A CROSS-CULTURAL STUDY OF INTERPERSONAL DISTANCE AND ORIENTATION SCHEMATA

David J.A. Edwards

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TO Felicity

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ABSTRACT

Expectations about interpersonal distance during social encounters (distance schemata) and body orientation (orientation schemata) were investigated among White English-speakers and Xhosa groups which included illiterate traditionalists (Reds), poorly educated urban dwellers, and highly literate students and nurses. In a series of six experiments a doll placement task was used in which subjects represented dyadic encounters by placing pairs of standing dolls. For each situation represented the responses of each group of subjects were summarised in the form of a profile which showed the mean of the distance and three angle measures (IPOS profile).

Independent variables included culture of subject, type of situation represented (friendly encounter, quarrel, accusation and denial, request) and the sex, age or relationship of the persons represented. In the culminating experiment (Experiment 6), females from three Xhosa groups (Reds or XR, poorly educated urban or XU, and urban nurses or XN) made twenty-three placements. In some respects the schemata of the four groups were very similar, while in others both distance and orientation schemata were a function of cultural group.

The experiments allowed an assessment of the validity of the doll placement method to be made, and results were discussed in terms of the effects on interpersonal distance and body orientation of cultural norms concerning the showing of respect and the nature and strength of the emotions present in the various types of situation. It was concluded that with cultural movement away from the traditionalist pattern the schemata of the urban Xhosa showed a transition towards those found among the Whites in some respects. However, while the schemata of the XN group showed features of both those of the XR and White groups, those of the XU group showed features found in neither which seemed to reflect the insecurity of the cultural milieu of the urban poor.

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PART ONE

PROLEGOMENA

CHAPTER ONE

PREFACE

1.1 FIGURE PLACEMENT METHODS

Tasks in which figures of people are placed to represent scenes and situations have for some time been part of the repertory of projective techniques available to the clinical psychologist. For example, in the MAPS test (Shneidman 1952), subjects choose cardboard figures representing people and place them against a sketched background with models of furniture. Interpretation is based on the figures and furniture selected by the subject, as well as on the total scene created.

Charlotte Buhler's World Test provides 360 toy models representing people, animals, objects and buildings for use in child psychotherapy. Similarly the Sceno-test, developed in Germany in the 1940's, offers the child 130 models with which to represent his or her world, with the emphasis on the family environment. The latter is readily approached even by children with severe disorders of behaviour (Biermann 1970a and b).

In the present study, a more abstract figure placement task, in which only two upright human figures are placed to represent some prescribed situation, was employed in a study of cross-cultural social psychology. Like the Sceno-test, the more abstract task has been found quite acceptable to children. It is also readily understood by adults from illiterate rural backgrounds, while it is still acceptable as sensible and interesting by highly educated persons.

Unlike the figures of the Sceno-test, which have jointed limbs, the dolls used in the present investigation were rigid, in a standing position, with head, shoulders and body facing straight ahead. This reduces the scope of the data obtained, but has the advantage of limiting the variables over which the subject has control to three, the distance between the figures, and the angles of each of them. Thus while the clinical techniques are amenable largely to subjective and holistic interpretations, appropriate to the clinical context, the present method

was designed to be suitable for quantitative analysis.

1.2 AIMS OF THE PRESENT PROJECT

Because the doll placement method used here allows the subject to represent only distance and orientation variables, attention is focussed upon these two aspects of behaviour. The regulation of interpersonal distance and body orientation is a subject that has received close attention recently from experimental social psychologists, so that it is possible to relate distances between dolls and the angles at which they are placed to the particular interpersonal events that are being portrayed. The spatial positioning of two interactors relative to each other is not, therefore, primarily of interest for its own sake, but because it is to some extent a non-verbal expression of the nature of the relationship between them and of the type of encounter they are engaged in.

The nature of interpersonal relationships and patterns of social encounter are to some extent a function of culture, and several studies outside Africa have demonstrated cultural differences in the manner in which interpersonal space is regulated (see sections 4.6.7 and 5.3.6). In the Southern part of South Africa there live groups of widely differing cultural backgrounds, and the present research was undertaken to discover whether these cultural differences would be reflected in differences between members of the different cultures with regard to perception of the way spatial positioning during social encounters is regulated.

Two groups, representing two distinct cultural traditions, were selected as the focus of the study. These were traditionalist Xhosas of Transkei, and White English-speakers of the Eastern Cape. In addition, Xhosa groups in transition away from the traditional pattern of Xhosa culture were also studied.

The study has three general aims: firstly to provide evidence for cultural differences in regulation of spatial position in South Africa; secondly, to interpret these differences in the light of the differing patterns of social relationships within the groups; thirdly, to explore the potential of the doll placement technique itself as an instrument for cross-cultural research.

In Part One the context of the research is set out. The literature on regulation of spatial position is reviewed, as well as previous studies using figure placement methods. The cultural context is set in Chapter 8.

CHAPTER TWO

INTERPERSONAL DISTANCE, PERSONAL SPACE AND THE BODY-BUFFER ZONE

2.1 INTRODUCTION

Research on the relation between human behaviour and the spatial matrix within which it occurs has three main foci. These are

(i) the design of spaces in accordance with the psychological and physical needs of their users (Gutman 1972, Sommer 1974);

(ii) the study of the behaviour engaged in by individuals and groups in their attainment and defense of spatial resources (Sommer 1969); and

(iii) the study of the regulation by persons of their spatial arrangement relative to each other during social encounters (e.g. Evans and Howard 1973).

It is the last of these areas within which the present research falls.

The study of spatial behaviour during social encounters includes the study of the regulation both of interpersonal distance and of body orientation. Research on the former is discussed in the remainder of this chapter.

2.2 PERSONAL SPACE: THE BODY-BUFFER ZONE PARADIGM

2.2.1 The concept of the body-buffer zone

It was suggested by Horowitz, Duff and Stratton (1964) that a person's image of his body comprises "not only an internalised projection of the body's boundary and position but also a sensitised projection of the immediate area around the body." This sensitised projection constitutes an area into which intruders may not come and beyond the boundaries of which people with whom he is interacting are kept. They proposed that it be called the "body-buffer" zone. This area is not supposed to be physically different in any way from the rest of the spatial matrix, but it does constitute a psychological reality for the individual. It constitutes part of his map of himself and his world and therefore has the status of a cognitive construct (Evans and Howard 1973).

The body-buffer zone is referred to in the current literature as 'personal space'. The first use of this term is attributed by Little (1965) to Katz in 1937 although its modern use stems from Sommer (1959). Unfortunately, the term 'personal space' is used to refer both to the body-buffer zone and to any spatial resource (a favourite chair, for example) to which an individual feels he has a personal right of control, although Sommer clearly distinguishes between the two meanings of the term (1969 p.viii).

Because of the ambiguity of the term 'personal space', the writer prefers the more explicit 'body-buffer zone'.

2.2.2 The body-buffer zone as territory

The body-buffer zone is viewed in the literature as like a piece of territory that is portable. A territory is a spatial area which an individual claims, and defends against intruders, because it affords a valued resource. In animals the resource is usually food supply (Watson and Moss 1971) or a place to rear young. In man it may also be a mineral resource such as oil or iron or a more subtle psychological resource such as privacy.

In man territorial phenomena may range all the way from the maintenance through the centuries of international boundaries, where the resources of an area are defended by a nation, to the maintenance of peace and lack of distraction in a small area of a library for part of an afternoon (Sommer 1969).

The viewing of the body-buffer zone as a sort of territory has led researchers to attempt on the one hand to measure its size, and on the other to examine the steps taken by individuals to defend it (e.g. Felipe and Sommer 1966). Attempts to measure the body-buffer zone will be described in the next section.

2.3 EMPIRICAL MEASURES OF THE BODY-BUFFER ZONE

2.3.1 Effects of sex and personality on body-buffer zone size

Horowitz, Duff and Stratton (1964) had subjects approach an object person (OP) walking forwards, sideways at various angles, and backwards. They stopped

when they began to feel uncomfortable and the position of the OP was then taken as the edge of the zone. Altogether eight points on the boundary of the zone were established. Schizophrenics had a larger zone than normals, and the zone of males was larger when the OP was male rather than female.

Using similar techniques, Kinzel (1970) found that violent prisoners had larger zones than non-violent ones, a finding confirmed by Hildreth, Derogatis and McCusker (1971), and, for South African Coloureds, by Roger and Schalekamp (1976).

Pedersen and Heaston (1972) examined the effects of sex of subject, sex of OP and approach angle on buffer-zone size. Significant effects accounted for very little of the variance of scores, although females tended to permit a closer approach from the sides than from the front, while males permitted a closer approach from the front. Males permitted a closer frontal approach than did females.

Frankel and Barrett (1971) examined the effects of race, self-esteem and authoritarianism on zone size using a frontal approach. For low authoritarians, an experimenter was allowed equally close, whether Black or White, and whether they themselves were high or low in self-esteem. In the case of subjects high on authoritarianism, however, those high in self-esteem allowed the experimenter closer than those low, and those low in self-esteem kept a Black at a greater distance than a White.

Hartnett, Bailey and Gibson (1970) found no effect of sex of subject or sex of approaching person on size of the frontal zone, but found that males scoring high on heterosexuality allowed a female experimenter closer than those scoring low.

2.3.2 Effects of threat on buffer-zone size

Hartnett, Bailey and Hartley (1974) had subjects approach an experimenter until they felt uncomfortable. A tall experimenter was not approached as closely as a short one, and a seated experimenter was approached more closely than a standing one, especially when the experimenter was tall. They argued that a

tall person is more threatening than a short one, but that the effect is reduced when the tall person is seated.

Bailey, Hartnett and Gibson (1972) emphasised the threatening aspects of an encounter with a stranger by saying 'people can actually become quite angry when placed at close quarters with someone they do not know.' Under these conditions, subjects stayed further away from males than from females. Males allowed females to approach very close.

The threatening effect of a person of higher status was suggested when distances in the above study were found to be smaller than those of the Hartnett, Bailey and Gibson (1970) study. In the former study, experimental confederates were white coated graduate assistants, and distances were larger than in the 1972 study where they were peers.

Karabenick and Meisels (1972) measured the full buffer zone and found that persons who had just been told they had done well on a test had a smaller zone than those told they had done badly. Zones were also larger in subjects with high test anxiety.

While all these studies suggest that the buffer zone becomes larger when a person feels threatened, the results of a study by Bailey, Caffrey and Hartnett (1974) were negative. Approach distance was not affected by degree of threat or by size of OP (strong and tall versus short and small).

Instead of threatening subjects, Meisels and Dosey (1971) aroused their anger by making insulting remarks. When told to walk towards the OP 'until you reach me', insulted subjects approached 80% closer than controls. The authors suggested that the insults provoked the subject to counter-attack by invading the experimenter's territory.

2.3.3 Effects on buffer zone size of experimental technique

Differences in technique of measurement have been found to produce differences in the size of the measured buffer zone. Thus both Hartnett, Bailey and Gibson (1970) and Bailey, Hartnett and Gibson (1972) found that with a frontal approach distances were smaller when an experimenter moved towards the

subject until told to stop than when the subject moved towards the experimenter until he felt he was close enough.

Meisels and Dosey (1971) compared the two instructions: (A) 'Walk towards me until you reach me', and (B) 'Walk towards me until you reach a natural or comfortable position'. Distances were considerably closer under instructions A, with several subjects moving so that their toes touched those of the OP. The close distances of the insulted subjects mentioned at the end of the last section were only found with the A instruction.

In Kinzel's (1970) study, twelve buffer-zone measures were taken at weekly intervals, and zone sizes decreased markedly over the first few sessions, especially in the violent group. This suggests that zone sizes are affected by desensitisation when repeated measures are made.

2.4 CRITIQUE OF THE BODY-BUFFER ZONE APPROACH

A major focus of the body-buffer zone research paradigm is the differences between individuals in their tolerance of the proximity of others. The importance of proximity tolerance as a personality factor is clear from its association with violence in prisoners (section 2.3.1), and from the existence of individual differences in proximity preferences that are consistent over time and various situations even in pre-school children (Eberts and Lepper 1975).

Nevertheless the relation between buffer-zone sizes and personality variables has generally been found to be small. The studies reviewed above demonstrated a number of such relationships but the independent variables usually accounted for little of the variance in scores. In a series of studies Pedersen (1937b, c, d and e) calculated correlations between zone distances and many personality and demographic variables. Although a number of significant correlations were found, these seldom exceeded ,2 in value or formed a meaningful pattern.

Despite its weak relationship with other variables, proximity tolerance is a personality factor worth measuring for its own sake, and the development of a

standardised procedure is perhaps desirable, using the types of technique employed in the studies described above.

However, the size and shape of an individual's body-buffer zone depends upon situational factors as well as individual disposition. This was recognised by Hall (1966) who suggested that a set of zones exist, each appropriate for a different type of situation. Horowitz et al. also recognised that its size would depend upon 'immediate interpersonal events and current ego- and drive states'. Some of the situational determinants of zone size were demonstrated in the studies reviewed in section 2.3 above.

Since the area of the body-buffer zone is likely to vary from moment to moment as context changes, its shape and size under the peculiar circumstances of the laboratory experiment is of limited interest, since these differ from those of everyday social encounter in two important respects.

Firstly, the subject's attention is drawn to the distance variable, so that Pedersen (1973a) aptly talks of an 'awareness' measure of distance. Secondly, the experimental situation is often poorly defined for the subject who may be uncertain as to what is expected of him. Thus slight differences in technique (see section 2.3.3) can affect zone size, probably because of their effects on subjects' expectations.

The ambiguity of the situation was demonstrated by Bailey, Hartnett and Glover (1973), in an experiment in which American fifth and sixth grade children made approaches to a middle-aged woman in pairs. The first child was an experimenter's confederate who either approached close or far, according to instructions. The distance adopted by the second child was strongly influenced by that of the first.

2.5 AN ECOLOGICAL APPROACH TO SPATIAL BEHAVIOUR DURING SOCIAL ENCOUNTERS

The criticism of the body-buffer zone paradigm arise from the static nature of the conceptualisation. The determination of interpersonal distance is best viewed within the context of the encounter within which it occurs, and

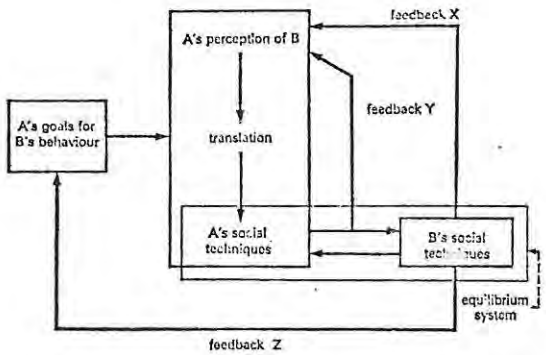
needs to be understood within the framework of an ecological model of interpersonal behaviour. In terms of such a model, interpersonal distance is one of many variables under the control of an interactor which he adjusts from moment to moment, as the encounter proceeds, in accordance with his changing needs.

Such a framework is not new in this field. Hall (1966), a pioneer in the study of interpersonal distance, despite his rather static set of distance zones, was able to write 'man and his environment participate in molding each other', and he saw social interaction as based on 'a series of delicately controlled, culturally conditioned servo-mechanisms that keep life on an even keel, much like the automatic pilot of an airplane' (p.4).

This approach is implicit in another comparatively early and important contribution to the area, Argyle and Dean's (1965) study of the relation between interpersonal distance and eye-contact (see section 3.1.2), and was presented as a formal model by Argyle (1967). It appears here as Figure 2.1.

FIGURE 2.1

ARGYLE'S SOCIAL SKILL MODEL OF THE SOCIAL ENCOUNTER



From Argyle (1967) p.95

In terms of this model, regulation of interpersonal distance is just one of many factors which can contribute to the smooth flow of the encounter. Others would include the regulation of facial and bodily expression, utterance content, timing and loudness, and gaze direction. Regulation of each of these would take place on the basis of feedback obtained from the three loops in the model.

One of the consequences of this model is that information about the

regulation of interpersonal distance will be of limited value if it is obtained outside the framework of ongoing natural encounters. Thus naturalistic studies such as those of Eberts and Lepper (1975) and Dean, Willis and Hewitt (1975) are generally regarded as making a more valuable contribution to the literature than the body-buffer zone type of experiment.

This does not mean that the buffer zone experiment is valueless, since it is possible to use it to bring variables under experimental control which would require greater expenditure of effort in the field. If the buffer zone research is viewed within the context of a dynamic model, it has an important contribution to make. Its danger is that the investigator is trapped into reifying the zones measured in particular experiments as real and stable objects valuable for their own sake.

CHAPTER THREE

THE REGULATION OF GAZE DIRECTION DURING SOCIAL ENCOUNTERS

3.1 GAZE DIRECTION AND INTERPERSONAL DISTANCE

3.1.1 Introduction

Direction of gaze is a second important variable under the control of an interactor, which is subject to regulation according to the momentary needs of the situation. This variable is also of importance in understanding the spatial positioning of dolls, which is the technique used in the present research. Before presenting a fuller account of how interpersonal distance is regulated, therefore, some of the factors involved in the regulation of gaze direction will be presented in this chapter.

Research has focussed on gaze at the face of another in the region of the eyes, and this can conveniently be referred to as 'direct gaze'. The term 'eye-contact' refers to mutual direct gaze. It is taken as axiomatic in the literature that what the individual looks at when not engaged in 'direct gaze' is of limited theoretical interest.

3.1.2 Relation between interpersonal distance and amount of direct gaze

The two variables of interpersonal distance and direct gaze are mutually interdependent. This was first demonstrated by Argyle and Dean (1965). Subjects conversed with a continuously staring experimenter at three set distances, and eye-contact increased in duration with increasing distance. The same effect was demonstrated by Goldberg, Keisler and Collins (1969) using two distances, and by Russo (1975).

The early findings were questioned by Stephenson and Rutter (1970) who showed that observers record more eye-contact as distance increased even though the true level remained the same, and by White, Hegarty and Beasly (1970) who

showed that measured eye-contact levels were affected by knowledge of the experimenter's hypothesis.

These objections were overcome by Stephenson, Rutter and Dore (1972) who used a zoom lens television camera and displayed the faces of the interactors side by side on a split screen so that observers did not know the interaction distance. Using nine pairs of subjects at each of three distances, they found a significant increase in duration of eye-contact with distance, as well as in length of glance. An increase in duration of direct gaze (whether or not reciprocated) did not attain significance, although the increase was 30% from 2 feet to 10 feet and would perhaps prove significant with a larger sample.

Russo (1975) was able to show that her observers were in fact quite accurate in measuring eye-contact levels since their measures had correlations between ,89 and ,95 with measures of their own eye-contact made by interactors during the interaction.

3.1.3 Gaze direction, interpersonal distance and equilibrium

Argyle and Dean (1965) suggested that individuals adjust the values of various variables including proximity and gaze direction to maintain a set level of intimacy. Although they did not define intimacy, Ingham (1970) related it to the level of interpersonal risks individuals are willing to take and Cook (1970) to level of physiological arousal and motivation.

It seems best not to state what is kept in equilibrium by the interactors except to say that it is the system comprising the two participants. Some states of the system are stable, others are not, and when an unstable state is reached adjustments must be made to regain stability. Thus intimacy, could be viewed as itself changing without the system's breaking up.

Instead of intimacy, Mehrabian uses the term 'immediacy', with behaviours being defined as immediate or immediacy-producing if they 'enhance closeness to and non-verbal interaction with another' (1969 p.203). Greater immediacy is associated with greater intensity of relationship and a greater mutual availability of information, and is related to eye-contact, direct body orientation,

forward lean, close proximity and touching.

The term 'immediate' is preferable to 'intimate' in denoting encounters characterised by close proximity, high eye-contact levels, willingness to take risks or to make self-disclosures. If these characterise a friendly encounter, the term 'intimate' would be appropriate, whereas if they occur in a hostile encounter it would not. The term 'immediate' could apply in either case.

The fact that immediacy levels can be adjusted to meet the needs of the situation was shown by Breed (1972). An experimenter adopted three levels of immediacy by adjusting body orientation, forward lean and amount of direct gaze. Subjects reciprocated the experimenter's behaviour by maintaining high immediacy when the experimenter exhibited high immediacy, and low when he exhibited low. Recently Patterson (1976) has suggested that if immediate behaviours elicit a positive emotional response, then they will be reciprocated, but if an unpleasant emotional response, they will be compensated for by a reduction of immediacy.

