation (WO) Measure (Hypothesis II)

The PAT, originated by Thomkins-Horn (1944), was adapted for use among Africans by I. Tekane of the Temperament and Personality Division of the NIPR. The PAT is also a device of the

projective variety since one of its fundamental premises assumes that the individual's arrangement is a significant sample of his personality make-up. However it is more structured than the TAT and deals with a wide range of well-defined situations including interpersonal relationships, attitude towards authority and the work situation. In the present study its use was restricted to the items dealing with the Work Situation and Acceptance of Authority. The instrument devised by Tekane was intended to measure the same dimension as the original Thomkins-Horn version but was modified in terms of the criteria established by Schepers & Kelmovitz of the Psychometric Division of the NIPR (1969). The latter workers attempted to validate the measure for use among a Western South African population. The instrument devised by Tekane (in collaboration with the writer) was intended specifically for Africans.

Scoring Procedure

A clear-cut dichotomy was set up for the scoring of this instrument. In other words, responses were scored simply in terms of whether they indicated positive or negative attitudes to the work situation. The object was to establish a clear-cut and easily scorable device - even if this entailed a loss of 'dynamic' information. The loss of information which results from the use of a dichotomy rating (rather than ranking on a continuum, for instance) was fully appreciated but considered a practical necessity. It was partly due to the desire to provide a precise scoring key for the raters, but was also geared to the constraints imposed by the computing techniques possible. The statistician R.W. Hamming (1965) (as quoted by Laubscher, 1969) has commented penetratingly on this kind of problem:

"We live in a world of shades of grey, but in order to argue, indeed even to think, it is often necessary to dichotomize and say 'black' or 'white'. Of course in doing so we do violence to the truth, but there seems to be no other way to proceed." (Introduction to paper by N.F. Laubscher, 1969).

In spite of the use of this simplified scoring procedure, difficulties were experienced. These will best be illustrated by describing the traditional approach to the rating of PAT responses. It was suggested

earlier that one of the premises underlying the PAT is that each individual's arrangement - as well as the story he composes to accompany it - is a meaningful sample of his orientation to the real-life situation portrayed. The standard scoring technique is concerned with whether the arrangement moves towards or away from activity in the work situation; in other words, the crucial aspect is the outcome of the arrangement, the situation depicted in the final card in the set. Thus, for example, if the character portrayed in a particular set is passive in the final card, the arrangement is given a negative score for work orientation.

It became apparent, however, that this approach could not be simply adopted as it stood. Since the instrument was in the process of construction and the situation novel to Zulus, it was decided to administer it in the form of a structured interview. This approach paid dividends in that it yielded valuable qualitative material. A careful inspection of this material revealed that it would be invalid to focus on the outcome card in the manner described above. An example will clarify this point:

Plate 15, Subject 12 (RM)

He has started working.

He has worked very hard.

Now very tired.

Since responses of this type were fairly common, it was decided that it would be invalid to rate only the arrangement per se: each rating would be dependent on both the technical arrangement and the information contained in the story told. Thus the qualitative information was to be given much more significance than is usually the case: it was felt that this would be the best method of achieving 'conceptual equivalence' for the test. The important point was the following: if the conclusion was passive or restful as the consequence of hard work it would be scored positively. On the other hand, if fantasy was a substitute for work and passivity a patent sign of indolence, the response was scored negatively.

3.4.7 The TAT as a Research Instrument

Although the TAT was designed as a basic instrument capable of tapping depth material, it was used in the present investigation primarily as a research tool. Thus the productions elicited were not treated in terms of the psychodynamic picture presented of the individual: instead, areas of interest were specified at the outset and the indices of these discernible in TAT protocols quantified and compared.

It may be useful to present the position adopted towards thought samples in a psychometric study. It is submitted that a TAT picture represents a specific 'real-life' situation. Thus an individual's response to the picture gives a valuable indication of the behavioural repertoire he brings to bear in the actual life situation. Obviously reality imposes certain constraints on the actual expression of motives. However it may well be that the individual is himself responsible for the constraints he 'perceives'. If this is the case, the constraints will surely be perceived in the TAT story created as well. In a sense, an individual's actions depend on his perception of the possibilities for action (cf. Kelly, 1962). TAT pictures are specifically devised to induce these perceptions. Viewed in this light, the distinction between thought and action becomes misleading and unimportant. Once one assumes that personality is interally consistent, it follows that individuals perceive (or create) in their fantasy material the situations they perceive in their daily lives.

The analysis presented above concurs to some extent with that put forward by Heckhausen (1968):

"Actions are operant behaviours, but so are thoughts, even if different in kind. A considerable amount of confusion has been caused here in the wake of the projection concept (Heckhausen, 1960). Actually we regard the apperception of a TAT picture situation - and the weaving of a story or plot in response - as operant behaviour in a kind of miniature life situation." (p. 110) (*italics mine*).

As is well known, the singular power of the TAT is its capacity to discern the psychodynamic patterns peculiar to an

individual. However, in a study concerned with differences among heterogeneous groups, it is necessary to forego meaningful material. Thus the psychometric demands of rigour and clarity governed the decision to treat each variable as unidimensional. It is recognized that this procedure is to some extent artificial and oversimplifying. However it was felt that the intercorrelations discerned among variables would help to indicate the manner in which they interact with each other. The procedure adopted then was an attempt to allow the statistical techniques to define the complexities. This decision was taken on the basis of the considerable evidence which indicated that only a clear-cut (albeit simplified) scoring system yielded satisfactory reliability coefficients. Trends have also indicated that increasingly sophisticated psychometric strategies are replacing the traditional respect for subjective intuition. The upshot of this shift has been to engender a greater degree of objectivity and less reliance on the intuitions of the rater.

3.4.7.1 Sense of Separate Identity

An analysis of this dimension was provided in Chapter 1. It was pointed out that evidence of a well-differentiated, integrated, autonomous ego in a process of 'self-actualization' was not expected from the groups investigated in the present study. Instead much more primitive signs were to be treated as positive indicators of this variable.

Scoring Procedure. In order to illustrate the procedure adopted economically and vividly, the cards which were selected are presented on one side and the rating system alongside them. (See Appendix).

3.4.7.2 n Achievement

The following were considered important factors in differentiating subjects on this dimension:

Future Component: The presence of a future component suggesting the individual's awareness of his ego projecting into and even manipulating his future.

Initiative: Signs of initiative and self-directed activity as opposed to dependence on guidance.

Personal Responsibility: Does the individual give evidence of a sense of personal responsibility or does he consider himself a passive victim of circumstances?

3.4.7.3 Acceptance of Authority (primarily in the Work Situation)

The following issues were explored under this heading:

- (i) willing submission to authority;
- (ii) resentful submission to authority;
- (iii) signs of loyalty to boss and work;
- (iv) positive identification with job.

A high score on this dimension would indicate a willing (not resentful) desire to cooperate with authority figures and prescribed modes of behaviour.

3.5 Administration of the Battery and Procedure

Since the strategy was geared to solving the problems associated with greater illiteracy, the rural groups were responsible for the procedure finally adopted for both groups. Thus six of the seven tests comprising the battery were administered individually. Since the rural subjects were illiterate, the items contained in the questionnaires necessitated personal interaction between the tester and the subject. The same applied to the administration of the TAT series. The latter was administered to the entire sample by the same interviewer who was thoroughly versed in the rationale of the projective hypothesis, in particular the difference between encouraging spontaneity and leading the direction of the responses.

The difficulties encountered in procuring subjects as well as the unpredictable length of some of the tests made it virtually impossible to adhere to a strict schedule, particularly among the rural groups. An attempt has been made to provide a rough estimate of the sequence and duration of the items comprising the test battery. This can be found below. In most cases the entire battery was administered on the same day. In some cases, however, this was not possible, especially among the rural subjects

where it was sometimes necessary to complete the battery in an isolated area of their kraals. It is believed that minor modifications such as these do not affect the nature of responses to personality measures. Personality variables are less sensitive to the conditions of administration than are cognitive variables where learning effects and positive transfer may affect reliability.

SCHEDULE

A rough indication of the sequence and duration of the tests administered in the major investigation.

<u>Test</u>	<u>Time</u>
Rod-and-Frame Test	Untimed (\pm 15'-30')
Cultural Stereotype	Untimed (\pm 15'-20')
Pattern Reproduction	(p)30" (i)30" (ii)30" (iii)1'30" (iv)2' (v)4' (vi)5'
Draw-a-Person	Untimed (\pm 10'-20')
Child-Rearing Practices	Untimed (\pm 20'-30')
Picture Arrangement Test	Untimed (\pm $\frac{3}{4}$ hr.-1 $\frac{1}{2}$ hrs.)
TAT	Untimed (\pm 1 $\frac{1}{2}$ hrs.-2hrs.)

N.B.: There were two (approximately 20') tea breaks, one during the morning and one during the afternoon. There was also an hour long lunch break. Since these were taken at different times by each subject, depending on his personal tempo, they have not been indicated in the above schedule.

3.6 Statistical Analysis and Results

The first half of this section will be concerned with the reliability of each measure, and the second with the inter-correlations between them. The latter then will be concerned with the extent to which the findings substantiated the hypotheses which governed the investigation.

3.6.1 Reliabilities of Each Instrument

3.6.1.1 Rod-and-Frame Test (RFT)

Scoring. A factor analysis computed by J.M. Schepers (1966) on a

large volume of Rod-and-Frame data (n=250) suggested that it would be valuable to make finer methodological distinctions than those made by Witkin. Witkin uses the summed mean of the individual's error score as an index of field-dependence. In Schepers' view, this global score fails to take account of the complexity of the response. Schepers conducted a Components Analysis on his Rod-and-Frame data and came up with three distinguishable principal components: he referred to these as the Frame Effect, the Chair Effect and the General Bias. (The latter refers to the subject's characteristic response tendency and is derived by calculating the algebraic sum of his error score). A Components Analysis conducted on a further sample yielded the identical three components. The stability of these factors confirmed Schepers' view that responses to Witkin's stimuli are complex and that it is desirable to separate out three functions. His findings have suggested that the score derived from the Frame Effect is most closely identified with the dimension of field-dependence. The frame component correlated .86 with Witkin's summed score: the other components showed non-significant correlations with a composite score as calculated by Witkin's procedure, of the order of -.13 (personal communication). The results suggested to Schepers that the Frame Effect score is the most important index of field-dependence. However the psychological meaning of these sophisticated methodological procedures has not yet been determined; until then, all three scores should be used in the attempt to measure field-dependence. Schepers' scoring procedure was adopted in the present investigation. At the same time, the Summed Error Score, after Witkin, was also calculated. The intention was to compare the two scoring procedures to determine whether they produced appreciably different results.

Statistical Procedures and Reliability of the Instrument

Frequency distributions were made of the three separate scores for each subgroup. They were skewed in almost every case. This meant that any procedure which involved the use of this test would be affected. In order to make possible the Analysis of Variance for purposes of examining Hypotheses I and IVa, the scores were normalized by means of logarithmic transformations.

The reliability of the test was calculated from the raw scores by means of the Spearman-Brown product-moment technique. Reliability was of the order of .73.

3.6.1.2 Cultural Stereotype (CS) (Questionnaire)

Statistical Procedures and Reliability of the Instrument

The overall reliability of this instrument was examined by means of an Item Analysis. The procedures adopted in this study were influenced by Chapter 21 of Gulliksen's (1950) book. The programme was developed by the Computer Division of the NIPR and is referred to as NP 50. The NP 50 programme allows for successive iterations. Each iteration excludes items with reliability indices below a specified level. The overall reliability is then calculated from the remaining items. The reliability of the measuring device increases with each iteration. This continues, until as a function of the fewness of items, it begins to drop.

In the present study, iterations were continued until optimum reliability was achieved. The reliability coefficient obtained was .88 (Kuder-Richardson formula 20; Kuder & Richardson, 1937). (This comprised 25 of the original 27 items: the items together with the scoring method used and reliability indices can be found in the Appendix.) The error of measurement of the CS Questionnaire was 3.3. This enables one to assume that the items comprising the questionnaire were reasonably relevant to the dimension explored.

At this point it is necessary to mention the additional computations which were conducted on the questionnaire. It was decided that in order to determine the value of each item, separate item analyses would be undertaken. Thus an analysis was made on each of the following groups separately: total urban, total rural, total males, total females and total group (all the figures regarding reliability quoted above were derived from the analysis of the total group).

It was felt that separate iterations on each of these groups would yield information on the following: (a) the extent to which an item had general applicability; (b) the relevance of an item to a specific group only; and (c) the extent to which an item was totally undifferentiating. A table (see overleaf) was drawn up to record in summary form the effectiveness of each item on these item analyses.

TABLE 50

CULTURAL STEREOTYPE (CS) QUESTIONNAIRE
SUMMARY OF ITEMS REMAINING AFTER 3RD ITERATION

	Total	Urban	Rural	Males	Females
1. Do you think the male is stronger than the female? In what way?		.17		.14	
2. Do you think the female is stronger than the male? In what way?					
* 3. Do you think the husband and wife's views should be given equal hearing in a marriage? If not whose opinion is more important?	.35	.20	.24	.36	.33
* 4. Do you think one partner should always submit to another? If so which one should dominate? In what way?	.24	.29		.30	.19
5. Do you think women should be allowed (or even encouraged) to do things which the husband knows nothing about?			.14		
* 6. Should women be allowed to express their opinions in meetings where there are men?	.27		.32	.29	.39
* 7. What is the father's role in bringing up the child?	.22	.20		.23	.21
* 8. What is the mother's role in bringing up the child?	.22	.20		.21	.22
* 9. Between the father and the mother who is more important?	.31		.14	.33	.30
10. To whom should a child take its complaints? Why?				.16	
* 11. What do you feel about a woman addressing an audience containing men? Do you think it is proper? Is it admirable?	.30	.25	.23	.26	.32
* 12. How would you feel if a woman was chosen as chairman of a committee (organization) which contains both men and women? Why?	.25	.21	.28	.24	.24
* 13. Is it proper for a woman to disagree with a decision taken by men? Why?	.34	.13	.16	.32	.34
* 14. Do you think it is proper for a woman to question the authority of her husband? Why?	.30	.21	.22	.28	.32
15. If a woman works, do you feel that this entitles her to more say in the running of the household? Why?		.11	.21		
* 16. Do you think women have rights? What are they?	.29		.31	.29	.29
* 17. What do you feel about women who fight for their rights? Why?	.28		.32	.27	.28
* 18. Do you think it is proper for women to express their opinions or make their presence felt in the presence of men in a job situation?	.29		.33	.21	.35
/ 19. Is it proper for women to tease men? Why?					
20. Do you think women should stand on their feet or do you feel men should protect them?		.17	.18		.18
* 21. Is it proper for women to supervise men?	.21	.26	.20	.18	.23
* 22. What do you feel about a woman who makes her own decisions and carries them out when the husband is away from home?	.21	.27		.22	.21
23. Do you think women should be encouraged to have careers?	.33			.36	.31
/ 24. Do you think men and women should mix freely? When should this be allowed? When should this be encouraged?					
* 25. Do you think women should be placed on the same footing as men? Why? (Why not?)	.28	.28	.24	.26	.31
	KR20 .88	.71	.82	.87	.89

KEY / = unsuccessful item; eliminated after iterations
* = successful item; differentiating for most groups

NOTE: 1. Items 1 and 2 were scored together
2. Responses were assigned positive scores when the male was seen as dominant and the female as dependent. However a positive score was assigned to responses which implied female control of child-rearing.

TABLE 49

CULTURAL STEREOTYPE (CS) QUESTIONNAIRE

Items and Item Analysis

Item Number	Item	p_g	s_g^2	r_{xg}^{sg}
1	Do you think the male is stronger than the female? In what way?	.42	.24	.11
2	Do you think the female is stronger than the male? In what way?			
3	Do you think the husband and wife's views should be given equal hearing in a marriage? If not whose opinion is more important?	.55	.25	.34
4	Do you think one partner should always submit to another? If so which one should dominate? In what way?	.24	.18	.24
5	Do you think women should be allowed (or even encouraged) to do things which the husband knows nothing about?	.16	.13	.06
6	Should women be allowed to express their opinions in meetings where there are men?	.65	.23	.35
7	What is the father's role in bringing up the child?	.45	.25	.21
8	What is the mother's role in bringing up the child?	.53	.24	.31
9	Between the father and the mother who is more important?	.58	.21	.13
10	To whom should a child take its complaints? Why?	.71	.24	.28
11	What do you feel about a woman addressing an audience containing men? Do you think it is proper? Is it admirable?	.58		

(contd.)

Item Number	Item	p_g	s_g^2	r_{xg}^{sg}
12	How would you feel if a woman was chosen as chairman of a committee (organization) which contains both men and women? Why?	.62	.24	.23
13	Is it proper for a woman to disagree with a decision taken by men? Why?	.48	.25	.33
14	Do you think it is proper for a woman to question the authority of her husband? Why?	.44	.25	.30
15	If a woman works, do you feel that this entitles her to more say in the running of the household? Why?	.35	.23	.14
16	Do you think women have rights? What are they?	.72	.20	.28
17	What do you feel about women who fight for their rights? Why?	.71	.20	.27
18	Do you think it is proper for women to express their opinions or make their presence felt in the presence of men in a job situation?	.67	.22	.28
19	Is it proper for women to tease men? Why?	.08	.08	.09
20	Do you think women should stand on their feet or do you feel men should protect them?	.17	.14	.13
21	Is it proper for women to supervise men?	.33	.22	.21
22	What do you feel about a woman who makes her own decisions and carries them out when the husband is away from home?	.27	.20	.22
23	Do you think women should be encouraged to have careers?	.52	.25	.33
24	Do you think men and women should mix freely? When should this be allowed? When should this be encouraged?	.92	.08	.05
25	Do you think women should be placed on the same footing as men? Why? (Why not?)	.43	.25	.28

Note: Responses were assigned positive scores when the male was seen as dominant and the female as dependent. However, a positive score was assigned to responses which implied female control of child-rearing.

However at this stage the instrument is uncorrelated with the other measures. In the absence of such data its construct validity cannot be assessed. Bechtoldt's distinction between the properties of a measure per se and its correlation with other measures will be recalled. Only the latter can give an indication of the aptness of the construct invoked to account for performance.

3.6.1.3 Pattern Reproduction Test (modified Kohs Blocks)

Reliability. Before the reliability of the test was calculated a graphic representation of the distribution of performance was plotted. This can be found in the Appendix. It will be observed that the test was unsuitable for the urban sample. It was highly skewed for both urban groups, suggesting that the test was set at too low a level of difficulty for these groups. Among the rural groups the distributions were more normal (tending to platykurtic). Its skewness among the urban groups indicated that comparisons of data which involved the use of this test should be made with caution.

The Kuder-Richardson formula with Tucker's correction (Kuder & Richardson, 1937; Tucker, 1949) was used to calculate reliability. The reliabilities were: urban males $r = .58$, urban females $r = .66$, rural males $r = .83$, rural females $r = .80$. Clearly the test was more suitable for the rural groups.

3.6.1.4 Draw-a-Person Test (DAP)

Statistical Technique and Reliability. Inter-rater agreement was determined by intercorrelational procedures (product-moment). High correlations were found among the ratings of the four judges used. The coefficients of correlation were as follows:

Rater 1 x Rater 2 $r = .91$
Rater 1 x Rater 3 $r = .88$
Rater 1 x Rater 4 $r = .93$
Rater 2 x Rater 3 $r = .89$
Rater 2 x Rater 4 $r = .91$
Rater 3 x Rater 4 $r = .87$

On the basis of this high agreement, it was decided to pool the four sets. In this way the danger of chance errors would be

minimized. (This approach was recommended by J.M. Schepers, Head of the Psychometric Division of the NIPR).

It may be observed here that agreement among scorers is often reported in the literature as evidence of the validity of an instrument. It should be pointed out that such agreement is tantamount to the agreement one would expect when a scoring key is supplied for purposes of scoring an intelligence test. In either case, the scoring procedure is concerned with rating a response on a measure of a specified function. The point is that with some psychological tests it is possible to establish a more precise scoring key than with others. But the precision of the scoring key does not testify to the adequacy of the measuring device. In other words, it does not follow from the high inter-rater agreement found here that the DAP has construct validity, that it in fact measures 'awareness of self'. Correlations with other measures of the same variable are required before construct validity can be claimed for the instrument.

Ebel's (1951) inter-class correlation technique was used to estimate reliability. The reliability value was of the order of .89.

3.6.1.5 Child-Rearing Practices (CRP) (Questionnaire)

Statistical Techniques and Reliability of the Instrument

The reliability of the instrument was examined by means of an Item Analysis. Iterations were continued until reliability was optimized. At this point, the reliability coefficient (Kuder-Richardson formula 20) was .89. The standard error of measurement was also calculated. The standard error (x 2) was 3.54. The high reliability coefficient as well as the low standard error permit one to assume that the items comprising the questionnaire are relevant to the factors being explored.

The significant information yielded by the Item Analysis will be found in the Appendix. As was the case with the Cultural Stereotype Questionnaire, the present Questionnaire was subjected to several additional item analyses. However, in this case, the data was broken down even further and nine analyses computed. The

following groups were distinguished and item analysed:

Total Group, Males, Females, Urban, Rural, Urban
Males, Urban Females, Rural Males, Rural Females.

A table was drawn up in order to summarize the results of each item analysis. This was done in the same fashion as for the Cultural Stereotype Questionnaire. The table gives an indication of the most differentiating items for each of the groups. Future workers might be interested in using only these items. (All 51 items were used in the present investigation. The Table can be found in the Appendix.