3.1.4 Visual behaviour as a complex system

A summary of an individual's visual behaviour by a score for the total time spent in eye-contact or direct gaze does not, of course, do justice to the complexity of the normal pattern of visual behaviour. The role of brief mutual glances in the initiation of encounters and maintenance of its subsequent flow was discussed by Goffman (1963) and the moment to moment shifts in gaze direction during an encounter were examined in detail by Kendon (1967) through frame by frame analysis of filmed interactions.

Kendon found that speakers looked away at the beginning of an utterance while attending to the planning of it, and averted gaze more during hesitant than fluent speech. Gaze levels were inversely related to emotional arousal (using smiling as a criterion), and Kendon suggested that aversion of gaze served to reduce arousal. Looking up was common at the end of an utterance and served as a signal to the addressee that it was his turn to speak. There were substantial differences between individuals in time spent in direct gaze (ranging from 28% to 70% of total interaction time) and there was more direct

gaze while listening than while speaking.

Kendon and Cook (1969) found that individual differences in patterns of gaze regulation remained fairly consistent with different partners, although some accommodation was made to the style of each partner. Subjects high on neuroticism had a pattern lacking in smoothness, talking in longer utterances, looking less while speaking and engaging in less eye-contact than those low on the trait.

3.1.5 Monitoring and expressive functions of direct gaze

Kendon drew attention to the distinction between the monitoring functions of direct gaze on the one hand, and its regulatory and expressive functions on the other. The direct gaze enables an individual to monitor the other's face while the pattern of directing gaze at or away from it is a source of information for the addressee.

In practice a pattern of visual behaviour is likely to have both functions simultaneously, since A's direct gaze can, for example, not only enable A to see B's face, but also enable B to see that A is still interested. Nevertheless both types of function play a role in determining moment to moment shifts in gaze direction, and they will be discussed in the following sections.

3.2 THE MONITORING FUNCTION OF DIRECT GAZE

3.2.1 Importance of the monitoring function

Direct gaze at the face of another allows information to be picked up about whether the other is interested in the conversation, what his reaction is to what is being said, and whether he is intending to start an utterance (if he is himself not speaking) or terminate his speech (if he is).

The importance of this information-seeking function of direct gaze was shown by Argyle, Ingham, Alkema and McCallin (1973). Interactors who could see their partner (but not be seen) maintained direct gaze for 67% of the time. Those who could not see (but knew where their partner's face was from a mark on a screen), but could be seen, only engaged in direct gaze 23% of the time.

Thus removal of the monitoring function of direct gaze reduced engagement in it far more than removal of its expressive function.

3.2.2 Looking for approval

The use of direct gaze as a means of obtaining information about the other's emotional response is demonstrated in a number of studies that have investigated the search for approval. Exline (1963) had interviewers make remarks that either positively or negatively evaluated their interviewees. Direct gaze by the interviewee was increased by the former and decreased by the latter manipulation.

That this effect was not merely the result of the direct gaze being positively reinforced, was suggested by Exline and Messick (1967), who gave interviewees high and low levels of social reinforcement. Dependent subjects used more direct gaze in the low reinforcement condition, and the authors suggested that they did this in search for the approval which they needed but which was not forthcoming.

Efran and Broughton (1966) found that the creation of an expectancy that social approval would be forthcoming from one of two interviewers resulted in a subject's directing 71% of his gaze at that interviewer. Evidence that direct gaze was greater in dependent subjects was not confirmed in a second study, however (Efran 1968). On the other hand Nevill (1974) did find that persons in whom dependency had been aroused engaged in more direct gaze than controls.

The relationship between dependency and levels of direct gaze may also be due to the communicative function of gaze. Combined with other appropriate non-verbal behaviours, direct gaze may be a way of communicating to another one's reliance on his assistance or approval. This seems to be enshrined in the idiom 'I look to you for help'.

3.3 THE REGULATORY AND EXPRESSIVE FUNCTION OF GAZE REGULATION

3.3.1 Introduction

Several aspects of the regulatory and expressive functions of gaze

regulation have already been mentioned: looking up as a signal that one has finished speaking, looking to indicate that one is paying attention, and looking to signal dependency. Two other factors which have received attention are the communication of sincerity and dominance, and these are discussed below.

3.3.2 The communication of single-mindedness and sincerity

Kleck and Nuessle (1968) showed films of an interviewer addressing an interviewee. The time spent by the interviewer in eye-contact was varied. In the high eye-contact condition he was rated as more friendly, self-confident, natural, mature and sincere, and in the low eye-contact condition as more cold, pessimistic, cautious, defensive, evasive, submissive and indifferent. Thus eye-contact communicated sincerity and openness.

The subjects of Pellegrini, Hicks and Gordon (1970) used eye-contact to create a favourable impression. Those asked to win the approval of another engaged in more eye-contact and longer glances than those in a neutral condition. Similarly, Libby and Yaklevich (1973) found a positive correlation between amount of eye-contact and nurturance. They interpreted this in terms of a greater sincerity and willingness to make self-disclosures on the part of the nurturant personality.

If such sincerity is regarded as inappropriate, it creates an unfavourable impression. Scherwitz and Helmreich (1975) had subject and confederate give each other their general impressions of each other. The confederate made a programmed speech and used a high, medium or low level of direct gaze. The confederate was liked least in the high eye-contact condition when he made a positive evaluation. This involved telling the subject that he appeared perceptive and sensitive, and subjects may have felt that such remarks could hardly be made with sincerity by someone who had just met them, so that the confederate was seen as ingratiating rather than friendly.

This interpretation was supported by a second experiment in which the confederate's positive evaluation was said to be either the confederate's own opinion or a description based on research into birth order and personality.

In the former case the previous finding was replicated, while in the latter, the confederate was liked more in the high eye-contact condition.

3.3.3 Communication of dominance and threat

High levels of eye-contact do not therefore necessarily give a favourable impression. Sincerity turns into brazenness if the non-verbal cues seem to belie the real intent. In the context of aggression and dominance too, high levels of eye-contact are not associated with liking. Direct gaze in animals serves to establish dominance, and gaze aversion to signal submission (Ellsworth and Carlsmith 1973).

Ellsworth, Carlsmith and Henson (1972) found that motorists stopped at traffic lights moved away faster if they were stared at than did controls, a finding which suggested the threatening and aversive nature of direct gaze. Strongman and Champness (1969) observed all possible pairings of ten subjects and recorded who first averted gaze and how many times each subject averted gaze in each pair. Treating gaze aversion as submission they found that the matrix, obtained from an analysis of who dominated whom, had a hierarchical structure.

The role of gaze aversion in submission is also emphasised in the finding of Libby and Yaklevich (1973) that persons high on abasement averted gaze more often than those low during an embarrassing interview. The person high on abasement readily submits to the dominance of others and this is communicated in his inability to maintain direct gaze in a threatening situation.

The threatening nature of direct gaze was also evident in a study by Ellsworth and Carlsmith (1973). Angered subjects delivered less shock to a confederate when he stared at them than when he averted gaze, suggesting that the stare served to inhibit the subject's aggression.

3.4 EYE-CONTACT AS AN AVERSIVE EXPERIENCE

3.4.1 Approach and avoidance factors in the regulation of eye-contact

Thus, despite its value in providing information, direct gaze at the face of another can also be aversive, and is not typically maintained all the time.

As Argyle and Dean (1965) pointed out, 'There are approach and avoidance drives behind eye-contact.' Aversion of gaze is not mainly due to the presence of information elsewhere which requires visual attention. Instead, the individual's constant making and breaking of eye-contact results from the shift in value of these approach and avoidance factors. Avoidance factors are discussed in the following sections.

3.4.2 Reduction of information

The face provides such a rich source of information that gaze aversion may be avoided in order to reduce the information load. It might be thought that the information, though picked up, could be ignored, but some types of information (e.g. novel patterns and intense stimuli) have priority in the competition for information-processing space (Broadbent 1958) and the face of another may be an effectively intense stimulus which interferes with the passage of other information. Thus Kendon (1967) found that persons averted gaze while planning an utterance, especially if it was a complex one.

3.4.3 Concealment of information about the self

Argyle and Dean (1965) suggested that gaze might be averted in order to conceal information about oneself. Subjects who had told a lie broke eye-contact when accused of having done so (Exline, Thibaut, Brennan and Gumpert 1961), and an interview on a personal topic elicited less direct gaze than one with a neutral one (Exline, Gray and Schuette 1965). The gesture of covering part of the face with the hand when under stress may be a vestigial form of a response with the same function.

3.4.4 Communication of submission

Above, the relation between gaze aversion and submission was discussed. Although the aversion of gaze may sometimes have a formal signalling function, in many cases the break in eye-contact occurs because its maintenance, with the consequent maintenance of the struggle for dominance, has become too aversive to

be tolerated.

When two men compete to push each other's arms to the table, the loser does not simply allow his arm to go to the table as a gesture of submission. He submits because he has not the strength to maintain his arm upright. Similarly, in a struggle for dominance through mutual gaze, the one who averts first may do so because he lacks the strength to continue to tolerate the aversive stimulation.

3.4.5 Intolerance of physiological arousal

Strength in this sense can perhaps be related to Pavlov's concept of 'strength of the nervous system'. For Pavlov, the strong nervous system is able to tolerate high levels of stress before breaking down, while the weak nervous system has a greater sensitivity to stimulation, has lower sensory thresholds, and is more prone to breakdown under stress.

Eysenck and Levey (1972) suggested that Eysenck's concept of extraversion is similar to strength of the nervous system as conceived of by Pavlov. According to Eysenck the introvert nervous system is more sensitive than the extravert and can tolerate less arousal or stress.

A number of studies have shown that direct gaze can be arousing physiologically. Wada (1961) reported that when an experimenter looked at a Rhesus monkey, there was an increase in activity in the reticular formation, a structure related to cortical arousal. Gale, Lucas, Nissim and Harpham (1972) found that EEG abundance scores (which are normally correlated negatively with arousal) decreased when an experimenter, who had his eyes averted, made eye-contact with the subject, and decreased still more when the experimenter smiled.

Using the galvanic skin response as a criterion for arousal level, both McBride, King and James (1965) and Nichols and Champness (1971) measured a higher level of arousal in subjects when an experimenter was making eye-contact than when he looked elsewhere than their eyes.

It follows from the above that extraverts should be able to tolerate more eye-contact than introverts because of their greater ability to accept arousing

stimulation. Evidence for this has been obtained both by Mobbs (1968) and by Kendon and Cook (1969).

It is possible to regard the avoidance factors for eye-contact as different instances of avoidance of unpleasant arousal levels. Thus the aversion of gaze while planning a complex utterance can be understood as a means of countering the negative effects of arousal on the performance of a complex task. Avoidance of gaze in embarrassing situations can be seen as an attempt to reduce arousal in the face of the directly arousing effect of the embarrassing situation, and, as implied above, gaze aversion as submission can be seen as the individual's having reached a level of arousal that can no longer be tolerated.

Arousal is a key concept in accounting for the regulation of both gaze direction and interpersonal distance and will be discussed again in Chapter 4 (section 4.4).

CHAPTER FOUR

A FRAMEWORK FOR THE INTERPRETATION OF FINDINGS ON INTERPERSONAL DISTANCE AND GAZE DIRECTION

4.1 COMPONENTS OF THE FRAMEWORK

Argyle's social skill model, presented in section 2.5, provides a general framework within which regulation of interpersonal distance and gaze direction can be understood. The main feature of this model is that these, and other, variables are continuously adjusted on the basis of feedback obtained about the course of the social encounter in which an individual is engaged. Such adjustment takes place in order to maximise the benefits available to the interactor, and to minimise costs.

In the present chapter, it is suggested that there are four major factors which are responsible for the adjustment of distance and gaze direction, each of which can be incorporated within Argyle's general framework. These are (1) the management of perceptual quality, (2) accommodation to physical constraints, (3) management of reward, punishment and arousal, and (4) impression management. These will be discussed in turn in the following sections.

The framework offered here cannot be afforded the status of a predictive model, since relations between the components can only be loosely specified. However, it does serve to simplify the large range of variables that have been implicated in the determination of interpersonal distance and eye-contact since it is suggested that the effect of any variable is mediated through one or more of the four components listed.

4.2 MANAGEMENT OF PERCEPTUAL QUALITY

The first component of the framework serves to optimise the quality and nature of the inputs to the perceptual systems upon which the individual relies for information about the course of the encounter in which he is engaged.

As Hall (1966) has pointed out, the distance between two people sets limits to the nature and quality of the information available to them about each other. Although the effective range of the auditory channel is large, tactile, thermal and chemical information through touch, taste and smell is only available at very close distances. Hall considers the effective range for visual communication between interactors to be between 18 inches and 10 feet. At closer distances less than a person's face fills the whole visual field and there are optical distortions, while at larger distances there is considerable loss of information due to reduction of effective acuity. Hall has suggested that these perceptual factors set a normal limit to interaction distances so that they normally fall within this range.

An example of the operation of this system is given by Hall, who noted the close distances preferred by Arabs when compared to Northern Europeans and North Americans. He argued that one factor involved is that Arabs like to small each other's breath as they converse, while Americans and Europeans have been taught to regard the natural odours of body and breath with distaste (Hall 1966 p.149).

Disturbances in the spatial behaviour of schizophrenics that have been noted in the literature (Horowitz et al. 1964; Evans and Howard 1973), may perhaps sometimes have their origin in difficulties experienced in maintaining perceptual clarity. Hoffer and Osmond (1966) have suggested that the perceptual disturbances that accompany this disorder account for many of the behavioural disturbances which typify it, and Kelm (1973), referring to this same perceptual instability, which would include instability of spatial perception, writes, 'Autobiographies of recovered schizophrenics indicate that they lived in an unstable and constantly shifting experiential world.'

Schizophrenics show both inappropriately large and small interpersonal distances (Sommer 1969 p.31). Both effects could result from disturbance of depth judgement in the visual system. In addition, the large distances could be a means of withdrawing from the source of confusing information.

4.3 ACCOMMODATION TO PHYSICAL CONSTRAINTS

The constraints set by the physical environment may limit the range of interpersonal distances that can be selected, and force the individual to accommodate his behaviour to them. While this may seem of rather limited theoretical interest, much of the data on interpersonal distance cannot be understood without it.

Interactors may be forced into positions that they would not otherwise have chosen, and which are uncomfortable, if there is inadequate space, as in a lift or a very small room (Dabbs 1971), or because of the way furniture is arranged (Sommer 1969).

Constraints may be set by the requirements of tasks such as painting a wall or washing dishes. Individuals engaged in such activities may interact in spatial arrangements that they would not have chosen had the need for accommodation to the constraints set by the task not arisen.

The effects of such accommodations have not been examined extensively in the literature because they are usually rather obvious, and experiments are designed to control for them. Two examples, one from the writer's experience, the other from data in the present project, will be cited to illustrate the importance of this factor.

In the first example, the writer found himself at a distance from an attractive girl who was a stranger that, in other circumstances, would have been construed as intimate. A conversation took place while he stood beside her, with clothing in physical contact (for the intimacy of this spatial relation see Cook 1970). However, in this case no embarrassment was felt or intimacy experienced. The girl was a librarian who was looking up the address of the publisher of a journal on the writer's behalf, and the spatial position adopted enabled both her and the writer to look at the appropriate page of the reference work together.

Minsky (1975) has pointed out that a stimulus configuration that does not conform to normal expectation can often be accommodated within one's cognitive framework on the basis of a simple excuse. Thus, in the present case the

apparently intimate spatial arrangement was automatically excused on the grounds of accommodation to the physical requirements set by the task of reading the book together.

In the second example, a doll placement was made by a white woman in the present series of experiments which was very atypical in its spatial characteristics. A young married man was represented as talking to his mother standing beside and slightly behind her. Such an arrangement was usually only elicited by hostile encounters. The present example, however, did not represent a quarrel, but the situation in which the mother was seen as baking or washing up in the kitchen, while the son talked to her while he watched her work.

4.4 MANAGEMENT OF REWARD, PUNISHMENT AND AROUSAL

4.4.1 The approach-avoidance paradigm

Maximisation of rewards, minimisation of punishments and maintenance of arousal at a comfortable level are grouped as a single component of the framework, taken as a complete unit from the model of Gray and Smith for approach-avoidance learning (Gray 1971 p.186 and 1975 p.361).

The Gray and Smith model is essentially an amplification of Miller's classic formulation of the 1940's. Miller demonstrated that a rat that had been punished and rewarded in the same goal box exhibited both approach and avoidance tendencies which worked in opposition to each other when the rat was put near the box. Typically a rat would approach the goal until a point would be reached where it would begin to oscillate between approach and retreat. He proposed that both approach and avoidance tendencies increased as the animal approached the goal, but that avoidance tendencies increased more sharply. The point at which the animal stopped was seen as the point at which approach and avoidance gradients intersected. Thus the behaviour of the rat in relation to the goal box was shown to be the consequence of its previous exposure to reward and punishment.

4.4.2 The Gray and Smith model

The Gray and Smith model incorporates reward and punishment monitor systems which record the rewarding and punishing consequences of responses in specific situations and so build a basis for predicting the future reinforcement value of these responses when the same or similar situations recur. Comparator systems monitor the actual rewards and punishments that occur and compare them with those predicted on the basis of previous experience. If an expected punishment is not forthcoming, this is rewarding and is registered by the system; if an expected reward is not forthcoming, this is registered as a punishment by the punishment monitor.

In this way the expected consequences of approach or avoidance can be used to control the response to an object by being fed into a decision mechanism which controls approach and avoidance in much the same manner as described by Miller. If the consequences of a selected response are not as anticipated, this is fed back to the appropriate reinforcement monitor, expectancies are modified and the behaviour output may be changed.

Incorporated in the model is an arousal system that receives inputs from both reward and punishment systems on the basis of the magnitude of the rewards or punishments expected to follow from a particular response. The arousal system sends its output to the systems that control the behaviour and increase its intensity. This incorporates Hull's principle of drive summation: as Gray writes, 'When approach behaviour occurs it will occur more vigorously if the animal is simultaneously exposed to threats of impending punishment' (1971 p.187).

4.4.3 Reward, punishment and interpersonal distance

This model can be applied to interpersonal distance by supposing that close proximity and direct gaze have been associated in the past with both rewarding and aversive consequences and that expectations derived from these consequences play a part in determining an individual's current behaviour. Thus an individual whose presence had been found to be rewarding and pleasant in the past would elicit approach tendencies, while one whose presence had

previously been aversive would elicit avoidance tendencies. Ambivalence would result towards one who was associated with both.

This analysis is supported by the finding of positive relationships between proximity, direct body orientation and direct gaze on the one hand, and degree of positive attitude towards an addressee on the other (Mehrabian 1969). A positive relationship between degree of liking and proximity is a consistent finding in the literature (Mehrabian 1968b; Mehrabian and Friar 1969; Guardo 1969; Meisels and Guardo 1969; Allgeier and Byrne 1973; Schaeffer and Higgins 1976).

The relation between physical avoidance and experience of punishment is shown in the responses of Guardo's (1969) subjects who often placed figures back to back when they represented people who disliked each other very much. Two experiments by King have explored the relationship more directly. In the first, domestic fowls received shocks to the comb in the presence of a dominant fowl. The extent to which an initial approach tendency was modified by this aversive experience was a linear function of the number of shocks received by the fowl in the presence of the dominant chicken (King 1966a). In the second study, the mean distance that a child maintained from another child was found to be inversely related to the ratio of friendly to unfriendly acts received from that child in earlier free play (King 1966b).

Other studies also provide evidence for the relation between interpersonal distance and previous experience of punishment from interpersonal encounters. Fisher (1967) found that children whose mothers were high on assaultiveness and irritability used larger distances when representing themselves in interactions by means of figures. This might be interpreted as meaning that these children had developed a generalised expectation that social encounters would be aversive, based on their experience with their mothers. Similarly, Hollender, Duke and Nowicki (1973) found interpersonal distances to be an inverse function of the amount of maternal affection received.

Gray (1971) argued that introverts are more sensitive to the punishing aspects of social encounter and extraverts to the rewarding aspects. This

would lead to the expectation that extraverts would use smaller distances than introverts, as was found by Williams and Leipold (cited by Sommer 1969) and by Tanaka (1975), Sewell and Heisler (1973), and Pedersen (1973b), and would tolerate higher levels of eye-contact, as was found by Mobbs (1968) and Kendon and Cook (1969).

Another effect that might be seen as being mediated by the effects of punishment is that of the variable of status. Dean, Willis and Hewitt (1975) reported greater distances between unequal status than equal status dyads among military personnel, and Jorgenson (1975) less direct body orientation between unequal status dyads, although no effect of status on distance was found in this study. These findings may reflect the fact that a higher status person is in a position to administer punishments to a lower status person without reciprocation.

4.4.4 When arousal is aversive

In terms of the Gray and Smith model, arousal is generated by rewards or punishments and expectation of rewards and punishment, and the intensity of behaviour is related to the current arousal level. Many writers (e.g. Eysenck 1970) recognise that high levels of arousal themselves constitute an aversive state, and several have regarded the aversive state of anxiety as equivalent to physiological arousal, mediated by the sympathetic division of the autonomic nervous system (Lynn 1971; Wenger and Cullen 1972).

However there are two reasons why anxiety and arousal cannot be regarded as synonymous. First of all, anxiety has both cognitive and physiological aspects. This is illustrated by May's (1974 p.29) discussion of a meeting with a new personality. On the one hand he writes:

> "You don't know what's ahead or what demands the encounter may make upon you, or the possibilities of this new relationship. You know you must risk something in order to go through with it, but you don't even know how much."

and goes on at once to talk about the '... faster heartbeats and tremors we feel at moments of meeting a new person.'

Kelly (1955) provides a more formal definition of the cognitive aspect of anxiety when he defines it as

"... the recognition that the events with which one is confronted lie outside the range of convenience of one's construct system" (p.494)

and this usually furnishes the conditions under which the physiological aspects of anxiety usually occur. The latter is a state of arousal of the sympathetic nervous system characterised by high adrenalin output, increased heart rate and electrical conductivity of the skin, increased respiration rate and salivary output and greater persistence of red dermographia (a red mark made on the skin by drawing a stylus over it) (Wenger and Cullen 1972).

The second reason why anxiety and sympathetic arousal cannot be regarded as synonymous is that this type of arousal may occur under conditions where the individual is not anxious but confident and competent to deal with whatever situation confronts him. An example of this would be a skilled sportsman who must be physiologically aroused to perform effectively, while remaining competent at his skill.

The key to understanding the relationship between arousal and anxiety is the concept of compatability between arousal level and task. Since the turn of the century it has been recognised that performance at a task is inferior not only when arousal is too low, but also when it is too high (Eysenck 1970 p.437). The inverted-U relation between arousal and performance is known as the Yerkes-Dodson law. In addition, optimal arousal level is an inverse function of the complexity of the task. Thus high arousal may disrupt effective performance, and arousal that is appropriate for one task may be disrupting for another.

It is proposed here, therefore, that what is often meant by anxiety is a state in which the current arousal level is greater than is appropriate for the current task. Thus high arousal that is being channelled into competent activity does not constitute anxiety, while anxiety will frequently occur when there is uncertainty because even low levels of arousal can interfere with the making of difficult decisions, and until a decision has been made there is no activity into which a high level of arousal can be channelled. On the other hand, if arousal is at an appropriate level, behaviour will have an air of confidence or competence ('quiet confidence' if the appropriate level is low).

4.4.5 Interpersonal distance, eye-contact and arousal

There is evidence that inappropriately high arousal is aversive and steps that can be taken to reduce its intensity include reduction of eye-contact and increase in interpersonal distance. Evidence for the physiologically arousing effect of eye contact has been reviewed in section 3.4.5.

A number of studies have demonstrated the effect of proximity to others on arousal. McBride, King and James (1965) found that arousal, as measured by the galvanic skin response, was lower at nine than at three feet or one foot when an experimenter engaged the eyes of a subject, and Epstein and Aiello (1974) found elevated skin conductance levels in subjects under crowded conditions.

An unusual index of arousal was employed by Middlemist, Knowles and Matter (1976). Arousal is known to increase the latency of micturation and decrease its duration, and both these effects were found when an experimenter's confederate was in the urinal adjacent to that being used by the subject.

The role of the body-buffer zone in keeping arousal from becoming aversive is generally recognised in the literature. Thus Evans and Howard write that personal space 'allows the human organism to operate at acceptable stress levels and aids in the control of intra-species aggression' (1973 p.340). Grossnickle, Lao, Martoccia, Range and Walters (1975) state that subjects felt uneasy when presented with a persuasive communication from a very close distance, and Dabbs (1971) whose subjects had friendly conversations or arguments in a very small room found that subjects tended to withdraw from interaction in the friendly condition (presumably in order to lower arousal) and were more comfortable in the argument, since the arousal induced by proximity could be appropriately channelled into this activity.

A number of investigators have attempted to show that the generation of excessively high arousal levels through the close proximity of others can reduce the efficiency of performance on a skilled task. Although some experiments have failed to demonstrate this conclusively, a positive effect was found by Paulus, Annis, Seta, Schkade and Matthews (1976) using a maze tracing task. Evans and Howard (1972) found that errors in a number categorisation task

increased with increasing proximity of an experimenter with whom he was making eye-contact, provided the task was fairly difficult. There was also a decrease in skin resistance with increasing proximity for easy and difficult tasks, though not for an intermediate one, and an increase in discomfort measured by self-rating. Rawls, Trego and McGaffey (1972) found some deterioration of performance in some tasks as a result of crowding, but only in subjects with large body-buffer zones.

Evidence of avoidance behaviour in the face of either a stare or the close proximity of another which is disturbing was obtained by Ellsworth, Carlsmith and Henson (1972) and by Konecni, Libuser, Morton and Ebbesen (1975). In the first study, motorists stationary at traffic lights drove away faster if they were stared at, while in the second subjects crossed a street more quickly at a crossing after having their body-buffer zone violated. The latter study also found that violation of the buffer zone made subjects less likely to assist in returning dropped objects.

4.5 IMPRESSION MANAGEMENT

4.5.1 Introduction

The fourth component of the framework for understanding the determinants of interpersonal distance regulation is impression management. This refers to regulation of distance (and eye-contact) in response to the impression created, or expected to be created on others. This component takes into account the instrumental or communicative function of non-verbal behaviours.

It is supposed that individuals may both engage in and avoid direct gaze as a means of communicating something, as well as seek or avoid close proximity for the same reason. It is also supposed that these behaviours may be regulated not only to manage the impression created on the person with whom one is interacting, but also that created in observers or possible observers of an interaction.

4.5.2 Evidence for the communicative and instrumental aspect of proximity and direct gaze

Scenarios can easily be constructed in which distance is regulated as a

means of communication. Suppose a young man is present while his mother is scolding his wife. He might move towards his wife in such a way as to communicate his support for her and to serve as a warning to his mother.

Evidence for the communicative role of direct gaze has been reviewed in section 3.3 of Chapter 3. There the role of direct gaze in communicating sincerity and dominance was described as well as the role of gaze aversion in communicating submission.

While Scherer and Schiff (1973), whose subjects rated photographs of dyads seated at cafetaria tables, found that perceived intimacy was related to high levels of perceived eye-contact and to proximity, a number of studies with live encounters failed to find clear effects of distance on impression formation: thus Porter, Argyle and Salter (1970) using distances ranging from 2 to 8 feet found no difference in the impression created in an addressee. In similar experiments, Patterson and Sechrest (1970) and Boucher (1972) did find some effects but they were very weak.

It seems likely that the interpretation of distance is highly context-dependent and is also determined by other verbal and non-verbal cues. This perhaps explains why, in the somewhat ambiguous context provided by a social psychology experiment, little meaning was attached to it.

Nevertheless Hall (1955) has pointed out that the close distances used by Arabs and South Americans give an impression of 'pushiness' to North Americans, while the larger distances of the latter give an impression of coldness to the former, and Rosenfeld (1965) showed that subjects instructed to gain the approval of another moved closer than if they had not been given this induction, which suggests that they moved close in order to create a favourable impression.

4.5.3 Interpersonal distance and privacy

A close interpersonal distance may be adopted as a means of reducing information available about an encounter to observers. At a close distance the voice can be lowered so that overhearing is difficult. An extreme example of this is whispering into someone's ear.

Haase's (1970) finding that close distances are regarded as more appropriate in a counselling interview than far ones may be related to this. From a consideration of the functioning of the arousal mechanism, it might be expected that the client would prefer to keep his distance so as to keep arousal low and enable him to give expression to more anxiety-provoking material. That a close distance in such a situation can interfere with self-disclosure has been shown by Dietch and House (1976).

What also seems to be important, however, is that the client should feel that his disclosures are confidential and for the ears of the counsellor only. A close distance makes it possible for the conversation to take place in low voices so that it cannot be heard by eavesdroppers or persons in the next room or passage. However, while a close distance is indicated for the counselling situations, Knight and Bair (1976) found that a distance of 18 inches was too close for comfort, although subjects preferred 30 inches to 48 inches. There is thus a conflict between the need for privacy and the need to keep arousal low.

A similar explanation may lie behind White's (1975) finding of an inverse relation between interpersonal distance and room size. The smaller the room, the less likely it is that there will be anyone else in it to overhear the conversation, while in a larger room people may draw nearer to reduce the possibility of others overhearing.

4.6 APPLICATION OF THE FRAMEWORK

4.6.1 Introduction

The framework presented is too general to have strong predictive power, and the four components that comprise it will require considerable differentiation within themselves before this can be achieved.

On the other hand, it might be argued that in this general framework the number of systems could be reduced from four to three since perceptual management could well be regarded as a case of accommodation to the physical constraints set by the structure of the sensory receptors and the physical properties of the stimuli that excite them. However, the role of perceptual systems and

optimisation of information seems sufficiently important to justify a separate focus within the present framework.

What the framework does provide is a means of understanding how some of the many variables that have been implicated in the determination of interpersonal distance and gaze direction come to have their effects. Some of these effects will be understood as being mediated through only one of the systems, while others may involve more than one of the four. In the following sections, a few of the variables that were not discussed earlier in the chapter are examined in terms of the framework to illustrate this.

4.6.2 Meeting the unpredictable

A number of effects involve response to the unknown and unpredictable. These can be understood within the context of reward, punishment and arousal. The unknown excites both approach and avoidance tendencies in an individual, which would both lead to an increase in arousal in terms of the Gray and Smith model. Because, in the face of the unpredictable, one does not know so well how to act, this arousal is likely to be aversive and close proximity to someone whose response is difficult to predict is likely to be avoided.

Thus Edwards (1975) found that an individual faced with a situation in which he did not know how to act was seen as using a greater distance and less direct gaze than one who did, and the telling of a lie was found to be associated with aversion of gaze by Exline et al. (1961) and with increased distance by Mehrabian (1972 p.71). Here fear of being found out and the unpredictability of the other's response in that event can be understood as producing aversive arousal levels.

A simpler example is a meeting between friends as compared to one between strangers. Interpersonal distances are closer in the former case (Willis 1966; Edwards 1972a; Heshka and Nelson 1972).

Two studies have found that individuals stand further from a stigmatized person than from an unstigmatised one. Kleck, Buck, Goller, London, Pfeiffer and Vukcevik (1968) found the effect with a person supposed to be epileptic,

and in representation of encounters with an epileptic, an ex-mental patient and an amputee, although not with a blind person. Worthington (1974) found the effect with a man in a wheelchair as compared to one who was not.

These stigmatisations can be understood as increasing avoidance factors, partly because of their unfamiliarity, and party because of fear of the distorted human body or mind. However the effect might also be partly related to impression formation and arousal control. An interactor, when faced with a stigmatised person, might wish to avoid giving the impression that he is upset or disturbed by the stigma. By keeping his distance he can keep arousal low and so reduce the risk of appearing upset. This would account for the absence of the effect with the blind person.

4.6.3 Locus of control and interpersonal distance

The importance of being able to predict the response of the other is that one does not then risk losing control of the course of an encounter. This is illustrated by the finding of Duke and Nowicki (1972) that the personality variable of locus of control interacted with acquaintanceship in determining interpersonal distance. Internals were found to use closer distances with strangers than did externals, but the two groups did not differ in their distances towards friends. Duke and Nowicki invoked a social learning model based on the work of Rotter to account for their findings. They argued that when individuals have specific expectancies about the responses of another, as with a person with whom they are familiar, these govern their regulation of interpersonal distance, but that where no specific expectancies exist, as with a stranger, they have to rely on generalised expectancies.

Since specific expectancies are related to experiences with the individual involved, these would not be expected to differ in externals and internals. However, since internals have a stronger generalised expectancy that they will be able to maintain control of events than externals, they are able to maintain a closer distance with strangers.

This explanation accords with the Gray and Smith reward-punishment-arousal

model discussed earlier, since, according to this too, the pattern of reinforcements is monitored and used as a basis for expectancies about the course of events and the consequences of responses. The greater distances towards strangers on the part of externals would follow if it is supposed that strangers are more anxiety-provoking to them because of the expectancy that control over their responses lies largely outside their power.

However, although Duke and Nowicki (1972) were able to obtain this effect in a number of experiments, it was not replicated by Duke, Shabeen and Nowicki (1974) in a sample of old people or by Edwards (1977).

4.6.4 Experience and interpersonal distance

Two experiments have demonstrated that social experience can help to reduce atypically large interpersonal distances. Booraem and Flowers (1972) found that psychotics who were given assertion training approached closer in a buffer zone experiment than untrained controls, and Mallenby (1975) that hard of hearing children who were at a special school kept a greater distance from normals than did hard of hearing children at a normal school. These results can be understood as a result of the assertion training and the experience of interaction with normal children having reduced the unpredictability of social interaction and also, possibly, having desensitised previously acquired fears.

This same effect may partly account for the finding of Tipton, Bailey and Obenchain (1975) that females with feminist attitudes approached a male more closely in a buffer zone experiment than those with more conservative attitudes. The feminists might have been less afraid of a male because their attitudes had led them to gain experience of interacting with a male on equal terms. On the other hand, the effect may also have been due to impression management with the feminist females attempting to communicate assertiveness and unwilling to submit to male dominance. This is supported by the finding of higher scores on aggressiveness and assertiveness in the feminists.

4.6.5 Personality and interpersonal distance

Individual differences in preferred distance may be accounted for in a

number of ways in terms of the present framework.

No research appears to have been done on the effects of impairments of perceptual functioning such as short-sightedness and deafness, but it seems possible that there might be compensatory reduction in interpersonal distance in such cases.

Most findings on individual differences have focussed around the reward-punishment-arousal component. In section 4.4.3 the relation between early experience of social encounters as unpleasant and an enlarged buffer zone was mentioned, as was the relation between extraversion and close distances and higher levels of eye-contact.

Other studies have related larger buffer zones to emotional disturbance (Smith 1954; Higgins, Peterson and Dolby 1969; Duhamel and Jarmon 1971). Such results could also be due to early experience of social interaction as aversive, but possibly the inability to channel high levels of arousal into action is also involved, so that arousing interpersonal stimulation is avoided.

The large buffer zones of violent individuals (see section 2.3.1) suggest that they are extremely sensitive to arousal from proximity of others, but in these cases the arousal is easily diverted into violent behaviour.

4.6.6 Effects of sex

Research on the effects of sex on interpersonal distance has been briefly reviewed by Evans and Howard (1973) with a number of studies supporting the view that male-female pairs tend to stand closest, followed by female-female pairs and finally by male-male pairs. However in a study based on photographs of natural encounters, Heshka and Nelson (1972) did not find a very clear pattern, and there was an interaction between sex and degree of acquaintance, with male-male pairs actually standing closer than male-female and female-female dyads when interactors were strangers.

Explanation of the effects of sex, where they occur, can probably be made in terms of the reward-punishment-arousal system and impression management. In some cases a combination of these two systems can be seen to be operating.

One factor is that males may avoid giving the impression of sexual interest in another male because of the cultural taboo on homosexuality. Such a phenomenon is due to the impression management system mediated by the punishment mechanism, since individuals are conditioned to avoid giving the impression of being a homosexual.

Clearly in many cases there are strong approach factors in male-female pairs due to sexual attraction, but in many cases these may be balanced by avoidance factors due to excessive arousal being generated or the need to conceal one's sexual interest.

These examples make it clear that impression management is often likely to be mediated through the reward-punishment-arousal component since effective management of impressions is the product of a learning process.

4.6.7 Effects of culture

A number of studies have examined the effects of culture and race upon interpersonal distance. Many of these have used figure placement techniques and these will be discussed in Chapter 5. The pioneering studies of Hall (1955, 1966) used naturalistic observation, and he found that North Americans used larger distances than either Arabs or South Americans. He also distinguished between contact cultures in which there is no taboo against physical contact in normal encounter and non-contact cultures where there is, and argued that distances are greater in the latter. Watson and Graves (1966) confirmed that Arabs use greater distances than North Americans, and Watson (1970) confirmed Hall's hypothesis about contact and non-contact cultures using several cultural groups in each category (see section 6.1.3).

Close distances were found for South Americans by Baxter (1970). In the natural setting of a zoo, Mexicans stood closer than Anglos (presumably White English-speakers) who in turn stood a little closer than Blacks. Willis (1966) also found closer distances between Whites than between Blacks in America. Aiello and Jones (1971), however, found that middle-class White children used larger distances than lower class Blacks or Puerto Ricans in America. This

effect could be due to status, since Scherer (1974) found larger distances in middle than in lower class children.

In contrast to Hall, Forston and Larson (1966) failed to find any difference between the distances used by North and South Americans, and, in a study of poor areas in New York, Jones (1971) found no difference between distances used by Blacks, Puerto Ricans, Italians and Chinese.

Another finding that could be an effect of culture was noted by Roger and Schalekamp (1976). Their violent South African Coloured prisoners had larger body-buffer zones than the American prisoners of other studies. However, when the sensitivity of zone size to experimental technique is considered (see section 2.3.3), the evidence that this is a cultural effect is, perhaps, not strong.

Each of the four components of the present framework may, perhaps, mediate effects of culture on distance. Hall's theory that Arabs like to smell each other's breath was given above as an example of management of perceptual quality. Arabs also like to touch each other frequently, and this might perhaps be regarded as a case of accommodation to a physical constraint, since touching can only occur at close distances.

It seems likely that the preferred interaction distance of a culture is a norm that is learned. This involves the punishment component of the reward-punishment-arousal system, since individuals who fail to conform to the norm would be censured. The arousal component may also be important in cultural differences. Comparing the interaction styles of English and Arabs (see Collett 1971), it seems likely that Arabs prefer to operate at a much higher arousal level than the more phlegmatic Englishman, and thus appear rather excitable to the latter.

Once the norm is learned the impression management system plays a role in determining distance. Abnormally large distances will seem cold and withdrawn, while abnormally close ones will seem aggressive and pushy. Those familiar with cultural norms will adjust their distances to avoid giving the wrong impression in these respects.

CHAPTER FIVE

THE STUDY OF INTERPERSONAL DISTANCE BY MEANS OF FIGURE-PLACEMENT TECHNIQUES

5.1 FIGURE PLACEMENT APPROACHES TO INTERPERSONAL DISTANCE

5.1.1 Why figure placements?

Most of the studies of interpersonal distance reviewed in the previous chapter employed naturalistic observation of interactors, semi-naturalistic laboratory situations or the more contrived body-buffer zone type of experiment. However a large number of studies have not involved real interactors at all, but have employed figure placement techniques.

There are two reasons why this type of technique has proved attractive. Firstly, administration is more economical in terms of experimenter-time. This is particularly the case when a comparison is made with naturalistic observations, but even a buffer zone experiment requires at least two experimenters, whereas figure placements can be administered by one.

Secondly, the subject can be asked to represent a larger number of relationships using figures than he can in naturalistic or buffer zone studies. In a buffer zone study the nature of the object person can be manipulated, but this usually means having several different confederates to act as object person. The provision of different figures to represent people in different roles is far more economical.

5.1.2 Approaches to the use of figure placements

There have been three main approaches to the use of figure placements.

The first was that of Kuethe (1962a, 1962b, 1964, 1975; Kuethe and Stricker 1963; Kuethe and Weingartner 1964). Subjects in these studies placed felt silhouettes of both animate and inanimate objects on a felt board

in any way they wished. No induction was given that a social encounter was to be represented.

The second approach was that of Little (1965, 1968; Little, Ulehla and Henderson 1968), who explicitly had his subjects represent interpersonal encounters by placing pairs of three-dimensional dolls.