3.6.1.6 Picture Arrangement Test (PAT)

Statistical Technique and Reliability of the Instrument

Intercorrelations were calculated in order to establish inter-rater agreement. The coefficients of correlation were as follows:

Rater 1 x Rater 2 $r = .91$
Rater 1 x Rater 3 $r = .93$
Rater 2 x Rater 3 $r = .90$
Mean $r = .91$

Ebel's (1951) Intra-class technique was used to derive an estimate of reliability. The reliability coefficient was of the order of .88. This high value is attributed to the fact that discussions concerning the indices to be rated were conducted beforehand.

An inspection of the distribution reveals that this was moderately normal for all groups. The platykurtic distribution of the urban groups (urban females in particular) suggests that the test was particularly differentiating for these groups (Grant, G.V. & Schepers, J.M., 1967).

3.6.1.7 Variables Explored by Means of the TAT: Statistical Procedure and Reliability

3.6.1.7.1 Sense of Separate Identity

Evidence of 'autonomous egos' was not anticipated from any of the groups investigated (cf. Chapter 1). The material

elicited lent support to this expectation and prompted the decision to treat relatively primitive signs as positive indicators of this dimension.

Four judges rated the material independently. Inter-correlation techniques were used to determine inter-rater agreement. Agreement between three of the four judges was consistently high. The fourth judge tended to depress reliability for all three variables. This could mean one of two things: either the isolated judge or the three judges were more reliable. Discussions among the four judges indicated that the isolated judge had a slightly different understanding of the construct being rated. An important point should be recorded here. Before the rating actually began, discussions were held among three of the judges. Unfortunately the fourth judge could not always be present at these discussions because of practical difficulties: being the only African member, the venue and times put aside for discussion were usually inconvenient and sometimes impossible for her. Attempts were made to avoid this but they failed. Obviously the fact that she is Zulu and the other judges Western is significant. An examination of her scoring trends revealed that she tended to assign a significant percentage of scores to the lower extreme of the scale, suggesting that she judged responses more stringently. Had she been present at the discussions, this may not have been the case. For this reason her ratings were excluded. Since this finding was true of all three variables, the findings on the variables to follow will refer only to the agreement obtained among the three judges. Inter-rater agreement on the SSI variable was of the order of .84.

3.6.1.7.2 n Achievement

Inter-rater agreement on this variable was of the order of .75. This was considered acceptably high.

3.6.1.7.3 Acceptance of Authority (primarily in the Work Situation)

Inter-rater agreement in this dimension was .75. This was also considered satisfactory.

The frequency distributions for each variable can be found in the Appendix . They are relatively normal for all subgroups.

For ease of reference, the information pertaining to each measure is presented in summary form. This is done separately for each group and can be found on pages 80-83 below.

3.6.2 Statistics used to Determine the Relationships Between the Measures:
Results

Analysis of Variance and Factor Analytic techniques were used to analyze the data. Analysis of Variance was the primary statistical tool used to test the hypotheses. The Factor Analysis was supplementary, undertaken to enable the discovery of unsuspected relationships among the variables.

Edwards (1954) has defined the value of Variance Analysis as follows:

".... the total sum of squares of a set of measurements composed of several groups can be analyzed or broken down into specific parts, each part identifiable with a given source of variation" (p.315).

Since the study was concerned with the effects of two distinct sources of variation among a number of populations, Analysis of Variance was considered the appropriate technique. Moreover, the versatility with which it is capable of testing hypotheses commended it for the present investigation: the study was motivated by clear-cut hypotheses. The limitations of the bivariate approach as exemplified by the typical independent/dependent model may be noted at this point. It will be recalled that Sex and Culture were presented as the Independent Variables governing performance on the Dependent Variables selected for study (cf. p. 53 of this chapter). However it is believed that the variables are both interrelated and multidetermined. Analysis of Variance techniques do not enable one to examine the intercorrelations between the variables comprising the design. Furthermore it was considered possible that the hypotheses governing the design were not the best statement of the relations between the variables. In other words the hypothesis-generating capacity of Factor Analysis was also exploited.

Thus the reasons for using both techniques were two-fold: firstly to examine the extent to which the hypotheses were

TABLE 4

URBAN MALES

MEANS, STANDARD DEVIATIONS, SKEWNESS, KURTOSIS, OBSERVED RANGES AND RELIABILITIES

Variables	\bar{X}	SD	Sk	Kt	Observed Range		Reliability
					Max.	Min.	
1. Child Rearing Practices	25.31	6.18	0.11	0.02	39	17	.72
2. Cultural Stereotype (CS).....	19.90	9.63	-0.39	-0.46	22	7	.75
3. Pattern Reproduction Test (PRT).....	33.57	9.21	-2.79	7.79	39	27	.58
4. Draw-a-Person (DAP).....	13.67	5.54	0.02	-0.87	25	4	.90
5. Work Orientation (from PAT).....	18.98	6.64	0.12	-0.63	32	9	.91
6. Sense of Separate Identity (SSI).....	8.55	3.14	-0.23	-1.11	14	4	.84
7. n Ach	5.78	2.13	-0.26	-1.14	9	2	.74
8. Acceptance of Authority (AA).....	7.71	6.27	-0.60	0.14	10	0	.75
9. Rod-and-Frame Test (RFT)	41.06	28.82	1.41	1.57	122	4	.75
10. Age	32.43	8.21	0.57	0.30	58	21	
11. Education	12.80	1.02	-0.43	2.26	15	10	
12 Urbanization Index (UI).....	12.69	2.35	-0.85	1.09	16	5	

TABLE 5

URBAN FEMALES

MEANS, STANDARD DEVIATIONS, SKEWNESS, KURTOSIS, OBSERVED RANGES AND RELIABILITIES

Variable	\bar{X}	SD	Sk	Kt	Observed Range		Reliability
					Max.	Min.	
1. Child Rearing Practices (CRP)	24.62	4.60	0.74	0.39	38	17	.73
2. Cultural Stereotype (CS)	14.30	3.56	0.12	-0.21	22	6	.82
3. Pattern Reproduction Test (PRT).....	37.18	3.19	-2.53	7.06	39	25	.66
4. Draw-a-Person (DAP)	18.50	4.50	-0.65	0.96	26	4	.90
5. Work Orientation (from PAT).....	25.22	7.11	-0.03	-0.71	38	10	.91
6. Sense of Separate Identity (SSI).....	5.82	3.05	-0.28	-0.57	12	0	.84
7. n Ach	4.98	2.52	0.21	-0.82	10	0	.74
8. Acceptance of Authority (AA)	3.36	2.30	0.71	0.64	10	0	.75
9. Rod-and-Frame Test (RFT).....	80.30	50.75	1.19	1.03	232	18	.70
10. Age	34.06	9.04	0.33	-1.00	52	21	
11. Education	12.08	0.99	-0.03	1.16	15	10	
12. Urbanization Index (UI).....	10.92	2.45	0.40	-0.65	17	7	

TABLE 6

RURAL MALES

MEANS, STANDARD DEVIATIONS, SKEWNESS, KURTOSIS, OBSERVED RANGES AND RELIABILITIES

Variables	\bar{X}	SD	Sk	Kt	Observed Range		Reliability
					Max.	Min.	
1. Child Rearing Practices (CRP)	18.85	3.25	-0.06	-1.37	24	13	.67
2. Cultural Stereotype (CS).....	8.15	3.43	-0.18	-0.74	15	1	.87
3. Pattern Reproduction Test (PRT)	20.70	11.20	0.14	-1.35	39	4	.83
4. Draw-a-Person (DAP)	23.74	5.09	-1.18	0.45	28	10	.90
5. Work Orientation (from PAT)	17.74	8.71	0.09	-0.29	36	0	.91
6. Sense of Separate Identity (SSI)	3.68	2.42	0.41	-0.67	9	0	.84
7. n Ach	3.25	2.31	0.66	0.71	10	0	.74
8. Acceptance of Authority (AA).....	2.28	1.86	0.51	-0.82	7	0	.75
9. Rod-and-Frame Test (RFT)	94.13	60.59	0.87	-0.15	254	15	.72
10. Age	39.53	16.02	1.17	0.87	80	21	
11. Education	3.08	3.26	0.61	-0.55	12	0	
12. Urbanization Index (UI)	3.02	3.74	0.64	-0.34	9	0	

TABLE 7

RURAL FEMALES

MEANS, STANDARD DEVIATIONS, SKEWNESS, KURTOSIS, OBSERVED RANGES AND RELIABILITIES

Variables	\bar{X}	SD	Sk	Kt	Observed Range		Reliability
					Max.	Min.	
1. Child Rearing Practices (CRP)	15.16	3.36	0.87	3.17	28	8	.78
2. Cultural Stereotype (CS)	7.37	4.59	0.65	-0.48	18	1	.88
3. Pattern Reproduction Test (PRT).....	17.90	9.81	0.42	-0.77	38	3	.80
4. Draw-a-Person (DAF).....	25.59	2.40	-1.08	0.74	28	19	.90
5. Work Orientation (from PAT).....	15.47	6.66	0.11	-0.33	30	0	.91
6. Sense of Separate Identity (SSI).....	5.33	2.87	0.08	-0.39	12	0	.84
7. n Ach	3.71	2.89	0.59	-0.81	10	0	.74
8. Acceptance of Authority (AA).....	4.65	2.80	0.20	-0.74	10	0	.75
9. Rod-and-Frame Test (RFT)	101.65	67.59	1.12	0.42	272	18	.74
10. Age	33.75	12.02	1.05	0.73	65	17	
11. Education	1.73	2.14	0.60	-1.37	6	0	
12. Urbanization Index (UI)	3.04	2.16	0.22	-1.09	7	0	

substantiated; and secondly to discern patterns within the data which might suggest hypotheses worthy of further investigation.

The Analysis of Variance technique will be presented first; a description of the Factor Analysis will follow. The trends shown up by both procedures will then be summarized.

3.6.2.1 Analysis of Variance

In the present study Sex and Culture were treated as the fixed (independent) factors determining performance on the dependent variables. The groups chosen for study were selected on the basis of these two variables. The variance analysis was computed in the form of a 2 x 2 table. Interaction effects were expected.

Since the samples to be compared were unequal in composition (casualties had reduced the samples and left them unequal) a special form of variance analysis was required. The programme used was prepared at the University of Miami and adapted for present purposes by Michael Muller of the Computer Division of the NIPR. The advantage of this programme is the fact that it is capable of handling unequal subjects in the various cells. Separate analyses were calculated for each measure. Before each analysis was undertaken, the frequency distributions of each measure were inspected in case of non-normalities of any kind. It was found that the distributions of the Rod-and-Frame test were so skewed that it was necessary to normalize the scores. This was done by means of logarithmic transformations. The Analysis of Variance procedures made use of the transformed data. Since the distributions of the remaining (8) measures were acceptably normal, the raw scores were used for their analyses. (The distributions of the urban groups on the Pattern Reproduction Test were also found to be disconcertingly skewed. Since it was not possible to normalize these scores inferences drawn from these findings were to be made with extreme caution).

After the Variance computations were conducted, two estimates of experimental effects were derived. The first was obtained by the standard procedure for estimating the significance of the F-ratio. The second estimate was derived by means of a

formula which enables one to calculate the actual magnitude of experimental effects. The calculation of this 'power' statistic was prompted by the recognition that the standard significance tests are insufficient to warrant the conclusion that an effect is large and important.

The limitations of the traditional significance test has received renewed attention recently and attempts to devise more satisfactory estimates of magnitude have been forthcoming (Cohen, 1966; Friedman, 1968; Hay, 1963; Fleiss, 1969). The procedure adopted in the present study was derived from the principles set out by J.L. Fleiss (1969). The formula used was particularly suited to the estimation of fixed variance models: the major sources of variance, Sex and Culture, were fixed factors in the present investigation.

The Analysis of the Rod-and-Frame data was fairly elaborate and will be presented in some detail. The analysis of the remaining measures was straightforward and it will not be necessary to describe the typical 2-way analysis which was performed on these.

Rod-and-Frame Test

Two sets of 2 x 2 Analysis of Variance computations were performed on the Rod-and-Frame data. The first series of variance computations were performed on each of the three component scores derived by means of Schepers's technique described earlier (FE, RE and GB). The fourth Analysis was performed on the Summed Scores (SS). It was felt that although Schepers was justified in separating out three scores from responses to the powerful TRTC instrument, the portable RFT used in the present study did not warrant these sophisticated computations. Nevertheless in the desire to obtain maximum information from the data both component and summed scores were calculated and separate variance analysis computed on all four sets of scores. Signs or direction of error were ignored in the calculation of the Summed Score: in other words, only absolute scores were used. This was because in spite of their consistent emergence as stable factors in statistical analyses (Schepers, 1967; 1968) their psychological meaningfulness has yet to be established. (The same may be said of the three algebraically

derived measures referred to above: a satisfactory account of their psychological significance has not yet been offered).

The Means and Standard Deviations obtained by each group on each measure are presented below. The results of the Analysis of Variance follow.

TABLE 8

MEANS AND STANDARD DEVIATIONS ON RFT PERFORMANCE FOR COMPONENT
VERSUS SUMMED SCORES

*SC	Variable 1 (GB)		Variable 2 (FE)		Variable 3 (RE)		Total Error Score	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
2 2	5.80	2.30	6.44	3.44	5.93	2.47	80.30	50.75
1 2	3.86	1.86	4.64	2.63	3.53	2.00	41.06	28.82
2 1	5.67	2.87	5.66	3.60	6.81	2.89	101.65	67.59
1 1	5.32	2.41	6.31	2.86	5.92	3.20	94.13	60.59

Key

*SC

2 2 = Female Urban

1 2 = Male Urban

2 1 = Female Rural

1 1 = Male Rural

N.B.

Variable 1, 2 and 3 have been normalized by means of logarithmic transformations.

Total Error Score has been derived from the raw scores (raw scores were retained at this point because it was found that the normalization procedures made no difference to the significance level).

TABLES 9 - 12

ROD-AND-FRAME TEST:

ANALYSIS OF VARIANCE

TABLE 9 VARIABLE 1 (GENERAL BIAS)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	1129.31	199	5.68		
Sex	68.72	1	68.72	12.11	0.001
Culture	20.95	1	20.95	3.69	N.S.
SC	32.09	1	32.09	5.65	N.S.

TABLE 10 VARIABLE 2 (FRAME EFFECT)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	1991.80	199	10.01		
Sex	19.09	1	19.09	1.91	N.S.
Culture	8.67	1	8.67	0.87	N.S.
SC	76.50	1	76.50	7.64	N.S.

TABLE 11 VARIABLE 3 (ROD EFFECT)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	1417.15	199	7.12		
Sex	134.99	1	134.99	18.96	0.001
Culture	133.07	1	133.07	18.69	0.001
SC	28.97	1	28.97	4.07	N.S.

TABLE 12

TOTAL ERROR SCORE

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	554218.00	191	2901.67		
Sex	27669.84	1	27669.84	9.54	0.001
Culture	66588.19	1	66588.19	22.95	0.001
SC	12251.05	1	12251.05	4.22	N.S

TABLES 13 - 20 MEANS AND STANDARD DEVIATIONS

TABLE 13 CULTURAL STEREOTYPE (CS) (QUESTIONNAIRE)

Group	N	Mean	S.D.
Urban Males	49	19.898	9.627
Urban Females	50	14.300	3.559
Rural Males	47	8.149	3.432
Rural Females	49	7.367	4.590

TABLE 14 PATTERN-REPRODUCTION TEST (REVISED KOHS BLOCKS)

Group	N	Mean	S.D.
Urban Males	49	33.571	9.213
Urban Females	50	37.180	3.192
Rural Males	47	20.702	11.205
Rural Females	49	17.898	9.813

TABLE 15 DRAW-A-PERSON TEST (DAP)

Group	N	Mean	S.D.
Urban Males	49	13.673	5.539
Urban Females	50	18.500	4.496
Rural Males	47	23.745	5.088
Rural Females	49	25.592	2.406

MEANS AND STANDARD DEVIATIONS (Contd.)

TABLE 16 CHILD-REARING PRACTICES (CRP) (QUESTIONNAIRE)

Group	N	Mean	S.D.
Urban Males	49	25.306	6.185
Urban Females	50	24.620	4.598
Rural Males	47	18.851	3.250
Rural Females	49	15.163	3.356

TABLE 17 PICTURE ARRANGEMENT TEST (PAT)

Group	N	Mean	S.D.
Urban Males	49	18.918	6.645
Urban Females	50	25.220	7.109
Rural Males	47	17.745	8.706
Rural Females	49	15.469	6.665

TABLE 18 SENSE OF SEPARATE IDENTITY (SSI)

Group	N	Mean	S.D.
Urban Males	49	8.551	3.136
Urban Females	50	5.820	3.055
Rural Males	47	3.681	2.424
Rural Females	49	5.327	2.868

MEANS AND STANDARD DEVIATIONS (Contd.)

TABLE 19 NEED FOR ACHIEVEMENT (n ACH)

Group	N	Mean	S.D.
Urban Males	49	5.776	2.312
Urban Females	50	4.980	2.519
Rural Males	47	3.255	2.308
Rural Females	49	3.714	2.887

TABLE 20 ACCEPTANCE OF AUTHORITY (AA)

Group	N	Mean	S.D.
Urban Males	49	7.714	6.275
Urban Females	50	3.360	2.301
Rural Males	47	2.277	1.862
Rural Females	49	4.653	2.781

TABLES 21 - 28
ANALYSIS OF VARIANCE

TABLE 21 CULTURAL STEREOTYPE (CS) (QUESTIONNAIRE)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	6622.34	191	34.67		
Sex	523.44	1	523.44	15.10	0.001
Culture	4218.33	1	4218.33	121.66	0.001
SC	282.57	1	282.57	8.15	0.005

TABLE 22 PATTERN REPRODUCTION TEST (MODIFIED KOHS BLOCKS)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	14971.81	191	78.39		
Sex	6.51	1	6.51	0.08	N.S.
Culture	12673.28	1	12673.28	161.68	0.001
SC	500.94	1	500.94	6.39	N.S.

TABLE 23 DRAW-A-PERSON TEST (DAP)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	3932.13	191	20.59		
Sex	565.38	1	565.38	27.46	0.001
Culture	3569.74	1	3569.74	173.40	0.001
SC	108.13	1	108.13	5.25	N.S.

TABLE 24 CHILD REARING PRACTICES (CRP) (QUESTIONNAIRE)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	3898.88	191	20.41		
Sex	237.28	1	237.28	11.62	0.001
Culture	3103.02	1	3103.02	152.01	0.001
SC	109.76	1	109.76	5.38	N.S.

TABLE 25 PICTURE ARRANGEMENT TEST (PAT) (WO MEASURE)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	10215.44	191	53.48		
Sex	204.86	1	204.86	3.83	NS
Culture	1489.80	1	1489.80	27.86	0.001
SC	896.10	1	896.10	16.76	0.001

TABLE 26 TAT: SENSE OF SEPARATE IDENTITY (SSI)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	1594.49	191	8.35		
Sex	17.02	1	17.02	2.04	N.S.
Culture	341.68	1	341.68	40.93	0.001
SC	233.34	1	233.34	27.95	0.001

TABLE 27 TAT: NEED FOR ACHIEVEMENT (n ACH)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	1212.45	191	6.35		
Sex	1.73	1	1.73	0.27	N.S.
Culture	172.84	1	172.84	27.23	0.001
SC	19.17	1	19.17	3.02	N.S.

TABLE 28 TAT: ACCEPTANCE OF AUTHORITY (AA)

Source of Variance	Sum of Squares	df	Mean Square	F	P(F)
Within Cells	2680.03	191	14.03		
Sex	53.95	1	54.95	3.85	N.S.
Culture	198.86	1	198.86	14.17	0.001
SC	551.85	1	551.85	39.33	0.001

3.6.2.2 Factor Analysis

In the present study the principle axis factor solution was rotated. Rotations were made in order to achieve positive manifold, simple structure and hopefully psychological meaningfulness. At the outset tests were intercorrelated by means of Pearson's product-moment technique. This was done for each group separately. The lower half of the intercorrelation matrices will be found in the Appendix. The matrix of intercorrelations was then subjected to an Iterative Principle Factor Analysis. Initially the number of factors to be iterated on was determined according to Kaiser's criterion (Kaiser, 1960, p. 146). However when it became clear that Kaiser's criterion was too high, it was decided on an intuitive basis to undertake a two-factor extraction.

The chief problem inherent in rotation relates to the selection of a primary factor basis for the common factor space. The object of the selection is to achieve a corresponding loading matrix L which is as simple as possible. In the attempt to achieve this in the present study, the iterative principal factor analysis was followed by the direct Quartimin procedure. The Quartimin criterion is one of the Oblimin criteria and is believed to be the most precise. Its advantage derives from the fact that it is applied to primary loadings directly. It thus by-passes the problems associated with the standard practice of rotating from the reference factors. It has been argued, notably by R.I. Jennrich and P.F. Sampson (1966) that reference factors are mathematical abstractions rather than variables of primary interest. The simplicity and neatness of the solution presented by these authors lends authority to their argument.

For ease of reference only the Factor Matrices and Factor Correlation Matrices will be presented in the body of the text. The Matrices of Residuals, Latent Roots and Percentage Trace will be found in the Appendix.