The third approach, which developed out of the work of Kuethe and Little, is essentially a simulation of the body-buffer zone experimental paradigm in which subjects are asked to represent themselves in interaction with various people having different relationships to them. The technique differs from that of Little in that subjects always represent themselves as one of the interactors.

Both in experiments using the buffer zone paradigm and Kuethe free placements sometimes both figures are placed by the subject, sometimes the self figure is fixed at the start, and sometimes the other figure is fixed at the start.

The figures placed have included silhouettes with a frontal or side view, dolls, and even gummed circles or squares. In other cases, subjects have moved a pointer or made a mark on a line. Often gummed figures, circles or squares have been stuck into booklets by the subjects. This method, as well as the making of marks on lines is often used for group administration. Some of these variations in method will be specifically referred to in the following sections. Some have been documented by Tolor (1975).

In addition to using free placement, Kuethe also developed a display reconstruction task. Subjects were shown two figures already placed. The figures were then taken down and handed to him, and the subject asked to reconstruct the original display. Under some circumstances systematic errors in reconstruction were found although not all experimenters have succeeded in replicating this effect (for a discussion see Kuethe and Tibbetts 1974).

5.2 THE STUDIES OF LITTLE

5.2.1 Effect of degree of acquaintance and setting

Although Little's work had its antecedents in the work of Kuethe, he was the first to relate the spatial positions in figure placements to the spatial

behaviour of real interactors.

In his first study (Little 1965), he had subjects represent three degrees of acquaintance in three settings represented by cardboard backgrounds. There was a strong effect of acquaintanceship with friends placed closer than acquaintances and acquaintances closer than strangers. Distances were larger with the office setting than with a street, but this was significant only for male subjects.

A second experiment replicated the above results, and showed the effect of setting was still obtained even without the illustrated background, the subjects simply being told what the setting for the encounter was.

The first two experiments used cardboard figures, but the quality of the figures was improved in a third study, and models made from black plexiglass were used. Female subjects represented the three degrees of acquaintance used previously in four settings. In a second phase of the experiment, the same subjects represented the same twelve situations by acting as 'theatre directors' and moving two actresses to represent them. Both with the dolls and with the actresses there was again a strong effect of degree of acquaintance, and distances in the office were larger than those in the other settings of street, campus and lobby.

5.2.2 Doll position and attitude congruence

In a second experiment, Little Ulehla and Henderson (1968) had subjects place figures representing either Johnson or Goldwater supporters in the presidential election. Goldwater-Goldwater pairs were placed closer together than either Johnson-Johnson or Johnson-Goldwater pairs. The authors argued that Goldwater supporters formed a fairly homogeneous ingroup and thus tended to have more in common than Johnson supporters who often only had aversion to Goldwater in common.

There was also an effect of degree of acquaintance, but this was stronger in the case of the Johnson-Goldwater dyads than in the other two cases.

5.2.3 A cross-cultural study

The third study (Little 1968) was a cross-cultural one in which university students from America, Sweden, Greece, Southern Italy and Scotland represented nineteen situations. It was predicted that the Mediterranean students would place the dolls closer than the other groups, and this was confirmed, although the Americans also had distances similar to those of the Italians.

Representations of male-male pairs by male subjects were placed further apart than female-female pairs placed by females, but only among the Italians and Greeks. For the Swedes there was no difference, while the female pairs had larger distances among the Americans and Scots. The effect of degree of acquaintance was found in all groups, and distances were closer when the conversation topic was pleasant rather than unpleasant.

Distances were larger for social-consultative encounters than for intimate ones in all groups, in support of the work of Hall (1966), and there was substantial agreement in all groups as to the order of the nineteen situations with respect to distance.

Finally, women represented interactions between superior and subordinate by greater distances than did males.

5.3 STUDIES WITHIN THE BODY-BUFFER ZONE PARADIGM

5.3.1 Introduction

A fairly large number of studies have been performed in which subjects represented themselves with various others. Several of these will be reviewed below to show the range of variables that has been examined, and the congruence that exists between figure placement data and data gathered by more direct methods.

5.3.2 Developmental studies

Carlson and Price (1966) and Estes and Rush (1971) examined free placements of figures using Kuethe's method (where no reference to actual social encounter is made) and found a development of patterns of response similar to that found by Kuethe.

In the study of Guardo (1969), children judged the degree of liking or acquaintance between interactors represented by figure pairs placed at different distances apart. Correlations between proximity and judged degree of liking or judged degree of acquaintance were high (around ,98). The author cites an unpublished study by Little and Ulehla in which similar results were obtained.

In the second part of Guardo's study, children traced a silhouette figure on to a page to represent themselves in interaction with a same-sex peer. Girls were found to place the figures closer than boys for interactions with their best friend and someone they liked very much, but further than boys for interactions with someone feared. Clear inverse relations between distance and degree of acquaintance and degree of liking were found. The largest distances were observed when the first figure represented "angry stranger" or "feared peer". In some situations there were a large number of back to back placements: 23 out of 60 for "dislike very much", 14 out of 60 for "angry stranger" and 13 out of 60 for "feared peer" suggesting that there is a strong tendency to avoid interaction with these types of person. In considering the relation between the figure placements and real spatial behaviour Guardo concludes:

> "The assumption of the correspondence between actual interaction distances and their figure placement measurement is indirectly supported by the fact that there is considerable comparability among Hall's Zone dimensions based on natural interactions, Little's interaction distances set by observers, and the present distances assigned by children."

In a second study, Meisels and Guardo (1969) used the same technique with children aged 8 to 15. The inverse relations between distance and degree of acquaintance and liking were again found in all age groups for male and female subjects with both same and opposite sex pairs (with a few small exceptions). They concluded that Hall's concept of personal space zones was as applicable to children as it was to adults. Girls used greater distances than boys with "feared peer" and "disliked peer" at all ages, and there was a tendency for distances to decrease with age except in positive affect situations with same-sex peers. Male distances with "feared peer" showed a marked decrease as they

grew older, presumably because of the development of active aggressive social strategies. Meisels and Guardo were able to relate developmental changes in distance schemata to data about social development in children in support of the general relationship between figure placement distances and actual spatial behaviour.

In a later study, Guardo and Meisels (1971a) concluded that the development of children's representations of interaction distances accorded well with expectations based on social learning hypotheses, particularly in the case of those relating to sex role identification. And in another study, Guardo and Meisels (1971b) examined directly the effects of the child's response to reward (praise) and punishment (reproof). Distances were closer when the parent was praising the child than when it was reproving it, a finding which replicated an unpublished result of Little. These latter findings can be interpreted within the terms of the reward-punishment-arousal system discussed in section 4.4 (especially 4.4.3).

The results of another study (Guardo 1976) were also interpreted in terms of the reward or punishment value of an individual for the child. Using sixth grade children as subjects, she found that distances were closer with peers described as outgoing, happy-go-lucky, intelligent and forthright, and larger with those described as emotionally labile and expedient. It was argued that the former were more attractive than the latter. Boys were more attracted to vigorous and assertive peers and avoided those who were apprehensive, while girls were attracted to tender-minded peers and avoided phlegmatic ones.

In another developmental study, Hamid (1975) found that with age boys showed increasing distance from a female peer, and that figure placement distances corresponded well with actual distances, especially in male subjects.

5.3.3 Children's response to body-build

In three studies, Lerner and his colleagues examined the distances at which children placed themselves towards peers of different body-builds. Using children between the ages of 5 and 9, Lerner (1973) found that distances were

larger towards a peer who was endomorphic (chubby) than towards a mesomorph (average[1]) or ectomorph (thin, except in the five year old group. The third grade children were retested a year later when in fourth grade, and comparable results were obtained. In addition stability coefficients were high, indicating consistency within individuals through time in their response to the three body-builds (Lerner, Karabenick and Meisels 1975b).

In a third study (Lerner, Karabenick and Meisels 1975a), distances towards the endomorph were again found to be largest, and this was found in the five year old group also. Again distances towards mesomorphs and ectomorphs were not significantly different, although the means for the ectomorph were actually larger in every grade. Distances towards the mesomorph were generally within Hall's intimate zone, those towards the endomorph were outside it. This was seen as reflecting the negative attitudes that have been found in other studies towards endomorphic children.

5.3.4 The Comfortable Interpersonal Distance scale

A few of the studies discussed above have required subjects to represent interpersonal distances in tasks in which one or both interactors was not represented by a figure but by a more abstract marker (Lerner 1973; Leginski and Izzett 1973; Kleck et al. 1968). If one is interested in establishing the usefulness of figure placement techniques, it is encouraging to find that the results of these studies are consistent with those in which figures more representative of human form are used.

Duke and Nowicki's (1972) Comfortable Interpersonal Distance (CID) scale involves just such an abstract representation of interpersonal distances. The subject is shown a figure of eight radiating lines each set at 45° to the one next to it. He imagines that he is at the focus of these radii and that at the end of each of the lines is a doorway. He is then asked to imagine that he

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[1]Although, in Sheldon's typology, there is normally a distinction between the mesomorphic or muscular and athletic physique and the average physique which has an equal balance of the features which are overemphasised in each of the three distinct types, Lerner and his colleagues refer to the average type as mesomorphic.

faces each doorway in turn and that through each doorway some specified person enters and approaches him. For each person he marks the radial line at the point at which he would prefer the approaching person to stop.

Despite the absence of any apparent reference for scaling by the subject, predictions of results of studies using this technique made on the basis of theories of how interpersonal distances are determined have generally been confirmed, and discussions of results post hoc in terms of these theories suggest that findings form a consistent pattern. For example, distances with a friend are smaller than those with a stranger and distances with a member of the same race smaller than those with a member of another race (presumably a person would generally be more familiar with members of his own race group). Larger distances were obtained towards high status individuals such as policeman, professor and university president, a finding which is consistent with previous findings of larger distances in unequal than in equal status dyads (Little 1968; Dean et al. 1975).

The absence of a common scale would not necessarily prejudice the results of effects involving within-subjects comparisons so long as each subject maintained his scale consistently. Between-subjects effects have also been examined with the CID, however. The effect of locus of control was examined by Duke and Nowicki (1972), who found that when representing strangers externals used larger distances than internals (see section 4.6.3), and Duke and Mullens (1973) found that schizophrenics had larger distances than other psychiatric patients who in turn had larger distances than normals. The result accords with those of other studies in which large distances have been found in schizophrenia, although such a finding is not always consistent (see section 4.2 and Tolor 1970 and Tolor and Reznikoff 1971).

In another study (Duke and Fenhagen 1975) it was predicted that delinquent girls, because of their generally hostile attitudes toward others, would be more external and would use larger distances than controls from others including parental figures. These predictions were also confirmed.

These findings suggest that even with this rather abstract representational

technique, subjects select a similar spatial scale as a basis for response. Otherwise predictions based on between-subjects comparisons would not be well supported.

5.3.5 Other variables relating to inter-figure distance

Leginski and Izzett (1973) played tape-recorded excerpts of people speaking in an intimate, personal, consultative and public manner, and had subjects indicate the expected interpersonal distance by placing a mark on a paper scale. Subjects' responses corresponded well to the four distance zones proposed by Hall (1966) for each type of interaction.

Comparable results were obtained by Edwards and Callender (unpublished). Here dolls were used, and distances were the same whether subjects heard the tape-recorded excerpts or were merely given a short description of the situation.

Levinger and Gunner (1966) confirmed the inverse relation between degree of acquaintance and distance found in other studies (see sections 4.6.2 and 5.2) and also found that distances towards a professor were larger than those towards a friend, although those towards a stranger were larger still. Naus and Eckenrode (1974), using Little's method, did not find an effect of acquaintanceship, although old-young pairs were placed further apart than young-young pairs.

Kleck, Buck et al. (1968) had subjects place a rectangle representing self in relation to another representing some defined other. Distances were smaller for liked professor than for disliked professor (confirming the findings on liking discussed above), smaller for friend than for stranger, and large distances were found with stigmatized individuals such as "amputee", "epileptic" and "ex-mental patient". The effect of stigma was also found in a laboratory study where subjects were found to place a chair further away from an individual whom they believed to have epilepsy than one not so stigmatised.

Spinetta, Rigler and Karon (1974) compared the figure placements of children dying of leukaemia with those of a control group of children who were chronically ill, but not dying. Subjects placed dolls representing doctor, nurse, mother and father in a replica of a hospital room. The dying children used

larger distances and this was taken as an indication of their sense of isolation from others.

5.3.6 Cross-cultural studies

Apart from Little's cross-cultural study mentioned above, a few other studies have employed figure placement tasks in a cross-cultural context.

Roger (1974) had Coloured prisoners represent themselves in interactions with another Coloured, a Black and a White. Although Roger did not report a difference in the distances of these three conditions, the writer reanalysed Roger's data using an appropriate factorial analysis of variance (the second factor was violent versus non-violent personality of subjects) and did find a significant effect of race of the second interactor. Distance towards a Black was significantly larger than that towards a White or a Coloured. This is the result actually predicted by Roger. Because of their position within South African society, Coloureds tend to identify with Whites and to shun identification with Blacks.

Also in South Africa, Roger and Mjoli (1976) compared simulated interpersonal distances of acculturated and unacculturated Xhosa males towards a thirteen year old boy, a peer and a chief. The acculturated subjects used smaller distances towards the peer and boy than the unacculturated ones, and used smaller distances with the peer than with the chief. While the acculturated subjects had their largest distance mean with the chief, the non-acculturated group had the smallest distance in this case. Angle of approach of the self figure towards these three figures was also measured, and the acculturated subjects were found to use a more direct angle.

Engerbretson and Fullmer (1970) had subjects represent six situations using silhouette figures. The technique was similar to Little's (1968) in that no figures were specifically referred to as 'yourself'. Subjects were male and female native Japanese, Hawaii Japanese and American Caucasians. Distances were significantly larger in the native Japanese group than in the other groups, suggesting that the Hawaii Japanese had become acculturated to

the American pattern. In all groups there were greater distances for encounters involving authority figures than for those that did not.

In Israel, Lanranz (1976) examined the doll placements of recent immigrant students from Argentina, Iraq and Russia. Subjects represented themselves with friend, stranger, Israeli and member of own culture. Friends were placed closer than strangers, with the other two cases intermediate. The Argentinians used the largest distances, followed by the Russians and Iraqis. This is perhaps surprising considering the close distances often attributed to Latin Americans (see section 4.6.7). The difference between friends and strangers was much larger in the Argentinian than in the Iraqi group.

5.4 FIGURE PLACEMENT IN THE STUDY OF CROWDING

A technique related to the above was devised by Desor (1972) to study crowding. Subjects placed pegs in a box to represent people in a room under various conditions. More figures were put in the same room when a partition was placed down the middle than when it was unpartitioned. Less than twice the number of figures were placed in a room twice the size of the first. More figures were placed in rectangular rooms than in square rooms of the same floor area, and more figures were placed in two door than in six door rooms. Desor argued that being crowded involves being in receipt of excessive social stimulation, and that the conditions which allow more figures per unit space are those which provide more protection from social stimulation.

Using the same technique, Baum and Davis (1976) found that more figures were placed in a light green than in a dark green room. Number of figures was not affected by presence or absence of pictures on the walls, or by whether subjects were representing an airport lounge or a cocktail party, although Desor had found that more figures were used in the latter case.

In a similar experiment, Paulus, Cox, McCain and Chandler (1975) found that prison inmates living with a large number of men per room placed less figures in the room than those housed at a lower social density. They suggested that inmates who were crowded experienced the condition as unpleasant and came to

value lower levels of crowding.

Edwards (1977) argued that higher crowding levels would be tolerated by subjects with a higher arousal-seeking tendency. However a zero correlation was obtained between perception of crowding using Desor's technique and a measure of arousal-seeking.

5.5 RELIABILITY AND VALIDITY OF FIGURE PLACEMENT TECHNIQUES

5.5.1 Reliability measures

A number of studies have examined the consistency of subjects' responses to figure placement tasks. With repeated measures experimental designs, a number of studies have found significant effects of individual differences (Little 1965; Edwards 1972a, 1973c, 1975) and Little (1965) obtained Spearman-Brown corrected reliabilities of ,81 for females and ,68 for males as a measure of the internal consistency of each subject across various doll placement conditions.

Lerner (1973) obtained test-retest reliabilities for a task in which children moved a marker to represent their preferred distance from another. These increased with age from ,4 for 4-5 year olds to ,7 at age 9. The nine year olds were retested one year later (Lerner et al. 1975b) and stability coefficients (comparing scores from the two sessions one year apart) ranged from ,3 to ,64 for different items. Within the later session test-retest reliabilities of ,91 were obtained. In a third study, in which a figure instead of a marker was used, Lerner et al. (1975a) found higher reliabilities than in the first, ranging from an average of ,63 for 5 year olds to ,91 for 9 year olds.

Using free placement of silhouettes, Tolor and Leblanc (1974) have reported a test-retest reliability of ,75 after a two week interval, and Guardo (1969) reported a test-reliability of ,84 for a task in which figures were pasted into books.

Pedersen (1973a) obtained test-retest reliabilities (with a one-hour time lapse) for simulated personal space measures using a movable profile figure, as well as for a 'live' body-buffer zone technique. Approaches from

different angles were used, as well as subject approaching object person and object person approaching subject. Most reliabilities for both simulated and unsimulated personal space were high, being above ,88 for three unsimulated measures and ranging from ,51 to ,91 for the simulated items, with most of the latter being above ,75.

Tolor (1975) computed correlations between distances of placements made under slightly different conditions. In the one, a gummed circle representing self was stuck next to circles representing each of a number of persons including policeman, father and friend. In the second, the circle representing each of these other characters was already fixed on the page and the self circle was stuck in by the subject. No specific induction that a social relation was to be represented was given, although most subjects reported that their placements reflected levels of interpersonal closeness for the relations in question. Correlations between self-other and other-self placements ranged from ,41 to ,90 with a median of ,84 for males and ,72 for females. Correlations between mean distance over all eight relationships were ,88 for males and ,82 for females.

Veitch, Getsinger and Arkkelm (1976) measured reliabilities for Duke and Nowicki's CID method (described in section 5.3.4). A split-half reliability (within session comparisons of same items) of ,95 was obtained, and test-retest reliabilities after sixteen months of ,47 for a same sex approacher and ,70 for an opposite sex approacher.

There is thus ample evidence that whatever the method used, there is considerable within-subject consistency in response to figure placement tasks.

5.5.2 Correlational studies of validity

Many studies of the validity of figure placement tasks have used the subject's own interpersonal distance preferences as a criterion. These have thus examined the question of whether an individual's figure placements are valid as an index of his proximity tolerance.

Rawls, Trego and McGaffey (1968) gave subjects a body-buffer zone task (four approaches from each of four angles) under both conditions of subject approaching the object person and vice versa. Subjects also performed a simulation of these conditions using figures. The correlation between each subject's means for the live and simulated task was ,70.

Haase and Markey (1973) used a buffer zone method in which subjects approached the experimenter and a figure placement task in which subjects placed a second figure on a board with another one. They were not asked to identify with the figure being placed. Here the correlation between tasks was ,56.

Roger (1974) used a buffer zone task and a simulation using dolls with Coloured prisoners in South Africa. Correlations of ,77 (violent prisoners) and ,72 (non-violent) were obtained. There were only 15 subjects in each group. Nevertheless the results provide good evidence for the relation between live and simulated tasks, although, while distances were larger in the violent prisoners with the live task, this difference was not significant with the simulated task.

Again with rather small numbers (thirteen in each group), Roger (1976) reported rank correlations of ,62 and ,60 between a live and simulated personal space task using Black female subjects.

Validities for the CID scale of Duke and Nowicki were obtained by Duke and Kieback (1974) using ten males and ten females, and comparing CID measures with a comparable live task. With a same sex stimulus, correlations were ,62 (front approach) and ,74 (rear approach) and with an opposite sex stimulus they were ,52 (front) and ,76 (rear). These values are rather larger than those reported by Hollender, Duke and Nowicki (1973) from an unpublished study by Martin. Using 80 subjects he obtained correlations of ,47 (male rear approach) and ,53 (male frontal approach).

Pedersen (1973a) obtained a correlation of ,42 between a buffer zone approach task and a simulation of it using profile figures. Figure placements which did not simulate the live task so exactly had lower correlations. There were 170 subjects in this experiment. In a second study (Pedersen 1973d) using 20 males and 20 females, he calculated correlations between 9 live measures and

9 simulated measures. For males the values were mostly above ,50 and ranged from ,11 to ,80. For the females only two values were significant and the range was ,10 to ,83.