TABLES 29 - 30

FACTOR ANALYSIS

12 VARIABLES (i.e. IRFT score)

2 FACTORS EXTRACTED

URBAN MALES

TABLE 29 DIRECT QUARTIMIN FACTOR PATTERN MATRIX

	1	2
1. Child Rearing Practices (CRP)	<u>.7003</u>	.0329
2. Cultural Stereotype (CS) .....	.2349	-.0748
3. Pattern Reproduction (revised Kohs)	-.0337	.2104
4. Draw-a-Person (DAP) .....	.2453	.0190
5. Work Orientation (from Picture Arrangement Test (PAT))	-.1568	<u>.3763</u>
6. Sense of Separate Identity (SSI)	<u>.5096</u>	-.1616
7. n Ach .....	.2575	<u>.4344</u>
8. Acceptance of Authority (AA)	-.1667	<u>.9940</u>
9. Age .....	.2831	-.0235
10. Education .....	.1412	.1135
11. Urbanization Index (UI)	<u>.5882</u>	.0454
12. Rod-and-Frame Test (RFT)	-.0594	-.0761

TABLE 30 DIRECT QUARTIMIN FACTOR CORRELATION MATRIX

	1	2
1.	1.0000	.0481
2.	.0481	1.0000

TABLES 31 - 32

FACTOR ANALYSIS

12 VARIABLES (i.e. IRFT score)

2 FACTORS EXTRACTED

URBAN FEMALES

TABLE 31 DIRECT QUARTIMIN FACTOR PATTERN MATRIX

	1	2
1. Child Rearing Practices (CRP) .....	.2092	.2095
2. Cultural Stereotype (CS) .....	.0352	.2784
3. Pattern Reproduction (revised Kohs)	-.0746	.2568
4. Draw-a-Person (DAP)	<u>.4183</u>	.1844
5. Work Orientation (from Picture Arrangement Test (PAT))	-.3224	-.0068
6. Sense of Separate Identity (SSI) .....	.2728	<u>.9228</u>
7. n Ach	<u>.3780</u>	.4202
8. Acceptance of Authority (AA) .....	.1394	.0110
9. Age	-.2475	-.0381
10. Education	<u>.4480</u>	-.0654
11. Urbanization Index (UI)	<u>.8772</u>	-.1303
12. Rod-and-Frame Test (RFT)	<u>.3721</u>	-.3611

TABLE 32 DIRECT QUARTIMIN FACTOR CORRELATION MATRIX

	1	2
1.	1.0000	.1468
2.	.1468	1.0000

TABLES 33 - 34

FACTOR ANALYSIS

12 VARIABLES (i.e. IRFT score)

2 FACTORS EXTRACTED

RURAL MALES

TABLE 33. DIRECT QUARTIMIN FACTOR PATTERN MATRIX

	1	2
1. Child Rearing Practices	-.0794	.2618
2. Cultural Stereotype (CS) .....	.2632	-.0622
3. Pattern Reproduction (revised Kohs) .....	.7237	.1425
4. Draw-a-Person (DAP)	<u>.8196</u>	.0588
5. Work Orientation (from Picture Arrangement Test (PAT) ) .....	.1840	<u>.3613</u>
6. Sense of Separate Identity (SSI)	<u>.5823</u>	.2847
7. n Ach .....	.3896	<u>.4778</u>
8. Acceptance of Authority (AA)	-.0857	<u>.9788</u>
9. Age	-.3669	.0554
10. Education	<u>.6974</u>	.1898
11. Urbanization Index (UI)	<u>.6112</u>	-.0912
12. Rod-and-Frame (RFT)	-.1204	-.2051

TABLE 34. DIRECT QUARTIMIN FACTOR CORRELATION MATRIX

	1	2
1.	1.0000	.2684
2.	.2684	1.0000

TABLES 35 - 36

FACTOR ANALYSIS

12 VARIABLES (i.e. IRFT score)

2 FACTORS EXTRACTED

RURAL FEMALES

TABLE 35 DIRECT QUARTIMIN FACTOR PATTERN MATRIX

	1	2
1. Child Rearing Practices (CRP)	<u>.4319</u>	<u>.4075</u>
2. Cultural Stereotype (CS)	<u>.3888</u>	-.3713
3. Pattern Reproduction (revised Kohs) .....	.2902	<u>.9095</u>
4. Draw-a-Person (DAP)	<u>.4672</u>	.3797
5. Work Orientation (from Picture Arrangement Test (PAT))	<u>.5473</u>	.1116
6. Sense of Separate Identity (SSI)	<u>.6500</u>	-.1583
7. n Ach	<u>.5218</u>	.1347
8. Acceptance of Authority (AA) .....	.3111	.0151
9. Age	-.6706	-.0608
10. Education .....	.2877	.0253
11. Urbanization Index (UI) .....	.4997	.0597
12. Rod-and-Frame Test (RFT)	<u>.3531</u>	-.0995

TABLE 36 DIRECT QUARTIMIN FACTOR CORRELATION MATRIX

	1	2
1.	1.0000	.1675
2.	.1675	1.0000

3.7 Discussion

3.7.1 Analysis of Variance

For ease of reference a summary of results is presented prior to the discussion.

3.7.1.1 Rod-and-Frame Test (Hypotheses I and IVa)

TABLES 37 - 40

SIGNIFICANCE OF THE DIFFERENCES BETWEEN GROUPS		MAGNITUDE OF THE DIFFERENCES BETWEEN GROUPS		
<u>Variable I (GB)</u>				
Sex	p < .001	Sex	r ² = .08	<u>TABLE 37</u>
Culture	p < N.S.	Culture	r ² = .08	
SC	NS	SC	r ² = .02	
<u>Variable II (FE)</u>				
Sex	NS	Sex	r ² = .00	<u>TABLE 38</u>
Culture	NS	Culture	r ² = -.00	
SC	NS	SC	r ² = .03	
<u>Variable III (RE)</u>				
Sex	p < .001	Sex	r ² = .05	<u>TABLE 39</u>
Culture	p < .001	Culture	r ² = .10	
SC	NS	SC	r ² = .02	
<u>Summed Score</u>				
Sex	p < .001	Sex	r ² = .04	<u>TABLE 40</u>
Culture	p < .001	Culture	r ² = .10	
SC	NS	SC	r ² = .02	

The Rod-and-Frame Test was the chief measure used to examine the postulate concerned with field-dependence. It will be observed that results are virtually identical irrespective of the scoring procedure. This suggests that it was not necessary to undertake the more elaborate procedure, that it would have been quite adequate to calculate the total score only. Moreover, since the psychological meaning of these methodological refinements has yet to be established, the effort devoted to the derivation of component scores in the present study was clearly not vindicated.

Performance was shown to differ in respect of both sources of variation, Sex and Culture. This was the case for the variance analysis computed on V₁ (General Bias) (GB), V₃ (Rod Effect) (RE) and the Summed Score (SS) (p < .001). On V₁ and V₃

the mean error score for urban males was 3.86, while the other groups obtained scores of the order of ± 5.5 (and higher). As indicated by the test of magnitude, a difference of two points is appreciable. (It may also be clarifying to recall the fact that these scores were normalized and that differences on these normalized scores are less striking than they would appear on the raw data). When the traditional Witkin-type global scoring procedure was used (here referred to as SS) the mean error for the urban male group was 40.01 as compared to 80.30, 94.13 and 101.65 for urban females, rural males and rural females respectively.

The urban male group consistently obtained the lowest error score. In other words this group emerged as the most field-independent, as predicted (Hypothesis I). The differences on SS appear most striking partly because the normalization procedure was not performed (it had been found to make no difference to the findings) but largely because differences were not 'thinned out', as it were, by the separating out technique. It will be recalled that a power statistic was also computed in an attempt to obtain an estimate of the magnitude of differences. In the present case it revealed that the Culture factor contributed more to experimental effects than the Sex factor (for SS, Culture $r^2 = .10$ as compared to $.04$ for Sex r^2). This finding is in line with the major hypothesis which related field-independence to degree of acculturation. Results indicate that extent of field-independent behaviour increased as the groups move towards the urban end of the continuum. The other hypothesis concerned with field-dependence (Hypothesis IVa) was also given support by the findings: females of both cultures were more field-dependent than males.

The only differences which failed to achieve significance were those obtained on V_2 . This finding was interesting in view of Schepers' suggestion that it is this score which is most closely associated with field-dependent perception. It is suggested that this result is probably attributable to the fact that the portable apparatus was not sufficiently precise to yield three component functions. Scores were thus spread out in such a way that their magnitudes were artificially depressed.

The results of both scoring procedures were included in order to indicate the extent to which the trends shown up by each procedure were comparable. Both procedures indicated that performance on the primary field-dependence measure was in the expected direction. The typical order of group performance, from urban male, urban female through rural male to rural female lent support to the hypotheses concerned with field-dependence.

3.7.1.2 Cultural Stereotype (CS) (Questionnaire) (Hypothesis IVb)

SIGNIFICANCE OF THE DIFFERENCES BETWEEN GROUPS		MAGNITUDE OF THE DIFFERENCES BETWEEN GROUPS	
Sex	p < .001	Sex	r ² = .07
Culture	p < .001	Culture	r ² = .38
SC	p < .005	SC	r ² = .04

TABLE 41

As can be seen from the statistics above, both sources of variation contributed significantly to differences in performance. The Culture effect was clearly more appreciable, as is evidenced by the values obtained by means of Fleiss' formula (Culture r² = .38 as compared to .07 for Sex r²). The small sex effect makes sense when one considers the nature of the instrument. The CS measure is concerned with the extent to which the stereotype prevailing in the four subcultures encourages independent behaviour among the sex groups. It was anticipated that responses to this questionnaire would be essentially a function of the individual's cultural status: Sex differences in respect of the stereotype were not expected. Thus, the greater contribution of the Culture variable was in the expected direction. The value of computing both statistics may be noted here. The significance test did not enable one to disentangle the separate contributions of the variables to experimental effects. The practice of obtaining only the significance level clearly results in a limited understanding of the variables interacting in the experimental design.

The mean scores indicate that it was the urban groups who are more prone to the stereotype examined. In other words, this group tended to endorse items which are indicative of an Active/Male - Passive/Female stereotype significantly more often than the rural groups. However, caution should be exercised when making inferences from this finding. The questionnaire focussed

very deliberately on a specific aspect of the Cultural Stereotype, namely the question of Activity/Passivity and Independence/Dependence among the sexes. This was governed by the primary interest of the study: to examine the relation between field-dependent behaviour and allied personality components. The scope of instruments which were not direct measures of perceptual field-independence was specifically geared to the investigation of the components of independent behaviour: the CRP examined the autonomy of the growing child; the CS, independence among the sexes; the WO measure, signs of initiative in the work situation; the SSI score, development of a distinctive independent ego; and finally the n Ach measure concerned itself with evidence of resourcefulness. Thus, the fact that the urban group displayed a greater sense of 'what is proper' for the sexes cannot be taken to mean that urban groups are generally more governed by social prescriptions for behaviour than their rural counterparts. It is well known that tribal societies lay down more detailed specifications for behaviour than are usually found in urban life. In order to conclude that urban Zulus have stronger notions regarding the decorum and function of the sexes than rural Zulus, one would require a more comprehensive investigation of the significant areas of their lives. It was not the intention of the present project to explore the stereotype in all its manifestations. In terms of its objective - to examine the relation between field-dependence and the cultural stereotype of dependence among the sexes - findings were in the expected direction. The greater field-independence of males in the two subcultures covaried with the Male/Independent - Female/Dependent stereotype fostered among these populations.

3.7.1.3 Pattern Reproduction Test (modified Kohs Blocks) (Hypotheses I and IVa)

SIGNIFICANCE OF THE DIFFERENCES BETWEEN GROUPS		MAGNITUDE OF THE DIFFERENCES BETWEEN GROUPS	
Sex	NS	Sex	$r^2 = -.00$
Culture	$p < .001$	Culture	$r^2 = .45$ <u>TABLE 42</u>
SC	NS	SC	$r^2 = .03$

Findings on this measure were also in the expected direction, particularly in respect of the urban/rural comparison.

The urban groups were significantly more accurate than the rural populations ($p < .001$, Culture $r^2 = .45$). Since there is evidence to indicate that this instrument correlates with the EFT, it may be viewed as a field-dependence measure. On this logic, it could be considered to provide further evidence of the greater field-independence of the urban groups, thereby lending further support to Hypothesis I. However these assumptions cannot be legitimately made of the present data. A glance at the distributions of the urban groups indicates that this instrument was highly unreliable for these groups. It is clearly set at too low a level of difficulty for a schooled urban population, and therefore unacceptable for purposes of comparison. For these reasons no attempt will be made to derive any psychological meaning from these findings - in spite of the significant statistical results. This instrument raises the question of functional equivalence more crucially than any of the others. It is suggested that future investigators intending to use this type of Witkin index should achieve functional equivalence for the measure prior to its inclusion in a test battery. It was not possible within the scope of the present study to over-determine all the instruments before they were deemed fit for use in the final test battery.

3.7.1.4 Draw-a-Person Test (DAP) (Hypotheses I and IVa)

SIGNIFICANCE OF THE DIFFERENCES BETWEEN GROUPS		MAGNITUDE OF THE DIFFERENCES BETWEEN GROUPS	
Sex	$p < .001$	Sex	$r^2 = .12$
Culture	$p < .001$	Culture	$r^2 = .47$ <u>TABLE 43</u>
SC	NS	SC	$r^2 = .02$

Both sources of variation contributed to differences in performance among the groups. The culture variable was clearly more appreciable as is evidenced by the values obtained on Fleiss' formula (Culture $r^2 = .47$, Sex $r^2 = .12$). Mean scores were significantly higher for both rurals and females. In other words, the drawings of the rural groups were considerably more primitive than those of their urban brothers: and among the rural groups it was typically the females who produced the more primitive drawings.

Witkin has reported (1962) findings indicative of a relation between field-independent perception and self-articulation as reflected in the Draw-a-Person Test. His correlations suggest that the DAP may be used as another field-dependence measure. In fact, his findings prompted the inclusion of this instrument in the present battery. It was considered desirable to include a measure which was specifically identified with Witkin's later formulations of field-dependence, consolidated in the notions of 'articulation' and 'differentiation' (1962). Witkin's belief that differentiation displayed in the DAP test is indicative of a deeper level of articulation and differentiation of self has acquired substantial empirical support. The present finding among the Zulu-speaking literate and illiterate groups - eminently suited to an examination of the 'sophistication' continuum - may be considered further support for his claims. The fact that inter-rater agreement of the order of .90 was found among the four judges, permits one to infer that the scoring procedure was reliable. In conclusion, the findings on this measure may be treated as additional supportive evidence for both Hypothesis I, concerned with Cultural differences in field-dependence, and Hypothesis IVa, concerned with Sex differences in respect of this dimension.

3.7.1.5 Child-Rearing Practices (CRP) (Questionnaire) (Hypotheses I and II)

SIGNIFICANCE OF THE DIFFERENCES BETWEEN GROUPS			MAGNITUDE OF THE DIFFERENCES BETWEEN GROUPS		
Sex	p	≤ .001	Sex	$r^2 = .05$	<u>TABLE 44</u>
Culture	p	< .001	Culture	$r^2 = .44$	
SC	NS		SC	$r^2 = .02$	

The variance ratio F was significant for both sources of variation. It will be recalled that the reliability of this instrument as established by the Kuder-Richardson formula 20 was .89. This fact, as well as the platykurtic nature of its distribution, suggest that the instrument can be regarded as both acceptably reliable and differentiating. (It was Schepers (1968) who observed, very pertinently, that the goal of test construction is to produce platykurtic rather than normal distributions: in other words a truly differentiating measure is one which spreads out subjects as widely as possible on the scoring continuum).

Although both sources of variation were significant at the same confidence level, the variance estimate r^2 indicates that the Culture variable was responsible for the greater proportion of variance. In psychological terms, these results mean that urban groups tend to encourage emotional independence and autonomous behaviour in their growing children more than their rural counterparts. The trend among the Sex groups (small but significant) suggests that males are more tolerant of their children than their female partners in the child-rearing process. This is an interesting finding when one considers that the questionnaire is essentially addressed to females. It lends itself to two interpretations: firstly, it is possible that males play a greater rôle in the upbringing of their children than one might have suspected. This is suggested by the fact that they have such a coherent set of views that they can be identified as 'growth fostering'. An alternative explanation is that their responses to the questionnaire are not behaviourally based, but verbalizations indicative of the way they would like their wives to nurture their children. The latter is the more likely explanation. It is unlikely, particularly in the urban setting, that males have the time or the predisposition to participate meaningfully in the upbringing of their children. The question of 'predisposition' is raised because information concerning this kind of factor is actually available within the study. The Cultural Stereotype (CS) Questionnaire is pertinent. Findings on the latter indicated that the female is viewed as the central figure in the child-rearing process (85% of the combined groups endorsed this item). Thus when both questionnaires are taken together, the second explanation emerges as the more likely: in other words, the views of urban males cannot be regarded as indicative of real participation in the nurturing process. Both explanations were noted in order to highlight the chief danger of questionnaires, that which misleads one into accepting a verbalized statement for an enacted form of behaviour. The question is more easily settled in statistical terms. It will be observed that although both Sex and Culture were significant at the same confidence level ($p < .001$), Culture $r^2 = .44$ as compared to Sex $r^2 = .05$. This enables one to treat the difference due to culture as more important than those due to sex.

Finally, it may be observed that performance of the urban males on the CRP links up with their scores on the RFT. The field-independent performance of this group is consistent with the independent attitudes they revealed in response to the questionnaire. Field-independence has been assumed to be an acquired pattern of behaviour. The present questionnaire was included in the battery in order to get a fuller picture of field-dependence and to garner information regarding the aetiology of field-independent patterns among Zulus. Findings supported the thesis that it is a socially acquired form of behaviour.

TAT Measures

3.7.1.6 Sense of Separate Identity (SSI)

SIGNIFICANCE OF THE DIFFERENCES BETWEEN GROUPS			MAGNITUDE OF THE DIFFERENCES BETWEEN GROUPS		
Sex	NS		Sex	$r^2 = .01$	
Culture	p	.001	Culture	$r^2 = .17$	<u>TABLE 45</u>
SC	p	.001	SC	$r^2 = .12$	

The findings shown up by the Variance analysis were in the expected direction. It will be observed that the Culture effect was substantially bigger than the Sex effect. However, sex differences had not been anticipated. The hypothesis concerning SSI may be usefully restated:

- . "The urban Zulu has a significantly greater sense of his separate identity than his rural counterpart."

After the Rod-and-Frame test, the SSI measure occupied an important position in the battery of tests selected to measure the correlates of field-dependence. An important aspect of field-dependent behaviour is what has been termed 'locus of control'. The emergence of a sense of separate identity by definition entails the development of an internal locus of control. Logically one expects the inner-oriented individual to have a more developed sense of self than the other-directed personality. Thus performance on this measure was expected to vary in the same direction as that on the more operational indices of field-dependence used in the study. The significant findings obtained on the SSI measure mean that the urban groups gave more evidence of formed egos than their rural counterparts.

A brief comment on the psychometric value of the TAT may be in order here. At this stage its usefulness in this study will be noted: its limitations will be dealt with later. The high inter-rater agreement (.75 and higher) found in respect of all three dimensions suggested that it was acceptably efficient. In other words, it was possible to reach a consensus concerning the nature of each variable and the indices used to measure it. It is felt therefore that the evidence was sufficient to warrant a positive evaluation of the TAT as a research tool in the present investigation.

3.7.1.7 PAT (WO); n Ach; and Acceptance of Authority (AA) (Hypothesis II)

SIGNIFICANCE OF THE DIFFERENCES BETWEEN GROUPS		MAGNITUDE OF THE DIFFERENCES BETWEEN GROUPS	
<u>WO (derived from PAT)</u>			
Sex	p < .05	Sex	r ² = .01
Culture	p < .001	Culture	r ² = .12
SC	p < .001	SC	r ² = .07
<u>TABLE 46</u>			
<u>n Ach</u>			
Sex	NS	Sex	r ² = -.00
Culture	p < .001	Culture	r ² = .12
SC	NS	SC	r ² = .01
<u>TABLE 47</u>			
<u>AA</u>			
Sex	p < .05	Sex	r ² = .01
Culture	p < .001	Culture	r ² = .06
SC	p < .001	SC	r ² = .16
<u>TABLE 48</u>			

The findings suggested that performance on these three measures should be viewed together. It was apparent that in order to derive a coherent psychological picture from the statistics, it was necessary to qualify inferences drawn from the results on one measure by those obtained on the other two. The interrelatedness of these measures is logical since each is concerned, in one way or another, with the same psychological area, namely the subject's response to the work situation.

To take the Work Orientation (WO) measure first: it will be observed that both independent variables contributed to variability in performance. The Culture factor is more appreciable, as can be seen from the magnitude estimate. This means that the urban groups gave more evidence of a positive orientation to work.

And in the case of the sex differences it was the females who scored higher on this dimension. The picture is filled out somewhat when these findings are examined in conjunction with the n Ach scores. Here again it was the urban groups who obtained higher scores ($p < .001$). It is interesting to note that Sex differences were not significant. This is interesting in view of the fact that females were found to be more positively oriented towards work than males. It is suggested that their positive work orientation is not necessarily the expression of achievement needs. As a possible explanation it is ventured that they are less aware of the negative aspects of the work situation; however a definite statement cannot be made on the present evidence.