The above studies suggest that figure placements provide a fairly good indication of how the placer would behave provided that the placement is an accurate simulation of the live task. Unfortunately, however, many of the studies have used rather small numbers, and studies using larger numbers would be of value.

Where simulated tasks are less comparable, lower correlations occur. Thus Pedersen (1973d) reported very low correlations between ,06 and ,20 between his figure placement task and the position at which subjects placed two chairs for himself and the experimenter to sit in.

Tolor and LeBlanc (1974) compared a buffer zone measure with Kuethe type free placements of silhouettes (with no indication that subjects should represent themselves) and Kuethe reconstructions (see section 5.1.2). For 72 males there was no correlation between the two figure tasks, or between buffer zone and reconstruction, and only a low correlation between buffer zone and free placement of ,28. For 35 females the only correlation between the three was between buffer zone and reconstruction distances.

In general measures which have a different character seem to yield low but often significant correlations (e.g. Haase and Markey 1973). Thus Edwards (1977) found low but significant correlations with a mean of ,24 between a simulated buffer-zone measure using dolls and Desor's measure of crowding perception in which subjects placed pegs in a simulated room.

Gottheil, Corey and Paredes (1968) obtained a surprisingly high correlation of ,40 between a task which involved having subjects place a magnet representing an interviewer in relation to one representing themselves and the actual nose to nose distance adopted towards the interviewer. However other studies that have compared tasks which are clearly not comparable such as those of Mallenby (1974) and Dosey and Meisels (1969) have found very low values.

Doll placements made using Little's technique, where subjects do not

represent themselves, do not appear to be strongly related to an individual's behaviour in a body-buffer zone experiment. Thus Little (personal communication) found no relationship between doll distances and subjects' own behaviour. The writer, in an unpublished study, gave a body-buffer zone task, a doll placement task, and a mime task. In the mime task subjects stood in relation to an experimenter to show how they would stand to talk to him. Emphasis was not only on distance but on posture and gesture. Interactions with friend and stranger were mimed. In the doll placement task, subjects represented three degrees of acquaintance. The highest correlation was between mime and doll placement (,67). Mime and buffer zone correlated only ,35 and doll placement and buffer zone only ,25 (which was not significant).

On the other hand, when Little (1965) compared doll placements with a comparable live task (in which subjects moved actresses on a stage) the correlation between the two was ,77. This shows that a person's expectations about how people stand in different situations can be measured comparably either by doll placement or by movement of real persons.

There are obviously many aspects of an individual's response to distance. Although correlations of a low order do appear to exist between measures of spatial behaviour in different situations, buffer zone measures do not provide a very strong index of actual behaviour in diverse situations, whether the former are simulated or live, and doll placements using Little's or Kuethe's methods even less so.

However the individual's own spatial behaviour is not the only possible criterion of validity for figure placement tasks. Schaeffer and Higgins (1976) obtained correlations between the distance at which subjects set particular children on Duke's CID test and sociometric ratings of the children by their peers. A correlation of -,80 indicated that children saw themselves as interacting more closely to more liked and popular children.

5.5.3 Comparability of figure placement data and real life

Another criterion for the validity of figure placement methods is whether

the determinants of interpersonal distance in real life are adequately reflected in the way distances between figures are determined. Evidence for this type of validity is strong. Much of it was presented in sections 5.2 and 5.3 where figure placement studies were described in some detail. There many hypotheses derived from knowledge about real distances were confirmed in respect of figure distances, and patterns of figure distances were generally interpreted within the framework of concepts developed for the understanding of interpersonal distance regulation.

Other studies which have noted the concordance between figure placement data and real life have been those of Veitch et al. (1976) who compared the smaller distances of females than males on the CID with that found in a number of observational studies, and Adler and Iverson (1975) who showed similarities between pattern of response to a figure placement task and earlier findings with live measures (Adler and Iverson 1974), in an experiment in which status, and validity of praise directed towards an individual were manipulated.

There seems to be no doubt, therefore, that the same variables which act to determine interpersonal distances act in the same way to determine the distances between figures. However, because doll placements are not necessarily reflections of an individual's own proximity tolerance, an account is required of how they are in fact related to real life distances. Such an account will be offered in Chapter 7.

CHAPTER SIX

THE INTERPRETATION OF DOLL ORIENTATION

6.1 THE RELATION BETWEEN BODY ORIENTATION AND GAZE REGULATION

6.1.1 Introduction

In the analysis of figure placements in which dolls are used, not only distance measures, but also measures of doll orientation can be examined. Since doll orientation is related to the perception of the amount of direct gaze the individual represented by the doll is engaging in, a discussion of the relation between body orientation and the regulation of gaze direction in real encounters will be presented first.

Although Hall (1963) included body orientation in his list of non-verbal variables for observational recording, it has not received such widespread investigation as interpersonal distance and eye-contact. This is largely because determination of body orientation in encounters is determined to a great extent by the strength of the need for direct gaze. In addition, Mehrabian (1969) noted that body orientation did not have such a strong relationship to immediacy as touching, distance, eye-contact and forward lean.

6.1.2 Mehrabian's studies

Body orientation was examined in a number of studies by Mehrabian and his colleagues. Mehrabian (1968a) had subjects show how they would stand in relation to an imaginary other represented by a hatrack. Subjects almost always had head and shoulders oriented in the same direction (r = ,93), and direct orientation was associated with direct gaze, but less strongly (r = -,41). Similar results were obtained by Mehrabian (1968b) and Mehrabian and Friar (1969). Mehrabian and Williams (1969) had subjects role-play different degrees of persuasiveness towards an addressee. Less direct orientation was associated

with less immediate patterns of behaviour, but not related to the degree of persuasiveness being role-played. In another part of the study, however, speakers with less direct shoulder orientation (30°) were rated as more persuasive than those with direct orientation. Possibly the less direct orientation was seen as less aggressive and therefore not so likely to provoke reactance (see Albert and Dabbs 1970).

The impression created by orientation of shoulder and body was also examined by Mehrabian (1967). Pairs of subjects listened to an experimenter talking to them for two and a half minutes. The experimenter's body and head were oriented primarily towards one of the subjects. Subjects judged that he had a more positive attitude towards the subject towards whom he was oriented. When the effects of head and body orientation were separated, with head orientation being maintained towards one subject and body orientation towards the other, head orientation was found to be the strongest communicator of positive attitude. It is not clear, however, whether the amount of direct gaze towards the two was controlled. It seems likely that this would have been difficult since the three were sitting in a triangle with chairs six feet apart. It is possible that the variable of importance was therefore the amount of direct gaze rather than the orientation of the head.

6.1.3 Cross-cultural studies

Hall (1966) noted that Arabs are uncomfortable in encounters if they cannot maintain a direct body orientation. As a result they find it difficult to walk and talk at the same time (p.150). The preference of Arabs for direct body orientation was demonstrated in laboratory studies by Watson and Graves (1966) and by Watson (1970).

Watson and Graves observed informal discussions between pairs of either Arabs or Americans and scored interpersonal distance, body orientation, eye-contact, touching and voice loudness. Significant differences between Arabs and Americans were found on all categories with Arabs facing each more directly, engaging in more eye-contact, sitting closer, talking more loudly and touching

each other more.

Watson (1970) extended this research to members of other nationalities who were currently studying in America at the University of Colorado. The nationalities represented three "contact" and three "non-contact" cultures. In the former, physical contact between individuals during interaction is normal while in the latter it is avoided except in formal situations such as the handshake or under conditions of intimacy. The three contact groups were Arabs, South Americans and Southern Europeans (from Italy, France and Turkey). The three non-contact groups were Indians and Pakistanis, Asians (from China, Indonesia, Japan, Philippines and Thailand) and Northern Europeans (from Australia, England, Germany, Netherlands, Norway, Scotland and the USA).

The contact groups faced each other more directly, touched each other more and engaged in more eye-contact than members of the non-contact cultures. Within the contact and non-contact groups there were no significant differences on any of these variables. The contact subjects also sat closer than the non-contact subjects with the exception of the Indians and Pakistanis who had distances which were even closer than those of the contact Latin Americans.

The data suggest the close relation between body orientation and eye-contact. Groups who engage in high levels of eye-contact facilitate this by adopting direct orientations. This relationship between orientation and eye-contact is supported further by findings relating the two variables to degree of friendship in the non-contact groups. On the basis of the results of interviews with the participants, Watson writes (of the non-contact subjects):

> "Many said that the better a person knows another the less important directness and eye-contact are, and the better a person knows another the closer he will interact with him."

These observations were confirmed in the experiment, where greater degrees of friendship were associated with less direct orientations, less eye-contact and closer interpersonal distances. They also confirm the inverse relation between eye-contact and proximity discussed above (section 3.1.2). Increase in orientation directness, presumably corresponding to the increased use of direct gaze, as distance is increased is regarded as the norm by Porter, Argyle and

Salter (1970). The same effect was demonstrated by Pellegrini and Empey (1970), whose subjects placed chairs for themselves to sit in while describing themselves to a same sex experimenter. Females sat closer than the males and also placed their chairs at larger angles. Both for males and females significant negative correlations between chair distance and chair angle were obtained.

6.2 STUDIES OF SEATING POSITION

6.2.1 Sommer's studies

Studies of seating position like that of Pellegrini and Empey just described generally confirm the relation between orientation and gaze regulation. These studies were developed by Sommer in the U.S.A.

In the first (Sommer 1959), he observed students seated in pairs at tables in a dining hall. For those sitting in adjacent chairs, it was found that interactions were more frequent between those sitting round the corner of tables than for those sitting opposite or side by side. In a laboratory study, where subjects chose a seat in relation to an already seated other person side by side positions were avoided except where both individuals were female.

In a later study observations were made during non-eating hours in a student cafetaria (Sommer 1965). Once again a preference for round the corner seating was found on the part of interacting dyads, followed by opposite seats; side by side positions were least preferred.

An indirect method of studying seating position by means of a questionnaire was also reported in this paper. Six seating arrangements at a rectangular table were shown and subjects were asked to select their preferred arrangement supposing they were with someone else engaged in each of four activities. When the activity was a conversation, round the corner and face to face positions were about equally chosen with side by side positions being infrequently selected. For cooperative work a side by side position was most popular because it facilitated sharing things. For separate study various distant arrangements were preferred although a third chose opposite seating and for competing face to face seating was most popular.

The results of this study were interpreted by Sommer on the basis of the differential needs for eye-contact in the various situations. High levels of eye-contact are appropriate under competition and many subjects said that competition was stimulated under these circumstances. This accounts for the preponderance of face to face choices. In the case of the separate study condition several subjects said that the distant arrangements they chose allowed staring into space rather than into the face of the neighbour.

Using a similar seating position questionnaire technique, Lott and Sommer (1967) studied the relationship between seating choice and status. There was a tendency for the position at the head of the table to be associated with the high status interactor. In the case of square tables, round the corner choices were more common for equal status pairs and face to face choices for unequal status pairs. Possibly the need to monitor the face of the other is more important where there is a status difference because of the competitiveness implied by that difference (but see Jorgensen 1975 for the opposite effect).

6.2.2 Cook's study

Sommer's 1965 questionnaire study was replicated in Britain by Cook (1970). A non-university group chose face to face and round the corner positions about equally often for a conversation, as had Sommer's subjects. University students, on the other hand, showed a distinct preference for round the corner seating. Cook suggested that the students avoided the high-eye-contact face to face position in order to keep the emotional level of the encounter low.

In a second questionnaire study reported in the same paper, subjects chose seating positions for encounters that were either hostile or friendly, and where motivation to interact was either high, medium or low. He argued that as motivation increased subjects would choose positions which were physically closer and which facilitated eye-contact.

The results confirmed the prediction. With low motivation to interact distant positions at the table were chosen. With medium motivation the most popular choices were round the corner in the friendly condition and distant

face to face in the hostile condition. In the high motivation condition in the friendly situation ("sitting with your boy/girl friend") the side by side position was most chosen. This facilitates physical contact at the expense of eye-contact. In the hostile condition ("with same-sex person, expecting to have an argument") the close face to face positions were preferred. Cook argued that this was because of the tendency to maximise eye-contact in this situation, particularly because of its threatening nature.

Cook also found some differences in the choices of extraverts and introverts. Over several situations extraverts chose the opposite and side by side positions (which maximise either physical or eye-contact) more often and the distant and round the corner positions less often than did the introverts. This is related to greater tolerance of and need for stimulation of extraverts (see section 3.4.5).

6.2.3 Cross-cultural studies of seating position

Two cross-cultural studies have employed seating position questionnaires. Sommer (1968) had college students from five countries rate 37 seating configurations at tables of various shapes for the degree of intimacy they represented. The subjects were from the United States, England, Holland, Sweden and Pakistan. The rank order of closeness was identical for all five countries. There were no differences between Americans, English and Swedes in their intimacy ratings. The Pakistani subjects rated face to face positions as less intimate than did the other groups because of its association with arguments and conflict while Dutch subjects rated round the corner configurations as less intimate than did the other groups.

Ingham (1974) gave a revised version of Sommer's (1965) questionnaire to Swedish and English subjects. There was a significant tendency for Swedes to prefer face to face positions where round the corner positions were preferred by the English subjects. Ingham suggests that Sweden is a "shame" culture where evaluation of the other's social behaviour and response to the other's evaluation of oneself play an important role in social interaction. Thus the greater

opportunity for visual feedback afforded by the face to face position may account for the Swedes' preference for it.

6.2.4 Conclusions

The general conclusion from these studies is that the choice of seating position commits the chooser to a body orientation relative to another which constrains his ability to engage in or avoid eye- or physical contact, and that therefore choices are made on the basis of the chooser's expectations about the extent to which he will want to engage in or avoid eye- or physical contact during an encounter. They thus support the general argument of this section that body orientation is regulated in relation to need for and tolerance of eye-contact.

6.3 ORIENTATION PATTERNS IN FIGURE PLACEMENTS

6.3.1 The Gerber and Kaswan study

Figure placement studies using silhouettes do not provide orientation measures. Even in cases where upright dolls have been used, however, the angles of the dolls are seldom examined in detail. Apart from studies by the writer, only two analyses of doll orientation have been reported, neither of which throws much light on the issue of its interpretation.

Gerber and Kaswan (1971) had groups of four dolls representing mother, father and two children placed by each member of a four person family in which one child had learning difficulties. Each subject made five placements of the four figures to represent families that were happy, loving, worried, sad and angry.

In the analysis of distance, all pairs of distances between dolls were summed. Distances in loving and happy families were closer than those for worried or angry ones. Distances were unaffected by which family member made the placement.

In the analysis of the angles at which the dolls were placed, two techniques were used. In the first, the orientation patterns were divided into

three categories. In Type I, the figures formed a single group. In Type II, they formed two subgroups. In Type III there was one subgroup or none at all and the figures were isolated from each other. Type I patterns were most common in representations of the loving family, Type II patterns were typical of the worried and sad families, and the angry family was represented by Types II and III. The child with learning difficulties did not differ from his sibling in the patterns used.

The second method of categorising the orientation patterns was in terms of interpersonal focus. Each pair of dolls in a placement was classified into one of four categories according to whether arrows indicating the direction in which the doll faced (a) intersected within the family circle, (b) intersected outside the family circle, (c) were parallel or (d) diverged. It was found that category (a) was used less for the sad family than for the others. Category (b) was equally frequent for all emotions represented. Category (c) was used less for the angry and worried families, and category (d) was used more for the negative emotions than the positive ones.

Two findings in this study distinguished the patterns used by different family members. Parents tended to group the figures as a unit more than did the children, and the children with learning difficulties tended to orient the figures away from each other when representing sad and angry families more than did the controls.

6.3.2 Roger and Mjoli's study

Doll orientation was also examined in a study of Roger and Mjoli (1976) using doll pairs. Acculturated and non-acculturated Xhosas placed dolls to represent themselves standing in relation to boy, peer and chief. The angle measure was that between the boy, peer and chief and the axis between the two figures. This was taken as the angle from which the subject saw himself as approaching. Whether the subjects placed the self doll at a direct angle or not was not made clear. The finding that the non-acculturated group had a mean angle of 23,5 while that of the acculturated group was only 9,3 is thus rather

difficult to interpret. A possibility is that subjects in these groups may have sometimes represented the figures as walking along side by side, as has been found to occur by the writer quite often among the Xhosa. The results may thus only reflect greater use of this pattern by the non-acculturated group.

6.3.3 The interpretation of schematic orientation asymmetry

In an experiment designed to examine the relation between body orientation and regulation of gaze direction, Edwards (1974) had subjects judge a set of small figure pairs mounted on cards in asymmetrical orientations. A description of an interaction was read to the subject in which two characters were described, and the subject had to identify one of the characters from the card he was judging.

The descriptions were chosen because one of the characters was expected to be seen as engaging in more direct gaze than the other, and it was expected that subjects would tend to identify the more directly facing figure on the card with the character expected to have more direct gaze.

The interaction descriptions read as follows:

Condition 1: "One of these figures is begging a favour from the other but the other does not wish to grant the request. Which one is asking the favour?" It was predicted that the figure in the more direct orientation would tend to be chosen.

Condition 2: "One of these figures is angrily reprimanding the other for some fault. The other is ashamed and cannot think of anything to say. Which is the angry one?" Again it was predicted that the figure with the more direct orientation would be chosen.

Condition 3: "These two people are having a conversation. One of them is afraid of the other. Which one?" In this case it was expected that the less directly facing figure would be chosen.

Condition 4: "One of these people enjoys the company of others, is warm and friendly, and likes to establish close personal relationships and be popular. The other is quiet and shy and does not make friends easily. Which is the warm

and friendly one?" In this case it was predicted that the more directly facing figure would be selected.

The figures used, though small, provided cues from their posture, gesture and facial appearance which were also shown to effect choices. Nevertheless the orientation cue was shown to be a strong determinant of choices, in each case in the manner predicted.

Since the predictions were based on an assessment of the eye-contact need and tolerance of the individuals described, the results supported the hypothesised relation between figure orientation and gaze regulation.

6.3.4 The determinants of orientation asymmetry

In a second experiment (Edwards 1973c) three situations were described in which two interactors were expected to have similar need for and tolerance of direct gaze, and three in which one was expected to have a high level of direct gaze and the other a low. This study, with White students, was later replicated with three Xhosa groups, and will be described in more detail in Chapter 13.

The main finding was that doll orientation patterns were predominantly symmetrical in the first case and asymmetrical in the second. In the latter case the low eye-contact interactor was consistently represented in the less direct orientation.

The experiment thus strongly confirmed the view that an individual's expectations about the visual behaviour of an interactor act as a strong determinant of the angle at which a doll representing that interactor is placed.

6.3.5 The effects of anxiety versus confidence on doll position

In a third experiment (Edwards 1975), the effect of an individual's confidence or lack of confidence on the way he would be represented by a doll placement was examined. Subjects placed a doll who was either trying to dominate a disliked person or trying to gain the approval of a liked person, who was either strongly or weakly motivated, and who was either confident about his ability to succeed or anxious and uncertain. Only one doll was placed,

the other being set at 15° to the inter-figure axis.

Because of the need to avoid high arousal when faced with indecision and lack of a clear outlet in activity (see section 4.4.4) it was expected that the doll would be at a more direct angle in the confident condition. This effect was confirmed, and angles were 17° larger in the anxious than in the confident condition. Doll orientation was not affected by the other two variables.

Distances were larger in the anxious than in the confident condition, and larger in the case of trying to get the approval of a liked person.

6.3.6 Conclusions

The three experiments of the writer's described above formed the basis of his Master's thesis (Edwards 1973b). There the conclusion was reached that doll orientation can be interpreted in terms of the known determinants of gaze direction. Direct orientations are used to represent interactors of whom high levels of eye-contact are expected, while less direct ones are employed where lower levels of direct gaze are expected. A strong theoretical base is thus provided for the interpretation of orientation measures obtained from free placements of pairs of dolls.