Findings on the AA measure follow the same pattern. For the Culture variable it was again the urban groups who revealed a greater acceptance of authority than the rural groups. It is speculated that the greater tendency among urban males to cooperate with authority figures is due to the fact that they more frequently find themselves in situations where cooperation is required. It should be observed that information on this variable is to some extent spontaneously produced in response to the TAT stimuli. This means that the urban groups tend to indicate their acceptance of authority more readily than do their rural counterparts. Therefore stimuli reminiscent of their work situation triggered off this tendency among the former groups more easily than among the latter. It might be said that rural groups have a weaker conditioning history in this regard.

In general the urban groups obtained higher scores on all three work dimensions than the rural groups. These findings were anticipated. It will be remembered that Hypothesis II predicted that

"The urban Zulu who obtains higher scores on indices of field-dependence also (a) has a higher level of aspiration (n Ach) and (b) displays significantly more goal-directed activity than his rural counterpart."

The rationale for postulating higher achievement drive among the urban groups was governed by the fact that they are more

acculturated. It is believed that the Achievement Motive is a by-product of the attempt to assimilate the Western ethos, this motive being an important (psychological) requisite for the maintenance of a competitive capitalist society. The high scores obtained by males on AA suggested that the conformity motive is particularly strong among urban groups. For this reason it was proposed that evidence of n Ach or striving behaviour may be more indicative of conformity needs than of the achievement motive as understood by McClelland. In other words evidence of n Ach among the urban groups may be indicative only of their active acceptance of their circumstances, and not necessarily of the tendency to seek out a medium for self-expression.

There is another reason for caution in this context. It may well be that a Western investigator who becomes familiar with the tribal milieu only at second remove, is unable to identify the indigenous sources of gratification and group acknowledgement of the native. In terms of the Westerner's understanding of the Achievement Motive, crystallized by McClelland in his phrase 'competing with standards of excellence', the rural population was shown to have substantially lower scores. However it does not automatically follow that rural Zulus do not strive for improved status in the eyes of their society. The African psychologist Benny Mkoatle warns strongly against the tendency among Western students of African culture to assume that the latter are wholly cooperative and that personal striving is deplored and repressed by the group (personal communication). The only safe conclusion to be drawn from the findings is that rural Zulus produced fewer indices of achievement drive as measured in this study.

The findings also point to the importance of treating n Ach within the context of the total work configuration and not as a unidimensional drive varying in magnitude among individuals. In the framework of the particular social and industrial order studied, this motive appears to be singularly bound up with its possibilities of expression and must therefore be examined in the light of both the socio-economic and psychological factors which enable its expression. Although the study was not deliberately geared to the investigation of these complex relationships, it

was fortunate that the measures selected sufficed to give an intimation of the complexity involved.

This section may be concluded by commenting on the limitations of the TAT as a psychometric measure. It will be recalled that the decision was made to limit depth interpretations and to treat the TAT as a psychometric tool as far as possible. This objective was influenced by the impression gained from reported studies that the most reliable were those which set out clear-cut scoring procedures. The present study adopted this strategy by stipulating precisely the scorable indices in the case of each variable. This was extremely efficient as far as it went. It is believed, however, that the decision to limit interpretations may have resulted in a loss of valuable 'dynamic' information. One of the prime features of the TAT is its capacity to induce ambiguous and socially unacceptable attitudes. It is quite possible that the indices which were regarded as indicative of positive attitudes towards authority signified only the 'show' of cooperation, perhaps camouflaging underlying hostility and resentment. The scoring strategy did attempt to accommodate ambiguities of this kind: thus a response which asserted cooperation but enacted hostility during the course of the events which transpired in the story was scored negatively. However, no proper psychodynamic analysis of the production was attempted. Since it was appreciated that the loss of information may have been valuable, an attempt was made to derive a 'dynamic' and coherent picture by piecing together the relationships yielded by the statistical techniques.

3.7.1.8 The results of the Analysis of Variance computations may be usefully summarized:

Hypotheses I and IVa: Field-Dependence

Since Hypotheses I and IVa were both concerned with field-dependence they were viewed together. The RFT was the chief measure used to examine these hypotheses. Findings indicated that performance on this measure was in the expected direction. The urban male group obtained appreciably lower error scores on this index of field-dependence than their rural

and female counterparts. In other words, the acculturated group was more field-independent than the tribal population as predicted by Hypothesis I; and males were less field-dependent than females, as anticipated by Hypothesis IVa. These findings were true irrespective of the scoring procedure used.

In line with Witkin's use of the DAP in his later formulation of the field-independence concept ('psychological differentiation') it was also used here as a second measure of field-dependence. The urban groups obtained significantly lower ratings than the other groups, indicating a higher degree of articulation and differentiation of self. Thus the greater differentiation found among the drawings of the urban male group was regarded as further corroborative evidence for the field-dependence hypotheses.

The urban groups were also more accurate on the Pattern Reproduction Test than the other groups. Since this test has been shown to correlate with the Embedded Figures Test it might be regarded as a further measure of field-dependence. However, its reliability was low among the urban groups and the results could not be considered support for the hypotheses.

In general it was concluded that Hypotheses I and IVa were supported by the findings.

Hypothesis II: n Achievement

n Ach was examined by means of the TAT. The Variance Analysis showed the urban groups to be significantly more achievement oriented than their rural counterparts ($p < .001$). Differences between males and females were non-significant.

The Work Orientation (WO) measure derived from the TAT was considered to have bearing on the question of n Ach. Females were found to be more positively work oriented than males and the urban groups more so than the rural groups.

The Acceptance of Authority (AA) measure derived from the TAT was also seen as relevant to Hypothesis II. Urban males obtained substantially higher scores on this measure as compared to the other groups. It was felt that this finding should qualify

the meaning one derived from the n Ach findings. It was suggested that evidence of n Ach may in fact signify the desire to be absorbed into the industrial and social structure and not necessarily the tendency toward self-actualization.

Hypothesis III: Sense of Separate Identity (SSI)

The primary measure of this dimension was obtained from the TAT. The hypothesis was supported by the findings: urban subgroups obtained significantly higher ratings than the rural groups. No differences between males and females were predicted and the data showed sex differences to be non-significant.

The DAP measure was also considered relevant to the examination of SSI. It was found that the urban groups produced more sophisticated drawings. Moreover drawings of males of both groups were more sophisticated. Since the measure examines the extent of self-awareness among individuals (graphically depicted) the urban/rural differences lent further support to the hypothesis. The male/female differences were not predicted but could be explained.

Hypothesis IVb: Cultural Stereotype

All four subgroups tended to favour items which expressed a Male/Active - Female/Passive stereotype. This lent support to Hypothesis IVb as well as to the fundamental position of the study which views field-dependence as an acquired pattern rather than a biogenically determined process. Urban males subscribed to the stereotype more strongly than urban females, a difference which did not emerge among the rural population. It is ventured that urban males are made aware of themselves as active agents in the environment and of the need to develop their personal resources. It is likely that this kind of awareness is not fostered in the rural setting, or if so, to a lesser degree than in the city.

3.7.2

Factor Analysis

Since the Factor Analysis was a supplementary procedure, the findings will be discussed in less detail and inferences made with reservation.

Since the hypotheses and measures were essentially concerned with two broad dimensions of behaviour - Autonomy and n Ach - a two factor extraction was undertaken. This decision was also guided by the fact that these two constructs were examined by means of at least three tests each: any factor which may have existed over and above these was clearly not measured by an admissible number of instruments. It is a well-known axiom of factor analysis that at least three tests are required to establish the factor space of an alleged factor.

As already indicated, the results of the factor analysis are interpreted with considerable caution. Firstly, since the study was not planned with a factor analysis in mind, the measures were not selected on the basis of their usefulness as reference markers for anticipated factors. This problem is lessened to some extent by the fact that the battery did contain three tests each for the two broad dimensions studied. The second reason for caution stems from the fact that not all the measures were acceptably reliable. The Pattern Reproduction Test for instance was highly unreliable for the urban groups: special care was therefore taken in the interpretation of results involving this variate. And finally it should be noted that the names given to the factors were determined by the terms of reference of the study and although they may not be the best means of identifying the factors they are at least consistent with the usage employed throughout.

The first observation made was that the factor patterns for the two sex groups had more in common with each other than the subcultures with each other. In other words, the following appeared to be the case: (i) a similar factor structure appeared to characterize the male groups; (ii) female groups were also fairly similar, although less so than the male groups; (iii) the groups classified according to culture appeared to have little in common.

An inspection of Tables 29 and 33 reveals that in the case of both male groups it was possible to identify two factors, both of which were susceptible of psychologically meaningful interpretation. In the case of the Urban Males, the first factor

was defined by Variates 1 (CRP), 6 (SSI) and 11 (UI). The CRP questionnaire concerns autonomy in the developing individual; SSI is concerned with the same dimension from a slightly different angle. V_{11} is the Urbanization Index. This grouping made sense in terms of the hypotheses governing the study. It was anticipated that the individual reared in the urban setting would be more independent than his rural counterpart. The factor may be termed 'Locus of Control' since it refers to the individual's directedness in his handling of the environment. It is significant that V_{12} (RFT), the primary field-dependence measure, did not load on this factor. It is suggested that the perceptual and personality correlates of field-dependence are sufficiently distinguishable to constitute separate factors. If this is indeed the case, the grouping of Factor I is regarded as the personality component of field-dependence. It will be observed that, in the case of the Rural Male group, (p. 99) variates 6 and 11 also loaded on Factor I. However for this group, the CRP does not load and instead V_4 (DAP) and V_{10} (Education) serve to fill out the picture. The fact that DAP and Education load for the latter group suggests that this factor is more determined by an ability component among the rural group than is the case for the urban group where, it will be recalled, it was essentially comprised of personality variates.

This difference prompts the speculation that rural males are aware of their SSI (the variate common to both groups) through their actions rather than their attitudes. This speculation is lent a measure of support by findings on the questionnaire. The impression gained from responses to the questionnaire (CRP) which helped to define this factor among the urban group suggested that the latter are more accustomed to verbalizing their attitudes. These findings support the argument concerning self-awareness put forward in Chapter 1. However, on the present data, it is not possible to make definitive statements. A study devoted to the investigation of introspective tendencies among these four sub-cultures would establish the validity of these impressions more definitely.

The grouping on Factor II was much more clear-cut and identifiable than Factor I among the male groups. Moreover, the fact that it was so strikingly similar for both male groups suggested that a psychologically meaningful dimension had been tapped. Factor II loaded on Variates 8 (AA), 7 (n Ach) and 5 (WO) for both male groups. These three measures all deal with the individual's resources in the work situation. The factor is therefore identified as 'initiative in the Work Situation'. It will be observed that Variate 8 (AA) accounts for the maximum variance (.98), with the other variables serving to fill out the picture. In the discussion of the variance analysis findings on AA were seen as relevant to the n Ach results and it was submitted that the three work variables should be viewed together. The fact that these three loaded on the same factor is regarded as support for the argument put forward in the earlier variance analysis.

Since Acceptance of Authority (AA) loaded highest on this factor it is seen as the defining variate. It is suggested that information concerning authority attitudes is invariably relevant when attempting to measure the achievement motive. This appears to apply particularly when it comes to the measurement of this motive in the Republic of South Africa. In a situation where authority figures assume a meaning beyond their industrial status, it is probable that personal attitudes towards authority will determine the likelihood of self-expression in the work situation.

Among the female groups it was somewhat difficult to interpret the factors (cf. Table 31, p. 98 and Table 35, p. 100). Factor I for Urban Females, for instance, was saturated with V_{11} (UI), V_{10} (Education), V_4 (DAP), V_7 (n Ach) and V_{12} (RFT). It is difficult to interpret this grouping since it contains such diverse variates. This multidimensionality suggests that the two factors are less distinct for the female groups and prompts the speculation that the females are less differentiated than the males.

The second factor was extremely ill-defined among the Urban Females group. V_6 (SSI) appeared to account for most of

its variance (.92); V_7 (n Ach) served to define it a little further. At most, it can be regarded as a doublet: but its vagueness prohibits one from identifying the construct involved.

Factor I for the Rural Female group was saturated with even more diverse variates than was the case with the Urban Female group. The following variates loaded: V_6 (SSI), V_5 (WO), V_7 (n Ach), V_4 (DAP), V_1 (CRP), V_2 (CS) and V_{12} (RFT). This is such a diverse set of variables that one is again prohibited from characterizing the factor. This caution is reinforced by the loadings on Factor II. The variance is almost totally accounted for by V_3 (Pattern Reproduction = .91), although CRP also loads appreciably (.41). This is a doublet and difficult to label.

One inference which can be drawn from the findings is the following: since it was difficult to identify the factors among the female groups it is possible that females are less differentiated than males. It should be stressed that this inference can only be made of performance on the measures comprising the present test battery; however, since the bulk of these measures is concerned in some way or another with personality differentiation, statements about differentiation are to the point. The lack of differentiation discerned among the female groups was not anticipated but can be explained. It will be recalled that the cultural stereotype assumes males to be more active in the environment than females. It is suggested that the stereotype fosters circumstances which provide males with more scope to develop factors to the point where they can become 'invariant', so to speak. Such factors would, therefore, emerge as distinct in a study which contains sufficient 'reference markers' (Cattell, 1966) to define their factor space.

An important methodological point is raised by the differences between the factor structures of the sex groups. The differences are open to two explanations: firstly, it is possible that the tests were not truly equivalent for the sex groups. Alternatively it is possible, as suggested above, that the diffuseness of the patterns among the female groups is indicative of less psychological differentiation among these groups. Although the

question of functional equivalence was not actually resolved within the study, the latter explanation is considered worthy of further study. Since the factor patterns could be distinguished more readily in terms of the sex groupings it is submitted that the experiences which are associated with sexual status are more formative in their effects than culturally produced experiences - among the Zulus studied. It would be valuable to devise a factorial study specifically designed to compare these four sub-cultures in respect of personality differentiation. The trends indicated by performance on the present battery of tests (somewhat premature for factorial analysis) suggest that extent of differentiation is a function of both sex and culture - in other words, the sex rôle stereotype fostered by the cultures studied.

Finally, it is believed that some support was given to the assumption made at the outset of the factor analysis that essentially two factors were explored by the investigation.

Summary

In the attempt to summarize this section of the results, only the general trends will be extracted.

- (a) The two factors found among the male groups were more easily identified than those yielded by the female groups.
- (b) Moreover, there were striking similarities between the factor patterns characterizing the male groups. In both cases, the first factor could be identified as a 'Locus of Control' factor, saturated with variates concerning Autonomous Functioning and Identity Awareness. The similarity of Factor II among these groups was particularly striking: in both groups, it was saturated with variates concerned with the self as an Agent in the (Work) Environment. Variates 8 (AA), 7 (n Ach) and 5 (WO) obtained high loadings for both groups. The fact that V_8 accounted for maximum variance in both cases (loading to the extent of .98) suggested that achieving tendencies and work orientation among males are strongly bound up with acceptance of authority in the work situation.
- (c) The factor patterns identified above were not evident among

the female groups. The fact that Factor I was so multi-determined and Factor II so ill-defined suggested that female groups are less differentiated than males in respect of the dimensions explored.

CHAPTER 4

GENERAL CONCLUSIONS, CRITIQUE OF PRESENT STUDY AND
SUGGESTIONS FOR FUTURE RESEARCH

The statistical findings of this study confirm the major hypotheses. The hypothesis concerned with the relation between acculturation and Sense of Separate Identity was supported by the results: the acculturated subjects were significantly more self-aware than the rural population. Moreover the findings indicated that acculturated Zulus are consistently more field-independent when compared with their tribal counterparts. The results also indicated that urban Zulus tend to be more achievement oriented than rural Zulus. Finally the findings with respect to sex differences supported the hypotheses set up in this study as well as trends reported by workers such as Berry (1969) and McArthur (1969).

With regard to n Ach, it was observed that the evidence was limited to (i) planning tendencies and (ii) a 'future component' in their thinking. There was little evidence of actual achievement themes or of any tendencies to compete with standards of excellence in the sense that McClelland formulated it. It was inferred from this that the Achievement Motive as it is understood by McClelland and his colleagues, is not well developed even among the urban Zulu population. This conclusion was drawn from the character of the TAT productions as well as the findings on the measures of 'Initiative' and 'Acceptance of Authority'. The factor analysis was found to be particularly useful in this regard. For the reasons already indicated, inferences drawn from the Factor Analysis were made with care. However it was felt that the trend unearthed by the Factor Analysis - the clustering of the work variates among the male groups - was a valuable finding. Its value lay in the fact that it drew attention to the need to view n Ach in the context of the work environment in general and authority figures in particular. The consistent emergence of this clustering among the male groups was so striking that it fed back to the interpretation of the variance findings.

Now that these trends have been discerned it is recommended that a further Factor Analysis be undertaken with the specific aim of substantiating the inferences drawn from the present somewhat premature analysis. Since the new analysis would be more geared to the dimensions examined, each measure would be selected in terms of its relevance, and the information yielded by the analysis would be more reliable and fruitful.

One important issue not fully resolved (and crucial in a factor analytic comparison of group trends) is the functional equivalence of the tests used. It will be recalled that the selection of instruments and their administration was geared to the rural groups. An attempt was made to ensure that the test could be tackled as comfortably by the illiterate population as it could by the literate group. The procedure had disadvantages however. It was found for instance that the Pattern Reproduction Test failed conspicuously to meet the conditions of test equivalence: it was clearly set at too low a level of difficulty for the urban schooled population. Comparisons of performance on this test were therefore pointless. However the broad scope of the study prohibited any attempt to establish the reliability of each instrument prior to its inclusion in the final battery. Thus only one operational measure of field-dependence, the RFT, could be regarded as equivalent for all groups.

The latter measure was not as reliable as it could have been. The most satisfactory estimate of reliability is obtained from test-retest procedures. The scope of the present study did not permit the calculation of a measure of stability of this kind. And even the split-half estimate calculated was not as high as one would have liked it to be ($r = .75$). However the practical problems inherent in the cross-cultural investigation of field-dependence did not permit the use of the more precise indices.

The difficulties facing the investigator of field-dependence among non-Western populations are bound up with deciding (a) which measure is most closely identified with the expression of this dimension, and (b) whether the measure selected is suitable for administration in a non-Western setting. The

selection of the RFT for use in the present study was influenced by evidence of its sensitivity to field-dependent perception. The choice of the portable apparatus was governed by the high correlations which Oltman reported. However, as was evidenced in the present study, the portable instrument has real disadvantages. To take the technical and more superficial level first: the fact that the apparatus is light-weight means that it is not only amenable to long distance journeys, but that it is easily damaged on these journeys. Injuries to the apparatus, however slight, render the instrument less precise and may also leave traces which facilitate perceptual judgement. Thus the mobility of the apparatus may well result in its being less reliable. The theoretical and less tangible drawbacks are perhaps more important. The distinction between Visual and Kinaesthetic-type perceivers is fundamental to Witkin's analysis. At several points in his discussion, Witkin associates the individual who characteristically relies on visual cues with field-dependent perception and the Kinaesthetic respondent with field-independent perception. On this view, the person who is more reliant on kinaesthetic cues is also reliant on inner cues in more basic ways: in Witkin's terms, he has an 'internal locus of control' and is less susceptible to field effects than the visual perceiver. A crucial aspect of the portable apparatus is the absence of electronic control. This obviously has practical advantages, but it also means that the apparatus is incapable of juxtaposing visual and kinaesthetic cues. The individual who is tilted by means of an electronically controlled chair and then required to judge the vertical has the option of deriving his cues from either his body or the external world: the experimental situation at least presents both possibilities, and the measure is thus capable of differentiating subjects in terms of their characteristic tendencies. When the apparatus works only within the visual framework, perceivers are not differentiated in terms of whether they rely on visual or perceptual cues: they are distinguished in terms of their susceptibility to field-effects in the visual context only. The crucial point is that the options open to the individual are constrained by the nature of the apparatus.

Another disadvantage of the present apparatus is that noted by Wober (1969). Reference has already been made to his concept of sensotypes. The concept reflects his conviction that it may be necessary to use a different sensory idiom for each culture, depending on the sensotype or dominant sense medium prevalent in that culture. The accumulating evidence that field-dependence cannot be treated as the global factor Witkin posits, lends support to Wober's argument. It is recommended that future investigators compare different measures of field-dependence in order to determine their differential sensitivity to this pattern in a non-Western population.

In spite of these limitations, it is felt that the apparatus was acceptable for comparing groups at different points on the acculturation continuum on the field-dependence dimension. The apparatus did appear to be capable of differentiating subjects in terms of the extent to which their perceptual judgements were displaced by misleading cues in the prevailing field.

In concluding this critique of the present study, a few comments on the sampling strategy will be in order. The importance of sampling strategy varies depending on the type of research involved. Investigators who are concerned with comparing specified behaviour trends must strive to procure representative samples; on the other hand, if the concern is to demonstrate cross-cultural variability as such, representativeness is less essential. In the present study, the sampling strategy was designed to procure groups representative of the urban and tribal life of the Zulu-speaking people. Since the samples finally retained were derived from the groups who clustered at the opposite extremes of the Acculturation continuum, it is felt that the significant differences shown up by the statistical analyses were governed by real population differences.

Finally it is suggested that at this stage of cross-cultural research, the comparisons made possible by intra-cultural studies are more realistic than more ambitious studies across cultures. The latter yield findings which may have more sweeping implications but their causes are more difficult to determine.

General Suggestions for Future Research

It has already been suggested that the evidence of high n Ach among urban males be treated with reservation. At that stage, it was argued that inferences drawn from these findings should be moderated by findings on the related variables studied, in particular Acceptance of Authority (AA). At this point, it is proposed that further variables be taken into account. It is recommended that future investigators interested in n Ach among non-Westerners living in South African should concern themselves not only with its relation to Acceptance of Authority and Field-Dependence, but also with the following: (i) the relation between n Ach and personal sense of responsibility; (ii) the relation between the objective possibilities and perceived possibilities; (iii) the relation between n Ach and Fear of Failure (FF); and finally, (iv) the relation between n Ach and 'pawn feelings' (de Charms, 1969).

In conclusion, it is submitted that the greater tendency of the urban groups to accommodate misleading field effects, their higher scores on indices of n Ach and their display of self-awareness may not be indicative of the existence of these dimensions in the same sense as it would among a Western population. Instead, these findings may denote essentially the capacity to meet the demands of the social ethos in which urban Zulus find themselves and which may not be fully comprehended. In other words, it is suggested that these personality traits are socialized at a somewhat superficial level and not effectively integrated by the personalities thus socialized. In the same vein it is ventured that the evidence of a greater sense of separate identity on the part of the acculturated groups testifies to a sense of personal isolation rather than personal integration.

It is submitted therefore that the findings of the present study have provided supportive evidence for the penetrating analysis offered by Biesheuvel (1959) some years ago, on the basis of operational surveys rather than experimental design. Biesheuvel argued of the rural African that although "he labours in the sweat of his brow, he is not really a worker in terms of his aspirations. Like the civilian turned soldier in time of war, who returns to

his home and job fundamentally unchanged by his experiences, the migrant labourer resumes his normal leisurely rural life as soon as the emergency that led him to leave it temporarily has passed" (p. 33). In Biesheuvel's view, the failure on the part of urban Africans (higher up on the occupational ladder) to assimilate is attributable to the "relative absence of the compulsive work motivation which is still characteristic of Western culture and which without economic necessity, impels it onwards on its remarkable and continuous course of material advancement" (pp. 33-34). In this regard he records his observation that "group values and the desire for participation rather than personal ambition were the motivating forces, while nothing emerged to suggest that any of our informants looked upon work as a moral duty, or as a game to be played with all one has" (p. 34) (*italics mine*).

Biesheuvel's observations have been corroborated by the present findings. The importance of distinguishing between the striving to assimilate the achievement ethos and true personal ambition among acculturated groups has been highlighted by the present study: there was a conspicuous absence of Western-type achievement themes, even among the detribalized groups. Biesheuvel (1959) referred to the 'painstaking rather than burning motivation' of the Africans he studied. This distinction is pertinent to the present findings: the deliberate attempt to adopt foreign patterns of behaviour is a laborious rather than an all-consuming activity.

CONCLUSIONS REGARDING THE EFFECTIVENESS OF THE TAT AS A MEASURING DEVICE

The material gathered in the fourth pilot study provided some evidence of the validity of the instrument since it was found that almost all the pictures were relevant to the areas they purported to measure. Furthermore it was found that the four parallel versions were highly similar and could be considered to have functional equivalence. Finally the fact that the TAT provided a sensitive and effective means of examining the hypotheses investigated in the final study is regarded as further evidence of its construct validity. However it is realised that more conclusive support for claims of validity for the test can only come from future studies which make use of the instrument among other groups.

APPENDIX A

(Material relevant to Chapter 2)

Card 1.3

Semantic Differential

- a. -
- b. -

General: serious,
bitter, exciting

Perceived Situations

Possibilities : 26%
for initiative:

Pressure of : 62%
authority/
force of
circumstance

Miscellaneous: 12%

Inter-rater agreement
= 72%



Card 1.4

Semantic Differential

a. sad, passive,
thinking,
planning ahead,
worried, anxious
General: sad, passive,
serious, clear,
usual, good,
personal, profound

Perceived Situations

Introspection : 66%

Physical factors: : 24%
illness, fatigue

Miscellaneous : 10%

Inter-rater agreement
= 80%





2. Relation to the Group

Card 1.5

Semantic Differential

a. serious, absorbed
General: tense,
serious, clear,
usual, good,
beautiful,
personal, profound

Perceived Situations

Attempt to
realise need for: 66%
achievement

Uncoping at : 22%
set task

Miscellaneous : 12%

Inter-rater agreement
= 76%



Card 2.1

Semantic Differential

a. remote, thinking,
disturbed,
distressed
General: sad, serious,
emotional,
beautiful, personal

Perceived Situations

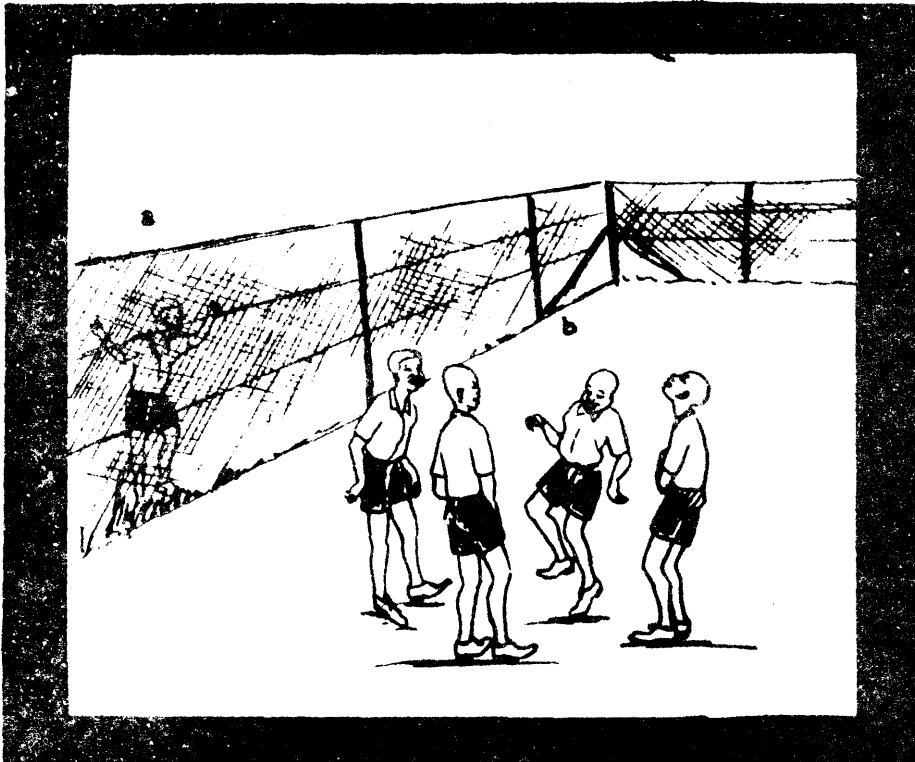
Introspection: 44%

Relation of : 42%
self to group

Miscellaneous: 14%

Inter-rater agreement
= 78%

Card 2.2



Semantic Differential

- a. sad, excluded, interested, ugly, sociable
 - b. friendly, together, pleasant
- General: happy, active, humorous, clear, usual, sharp, good, beautiful, exciting

Perceived Situations

Outside group because of : 38%
personal factors

Outside group because of : 50%
circumstances

Miscellaneous : 12%

Inter-rater agreement
= 84%

3. Relationship to parents

Card 3.1



Semantic Differential

- a. kind, intimate, helpful, tolerant, concerned, discussing
 - b. determined, submissive, grateful, intimate, discussing, tense
- General: pleasant, active, serious, clear, usual, good, beautiful, personal, profound

Perceived Situations

Positive exchange between the two : 56%

Hostility : 34%

Miscellaneous : 10%

Inter-rater agreement
= 72%



Card 3.3

Semantic Differential

- a. hurt, resigned, puzzled, displeased
- b. happy, intimate, assertive

General: unpleasant, sad, active, tense, serious, clear, usual, emotional, bad, ugly, personal, bitter

Perceived Situations

Relationship main: 70%
feature of card

Anxiety due to circumstances : 28%

Miscellaneous : 2%

Inter-rater agreement
= 82%

4. Death



Card 4.1

Semantic Differential

- a. brave, frightened, resigned, strong, despairing
- General: unpleasant, sad, active, tense, serious, clear, emotional, sharp, bad, ugly, personal, bitter, profound, exciting

Perceived Situations

Resignation to circumstances : 74%

Determination to resist : 26%

Miscellaneous : 0%

Inter-rater agreement
= 96%

Card 4.2

Semantic Differential

a. frightening,
tranquil, natural,
continuous
General: unpleasant,
sad, passive,
tense, serious,
clear, usual,
emotional, dull,
bad, ugly, bitter

Perceived Situations

Personal : 64%
experience
Remote concept: 32%
Miscellaneous : 4%

Inter-rater agreement
= 78%



5. Self-Concept

Card 5.1

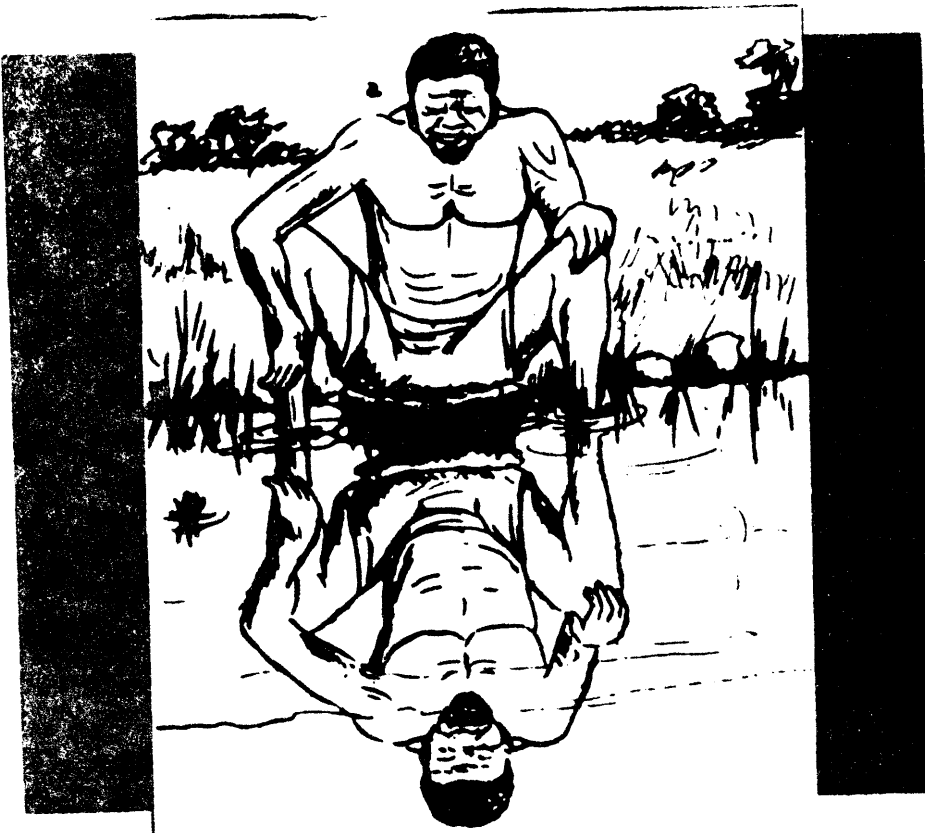
Semantic Differential

a. disturbed,
thinking, ugly,
depressed,
confused
General: unpleasant,
sad, passive,
tense, serious,
clear, dull, ugly,
personal, bitter

Perceived Situations

Reflection : 80%
of self
Two persons : 8%
in picture
Miscellaneous: 12%

Inter-rater agreement
= 90%



Card 5.2

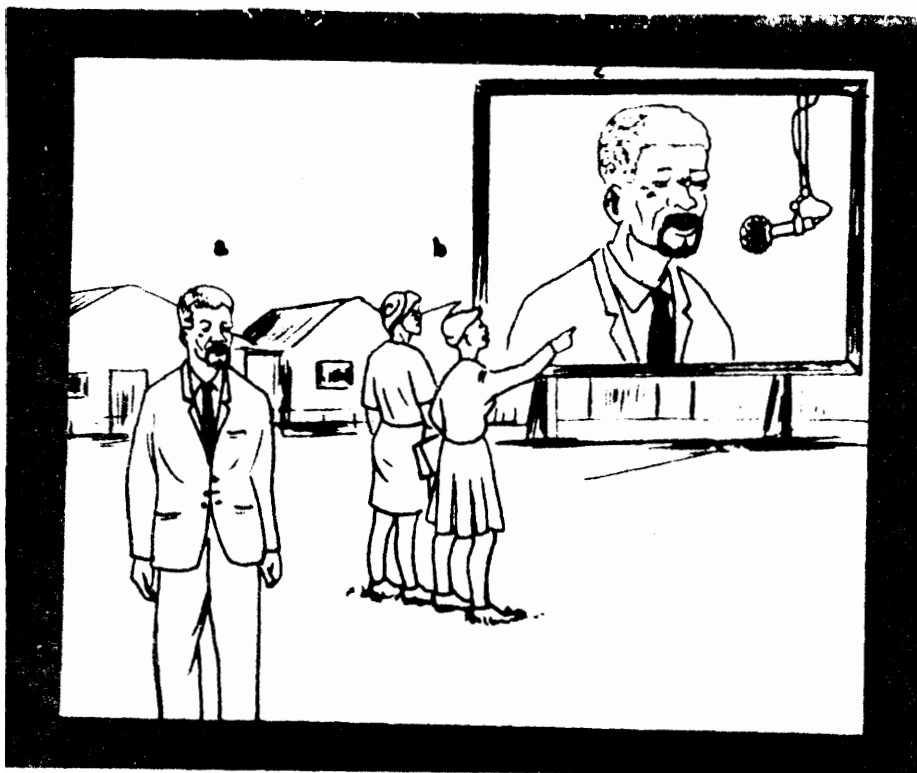
Semantic Differential

- a. displeased, tense
 - b. aware, discussing, complimentary
 - c. alike
- General: pleasant, happy, active, tense, serious, clear, usual, good, beautiful, personal, exciting

Perceived Situations

- Opportunity for feedback re self: 60%
- Random gathering: 30%
- Miscellaneous : 10%

Inter-rater agreement
= 90%



6. Sexual Themes

Card 6.1

Semantic Differential

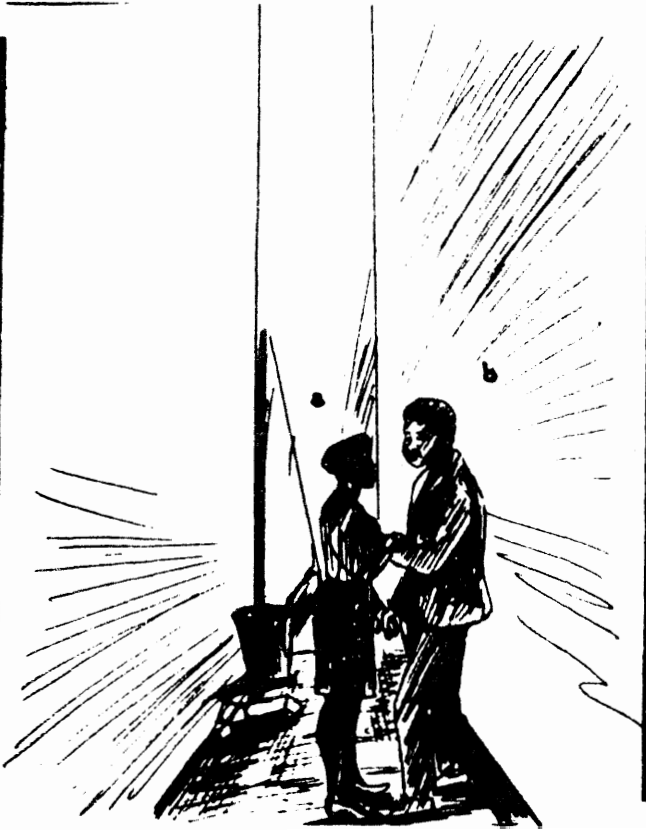
- a. unusual, happy, intimate, unnatural
 - b. amused, happy, beautiful, intimate
- General: pleasant, happy, active, humorous, clear, sharp, good, beautiful, personal, sweet, exciting

Perceived Situations

- Unnatural situation : 52%
- Natural situation, - acceptance : 42%
- Miscellaneous : 6%

Inter-rater agreement
= 72%





Card 6.2

Semantic Differential

(Significant at the 5% level)

- a. unafraid, intimate, pleased, feminine, innocent
- b. gentle, pleased, intimate, kind

General: active, serious, clear, usual, emotional, sharp, personal, exciting

Perceived Situation

Mutual acceptance: 68%

Force (anxiety, resistance etc.) : 30%

Miscellaneous : 2%

Inter-rater agreement

= 90%

Card 6.3

Semantic Differential

(Significant at the 5% level)

- a. upset
- b. upset, gentle, kind, expecting

General: unpleasant, sad, tense, serious, clear, emotional, bad, personal, exciting

Perceived Situation

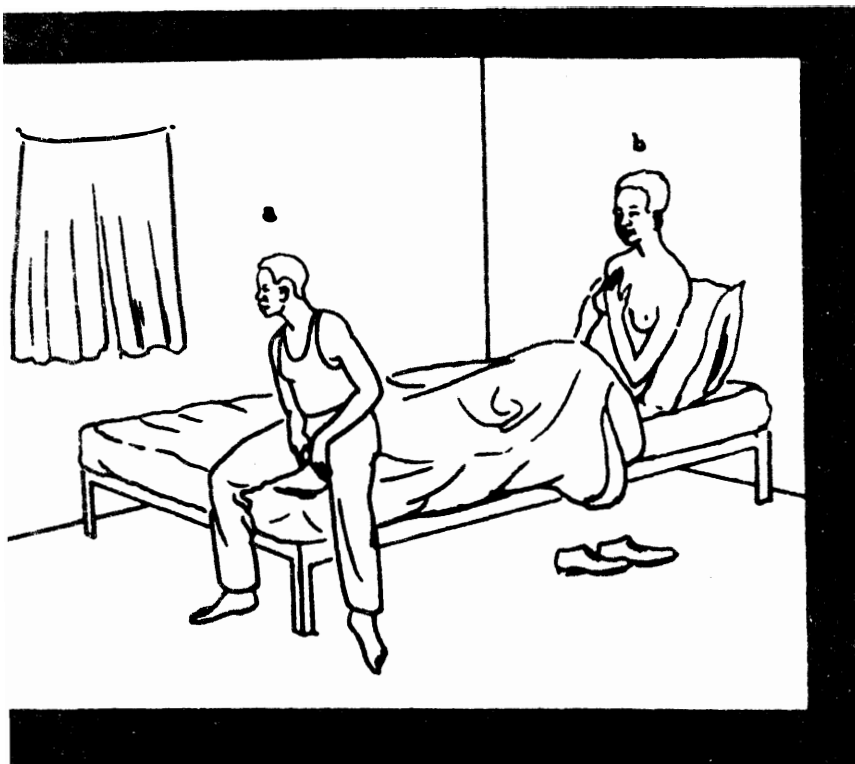
Natural situation : 50%

Clandestine situation : 42%

Miscellaneous : 8%

Inter-rater agreement

= 84%



7. Relationship with the Supernatural; the bizarre, the unreal, the unknown, the uncontrollable (forces within and without)

Card 7.1



Semantic Differential

a. evil, viscious, ugly, remote, frightening
General: unpleasant, sad, active, tense, serious, unusual, emotional, sharp, bad, ugly, impersonal, bitter, exciting

Perceived Situations

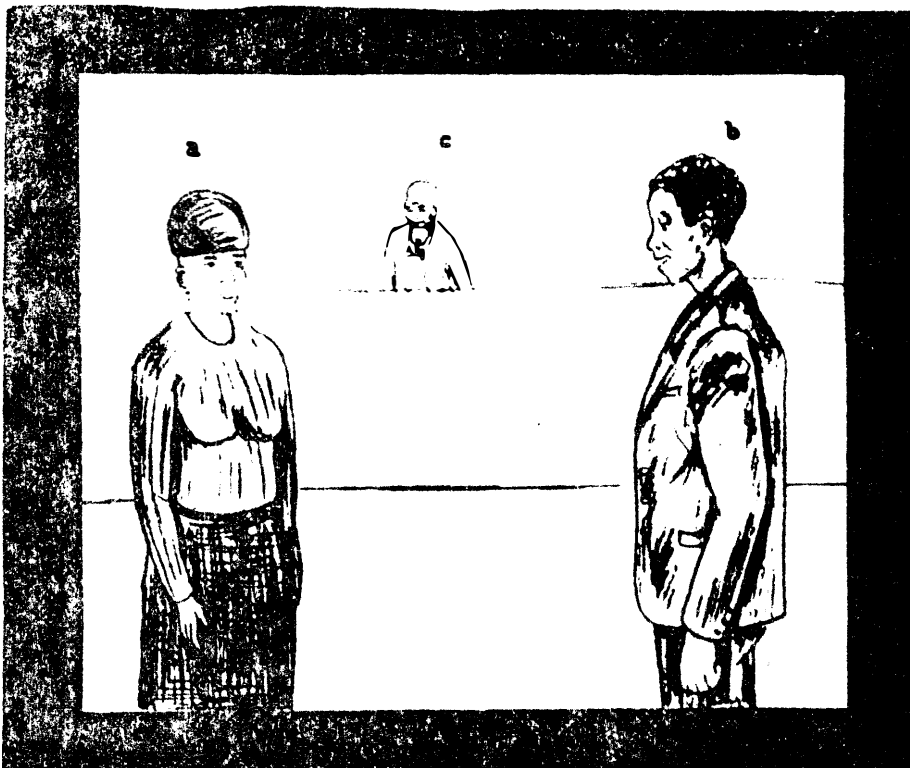
Cosmic/
mythological : 28%
creature

Personally : 70%
threatening

Miscellaneous: 2%

Inter-rater agreement
= 90%

Card 7.2



Semantic Differential

a. confident, intimate, controlled
b. confident, sure, active, intimate, controlled
c. far, ugly
General: pleasant, happy, active, clear, usual, emotional, sharp, good, beautiful, personal, sweet, exciting

Perceived Situations

Background figure : 28%
threatening

Background figure
benign, neutral, : 66%
unnoticed

Miscellaneous : 6%

Inter-rater agreement
= 90%

APPENDIX B

(Material relevant to Chapter 3)

TABLE 51

CHILD-REARING PRACTICES (CRP)

Items, Responses, Key and Item Analysis Information

Item Number	Item	Response	Key	p_g	s_g^2	r_{xg}^2
1	Nothing brings more pleasure to a parent than to have her son bring home good report cards.	Yes	1	.84	.14	.00
	Nothing brings more pleasure to a parent than to know that her son is popular in school.	No				
2	When it's his own money I don't expect my son to consult me even when it's an expensive purchase.	Yes	1	.13	.11	.07
	I expect my son to consult me before making an expensive purchase, even if it's his own money.	No				
3	It is right that a child should sometimes hear things outside the home which make him question his parents' ideas.	Yes	1	.34	.22	.29
	Children should be kept from hearing things which make them question their parents' ideas.	No				
4	I almost always feel able to deal with my child's everyday problems.	Yes	1	.58	.24	.12
	I often feel unable to deal with my child's everyday problems.	No				
5	I have forbidden my son to play certain rough games for fear he might get injured in some way.	No	1	.24	.18	.17
	I have given my son permission to play any sports, even rough ones.					