CHAPTER SEVEN

SOCIAL SCHEMA: THE COGNITIVE BASIS OF THE SUBJECT'S RESPONSE TO THE DOLL PLACEMENT TASK

7.1 SOCIAL SCHEMA ACCORDING TO KUETHE AND LITTLE

It was pointed out at the end of Chapter 5 that the subject's own response to a body-buffer zone situation is not the only criterion against which his figure placements can be validated. The fact that the determinants of distances in the doll placement are the same as those that operate on real life distances is itself a powerful argument for their validity. However an account is clearly required of how figure placements come to have this validity, and the present chapter discusses the cognitive basis of the subject's response to the figure placement task.

In interpreting the results of his early figure placement experiments, Kuethe (1962a) supposed that the patterns in which the figures were placed reflected the expectations which people have about social organisation and order. These expectations he called 'schemata', and were conceptualised as cognitive organising systems based upon the individual's social experience. He argued that the highly constrained nature of the patterns in which the figures were placed was due to the fact that members of a single culture, exposed to the same range of social experiences, all developed a similar set of schemata that served to organise responses to the figure placement task.

Kuethe argued that the generalised expectations embodied in the schemata were relied on particularly in ambiguous situations or where information was scarce. For this reason his instructions to subjects were always vague, allowing them to place figures in any way they pleased. In such a situation he saw the schemata acting as 'unit-forming' principles, and serving to give order to the response in much the same way as the principles of grouping, discovered by the Gestalt psychologists, structure ambiguous perceptual displays.

Kuethe saw the schemata as embodying a person's general expectations about social behaviour. He did not stress spatial behaviour in particular because he saw responses to the figure placement situation as being determined by a wider range of social expectations as well. For this reason, in his studies, measurements of distances between figures did not always play the major part, and much of the analysis was of the order and pattern of several figures placed together.

For Kuethe, schemata can be more abstract than expectations about spatial relations in social encounters. He suggested that 'people belong together' was just such an important schema and wrote,

> "The schema that people belong together and that nonhuman objects should not intervene has its parallel in the tendency of subjects to assume an affinity between people. Man's social nature is revealed by his readiness to assume that the relationships existing between people are primarily positive, and that interaction, rather than isolation, is the rule."
> (Kuethe 1962a p.37)

In implying that placing figures together suggests an expectation that people will interact, he does not rule out the possibility that the positions of the figures reflect their expected spatial behaviour. However, he implies that schemata that are not essentially spatial may be represented spatially by means of figure placement, and although several workers have related the schemata obtained with Kuethe's felt board method to the spatial behaviour of real interactors (e.g. Fischer 1968; Lewit and Joy 1967; Holohan and Levinger 1971) it is perhaps significant that even in recent papers (Kuethe 1975; Kuethe and Tibbetts 1974) Kuethe himself has not related his findings explicitly to the interpersonal distance literature.

This relationship was first made explicit by Little (1965). For him the schemata being tapped are specifically spatial and give rise to 'reproduced interaction distances between individuals' (Little 1968 p.2). In contrast to Kuethe's unstructured task, therefore, Little had his subjects represent people in specific situations so that they looked natural for the situation in question.

The approaches of Kuethe and Little need not be seen as incompatible. The studies reviewed in Chapter 5 show that many aspects of an interpersonal relationship or situation are reflected in their spatial relationships with each other during an encounter. The more abstract schemata upon which Kuethe has focussed,

therefore, can be seen as being mediated by the spatial schemata studied by Little.

Possibly Kuethe's position should serve as a warning that the subjects' responses to the figure placement task may sometimes be determined by schemata that are not primarily spatial in nature and that are not necessarily translated into spatial terms in real encounters. Nevertheless the evidence that true spatial schemata are what is predominantly being tapped by the task is strong; otherwise the prediction of doll position from knowledge about human spatial behaviour would not be as successful as it usually is.

7.2 THE CONCEPT OF SCHEMA IN PSYCHOLOGY

7.2.1 The concept of schema in Piaget

The widespread use of the concept of schema in psychology arose from the work of Bartlett in Britain and Piaget in Switzerland. Bartlett (1932) introduced the term as a central part of his theory of remembering, while for Piaget the schema is the fundamental system for the organisation of all aspects of behaviour (Flavell 1963). In French, Piaget uses the term schème, not schéma, but the former is normally translated as 'schema', and its meaning is essentially the same as it is in Bartlett, as will be shown.

Flavell (1963 p.52) has defined schema in Piaget as

> "... a cognitive structure which has reference to a class of similar action sequences, these sequences of necessity being strong, bounded totalities in which the constituent behavioural elements are tightly inter-related."

It is thus a complex controlling structure within the organism which is responsible for the smooth directed flow of organised behaviour.

An important aspect of schemata is their hierarchical structure. This means that a hierarchy of schemata can be seen as controlling a given action sequence, with the specific details of fine adjustment being controlled by schemata low in the hierarchy and more general aspects by schemata at higher levels.

A modern statement of the Piagetian theory, is Miller, Galanter and

Pribram's (1960) concept of 'plans' which are in effect simple regulating systems incorporating a negative feedback loop. These too are seen as hierarchically ordered and responsible for the directed nature of behaviour.

7.2.2 The concept of schema in Bartlett

At first sight, Bartlett's use of the concept of schema seems rather different from that in Piaget. Bartlett (1932) took the term from the neurologist Head, who used it in his account of how individuals can know the positions of their limbs without looking at them. According to Head, information from sense receptors in the limbs was used by the brain to form 'organised models of ourselves which may be called schemata' (Head 1920 cited by Bartlett 1932 p.200).

Similarly, Bartlett suggested that all experience is organised into a complex set of schemata which constitute a model of the world for the individual and embody his expectations about the order of things. His classic experiments on memory showed how, in recall, the original information, whether in the form of picture or story, was modified to become more like material familiar to subject's own experience. The effect was particularly marked with material from a culture whose patterns of thought were different from those of the subject.

Bartlett argued that in normal remembering the original stimulus was largely reconstructed on the basis of the schemata, and built out of a general impression of the original which was all that was actually retained. He wrote,

> "Suppose an individual is confronted by a complex pattern (to recall) ... (he) does not normally take such a situation detail by detail and meticulously build up the whole. In all ordinary instances, he has an overmastering tendency simply to get a general impression of the whole, and on the basis of this he constructs the probable detail. Very little of the construction is literally observed, and, often, as was easily demonstrated experimentally, a lot of it distorted or wrong as far as the actual facts are concerned. But it is the sort of construction that serves to justify the general impression." (p.206)

Thus the schemata constitute an organised system of expectations about the patterns of things which provide a basis for an economical system of memory in which access to all the details of the original was not required.

The weakness of such a system, as Bartlett showed, was its inability to capture material that formed an unfamiliar pattern in such a way as to render

it in its original form. Bartlett demonstrated this with his method of serial reproduction, in which subjects were presented with reconstructed versions of a picture made by other subjects. Using a series of subjects, a stylised Egyptian owl gradually became a more familiar domestic cat.

Kuethe used the same method in his reconstruction task, and a comparable phenomenon occurred, with a distance between two figures that was originally very large gradually diminishing from subject to subject until the two figures were together (see section 5.1.2).

7.2.3 Schema as image versus schema as plan

For Bartlett, therefore, the schemata constituted what he called 'an organised mass' of stored information which could be used as a basis for recall, while for Piaget the schemata are a system for the control of response. The work of these two writers thus draws out a static and a dynamic aspect of schematic organisation.

In Bartlett the schemata are something stored in a particular form, which constitute an individual's model of reality. It is not static in the sense that it is unchanging, but in the sense that it is there to be operated on by the mechanisms of recall.

In Piaget, however, the schemata are themselves operating systems controlling behaviour, whether the behaviour in question is overt (grasping a toy) or covert (solving a problem). Thus the two uses of the same term seem to correspond well to the distinction made by Miller, Galanter and Pribram (1960) between 'image' and 'plan'. For these writers, the image is an individual's model of the world, while the plan is his way of operating on or responding to reality.

Lunzer (1968) makes the same distinction by using the word 'schema' for the model of reality and the word 'strategy' for the operating system. But he points out that the distinction is not in fact a real one, but rather one which reflects the point of view of the theorist. For Lunzer, talk about schemata is talk about 'the potential activation of strategies' and focus on schemata (in

his sense) is focus on 'the connectivity of various centres that are involved in strategies'.

For Lunzer, then, an individual's cognitive processes are schemata when seen from a structural point of view but strategies when seen from a functional point of view. He uses an analogy from electronics:

> "The strategy may be likened to the flow of current in any phase of the operation of the machine. The schema is the wiring diagram itself." (p.187)

Lunzer's conclusion that no distinct dividing line can be drawn between an individual's schemata as his model of the world and his schemata as organised ways of responding to the world was also anticipated by Miller, Galanter and Pribram, despite their own similar distinction between 'image' and 'plan'. They defined the 'image' as "all the accumulated, organised knowledge that the organism has about itself and its world" (p.17), but such a definition goes beyond that of a mere map of spatial and temporal relationships, and includes ... "everything the organism has ever learned - his values as well as his facts" (p.18). This means that the 'image' implies a way of responding, that is, it implies a plan. Similarly, the plan, since it can be learned, must form part of the image.

For Bartlett, remembering involved processing information in a certain way when it arrived, and then carrying out another set of processes on the result of the first process in order to reconstruct it. Thus the material is retained in the form of schemata, not so much because of the way it is stored but because of the way it is laid down and retrieved. The initial processing of the information and its retrieval can be regarded as a set of coding operations that are reversed on retrieval (Oldfield 1954). The coded material only acquires its significance because of the way in which it can be decoded. Thus memory schemata incorporate not only the coded form of the original material, but also the sequence of operations required for effective retrieval. The key to Bartlett's theory is thus the way information is processed, that is, the sequence of operations that are performed on it.

That Bartlett's theory of schema implies a particular way of organising a

sequence of operations is clear, when it is recalled that he used the theory not only as a model of remembering, but also in his analysis of the nature of skilled behaviour (Bartlett 1958; Schmidt 1975). Here the fact that Bartlett and Piaget are using the term in the same way becomes clear when it is seen that Bartlett applied the same analysis to a sensory-motor skill such as hitting a ball as to a cognitive skill such as thinking.

7.2.4 Minsky's frames

Minsky (1975) has offered a reformulation of Bartlett's theory of schemata which he believes is sufficiently exact to form the basis for computer simulations of human cognition. On the other hand, it is also sufficiently flexible to provide a model for such diverse operations as tracking the changing image of a cube as it rotates, knowing what goes on at a children's party and understanding the nuances of a short fable.

The central feature of Minsky's theory is what he calls a 'frame', which is similar to what Bartlett calls a schema. Minsky defines a frame as,

> "... a data structure for representing a stereotyped situation, like being in a certain kind of living room or going to a children's birthday party." (p.212)

A frame must be mobilised if any situation with which one is confronted is to be understood, and the frame that is mobilised will determine how the incoming information will be processed, what expectations will be entertained about it, what categories and discriminations are likely to be made.

A frame is sufficiently general in nature to allow for the perception of any number of different events within a general class. Thus a person's frame for a football game would be able to accommodate any of the infinite number of possible events that counts as a game of football, since the expectations embodied in the frame will be met by all these games even though each is different from the other.

Like Bartlett's schemata, frames are organised in a hierarchical structure, with those at the top of the hierarchy being more abstract and those nearer the base involving more specific expectations about details. To allow

for the cognition of the detail of specific situations, each frame has a number of empty slots or 'terminals'. Each terminal may take one of several different values or 'assignments' according to the details of the specific information being cognized at any time.

In Minsky's own words,

> "We can think of a frame as a network of nodes and relations. The 'top levels' of the frame are fixed and represent things that are always true of the supposed situation. The lower levels have many terminals - 'slots' that can be filled by specific instances of data. Each terminal can specify the conditions its assignments must meet. (The assignments themselves are usually smaller 'subframes'.)" (p.212)

Minsky suggests that in a case where the data do not determine what values shall be assigned to the terminals of a frame that is currently being employed, a value will be assigned by default from a hierarchy of possibilities that are stored with the frame. He gives a simple example:

> "Thus, if I say, 'John kicked the ball', you probably cannot think of a purely abstract ball, but must imagine characteristics of a vaguely abstract ball: it probably has a certain default size, default colour, default weight ... in any case your image lacks the sharpness of presence because the processes that inspect and operate upon the weakly bound default features are very likely to change, adapt or detach them" (p.228).

Such a theory can account for the ability to understand situations that are unexpected and new. An old frame is selected that is at least partially appropriate, and adapted to meet a new situation. The frame is not conceptualised as necessarily static. Apart from the flexibility it derives from being able to take different assignments at its terminals, the adapting of old frames and the making of new ones to meet new data (Piagetian accommodation) is a basic cognitive process. On the other hand, provided that most incoming information is effectively handled by available frames, the occasional unusual information may become distorted by being assimilated to frames that are not entirely appropriate.

7.3 A MODEL OF THE COGNITIVE BASIS OF THE SUBJECT'S RESPONSE TO THE FIGURE PLACEMENT TASK

7.3.1 Minsky's frames and social schemata

In terms of Minsky's model, Kuethe's and Little's concept of social schema

can be filled out in the following way. When a person is presented with a figure pair and asked to represent a certain situation, a hierarchy of frames is mobilised that embodies his expectations about behaviour between persons of the type being represented in the specified situation. The less specific is the experimenter about whom or what is to be represented, the more will the subject rely on the default assignments that he has available for the terminals of the frame system.

One set of terminals within a system of frames for cognizing social encounters will have assignments which specify the spatial arrangement of the interactors, and depending on their values the latter will be perceived or imagined to be sitting or standing, facing each other or away from each other, and standing close or far. When a person is asked to place a pair of dolls, the experimenter is asking for values to be assigned to these terminals and for these values to control the spatial positioning of the dolls.

Since the default assignments for terminals are likely to embody the assignments that have arisen most frequently in the subject's experience in the past, the way in which he places the dolls will be determined to some extent at least by the patterns of spatial behaviour with which he is familiar.

One feature that must be added to Minsky's model is that there must be some interdependence of mechanisms that assign values to terminals. The a priori probability that a terminal will have a particular value will depend upon the values assigned to other terminals.

For example, how people arrange themselves spatially depends upon such variables as their degree of liking and the formality of the encounter. If a person is asked to imagine a situation in which two people like each other he envisages a closer distance than if he imagines a situation where they dislike each other. Thus the values assigned to the terminals specifying spatial arrangement are conditional on the values assigned to those that register degree of liking or formality.

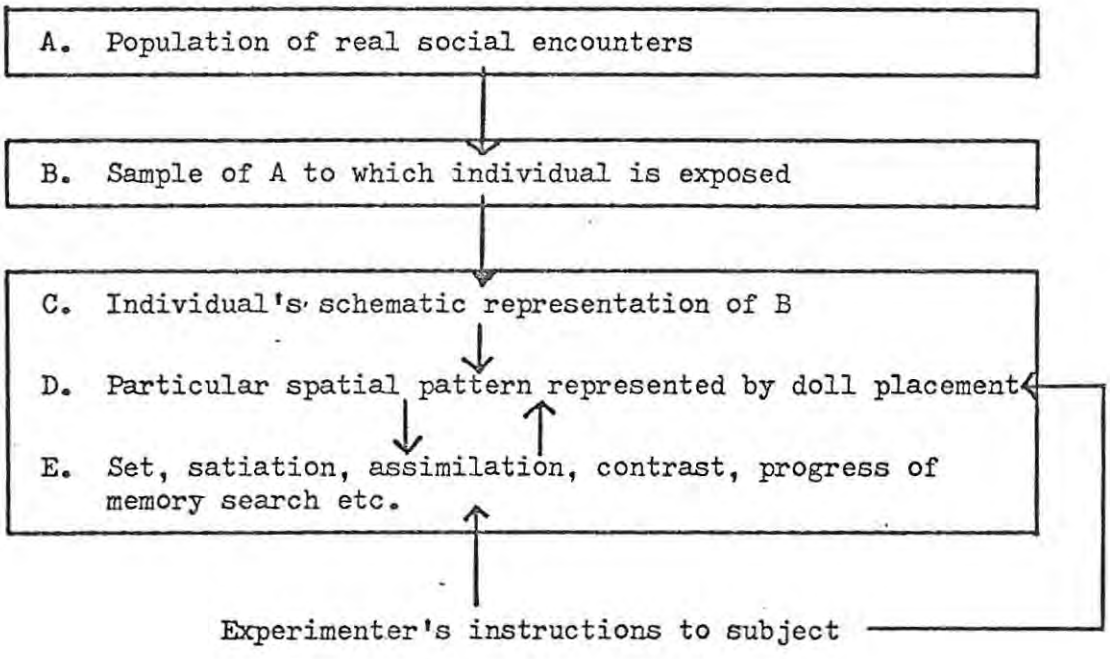
In the present context, Minsky's theory of frames will be incorporated in a model which accounts for the manner in which the individual's response to the doll placement task is generated, and the fact that the spatial arrangements of

dolls placed in such a situation bear such a strong relation to the way in which real interactors regulate their spatial positions.

The model is presented in Figure 7.1 and has five components. The nature of each component will be discussed in the following sections.

FIGURE 7.1

A MODEL OF THE SUBJECT'S BEHAVIOUR IN THE DOLL PLACEMENT TASK



7.3.2 A. Population of spatial behaviours in real encounters

All the real encounters that take place between pairs of individuals can be regarded as a population (in the sense in which the term is used in statistical theory). The population can be regarded as being divided into many sub-populations representing different classes of encounter. For example, from the parent population a sub-population of friendly encounters, or of intimate encounters, or of encounters between adult females could be drawn.

In any encounter there may be shifts in interpersonal distance, amount of direct gaze and body orientation. However, it is supposed that certain spatial patterns occur more frequently than others in particular sub-populations, and that sub-populations differ with respect to the probabilities assigned to different positions. For example, close distances have a higher probability in the sub-population of encounters between people who like each other than in the sub-population of encounters in which they dislike each other.

In any sub-population, therefore, it is supposed that there is a set of spatial patterns that could be arranged in a hierarchy according to their probability of occurrence.

7.3.3 B. Sample of the population to which the individual is exposed

Of the whole population of social encounters discussed above, any individual is exposed to only a small sample. This sample is not random but depends upon his domicile, culture and the groups to which he belongs. If patterns of spatial behaviour differ from one culture to another, members of the different cultures will be exposed to different samples of the total population of spatial behaviours.

The probability that individuals may also be exposed to representations of real encounters through books, plays and films must also be taken into account.

7.3.4 C. An individual's schematic representation of social interaction

Each individual develops a system of schemata or frames which is a cognitive structure for perceiving, understanding, predicting and planning the course of interpersonal encounters. The samples of social encounter to which an individual is exposed are not stored as a set of discrete memories, but are organised into a frame system having the characteristics discussed in section 7.2.

This system of frames or schemata is the individual's model of social encounter and constitutes his implicit, naïve, social psychology. While this model is private from individual to individual, those of different individuals are similar because they are based upon the same cognitive mechanisms and constructed out of the same kind of social experience.

7.3.5 D. Particular spatial pattern represented by doll placement

If a person is asked to imagine a certain type of situation, whether vaguely or precisely defined, involving two people engaged in social interaction, it is supposed that he mobilises a system of appropriate frames and

subframes and assigns values to the terminals of these, where these are not specified for him, by using the default values available within the system. In this way he can construct expectations about various classes of behaviour within the encounter, whether these be emotional, gestural, spatial, paralinguistic or linguistic.

However, usually there is more than one default value available at any terminal, and several of these might have a high probability of being assigned. But when a situation is created in which the subject can make only one response, only one of these possible default values can be represented in the response.

In the doll placement task, there may be many ways in which an individual could represent the situation described to him by the experimenter, since he might be able to envisagé a number of different spatial arrangements of the interactors which would be more or less probable according to the value of variables not defined by the experimenter. In other words he could imagine the situation in different ways, and different spatial patterns would be associated with them. The response of the subject to the task is, therefore, only one of the ways in which he might have responded. As such it provides only very incomplete information about the structure of his schemata.

7.3.6 E. Dynamic factors affecting frame construction

The process of constructing an appropriate frame system and of assigning values to its terminals involves search for and selection of appropriate frames and subframes. This is seen as a dynamic process which is affected in various ways by the context in which it occurs, by the results of the search processes themselves, and by the nature of values that are available for assignment by default to empty terminals.

Minsky suggests (p.228) that default assignments are only weakly bound, and this would be particularly the case at the lower levels of the hierarchy, where changes can be made to assignments without affecting much of the rest of the frame structure. As a result, it is supposed that the value of an assignment to a terminal may fluctuate.