Item Number	Item	Response	Key	p _g	s _g ²	r _{xg} ^{sg}
6.	<p>I think military training may be good for a teenage boy because of its strict discipline.</p> <p>I think the strict discipline of military training is too hard on most teenage boys.</p>	<p>Yes</p> <p>No</p>	1.	.49	.25	-.16
7.	<p>I usually agree with what I read and hear on how to raise children.</p> <p>I don't necessarily agree with what I read and hear on how to raise children.</p>	<p>No</p> <p>Yes</p>	1.	.60	.24	-.06
8.	<p>Even when my husband/wife criticizes the way I am raising our son, I can still feel I am a good mother/father.</p> <p>When my husband/wife criticizes the way I am raising our son, I wonder whether I am a good mother/father.</p>	<p>Yes</p> <p>No</p>	1.	.57	.25	.04
9.	<p>I hope that when my son is married he will live near by.</p> <p>I don't think married children should necessarily live close by their parents.</p>	<p>No</p> <p>Yes</p>	1.	.48	.25	.30
10.	<p>I tried not to make my child feel ashamed when he had accidents during toilet training.</p> <p>During toilet training, if my child had an accident, I would usually try to make him ashamed of himself.</p>	<p>Yes</p> <p>No</p>	1.	.46	.25	.18

Item Number	Item	Response	Key	p _g	s _g ²	r _{xg} s _g
11.	<p>Since I am often uncertain about my own views, I have found it best to go along with the way others do things.</p> <p>I may not always be right, but I have my own views on how things should be done, and I try to stick to them.</p>	No	1.	.73	.20	.04
		Yes				
12.	<p>It is more important for a boy to be a top student, than to be well adjusted.</p> <p>It is more important for a boy to be well adjusted, than to be a top student.</p>	Yes	1.	.57	.25	-.21
		No				
13.	<p>When our son misbehaved and my husband/wife and I were both present, my husband was most likely to discipline him.</p> <p>When our son misbehaved and my husband/wife and I were both present, I was most likely to discipline him.</p>	No	1.	.44	.25	.09
		Yes				
14.	<p>Even though experts differ a great deal in the advice they give on raising children, I am usually quite certain about the best course of action.</p> <p>Since experts differ so much in the advice they give on how to raise children, I am often uncertain about the best course of action.</p>	Yes	1.	.72	.20	-.04
		No				
15.	<p>It's best for a child if he never starts wondering whether his parent's views are right.</p> <p>It's an important part of growing up for a child to wonder whether his parent's views are right.</p>	No	1.	.32	.22	.19
		Yes	1.	.32	.22	.19

Item Number	Item	Response	Key	p _g	s _g ²	r _{xg g}
16.	<p>Parents should not let their children learn of the mistakes they (parents) make.</p> <p>A child should learn that parents sometimes make mistakes.</p>	No Yes	1.	.45	.25	.19
17.	<p>I mostly agree that "a parent's happiness is entirely tied up with its child".</p> <p>I do not agree that "a parent's happiness is entirely tied up with its child".</p>	No Yes	1.	.15	.12	.08
18.	<p>When my son was little the most common reason for punishing him was for arguing too much and asking too many questions.</p> <p>When my son was little the most common reason for punishing him was for being babyish and immature.</p>	No Yes	1.	.56	.25	.11
19.	<p>If a boy does "B" work in school, I think it is plenty good enough.</p> <p>If a boy does "B" work in school he should be made to bring his work up to an "A".</p>	Yes No	1.	.69	.21	.21
20.	<p>I often "compare notes" with other parents to see how I am doing in raising my children.</p> <p>I seldom discuss my children and my child-raising problems with other mothers.</p>	No. Yes	1.	.22	.17	.10

Item Number	Item	Response	Key	p _g	s ² _g	r _{xg} ^{sg}
21.	<p>I am willing to discuss the matter when my son questions my rules and decisions.</p> <p>I do not allow my son to question my rules and decisions.</p>	<p>Yes</p> <p>No</p>	1.	.51	.25	.34
22.	<p>It is a parent's responsibility to follow exactly the doctor's advice about its child.</p> <p>A parent has to use its own knowledge about its child in carrying out the doctor's advice.</p>	<p>No</p> <p>Yes</p>	1.	.11	.10	.03
23.	<p>Though it is hard when your son is grown up and leaves home, it's not the end of everything.</p> <p>When your son is grown up and leaves home you have little else to live for.</p>	<p>Yes</p> <p>No</p>	1.	.61	.24	.29
24.	<p>When my son misbehaved as a young boy, I found it best to give him a good hard spanking or make him feel ashamed of himself.</p> <p>When my son misbehaved as a young boy, I found it best to take away some of his privileges or make him stay in his room.</p>	<p>No</p> <p>Yes</p>	1.	.19	.16	.15
25.	<p>I think it's a good idea for my son to have some friends whose backgrounds are different from his own.</p> <p>I would prefer that my son make friends with those who come from a home and background similar to his own.</p>	<p>Yes</p> <p>No</p>	1.	.27	.20	.18

Item Number	Item	Response	Key	p _g	s _g ²	r _{xg s_g}
26.	<p>In deciding how to handle my child's everyday problems, I am likely to feel most secure when trusting my own hunches and feelings.</p> <p>In deciding how to handle my child's everyday problems, I am likely to ask friends and relatives for advice.</p>	<p>Yes</p> <p>No</p>	1.	.69	.21	-.14
27.	<p>I try to leave my son on his own in choosing his friends.</p> <p>I try to keep a close check on my son's friends to see whether any might be a bad influence on him.</p>	<p>Yes</p> <p>No</p>	1.	.22	.17	.10
28.	<p>When my husband/wife did not help me care for our child when he was small, I did not resent it.</p> <p>When my husband/wife did not help me in caring for our child, I resented it.</p>	<p>Yes</p> <p>No</p>	1.	.28	.20	.08
29.	<p>I sometimes wish my son did not question everything so much and just learned to accept things as they are.</p> <p>I encourage my son to question things and to form his own opinions.</p>	<p>No</p> <p>Yes</p>	1.	.50	.25	.31
30.	<p>I usually join in the fun when my son gives a party or has a group of friends over.</p> <p>I usually stay in another room when my son gives a party or has a group of friends over.</p>	<p>No</p> <p>Yes</p>	1.	.45	.25	.12

Item Number	Item	Response	Key	p _g	s _g ²	r _{xg} ^{s_g}
31.	<p>I would not let my son go to a lecture where he would hear views that go against those we hold.</p> <p>It would be all right for my son to go to a lecture giving points of view out of line with those we hold.</p>	No	1.	.31	.21	.28
		Yes				
32.	<p>My worries have kept me from letting my son go places and do things which are reasonable for him to try.</p> <p>I don't let my worries keep me from letting my son go places and to things which are reasonable for him to try.</p>	No	1.	.74	.19	.17
		Yes				
33.	<p>A parent has a right to know everything going on in her child's life.</p> <p>A child has a right to keep many things private from his parents.</p>	No	1.	.26	.19	-.04
		Yes				
34.	<p>When my husband's/wife's duties prevented him/her from helping me in caring for our child, I often felt unable to cope with it.</p> <p>When my husband's/wife's duties prevented him/her from helping me in caring for our child, I felt quite able to do it myself.</p>	No	1.	.39	.24	.29
		Yes				
35.	<p>I have tried to follow carefully the advice of experts on what you should tell a child about sex.</p> <p>I have tried to follow my own thoughts and feelings in telling my child about sex.</p>	No	1.	.63	.23	-.16
		Yes				

Item Number	Item	Response	Key	p _g	s _g ²	r _{xg s_g}
36.	<p>In bringing up our son, my husband/wife tends to consider the discipline as part of his job.</p> <p>In bringing up our son, my husband/wife tends to leave the disciplining to me.</p>	No	1.	.62	.24	.05
		Yes				
37.	<p>I let my son watch out for himself.</p> <p>I try to keep track of exactly where my son is and what he is doing.</p>	Yes	1.	.31	.21	.19
		No				
38.	<p>I don't urge my son to be more sociable and don't object to his spending some time alone.</p> <p>I encourage my son to socialize with his family and friends rather than to spend his time alone.</p>	Yes	1.	.15	.13	.04
		No				
39.	<p>Because the world is a dangerous place, I can't help warning my son to be careful.</p> <p>I have tried not to discourage my son's enthusiasm and adventurousness even though I know there are dangers in life.</p>	No	1.	.23	.18	.19
		Yes				
40.	<p>I often finished things for my son even though he could do them himself, just to get them done and out of the way.</p> <p>When my son started something, I let him finish it himself, even though it might take longer.</p>	No	1.	.75	.19	.16
		Yes				

Item Number	Item	Response	Key	p_g	s_g^2	r_{xg}^2
41.	<p>If a boy is a 'loner' it is important to get him to be more sociable.</p> <p>I think it is all right for a boy to be a 'loner' if it suits him.</p>	<p>No</p> <p>Yes</p>	1.	.17	.14	.04
42.	<p>A parent should not try to be a companion to its child but should develop its own interests and activities.</p> <p>A parent should try to be a companion to its child and to join in with his interests and activities.</p>	<p>Yes</p> <p>No</p>	1.	.43	.25	.12
43.	<p>When my son goes out on a date or to a party, I ask him to tell me everything that happened.</p> <p>I seldom ask my son about his dates unless he brings the subject up himself.</p>	<p>No</p> <p>Yes</p>	1.	.49	.25	.25
44.	<p>I have worried quite a bit that something terrible might happen to my son when I'm not there to watch over him.</p> <p>Although it's possible that something might happen to my son when I'm not there to watch him, I haven't worried much about it.</p>	<p>No</p> <p>Yes</p>	1.	.37	.23	.29
45.	<p>It will do no harm to let a child hear someone criticize his parents.</p> <p>There are few things worse than letting a child hear anyone criticize his parents.</p>	<p>Yes</p> <p>No</p>	1.	.17	.14	.11

Item Number	Item	Response	Key	p g	s ² g	r _{xg} s _g
46.	<p>If a child is stubborn it is not necessarily because he's mean.</p> <p>If a child is stubborn you have to take the meanness out of him.</p>	<p>Yes</p> <p>No</p>	1.	.21	.17	.19
47.	<p>I encourage my son to come to me for advice and direction in making decisions.</p> <p>I encourage my son to make decisions by himself and learn from his own mistakes.</p>	<p>No</p> <p>Yes</p>	1.	.21	.17	.20
48.	<p>A gentle reminder is often as effective as a more severe punishment.</p> <p>A punishment must generally be severe if it is to be effective.</p>	<p>Yes</p> <p>No</p>	1.	.47	.25	.30

Item Number	Item	Response	Key	p _g	s _g ²	r _{xg} ^{s_g}
49.	<p>When I disagree with my husband/wife about bringing up our son, I may or may not do what he/she wants.</p> <p>When I disagree with my husband/wife about bringing up our son, I do what he/she wants, no matter how this makes me feel.</p>	<p>Yes</p> <p>No</p>	<p>1.</p>	<p>.57</p>	<p>.25</p>	<p>.17</p>
50.	<p>When my son took his toys apart (occasionally ruining them in the process) I felt it was a way for him to learn how things work.</p> <p>When my son took his toys apart (occasionally ruining them in the process) I felt it was because he was destructive.</p>	<p>Yes</p> <p>No</p>	<p>1.</p>	<p>.53</p>	<p>.25</p>	<p>.24</p>
51.	<p>I didn't supervise my son's homework because I felt this should be his own responsibility.</p> <p>I supervised my son's homework to make sure that it was done well and on time.</p>	<p>Yes</p> <p>No</p>	<p>1.</p>	<p>.14</p>	<p>.12</p>	<p>.07</p>

TABLE 52

SUMMARY OF ITEMS REMAINING AFTER FIFTH ITERATION

CHILD REARING PRACTICE

	Total	Males	Females	Urban	Rural	Urban Males	Urban Females	Rural Males	Rural Females
✓ 1. Nothing brings more pleasure to a parent than to have her son bring home good report cards									
✓ 2. When it's his own money, I don't expect my son to consult me even if it's an expensive purchase									
• 3. It is right that a child should sometimes hear things outside the home which make him question his parents' ideas	.02	.06	.27	.02		.24	.32		
4. I almost always feel able to deal with my child's everyday problems			.29						
• 5. I have given my son permission to play any sports, even rough ones	.19	.25		.22		.23			
✓ 6. I think military training may be good for a teenage boy because of its strict discipline									
7. I don't necessarily agree with what I read and hear on how to raise children								.24	
8. Even when my husband wife criticized the way I am raising our son, I can still feel I am a good mother of a boy					.02				.22
• 9. I don't think married children should necessarily live close by their parents	.11	.22	.23				.21		
10. I tried not to make my child feel ashamed when he had accidents during toilet training		.19				.21		.22	
11. I may not always be right, but I have my own views on how things should be done, and I try to stick to them								.23	
12. It is more important for a boy to be a top student, than to be well adjusted								.17	
13. When our son misbehaved and my husband wife and I were both present, I was most likely to discipline him				.23	.30			.19	
14. Even though experts differ a great deal as to advice they give on raising children, I am usually quite certain about the best course of action								.23	
• 15. It's an important part of growing up for a child to wonder whether his parents' views are right	.20	.23		.30		.23	.29		.22
• 16. A child should learn that parents sometimes make mistakes	.21	.27		.25			.32		.29
✓ 17. I do not agree that "A parent's happiness is entirely tied up with his child"									
• 18. When my son was little the most common reason for punishing him was for being late and immature					.18		.19	.23	.24
• 19. If a boy does "B" work in school, I think it is plenty good enough	.27	.30	.22						.26
✓ 20. I seldom discuss my children and my child-raising problems with other mothers									
• 21. I am willing to discuss the matter when my son questions my rules and decisions	.24	.24	.37		.20		.20	.24	.19
22. A parent has to use its own knowledge about its child in carrying out the doctor's advice									.22
• 23. Though it is hard when your son is grown up and leaves home, it's not the end of everything	.33	.29	.37		.26			.25	
✓ 24. When my son misbehaved as a young boy, I found it best to take away some of his privileges or make him stay in his room									
25. I think it's a good idea for my son to have some friends whose backgrounds are different from his own				.25		.24	.25		
✓ 26. In deciding how to handle my child's everyday problems, I am likely to feel most secure when trusting my own hunches and feelings									
✓ 27. I try to leave my son on his own in choosing his friends									
✓ 28. When my husband wife did not help me care for our child when he was small, I did not resent it									
• 29. I encourage my son to question things and to form his own opinions	.24	.37	.30	.22			.21		.24
30. I usually stay in another room when my son gives a party or has a group of friends over		.21							

(contd.)

TABLE 52 (contd.)

	Total	Males	Females	Urban	Rural	Urban Males	Urban Females	Rural Males	Rural Females
* 31. It would be all right for my son to go to a lecture giving points of view out of line with those we hold	.30	.32	.24	.30		.26	.24		
* 32. I don't let my worries keep me from letting my son go places and do things which are reasonable for him to do.			.23		.25	.20			.17
* 33. A child has a right to keep many things private from his parents									
* 34. When my husband's wife's duties prevented him from helping me in caring for our child, I felt quite able to do it myself	.32	.31	.32						
* 35. I have tried to follow my own thoughts and feelings in telling my child about sex									
* 36. In bringing up our son, my husband wife tends to leave the disciplining to me									
* 37. I let my son watch out for himself	.20		.23			.24	.21		.19
* 38. I don't urge my son to be more sociable and don't object to his spending some time alone									
* 39. I have tried not to discourage my son's enthusiasm and adventurousness even though I know there are dangers in life	.21	.23	.22			.19			
* 40. When my son started something I let him finish it himself, even though it might take longer	.21		.24						
* 41. I think it is all right for a boy to be a "loner" if it suits him									
* 42. A parent should not try to be a companion to his child but should develop his own interests and activities									
* 43. I seldom ask my son about his dates unless he brings the subject up himself	.27	.32	.25						.24
* 44. Although it's possible that something might happen to my son when I'm not there to watch over him, I haven't worried much about it	.33	.32	.35			.32			
* 45. It will do no harm to let a child hear someone criticize his parents									
* 46. If a child is stubborn it is not necessary because he's mean	.19	.21				.21			
* 47. I encourage my son to make decisions by himself and learn from his own mistakes	.20	.18	.21						
* 48. A gentle reminder is often as effective as a more severe punishment	.33	.33	.32						
* 49. When I disagree with my husband wife about bringing up our son, I may or may not do what he/she wants			.20	.19	.31				
* 50. When my son took his to a sport occasionally, ruining them in the process I felt it was a way for him to learn how things work	.26	.26	.25	.18				.20	.21
* 51. I didn't supervise my son's homework because I felt that should be his own responsibility						.14			

R .89 .90 .90 .70 .61 .72 .73 .67 .71
(N=20)

KEY: * unsuccessful item; eliminated after iterations
successful item; differentiating for most groups

NOTE: Only items which were scored positively have been listed

FIGURE 82
FREQUENCY DISTRIBUTIONS OF THE PATERN REPRODUCTION TEST

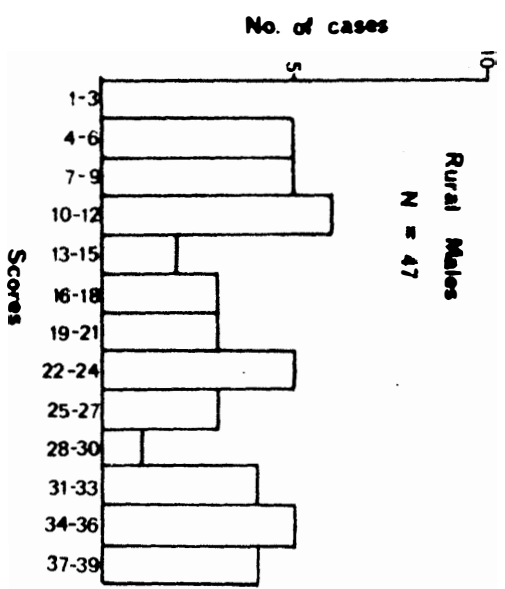
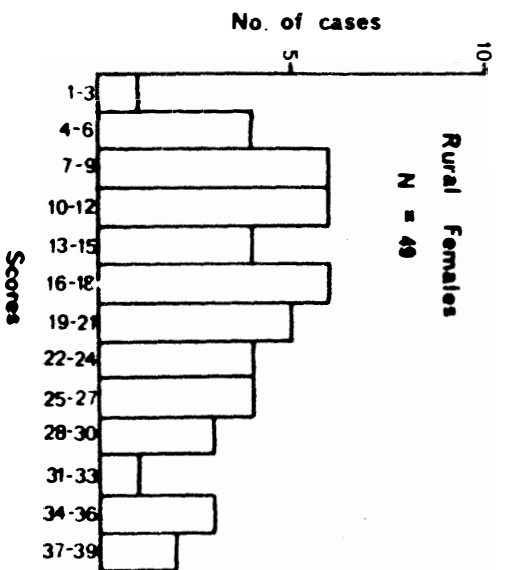
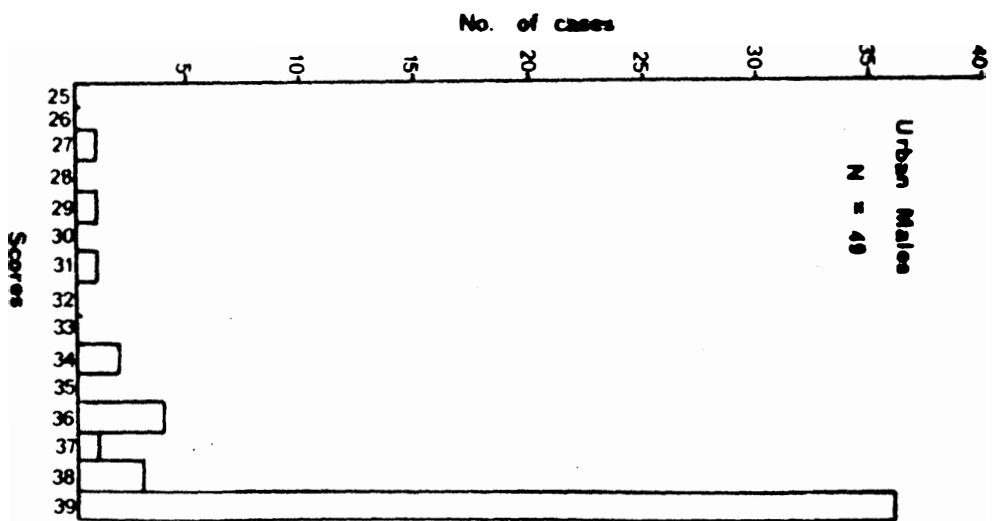
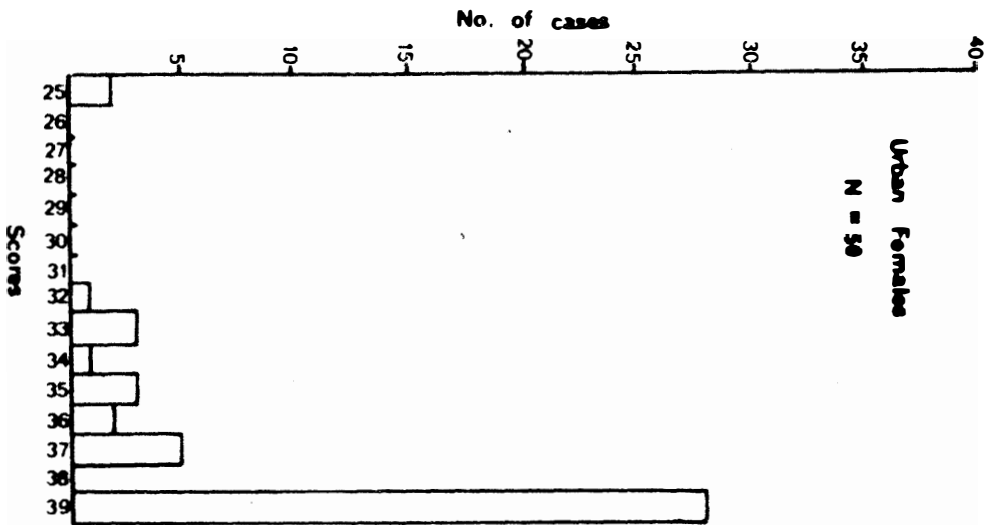


FIGURE 83

FREQUENCY DISTRIBUTIONS OF GRAY-A-PERSON TEST

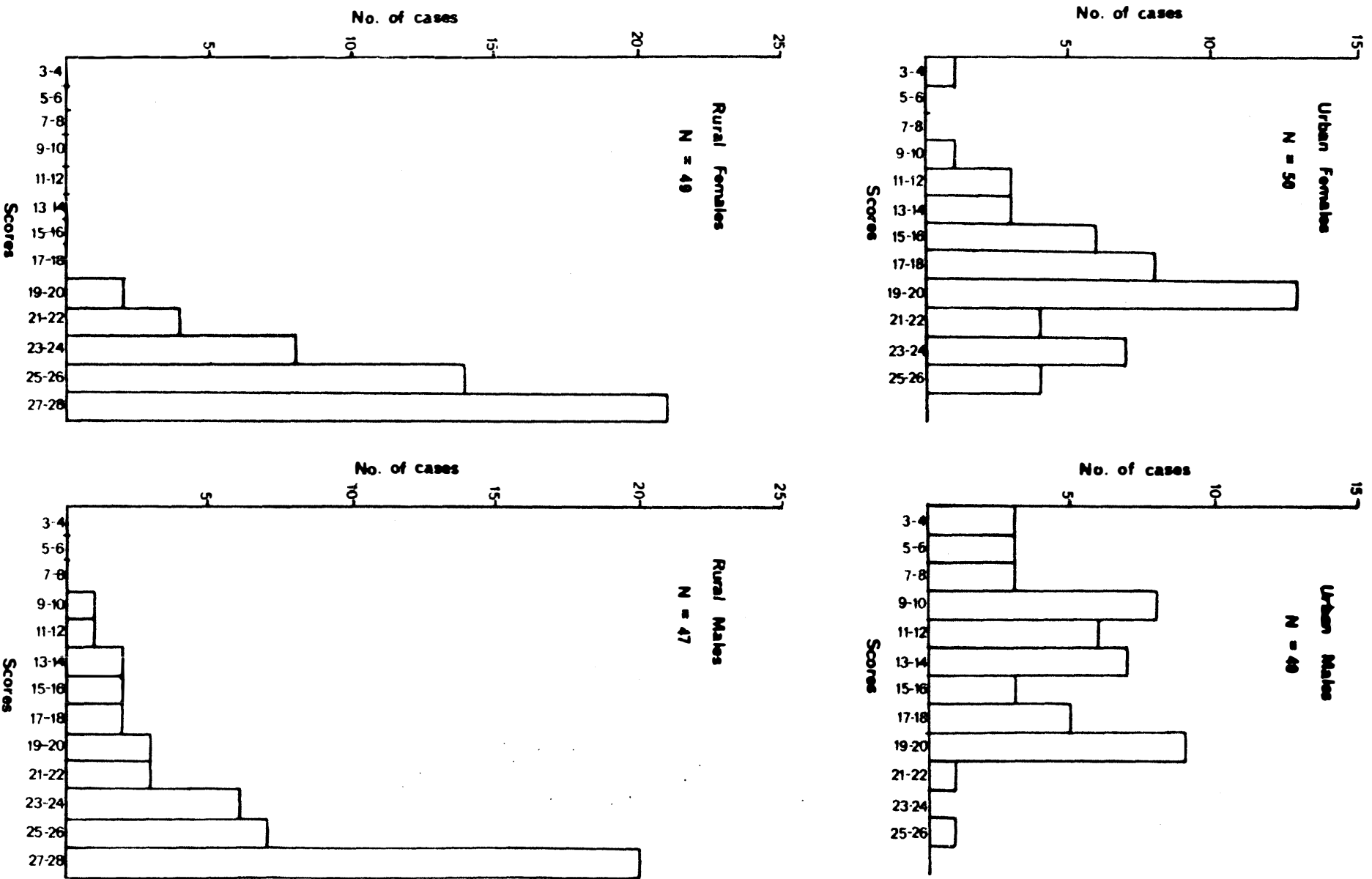


FIGURE 8.4
FREQUENCY DISTRIBUTIONS OF CHILD-REARING PRACTICES (CRP)
QUESTIONNAIRE

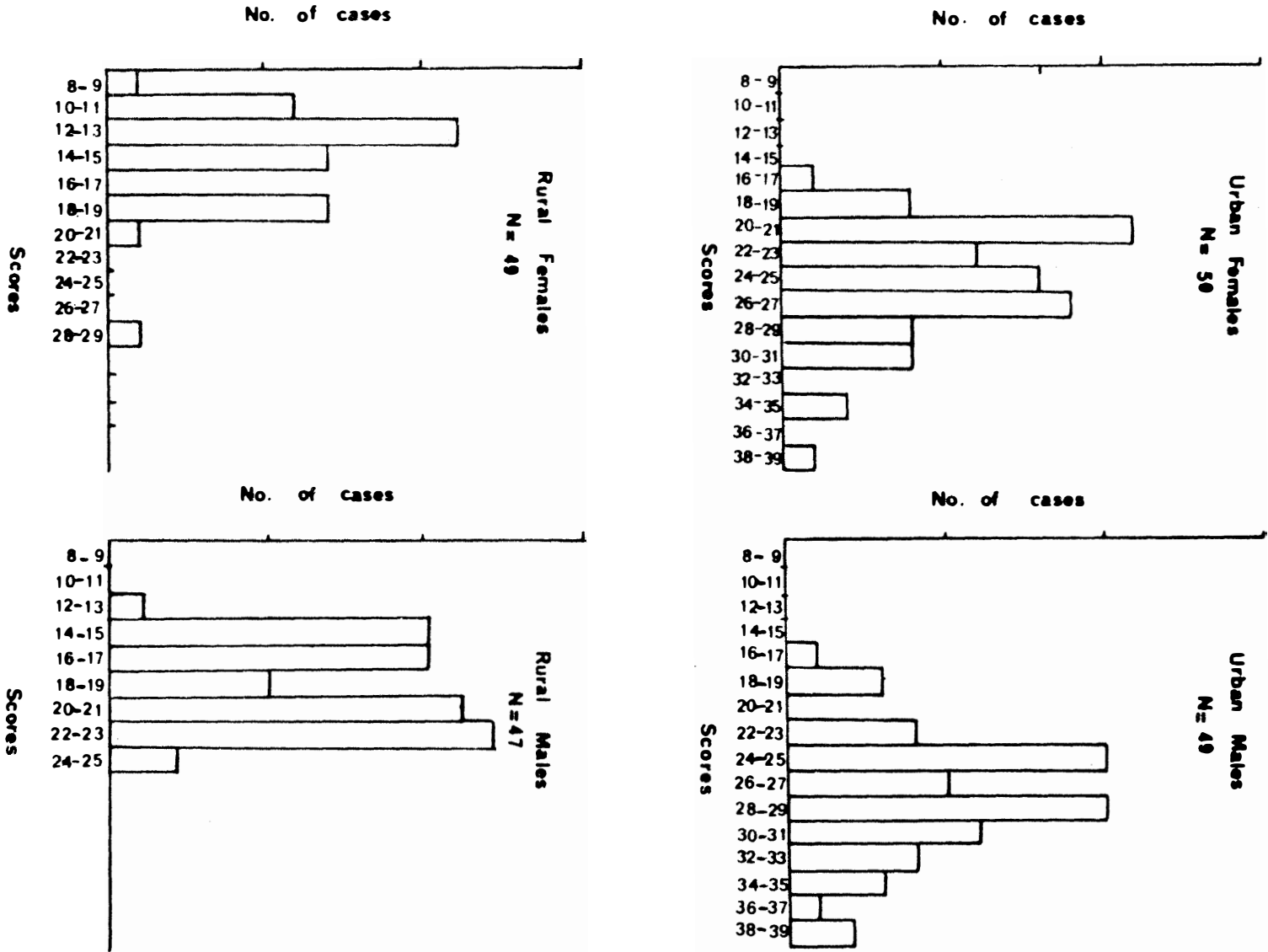


FIGURE 85

FREQUENCY DISTRIBUTIONS OF PICTURE ARRANGEMENT TEST

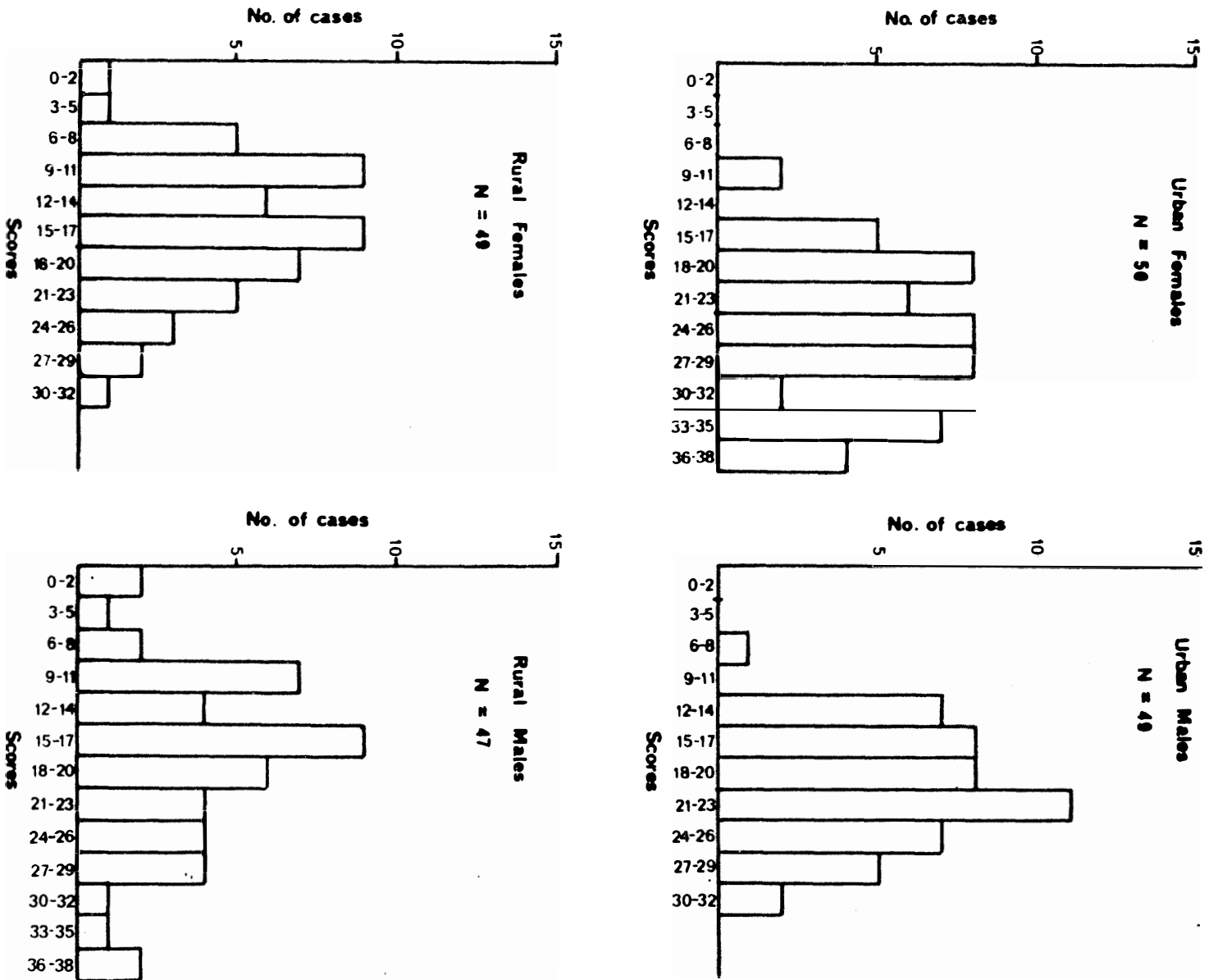


FIGURE 86

FREQUENCY DISTRIBUTIONS OF SENSE OF SEPARATE IDENTITY (SSI)

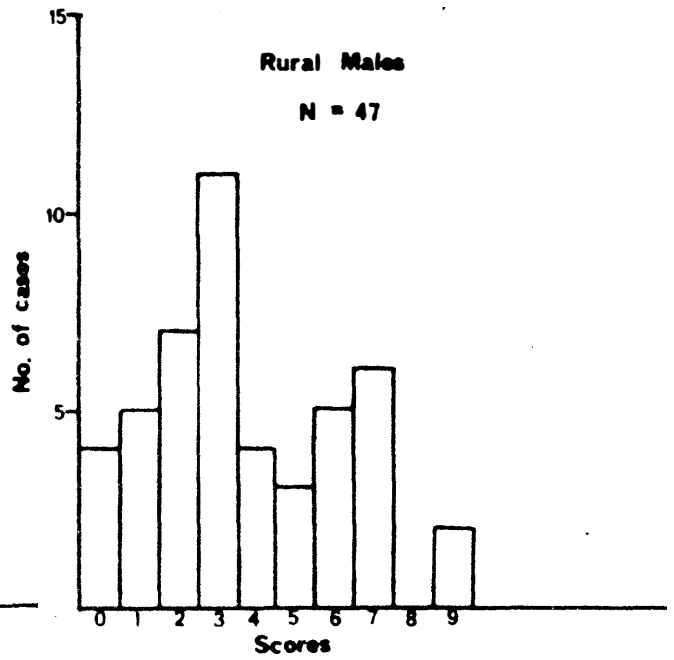
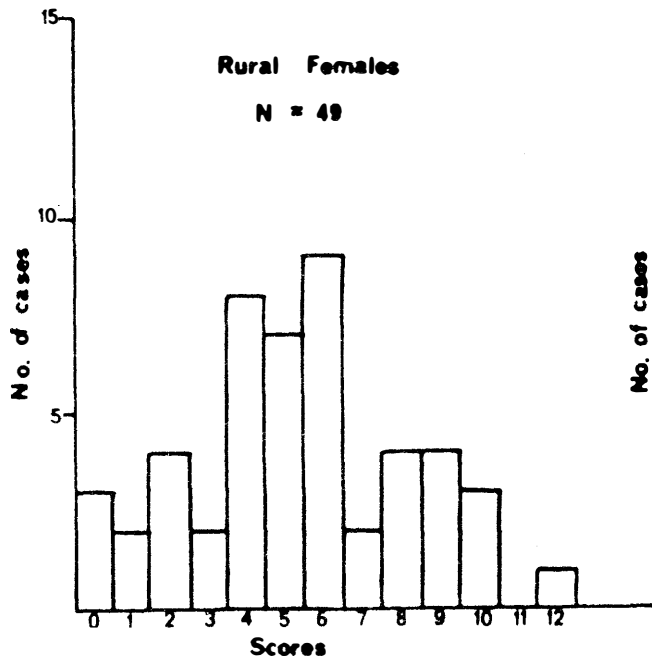
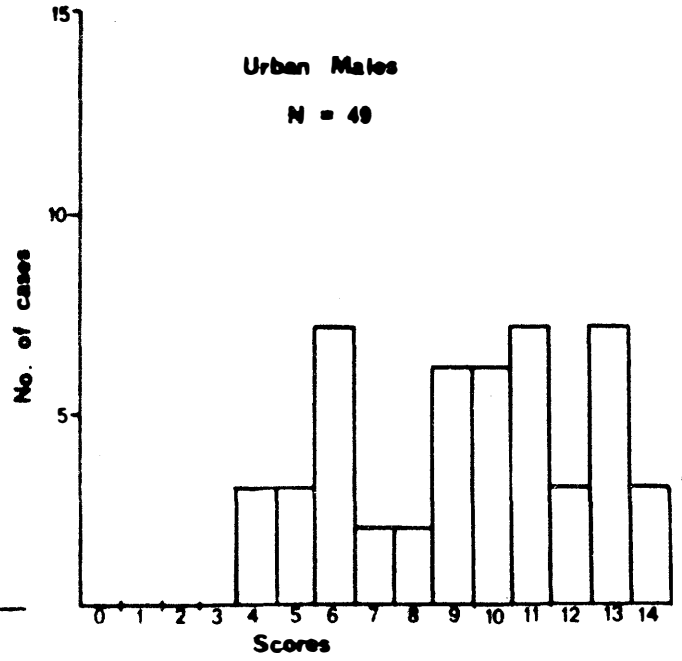
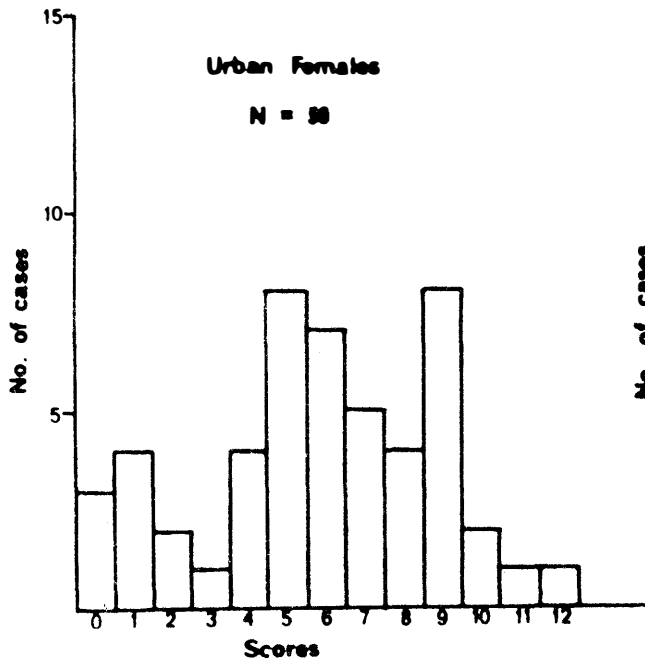


FIGURE 87

FREQUENCY DISTRIBUTIONS OF NEED FOR ACHIEVEMENT (n Ach)