One mechanism that would lead to such fluctuation would be the effect of satiation. This phenomenon, well known in perceptual processes, would result in an assignment to a terminal becoming less and less able to maintain its position at the terminal in the face of competition from other values having high probability.

Famous examples of the satiation effect resulting in a shift from one interpretative structure to another are the Necker cube and Schröder staircase. But, as Minsky points out (p.228), such shifts are relatively uncommon in perception where assignments to terminals are strongly determined by the nature of the data. It is only in those unusual cases where more than one frame structure has a high probability that such effects of satiation resulting in changes of interpretation can be reliably demonstrated.

In imagination, however, assignments to terminals are determined by the subjective probabilities of the values available for attachment. Thus, if several values have similar probabilities, fluctuation from one to another as a result of satiation would be expected. Such effects might occur at relatively low levels of the hierarchy of frames, in which case relatively small changes in the way the situation is imagined by the subject would take place; on the other hand they might occur at higher levels, bringing about more far-reaching changes in the subject's construction of the situation.

Another factor that would bring about fluctuation in the frame system is the nature of the search process itself. After the initial search process, a system of frames and subframes is constructed on the basis of those frames and terminal values uncovered so far. If it is assumed that the search process continues after the construction of the initial system, if a subframe is then discovered which is appropriate for incorporation in the system, and which has a higher subjective probability than subframes already incorporated, then the original system would be restructured to incorporate the newly discovered subframe. Thus, the sudden retrieval of a memory of some past situation which provides an appropriate model for the situation the subject has been asked to represent, might result in his expectations about the situation changing suddenly.

While the effect of satiation and late discovery of appropriate subframes would be to render the current frame system unstable, the factor of set would tend to render it more stable by operating selectively against some of the subframes that might have been incorporated in the structure. Such an effect might be achieved in the doll placement task by, for example, dressing the dolls in a certain way, so that a whole range of encounters for which the dress was inappropriate would be selected against in the search for subframes to use in constructing the frame system for the situation in question.

Two mechanisms that are well established as cognitive phenomena that might affect the subject's set in the doll placement task are assimilation and contrast. These would operate if he was asked to represent several situations in a row. Assimilation would occur if the subject tended to represent each new type of situation within the general framework developed for the previous situations. For example, after representing a series of hostile encounters, there might be a tendency to represent a new situation, not specifically described as hostile, in a hostile manner, because of the set created by the previous items.

Contrast would occur if the subject deliberately moved away from a frame system developed for one item in constructing that for another. This might occur if he wanted to heighten the difference between the two situations. For example, after representing a series of hostile encounters with large distances, a subject might represent a subsequent friendly situation by a closer distance than he would normally use in order to emphasise the difference between the two types of situation.

The model proposed here does not attempt to define the conditions under which the effects of set and satiation, and of assimilation and contrast, occur. These mechanisms do, however, provide accounts of many of the phenomena observed when the doll placement technique is used, and will be invoked when experimental results are discussed.

7.4 SOME IMPLICATIONS OF THE MODEL

7.4.1 Implications for validity

According to the proposed model, an individual's social experience is embodied in his system of schemata or frames. This system enables him to make general predictions about the course of interpersonal events by generating frame systems to model the situation being perceived and deriving expectations from it. The ability to predict furnishes the individual with the capacity to imagine, that is to construct frame systems which do not correspond to the current perceptual input. When the subject is asked to make a doll placement, this imaginative capacity is tapped, and the response is determined by the nature of the frames that are available and of the construction processes that can be brought to bear on them.

In terms of this, the question as to the validity of the doll placement technique has two parts. The first is whether the manner in which a person places the dolls is a valid indication of his expectation about how people would stand in a social encounter.

The model suggests that this is only partially the case, since a person may be able to construct several specific expectations about a single general situation, while the figure placement can embody only one of them.

If the investigator was interested in the individual's schemata for their own sake, therefore, he would have to elicit many placements. In the present case, however, the interest was not in the range of expectations within each individual, but in that within a group as a whole. Since schemata were collected from many subjects, those not furnished by one could be provided by another.

The second question about validity concerns whether the subject's doll placement is a valid indication of how people from the subject's own milieu actually behave, for even if the placement was a valid measure of his expectations, his expectations might be only poorly related to the facts of real life encounter. In fact, the studies reviewed in Chapter 5 suggest that figure

placement tasks do have this type of validity, since there is considerable concordance between the way distances are determined in a doll placement task, and the way they are determined in real life (see section 5.5.3).

7.4.2 Implications for reliability

The model describes mechanisms which could give rise to considerable instability in the subject's response. Thus the same situation might be represented in different ways from one occasion to the next by the same subject. For this reason, the reliability of single measures obtained with the doll placement method may not be very high, particularly in representations of situations associated with a wide range of possible spatial patterns.

Such a lack of reliability, should it be shown to occur, would not, however, detract from the value of the technique unless it was being used as a measure of some stable feature of an individual's personality or behaviour. If doll placement distances were being used as an indirect measure of an individual's own proximity tolerance, for example, then a reasonable degree of reliability would perhaps be required (although even an individual's proximity tolerance may depend on the specific details of the situation in which he finds himself).

In the present case, however, it is not the proximity tolerance of each individual subject that is at issue, but rather the patterns of spatial behaviour within a culture.

7.4.3 Implications for terminology

Finally, the model has implications for the terminology used to describe the subject's response to the doll placement task. The way he places the dolls is usually called a 'social schema'; the distance between them is sometimes called a 'distance schema', and the orientation pattern an 'orientation schema'.

In terms of the model, the schema is not the response itself, but the cognitive structure underlying the response; the response thus provides an

indirect measure of these cognitive mechanisms. In addition, as shown above, a single response provides a rather inadequate measure of the subject's expectations about a situation. Therefore, it is misleading to give the response itself the name 'schema'.

However, the use of the phrase 'social schema' is now so widespread and accepted that it is unlikely to be dropped, and in the present work the phrase will sometimes be used, although often other methods of referring to the subjects' responses will be preferred.

CHAPTER EIGHT

PATTERNS OF SOCIAL INTERACTION AMONG XHOSAS AND ENGLISH-SPEAKING WHITES

8.1 CULTURAL GROUPS OF THE EASTERN CAPE AND TRANSKEI

8.1.1 Introduction

It is a consequence of the model discussed in the previous chapter that individuals born and brought up in different cultural settings which have different patterns of social interaction will have different expectations about social interaction. And where differences in the way in which interpersonal distance, gaze direction and body orientation exist, these will be reflected as differences between the cultures in the way their members place dolls to represent social encounters.

In the present study, an examination was made of doll placements of Xhosas and English-speaking Whites from the Eastern Cape and Transkei, and in the present chapter social interaction within these cultures is discussed in order to show that there is a basis for expecting that there would be differences between the two with regard to regulation of interpersonal distance and eye-contact.

8.1.2 Selection of cultural groups for study

The Eastern Cape of South Africa and what used to be the Transkei and is now the Republic of Transkei is an area in which there is great cultural diversity. However, apart from small Coloured, Indian and Chinese communities, the majority of the inhabitants are of European or African (Bantu) origin.

The Whites fall into two major language groups: Afrikaans- and English-speaking. The Afrikaners are largely descended from Dutch, German and French settlers who farmed in the Cape from about 1657. Relatively isolated from Europe for a large part of the 18th and 19th centuries the group developed its

own characteristic language and social identity. English-speakers are more diverse in their origins. Some are descendants of parties of settlers who arrived in 1820. Others are descended from later arrivals to the Eastern Cape or to other areas of southern Africa. A few are recent immigrants, or children of recent immigrants from Britain and even Australia, Canada and the United States.

In the present study, English-speaking Whites and Xhosas were selected for study. The English-speaking Whites and the more traditional Xhosas represent very different cultural traditions. The English-speaking White derives his culture from the historical traditions of western Europe, and, although a number are still, or are descended from, farmers, the participation of this group in business, commerce and technological development has been until recently, and still is somewhat, greater than that of the Afrikaners. Many members of this group have their contact with western Europe enhanced through the universality of their language and the fact that they often have relatives in Britain.

The Xhosas are a people in many stages of cultural transition from the traditional tribal pattern towards an urban, western way of life. However there is one group of them who have attempted to maintain the traditional pattern of values and life in the face of the onslaught on it from education and urban development. These are sometimes called the 'amaqaba' (or 'painted' people), and are often referred to as the 'Red Blanket' people, or simply 'Reds', because the blanket dyed with red clay was their traditional dress and is still the major item of dress of women and children.

8.2 SOCIAL INTERACTION IN TRADITIONAL XHOSA CULTURE

8.2.1 'Red' and 'School'

The task of studying the traditional pattern of Xhosa life, as presently preserved, is simplified by the fact that rural Xhosa fall into two fairly distinct categories. On the one hand there are the traditionalists who strive to maintain the traditional values and patterns of behaviour, and these, as mentioned above, are called 'Reds'. On the other hand there are those who

identify with western culture and the aspirations and values of that culture. These are called 'School' people since the school is the symbol of their aspiration towards success within a western framework.

This does not mean that a Red has necessarily not been to school or that a School person has. Red families typically send one or two children to school so that they can learn to read and write and handle correspondence for the family (Mayer 1963), while School people often have little or no education.

The majority of rural Xhosa identify themselves as either Red or School, so that Red-School is not a continuum with the characteristics of a normal distribution, but a dichotomous pair of categories. Thus Mayer (1963) found that all country-rooted informants in East London identified with one group or the other when questioned. Similarly Dubb (1966) devised a short questionnaire measure which he gave to members of an East London church which had many members recently arrived from rural areas. Since Reds don't go to church, subjects rated themselves before joining the church and a clear bimodal distribution of scores was obtained.

8.2.2 Traditionalism and hlonipha behaviour

A major feature of traditional African cultures is the way in which sharp distinctions between social roles are maintained. Thus I. Mayer (1975) writes,

> "Traditionalism is the urge to preserve an established social order, in other words, an established set of social distinctions specifying different kinds of people and roles for different occasions. The urge, therefore has to express itself in a constant care for keeping apart. For traditionalist-minded people this clear enunciation of accepted social types represents order, security and decency; it is practically an end in itself. Correspondingly, a soft-edged social style, without the care for distinctive images, appears to them as sloppy and confusing." (p.260)

As Mayer points out, this affirmation of social distinctions is continually being declared in the observance of strict rules of dissociation between individuals who are in different roles, and these observances are often referred to as 'showing respect'. She documents some of this respect behaviour among the Gusii of Uganda as follows:

"Family members had to take care where they trod, literally and

> figuratively. For instance, they would not eat together, work together, bathe together, use the same dishes, beds, stools, clothes, allow their bodies to touch, sit on the same side of a hut, or even enter by the same door". (p.262)

This type of behaviour is also typical of the Red Xhosa. Among them, 'hlonipha', or respect, is shown in a variety of ways. Perhaps best known are certain verbal avoidances. For example, a married woman never uses the name of her father-in-law or his male progenitors, nor any word that is similar in sound to these names, or begins with the same syllable. A similar rule applies to married men with respect to the name of the mother-in-law. Another example of hlonipha by verbal avoidance is the special vocabulary used by boys at the time of their initiation into manhood when addressing women (Soga 1931).

However, the word hlonipha may refer to many other behaviours that communicate respect. The word occurs in Zulu, a language closely related to Xhosa, and of the Zulu word Raum (1973 p.5) writes,

> "Hlonipha as respect, avoidance, is observed ... in many relations of superordination and subordination, by men and by children, chiefs and commoners, nor is it restricted to avoidances, but covers 'positive' actions from gestures to benefactions. The term has abstract aspects, its meaning shading from to obey ... to approved custom in general. The aim of education may be described as ukuhlonipha (respectful attitude)."

8.2.3 Forms of respect during social encounters

As Raum (1973 p.142) points out, the attitudes expressed through hlonipha observances are few, but they are communicated again and again in many aspects of behaviour within and without the social encounter.

Two methods of communicating this are the avoidance of direct gaze and proximity, as Xhosa informants will usually affirm. Some teenage Xhosa girls turned their heads through 90° (while maintaining a direct body orientation) when talking to the writer, and, even more formally, Broster (1967 p.184) described how Red AmaQhathi women of North Eastern Transkei demonstrated their respect for a visiting Paramount Chief by bowing '... deeply and reverently, careful that their eyes should not rest on the majestic face of a great chief.'

However, respect forms involving avoidance of direct gaze, proximity and touching are not well documented in the literature on the Xhosa-speaking groups.

Thus in Hunter's (1961) account of the life of the Pondo, Hammond-Tooke's (1962) of the Bhaca, and Soga's (1931) of the Xhosa, the hlonipha of language referred to above is described, as well as rules about avoidance of certain places (ukuceza) particularly by a young bride, and certain food taboos. But no reference to the regulation of interpersonal distance or gaze direction is made.

Avoidances of proximity and direct gaze are documented for the Zulu by Raum (1973). But even in this exhaustive work, relatively few references to them occur. They will be reviewed briefly in the following paragraphs.

Raum mentions that it is a serious offence for a child to strike his father, even in fun, and a child must not pass in front of his father or cast his shadow on him. A rule about avoidance of eye-contact with adults seems to apply only to girls.

He also mentions a number of behaviour forms required of a woman. She must kneel in the presence of her husband and may not gaze into his eyes when he speaks to her (p.101). When newly married she simply does not interact with her father-in-law at all. Later a release rite is performed, but large interpersonal distances must be maintained, and she may not speak. The newly married Zulu wife must also go on her knees in the presence of older members of her husband's family. She may interact with her mother-in-law, but may not look her in the eye (pp.106-7).

Raum also mentions a few rules for the newly married man. At first interaction with the mother-in-law is avoided, and later, when it is permitted, he must be the first to offer a greeting. Towards his father-in-law respect is shown by not talking too loudly or approaching too close.

In considering the Xhosa it should be borne in mind that the Zulu place rather more emphasis on these behaviours and seem more willing to sacrifice personal convenience for the sake of showing respect. Thus, the subservient kneeling of the wife in her husband's presence is not found among the Xhosa at all.

8.2.4 The status of women

One of the role boundaries that is very marked among Red Xhosa is that between male and female. Thus Mayer (1963 p.234) writes,

> "Even the most fortunate of rural women has to go through a long period of subjection to men and to older women; the least fortunate, such as widows and unmarried mothers, may suffer deprived status permanently."

Consequently women are expected to show respect towards men, and Mayer quotes a number of Red informants who commented unfavourably on the lack of respect shown by School women towards men (p.34).

This even applies to the relationship between man and wife, and the close relationship to which westerners aspire is actually frowned upon by the Reds. Mayer (1963 p.98) writes,

> "Red etiquette actually forbids a young man to be too intimate with his own wife ... he should not speak to her too often and whatever his personal feeling for her may be, he should conceal it under a mantle of 'respect'."

Perhaps, however, this is rather to overstate the case, for Hunter (1961 p.44) points out that the relationship is not necessarily cold.

> "In a small umzi (homestead) where there are few adults their relations are necessarily intimate. That there is sometimes real affection between husband and wife is proved by the fact that a husband sometimes stands by his wife when she is accused of witchcraft and leaves his own family rather than leave her."

Finally, as implied in Mayer's statement at the beginning of this section, the need for a woman to show respect towards men is reduced with age. Wilson, Kaplan, Maki and Walton (1952 p.108) point out,

> "Advancing old age to some extent enhances the status of women. The spatial and verbal avoidances which complicated their early married days are very much less strictly observed; and they have considerable say in the affairs of the homestead, often greater than that of men their junior in years."

8.2.5 Relations within and between the generations

Perhaps even more marked than the distinction between the sexes is that between the generations, and Red people pride themselves on the discipline of their children. Mayer (1963 p.97) comments,

> "The authoritarian aspects of the parent-child relationship are played up, while (on the whole) the intimate aspects tend to be played down."

And I. Mayer (1975 p.269) describes ways in which respect by children towards their father was shown among the Uganda Gusii:

> "From the time sons and daughters had 'sense' they were not to come close enough to touch their father, not shake hands, clap him on the back, wrestle, shout, or even 'look at him with bright eyes'. They were to address him as 'Father' (Tata), not by his personal name or nickname. They were never to sleep in any hut where he slept, and never sit on his bed or use his clothes, bedding, beerpipe or other possessions; not even in his absence; not even after his death."

Nor does the authoritarian nature of the relationship end when the child attains adulthood. Of the Xhosa Mayer (1963 p.97) writes,

> "... even after marriage the Red Xhosa man is expected to regard himself as definitely 'under' his parents. A man's closest ties are with his parents always - even after maturity, even after marriage."

By contrast, relations between members of the same generation are not governed by strict requirements for respectful behaviour. Of the Uganda Gusii I. Mayer (1975 p.269) writes, when describing relations between individuals in the same role category:

> "They need not keep to the visitor's entrance, through the main gate and cattle pen into the drinking place, but could use the family door into the living room too. The males could, and should, be welcomed with the offer of their 'brother's' stool; either sex could sleep in the hut if they wanted to stay overnight. It was not 'wrong' to use each other's beds or clothes or beerpipes, not embarrassing to touch physically, whether by handshake, a comradely embrace, an angry shove or a stand-up fight."

8.2.6 The Xhosa and the contact/non-contact dichotomy

Hall (1966) has distinguished between contact and non-contact cultures. In the former physical contact is normal during social interaction, while in the latter it is ruled out except in a formalised way such as the handshake or in the expression of intimacy.

Evidence for the usefulness of this distinction was obtained by Watson in the study described in section 6.1.3 and by Little in the doll placement study described in section 5.2.3. In both these studies, there was clear evidence for differences in the spatial behaviour of contact and non-contact groups.

Among members of traditionalist African cultures, however, as I. Mayer has shown in the paper cited above, while behaviour between members of different

role categories is clearly non-contact, that between peers is often contact in nature. Three examples from everyday observation of contact behaviours among Xhosas can be cited. Firstly, young men are often seen walking along hand in hand. Secondly, the handshake of greeting is often prolonged for several minutes so that individuals are effectively holding hands as they converse. Thirdly, when a Xhosa makes a point, he emphasises it by clasping or patting the shoulder of his fellow. These behaviours are by no means confined to the Reds, but are common among urban Xhosa.

However, Hall pointed out that an encounter between a member of a contact culture and a member of a non-contact culture is usually uncomfortable for both since each violates the norms about distance, eye-contact and touching of the other. Collett (1971) has shown that contact Arabs enjoy an encounter with an Englishman who falls in with their contact style of interaction more than with one who has studied the Arab world.

In South Africa, however, the non-contact Whites do not typically complain that Africans are 'pushy' or come too close in social encounters, even though complaints about other aspects of their behaviour are plentiful. At this level of everyday observation, therefore, the Xhosa do not show the preference for very close interaction typical of Arabs or Mediterranean people.

8.3 THE IMPACT OF WESTERNIZATION AND URBANIZATION ON TRADITIONAL FORMS OF BEHAVIOUR

8.3.1 Westernization within the rural milieu

While the Reds of the country areas preserve the traditionalist culture, the School people, often living side by side with them, have, due to the impact of western education, undergone a considerable breakdown of the authoritarian features of Red culture. The sharpness of role boundaries is reduced, which results in a much lower standard of discipline on the part of women and children (Mayer 1963 p.38), an effect which is met with some perplexity and dismay, very often, by the School people themselves (e.g. Wilson et al. 1952 p.126). Some effects of this are a weaker sense of unity in the family, a lesser feeling of

responsibility of children towards parents, and a high rate of illegitimacy.

Nevertheless the traditional avoidance behaviours of Red culture are still practised, although often in an attenuated form. Thus Hunter (1961 p.60) writes of the Pondo,

> "The wife in a Christian umzi usually avoids her husband's father's name or words very like it, but will use other words, not similar, that a pagan wife would avoid ... (she) does not make such wide circuits as a pagan wife, and may be 'set free' by her mother to cross the inkundla or go to the men's side of the hut. By a few Christian wives, even the taboos connected with cattle are disregarded."

A similar relaxation of traditional customs is documented among School people living on farms in the same study (p.534).

While there is no documentation of the effects of the School orientation upon spatial behaviour in social interaction, an attenuation of showing respect through avoidance of proximity and direct gaze would be expected.