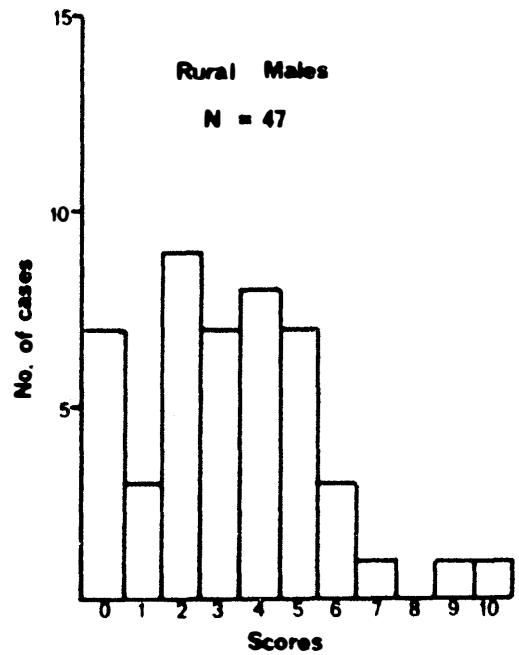
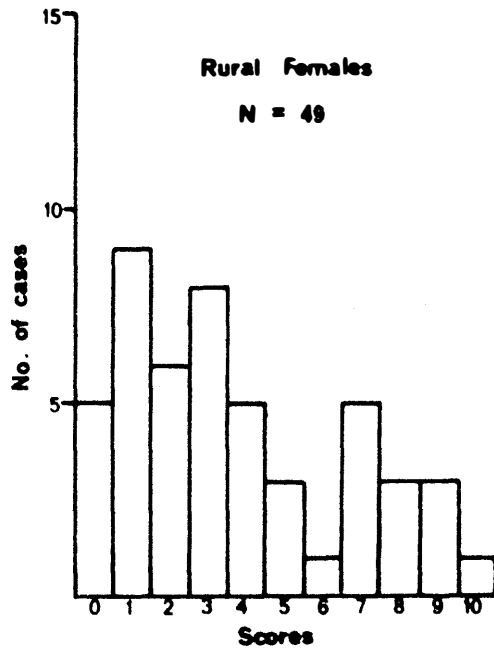
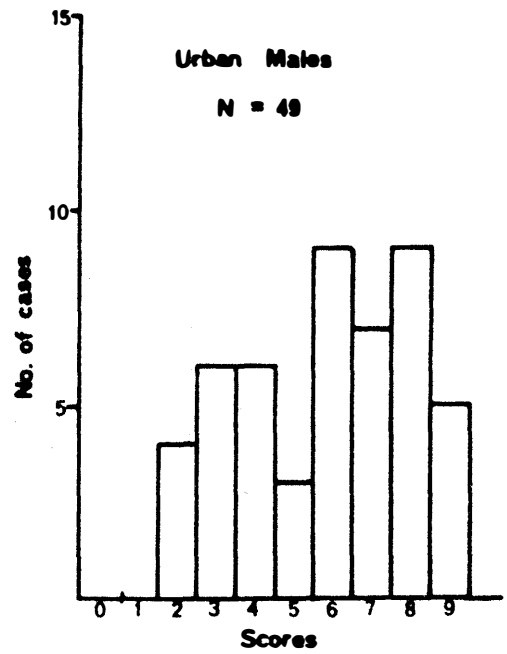
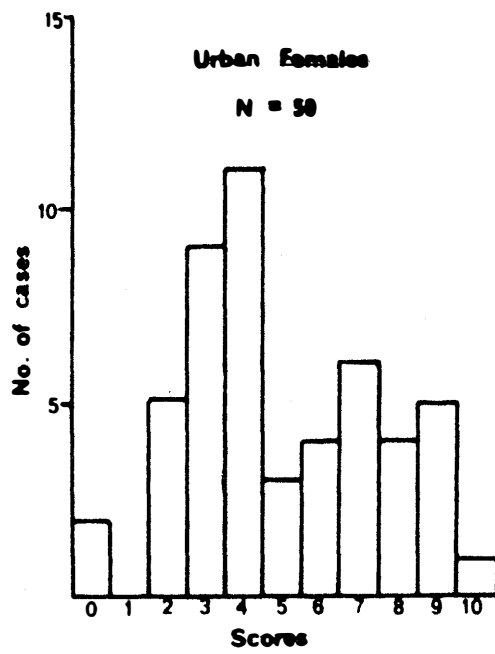


FIGURE 88

FREQUENCY DISTRIBUTIONS OF ACCEPTANCE OF AUTHORITY (AA)

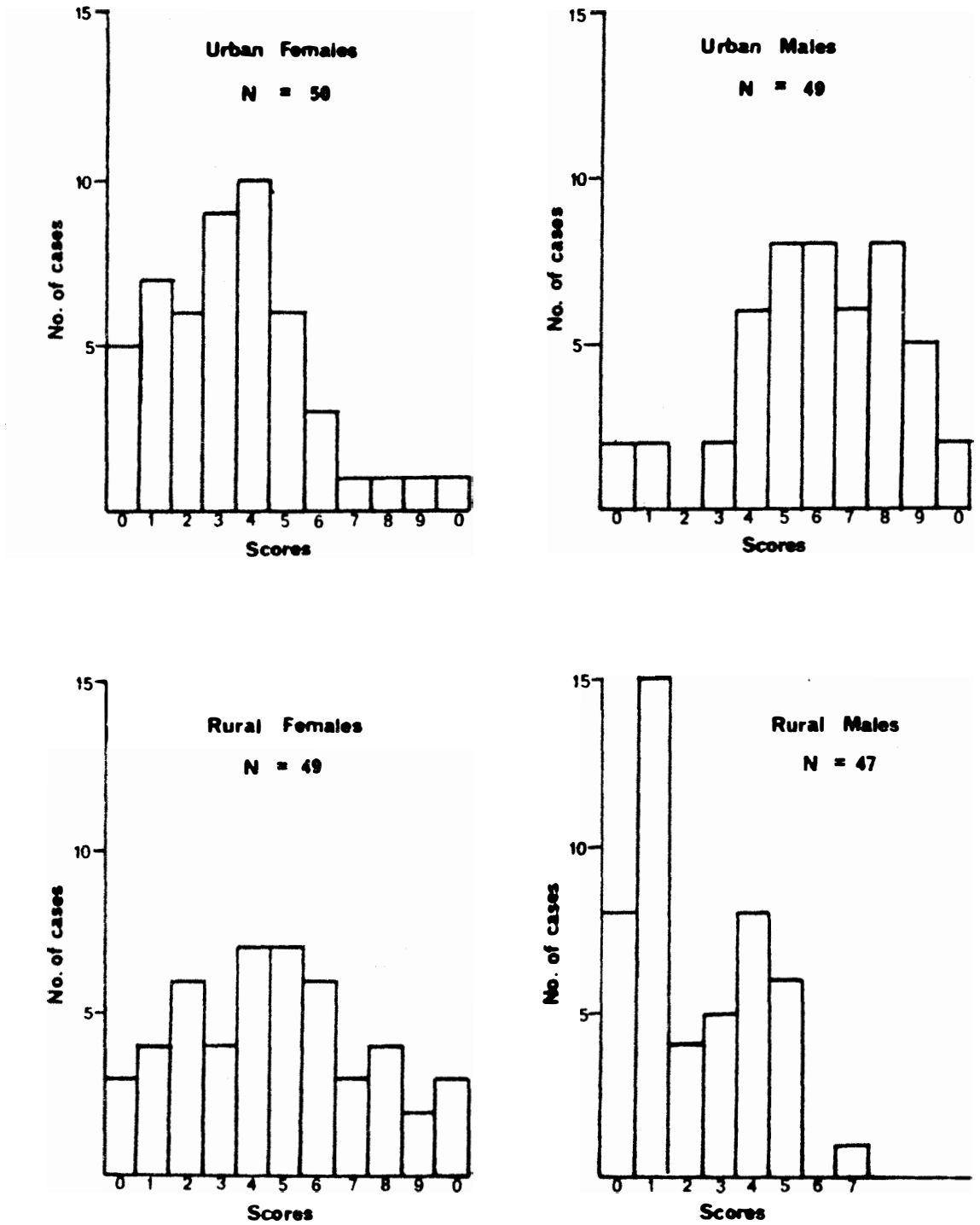


FIGURE 79

RATING SYSTEM FOR (3) TAT VARIABLES

Sense of Separate Identity

P

N



1.4

Signs of self-awareness (tendency to note personal reactions in situations); positive signs of independence; active rather than passive; awareness of self and/or role in situation (work, sexual, interpersonal); evidence of personal ego (rather than group ego); sense of continuity of ego

No signs of self-awareness; passive in circumstances; dependent (tending to be helpless); confused role identity (work, sexual, interpersonal); shared ego.

1.4

2.1

3.1

3.3

5.1

5.2

7.2



2.1

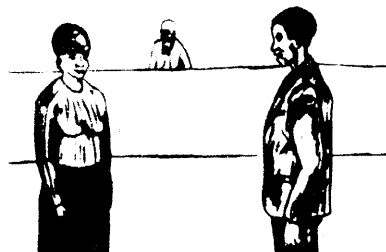
Positive scores were summed and treated as the index of Sense of Separate Identity



3.1



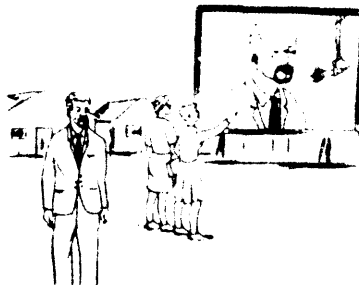
5.1



7.2



3.3



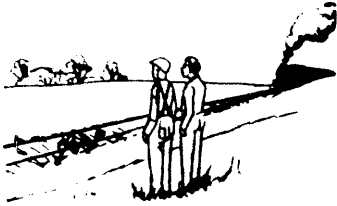
5.2

FIGURE 80

n Achievement (goal-directed behaviour) initiative

P

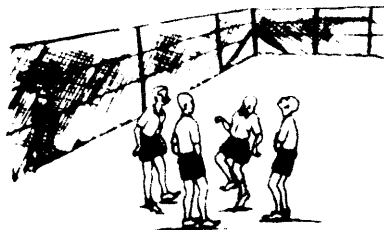
N



1.3



1.4



2.2



1.5



3.3

Tendency to make plans; desire to actualize self (realize plans); aware of difference between present state and possibilities; not resigned to circumstances; desire to participate in activities; positive signs of initiative

Works without ambition; obedient and/or submissive in job situation; easily discouraged; resigned to circumstances; no initiative; fatalistic attitude towards circumstances.

1.3	
1.4	
1.5	
2.2	
3.3	

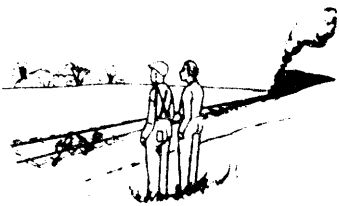
FIGURE 81

Acceptance of Authority



1.1

Acceptance of authority figure; cooperative towards authority figure	Hostility; resentment, <u>submissive</u> rather than cooperative (signs of latent resentment)
1.1	
1.3	
3.1	
3.3	
7.2	



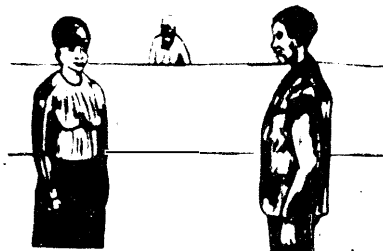
1.3



3.3



3.1



7.2

TABLE 53

URBAN MALES

INTERCORRELATION MATRIX

12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	0.23	1.00										
3 PRT	-0.06	-0.10	1.00									
4 DAP	-0.09	0.02	-0.19	1.00								
5 PAT (WO)	-0.13	0.15	-0.11	0.19	1.00							
6 SS	<u>0.36</u>	-0.02	-0.03	-0.28	-0.26	1.00						
7 n Ach	0.18	-0.19	0.17	-0.17	0.10	0.08	1.00					
8 AA	-0.05	-0.10	0.21	0.01	0.39	-0.22	<u>0.40</u>	1.00				
9 Age	<u>0.29</u>	0.26	-0.16	0.18	0.02	-0.04	0.21	-0.06	1.00			
10 Schooling	0.12	-0.06	0.08	0.18	0.09	0.08	0.00	0.10	0.17	1.00		
11 UI	<u>0.39</u>	0.22	-0.02	-0.21	0.07	<u>0.30</u>	0.23	-0.03	0.10	0.15	1.00	
12 Summed RFT	-0.02	-0.13	-0.20	0.26	-0.08	-0.05	0.14	-0.07	0.00	-0.08	-0.05	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

Significant correlations are underlined.

TABLE 54.

URBAN FEMALES

INTERCORRELATION MATRIX

12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	<u>0.34</u>	1.00										
3 PRT	0.03	0.15	1.00									
4 DAP	-0.09	0.09	-0.15	1.00								
5 PAT (WO)	-0.10	-0.17	-0.07	0.10	1.00							
6 SS	<u>0.29</u>	<u>0.28</u>	0.22	<u>-0.35</u>	-0.14	1.00						
7 n Ach	0.11	-0.07	-0.01	-0.23	-0.11	<u>0.56</u>	1.00					
8 AA	-0.14	-0.07	-0.11	0.05	-0.21	0.07	<u>0.30</u>	1.00				
9 Age	-0.16	0.06	-0.04	0.07	-0.12	-0.14	-0.18	0.24	1.00			
10 Schooling	0.03	-0.13	-0.02	-0.31	0.00	0.12	0.21	0.01	-0.28	1.00		
11 UI	0.22	0.09	-0.06	<u>-0.36</u>	<u>-0.32</u>	0.23	0.29	0.12	-0.20	<u>0.38</u>	1.00	
12 Summed RFT	-0.06	-0.08	-0.20	-0.09	-0.12	-0.19	0.10	0.02	-0.12	0.08	<u>0.32</u>	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

Significant correlations are underlined.

TABLE 55
RURAL MALES
INTERCORRELATION MATRIX
12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	0.02	1.00										
3 PRT	0.05	0.20	1.00									
4 DAP	0.13	-0.20	<u>-0.70</u>	1.00								
5 PAT (WO)	0.11	0.06	0.28	-0.20	1.00							
6 SS	0.03	<u>0.29</u>	<u>0.48</u>	<u>-0.59</u>	<u>0.38</u>	1.00						
7 n Ach	0.19	0.14	<u>0.39</u>	<u>-0.42</u>	<u>0.31</u>	<u>0.55</u>	1.00					
8 AA	0.23	-0.02	0.27	-0.20	<u>0.37</u>	<u>0.37</u>	<u>0.52</u>	1.00				
9 Age	-0.07	-0.17	-0.20	0.25	-0.18	-0.06	-0.16	-0.01	1.00			
10 Schooling	0.09	-0.01	<u>0.54</u>	<u>-0.64</u>	0.22	<u>0.56</u>	<u>0.52</u>	<u>0.30</u>	<u>-0.41</u>	1.00		
11 UI	0.17	0.18	<u>0.51</u>	<u>-0.39</u>	0.18	<u>0.31</u>	<u>0.32</u>	0.01	<u>-0.32</u>	0.48	1.00	
12 Summed RFT	0.19	-0.05	-0.21	0.25	-0.20	-0.14	-0.00	-0.23	-0.04	-0.14	0.02	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

Significant correlations are underlined.

TABLE 56
RURAL FEMALES
INTERCORRELATION MATRIX
12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	0.11	1.00										
3 PRT	0.04	-0.18	1.00									
4 DAP	-0.01	-0.05	<u>-0.57</u>	1.00								
5 PAT (WO)	0.17	0.28	<u>0.35</u>	<u>-0.36</u>	1.00							
6 SS	0.18	<u>0.29</u>	0.14	-0.26	<u>0.30</u>	1.00						
7 n Ach	-0.01	0.24	<u>0.36</u>	<u>-0.30</u>	0.28	<u>0.42</u>	1.00					
8 AA	-0.20	0.01	0.15	-0.10	0.22	0.04	<u>0.36</u>	1.00				
9 Age	-0.09	-0.12	<u>-0.36</u>	<u>0.41</u>	<u>-0.43</u>	<u>-0.45</u>	-0.22	<u>-0.32</u>	1.00			
10 Schooling	0.10	-0.01	0.15	-0.25	0.05	0.13	0.26	0.03	-0.18	1.00		
11 UI	<u>0.32</u>	0.15	0.28	<u>-0.32</u>	0.19	<u>0.29</u>	0.27	0.20	<u>-0.39</u>	0.09	1.00	
12 Summed RFT	0.05	-0.04	0.06	-0.13	0.19	0.14	0.17	0.21	<u>-0.29</u>	<u>0.48</u>	0.16	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

Significant correlations are underlined.

TABLE 57.

URBAN MALES

RESIDUAL CORRELATION MATRIX

12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	0.11	1.00										
3 PRT	-0.07	-0.08	1.00									
4 DAP	0.12	0.08	-0.21	1.00								
5 PAT (WO)	-0.08	0.23	-0.22	0.19	1.00							
6 SS	0.02	-0.18	0.01	-0.19	-0.17	1.00						
7 n Ach	-0.04	-0.26	0.10	-0.11	-0.03	0.02	1.00					
8 AA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
9 Age	0.14	0.21	-0.16	0.27	0.08	-0.23	0.17	0.0	1.00			
10 Schooling	0.02	-0.09	0.06	0.23	0.08	0.03	-0.11	0.0	0.13	1.00		
11 UI	-0.05	0.12	-0.02	-0.08	0.18	0.02	0.06	0.0	-0.09	0.07	1.00	
12 Summed RFT	0.03	-0.13	-0.19	0.26	-0.07	-0.03	0.22	0.0	0.02	-0.06	-0.01	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 58

URBAN FEMALES

RESIDUAL CORRELATION MATRIX

12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	0.29	1.00										
3 PRT	-0.02	0.09	1.00									
4 DAP	0.06	0.21	-0.15	1.00								
5 PAT (WO)	-0.03	-0.16	-0.09	-0.06	1.00							
6 SS	0.0	0.0	0.0	0.0	0.0	0.0						
7 n Ach	-0.10	-0.28	-0.13	0.06	0.05	0.0	1.00					
8 AA	-0.19	-0.08	-0.12	0.13	-0.17	0.0	0.29	1.00				
9 Age	-0.10	0.10	-0.04	-0.05	-0.22	0.0	-0.07	0.29	1.00			
10 Schooling	-0.07	-0.18	0.01	-0.16	0.17	0.0	0.07	-0.05	-0.20	1.00		
11 UI	0.08	0.12	0.01	-0.00	-0.09	0.0	-0.08	0.01	0.02	-0.00	1.00	
12 Summed RFT	-0.08	-0.01	-0.12	-0.01	-0.02	0.0	0.15	-0.02	-0.06	-0.11	-0.01	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 52

RURAL MALES

RESIDUAL CORRELATION MATRIX

12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	0.04	1.00										
3 PRT	0.04	0.03	1.00									
4 DAP	0.25	-0.00	-0.16	1.00								
5 PAT (WO)	0.03	0.01	0.03	0.11	1.00							
6 SS	-0.04	0.22	-0.13	-0.05	0.16	1.00						
7 n Ach	0.12	0.05	-0.15	0.09	-0.00	0.16	1.00					
8 AA	0.00	-0.01	0.04	-0.01	-0.01	-0.04	-0.01	1.00				
9 Age	-0.10	-0.08	0.10	-0.08	-0.12	0.23	-0.01	-0.00	1.00			
10 Schooling	0.09	-0.29	-0.14	0.00	-0.10	0.03	0.11	-0.01	-0.27	1.00		
11 UI	0.25	0.04	0.16	0.22	0.06	-0.09	0.10	-0.04	-0.15	0.11	1.00	
12 Summed RFT	0.25	-0.02	-0.08	0.17	-0.09	0.04	0.26	-0.05	-0.11	0.05	0.14	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 60

RURAL FEMALES

RESIDUAL CORRELATION MATRIX

12 VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12
1 CRP	1.00											
2 CS	0.03	1.00										
3 PRT	0.00	0.0	0.0									
4 DAP	0.10	-0.02	0.0	1.00								
5 PAT (WO)	0.07	0.19	0.0	-0.03	1.00							
6 SS	0.06	0.04	0.0	0.03	-0.06	1.00						
7 n Ach	-0.13	0.16	0.0	0.06	-0.07	0.16	1.00					
8 AA	-0.28	-0.10	0.0	0.11	0.06	-0.21	0.23	1.00				
9 Age	0.06	0.12	0.0	0.04	-0.07	-0.07	0.26	-0.15	1.00			
10 Schooling	0.04	-0.12	0.0	-0.12	-0.15	-0.06	0.12	-0.07	0.03	1.00		
11 UI	0.26	0.01	0.0	-0.04	-0.15	-0.02	-0.02	0.05	-0.06	-0.07	1.00	
12 Summed RFT	-0.02	-0.22	0.0	0.02	0.01	-0.12	-0.01	0.12	-0.10	0.43	-0.01	1.00
	1	2	3	4	5	6	7	8	9	10	11	12

TABLE 61

FACTOR ANALYSIS

12 VARIABLES

COMPARISON OF LATENT ROOTS AND PERCENTAGE TRACE
FOR ALL FOUR GROUPS

	Urban Males		Urban Females		Rural Males		Rural Females	
	L.R.	P.T.	L.R.	P.T.	L.R.	P.T.	L.R.	P.T.
1	2.09	17.45	2.55	21.26	4.09	34.06	3.41	28.45
2	1.77	32.22	1.72	35.60	1.45	46.11	1.47	40.69
3	1.71	46.44	1.49	48.06	1.38	57.61	1.30	51.53
4	1.32	57.46	1.29	58.79	1.02	66.12	1.24	61.87
5	1.10	66.67	1.05	67.57	0.93	73.84	0.95	69.79
6	0.96	74.63	0.81	74.31	0.76	80.21	0.85	76.90
7	0.74	80.81	0.76	80.67	0.69	85.93	0.74	83.03
8	0.62	85.95	0.64	86.04	0.48	89.94	0.64	88.39
9	0.50	90.14	0.56	90.68	0.46	93.81	0.45	92.17
10	0.49	94.19	0.47	94.57	0.32	96.49	0.37	95.21
11	0.39	97.48	0.40	97.86	0.21	98.27	0.33	97.93
12	0.30	100.00	0.26	100.00	0.21	100.00	0.25	100.00

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