8.3.2 Effects of the urban environment

While the traditional role boundaries and the avoidance practices that affirm them are attenuated among the rural School people, they are reduced even further in the urban environment. Thus there is a marked contrast between the behaviour of the rural School people and those who have their roots in town. Mayer (1963 p.10) describes this as follows:

> "There is a different feeling between the generations and between the sexes, reflected in different patterns of family life, especially as regards the relations of a woman to her husband and her parents-in-law. By and large, both the rural Xhosa cultures, School as well as Red, are distinctly more patriarchal in tone than that of the townspeople."

This breakdown of role distinctions and of formality in social interaction was also noted by Brandel-Syrier's (1971 p.80) informants, who were residents of a Transvaal township (and not necessarily Xhosas):

> "Rural people were said to be more polite, more dignified. Urban people were socially more relaxed and adaptable; but they were also more cheeky, rude and noisy, more disrespectful. In dress, rural people were said to be more meticulous and rigid, urbanites more nonchalant."

A persistent feature of the urban African community is the breakdown of family life. In East London, Pauw (1963) noted a marked unwillingness on the part of many men to undertake the responsibilities of supporting a household,

and many family heads are women. This reflects a failure of the culture to adjust to the urban environment, but it may also reflect the fact that the stress of living under crowded conditions that afford little personal privacy is handled better by women than by men.

Where the family has a father, there is a greater equality between husband and wife than is found in the country, so that Pauw (1963 p.159) writes,

> "Quarrels and disputes are affairs between husband and wife in which the wife tends to act with less submissiveness than tradition requires ... Consultations between husband and wife on matters of household economy, children's education and the performance of ritual are common."

And one informant commented:

> "Women shout at their husbands and they even return blows when beaten by them."

Nevertheless, in many families, the husband is still the major authority, and Pauw found, for example, that many women would refuse to give him information without first obtaining the approval of their husbands.

8.4 AIMS OF THE PRESENT STUDY

The material discussed above suggests that a major difference between Red Xhosa and Whites, with respect to regulation of interpersonal distance and gaze direction, would be the extent to which avoidance of proximity and direct gaze is used as a means of showing respect. In terms of the framework outlined in Chapter 4, Whites and Xhosa would be expected to differ in the way in which the impression management factor acted in the regulation of these behaviours. As was pointed out in section 4.6.6, the effect of impression management can often be seen as being mediated by the reward-punishment-arousal mechanism, since the socialisation process uses reward and punishment to teach individuals to make a good impression.

Part of Red Xhosa socialisation involves the teaching of the maintenance of role boundaries by means of the many behaviours which affirm them. By obeying these norms, the Xhosa gains approval for being 'respectful', avoids censure for 'disrespect' and creates a favourable impression on those around

him. Among English-speaking Whites, on the other hand, the teaching of avoidance of proximity and gaze towards a man (on the part of a woman) or towards a senior (on the part of a junior) is not a systematic part of the socialisation process.

The first aim of the present study was to discover the extent to which differences between Red Xhosa and Whites in their regulation of distance and gaze direction would be reflected in the way in which they placed doll pairs to represent social encounters. The second was to identify a set of social encounter situations, which, when represented by doll placements, elicited different social schemata from the two groups.

Thirdly, the aim was to examine those situations which were associated with different social schemata in the two groups, and to see whether the schemata of transitional Xhosa groups showed a move away from the Red pattern towards that of the Whites.

PART TWO

METHOD

CHAPTER NINE

THE DOLL PLACEMENT TECHNIQUE AS EMPLOYED IN THE PRESENT STUDY

9.1 INTRODUCTION

9.1.1 The doll placement task

The advantages of figure placement tasks were discussed in Chapter 5. The first was that of economy of administration, the second that response to several types of situation can be examined within a single session (see section 5.1.1).

Of the many different approaches to the use of figure placement (section 5.1.2), that of Little was employed in the present study, in which subjects place two free-standing dolls to represent social situations described to them.

There are three reasons why free-standing dolls were preferred to silhouette figures or gummed circles. Firstly, this method furnishes a more life-like representation of two people engaged in an encounter than do the other types of material. Secondly, data are available not only on the distances between the dolls, but also on the angles at which they stand. Thirdly, it provides the greatest possible control by the subject over the material. The dolls can be moved around with ease and fine adjustments made to their position until an arrangement is reached that is satisfying. It is likely that other versions of the task would have proved unsatisfactory with uneducated subjects.

A feature of Little's method is that the subject is not always asked to represent himself as one of the interactors. While subjects very often do do this anyway, the method allows subjects to represent encounters in which they could not themselves be involved. For example, a woman could be asked to represent a meeting of two men.

The discussion of the cognitive basis of social schemata in Chapter 7 makes it reasonable to suppose that subjects would have expectations about situations in which they have never been involved personally, and responses of

subjects to the present series of experiments supported this supposition.

9.1.2 The three stages of the study

The study falls into three stages, and, since the details of the method differed slightly from stage to stage, a brief outline of them will be presented here.

Stage 1: This stage consisted of two experiments which were largely exploratory and which were carried out before the background assembled in Part One had been collected and formulated. As a result, the groups of subjects selected were not ideal for the present purposes. However, the experiments provided many results which were highly suggestive of the course of further research, and they are described in Chapters 11-13.

Experiment 1 used as subjects Xhosa manual workers from Grahamstown and a group of Rhodes students. In Experiment 2, the same two groups were used, but in addition there were groups of Xhosa students and Red Xhosas.

Stage 2: Experiment 3, the first in this stage, examined questions concerning the validity of the doll placement technique when used with Red Xhosas. Experiments 4 and 5 were designed to enable a comparison between the schemata of traditionalist Red Xhosas and Whites to be made. They are described in Chapters 14-16.

Stage 3: Finally, twenty-one items were selected, on the basis of the results of the first two stages, and administered to a White group, a Red Xhosa group, and two transitional Xhosa groups. This was Experiment 6, and constituted the third stage of the project. This is described in Part Four.

9.2 THE DOLLS

9.2.1 The first set of dolls

At the start of the project a set of dolls was constructed, and used in Experiments 1 and 2 (Stage 1). However, there were a number of unsatisfactory features of this set, and new dolls were made for use in Stages 2 and 3.

The first set of dolls was made out of a mixture consisting of papier

maché, clay, plaster of Paris and size which was mounted on wire frames. Clothing and physiognomic features were lightly sketched. There were two sub-sets, each of five dolls, the one representing Blacks and the other Whites.

The five dolls represented:

two men dressed in jacket and trousers (height, including base, 182mm);

an older man with the same clothing and height;

a woman wearing a headscarf (Black set) or bareheaded (White set) and with a short skirt (height, including base, 170mm); and

a male youth wearing a sweater and long trousers whom subjects judged to be about 16 years old (height, including base, 168mm).

Each doll was mounted on a circular plastic base of diameter 60mm and was painted a uniform reddish brown (Black set) or pinkish brown (White set).

The following features of this set of dolls were unsatisfactory:

(1) The youth and woman were shorter than the men. Although the heights were chosen to match real differences in height, it was thought possible that the height of the dolls might affect the way in which the subject placed them, so that a uniform height was preferable.

(2) The postures of the dolls were not uniform. There were slight differences in erectness and leg and arm position, although all dolls were upright and had body, head and shoulders in the same orientation.

(3) The plastic bases were too large and prevented some subjects from placing the dolls as close as they wanted to. In addition, there was a thick papier maché base to the figure itself which meant that the dolls stood on a little mound between 3 and 5mm in height, which looked rather unnatural.

(4) The material gradually shrank, and this affected the heads of the dolls which, in some cases, became unnaturally small.

While these points made it desirable that a new set of dolls be made, it is unlikely that they had a large effect on the results of the experiments in Stage 1. Usually subjects seem to pay little attention to the details of the dolls, and Little (1968) found that whether he used dolls or merely gray cylinders quite comparable results were obtained.

9.2.2 The second set of dolls

The second set of dolls was designed and constructed by an M.A. (Fine Art) student. Figures were first modelled in plasticine, and these were used to make rubber moulds. Originally it was intended that the final dolls should be made of resin and thus be robust, but light. However, due to problems with the resin compound, and the need to complete the set for the start of Stage 2, plaster of Paris had to be used.

Because of distortions in the moulds, features of facial expression and clothing had to be finished with a knife. However, the final figures were of very standard appearance, and these features were indicated much more lightly than in the first set of dolls. All dolls were painted with a brown matt powder paint and mounted on circular bases of diameter 50mm made of white perspex 2,5mm thick. With the base each doll was 180mm in height, except in the case of the Black women, which were 2,5mm taller than this, because of their headdresses.

Once again, separate sub-sets of dolls were made for use with Black and White subjects. In each sub-set there were figures of man, woman and male youth. In addition, two different figures of a Black woman were made, the one for use with Red subjects, the other for use with urban subjects. The use of moulds made it possible for several figures of each type to be constructed. This meant that two men or two women could be used together in representing the same situation, and also acted as a safeguard in case of breakage. The figures of this second set are illustrated in Plate 9.1.

9.3 PRESENTATION OF THE TASK TO THE SUBJECT

9.3.1 Phases of the experimental session

In each of the six experiments, the experimental session with the subject had the same basic form, with five phases of activity. These were:

PLATE 9.1

EXAMPLES OF THE SECOND SET OF DOLLS

(1) A general description of the task to the subject;

(2) A description of a specific situation to be represented;

(3) The placement of a doll pair by the subject;

(4) Questions to the subject about the placement;

(5) The recording of the placement.

Since in each experiment several placements were made, phases 2 - 5 were repeated several times, and this is indicated by the arrow above. Each of these phases will be discussed below.

9.3.2 Communication with the subject

With White subjects communication with the subject was either by verbal instructions given by the writer or by typed instructions read by the subject. With Black subjects, with a few exceptions, an interpreter was used. He either gave memorised instructions to the subject, read instructions from typed cards, answered simple questions posed by the subject, or translated questions posed by the writer and translated back the subject's answers.

9.3.3 General description of the task

In Experiment 1, subjects were told that they were taking part in an experiment on how people talk to each other. It was explained that situations would be described to them and that they were to place pairs of dolls to represent these. They were also required to ascribe a conversation to the interactors, as had Little's (1965, 1968) subjects.

The purpose of the conversation was to distract the subject from the experimenter's interest in the dolls' positions. This part of the procedure was unsatisfactory for three reasons. First of all, with the emphasis on the conversation, some subjects could not see what the point of placing the dolls was. Secondly, subjects often ascribed time-consuming conversations to the dolls, which prolonged the session unnecessarily. Thirdly, subjects who could not think of anything to say were embarrassed by the request for a conversation.

To most subjects it was fairly obvious that the positions of the dolls

were important, so it seemed best to be frank with subjects at the beginning and to provide unambiguous perception of the task. From Experiment 2 onwards, therefore, subjects were told that they were taking part in a study of how people stand when they talk to each other, and the requirement for a conversation was dropped. This proved a very satisfactory procedure, and was particularly valuable with the Red Xhosas who often wanted a clear idea what the experiment was about before agreeing to participate.

For use in Stages 2 and 3 of the project, the following general instruction was prepared and typed on a card:

> Instructions to subject
>
> You are taking part in a study of how people stand when they talk to each other.
>
> A number of situations are going to be described to you in which two people are in conversation with each other. You will be asked to represent each of these situations by means of a pair of dolls. Take the dolls and place them on the sheet of paper in front of you so that they look right for the sort of situation you have been asked to represent. Obviously there are no right or wrong ways of doing this. Simply place them so that they look right to you.
>
> There is no need to think for a long time about how the dolls should be placed. Just place them in any way that seems natural for the situation you have been asked to represent. If, when you have placed them, you are not satisfied with the way they are standing then you can move them until they are standing in a way which satisfies you.
>
> Before you place any of the dolls you will have the opportunity to handle them and to try out different ways of placing them.
>
> After you have placed a pair of dolls you may be asked a few questions about the sort of conversation they are having.

A Xhosa version of this appears in Appendix A. This was read to the subjects by the interpreter in those cases where he was present.

The subject would then be shown the dolls and allowed to handle them, and the following was then read by the experimenter (or by the interpreter in Xhosa):

> Now look at the dolls. You can see that they are very indefinite in appearance. This is so that they do not suggest any particular person or type of person to you. This means that you can imagine them as representing any type of personality or mood that you want to. You can imagine that they represent some particular person you know, or that they represent no one in particular, but just 'people in general'. You see that they are standing upright, rather stiffly, with their arms at their sides. But you do not have to represent people standing only in this posture. Although you cannot move their limbs, you can imagine

> that their bodies are relaxed or tense, that their arms are in different positions, and that they have different expressions on their faces. There are only two restrictions: firstly that you should represent people who are standing, not sitting; secondly that you should represent people standing still and not walking along or running about.

These instructions were not employed in this specific form in Experiment 2, but the instructions given were similar in character to those above. The instructions proved very satisfactory for all subjects and most responded quickly and spontaneously to the interaction descriptions when they were presented. A few subjects who pondered lengthily over their responses were encouraged to respond more quickly.

9.3.4 Interaction description and placement by the subject

Descriptions of the situations to be represented were typed on cards in English and in Xhosa. These were presented one at a time, usually in an order that was randomised independently for each subject, although details of the ordering will be given when each experiment is described. The descriptions were read by the subject, except when the interpreter was present, in which case the interpreter read the card to the subject.

The subject was seated at a table before a sheet of newsprint of size 320mm x 510mm. The dolls were laid on their backs above this paper. At the start of the session subjects would be handed the appropriate dolls, but later they would take them themselves. Having read or heard the description, they would place the dolls upright on the paper.

9.3.5 Questions to the subject and recording of the placement

Although, after Experiment 1, subjects were not required to provide a conversation for the figures as a matter of routine, questions were often asked, and in some cases details of the topic of conversation were asked for.

Questions directed to the subject after the placement had been made served three purposes: firstly, to check that the interaction description had been understood; secondly, as a check that he had not represented impermissible posture or movement projections; and thirdly as a means of gaining

material which would have been useful in interpreting the results of the experiment.

Checking that the situation intended by the experimenter had been represented was particularly important with less literate subjects. Some of these subjects showed a propensity to miss or confuse details of the interaction descriptions, and these subjects were checked especially carefully. In a few cases Red Xhosa subjects were discarded because of poor comprehension of the interaction descriptions.

Once the competence of the subject was clear, only a few items would need to be checked, and experience showed which these had to be. However, any subject who showed poor comprehension was asked questions on most responses.

Impermissible projections involved representations of walking, running or sitting. These are discussed below in section 9.4. Certain orientation patterns were a sign that such a projection might have occurred, and subjects were questioned in these cases.

The asking of questions to gain material for interpretation was carried out routinely only in Experiments 4 and 5. However, in other experiments, the subject was sometimes questioned about schemata which were of interest to the writer. In Experiment 6, this was usually done at the end of the session, the subject's placements being reconstructed for the purpose.

After any questions had been answered, the position of the dolls was recorded on the sheet of newsprint. In order to do this, the writer drew circles round the bases of the dolls and marked the direction in which they were facing. The newsprint was then removed and replaced by a fresh sheet for the next placement.

9.4 POSTURE AND MOVEMENT PROJECTIONS

9.4.1 Definition

In making his doll placement, the subject makes a direct representation of only three variables, the distance between the dolls, and the angles at which they are standing. However, were he able to vary the posture and facial

expression of the figures, presumably he would be able to do so. A posture, movement or facial expression imagined by the subject, but not represented in his placement, will be termed a 'projection'.

Subjects were encouraged to project gestures and facial expressions on to the figures (see instruction in section 9.3.3), since it was undesirable that they should represent people with only the rigid posture and limited facial expression of the dolls provided for them.

Sometimes, however, the subject saw his placement as representing one figure running away, or the two walking side by side. These cases were called 'movement projections'. In other cases the figures were supposed to represent people sitting down. This was a case of 'gross postural projection'. Such projections were not permitted, and the reasons for this are given below.

9.4.2 Projection of running away

This projection occurred in representations by Xhosas of man and boy quarrelling, with the boy being seen as running away. Initially the view was taken that what was being examined in the experiment was the spatial positions the figures would be in while interacting. Since the boy's flight meant that the interaction was terminated, representation of it did not accord with the aim of the experiment.

The wisdom of this decision may, however, be questioned. If the immediate response of a subject to an item is to represent one figure running from the other, then this is in itself important, and ought, perhaps, to be reflected in the results. The frequency of this projection was not, therefore, examined in this study, but it is a phenomenon which merits further research.

9.4.3 Projection of walking side by side

Sometimes, usually with Xhosa subjects, two figures were placed side by side, and this represented two people strolling along together. If two people are to converse while walking, it is most convenient to walk side by side so that they can hear each other (a perceptual management factor), and so that they

do not bump into each other or have to walk with their bodies at an angle (accommodation to physical constraints).

It was felt that the side by side position used to represent this was not a pure reflection of the eye-contact needs of the interactors, because it was the result of this accommodation to the constraints set by the activity of walking. For this reason, this projection was not allowed.

The wisdom of this might also be questioned. It is possible, for example, that people who want to talk without engaging in eye-contact would choose to walk along in order to justify their avoidance of direct gaze. Walking side by side may provide the conditions for a comfortable encounter where the arousal of face to face interaction needs to be avoided. If this is the case, subjects who perceived interactors as needing to look at each other in the normal course of an encounter would not imagine them as holding a conversation while walking along. Thus Hall (1966) argues that Arabs, because of their preference for high levels of eye-contact, cannot walk and talk at the same time.

9.4.4 Projection of sitting down

Although the figures themselves were standing, subjects sometimes used them to represent individuals who were seated. In one case, for example, a side by side position was found to represent two men sitting on a log.

This example of 'gross postural projection' was not allowed, since it was felt that the position of dolls might in this case reflect accommodation to the physical constraints set by the available seating, and the effect of more interesting psychological factors would be obscured.

Once again the wisdom of this could be questioned, for the same reason as was given at the end of the previous section. However, it was felt that since the dolls were standing, the interactors represented should be standing also, if only to reduce the heterogeneity of subjects' responses.

9.4.5 Conclusion

Two types of case occurred, therefore, in which a subject was asked to

make a new placement. In the first case, the subject would have misunderstood the interaction description in some way. In the second, he would have represented either movement or a seated posture.

Occasionally anomalies were encountered, where a case could have been made out for asking for a new placement. For example, in section 4.3 the placement of a man behind his mother was referred to, which represented mother baking and the man watching and talking. Such cases were, however, rare and so have little effect on the overall results.

CHAPTER TEN

PROCEDURES FOR DATA ANALYSIS

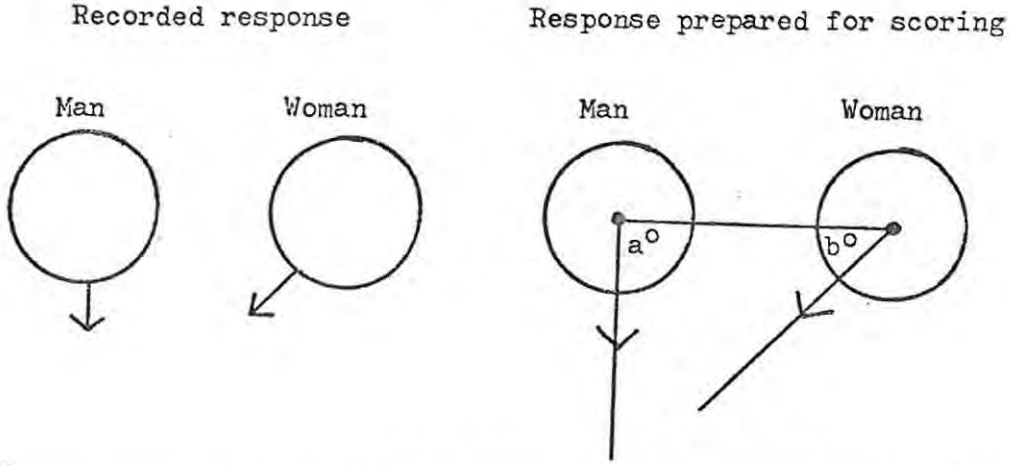
10.1 SELECTION OF DEPENDENT VARIABLES

10.1.1 Preparation of data for analysis

Once recorded, a doll placement response consists of two circles marking the positions of the bases of the two dolls, and a mark on each indicating the orientation. This was prepared for scoring by locating the centres of the two circles, joining them together, and drawing a line from the centre of each through the point marking its orientation. An example of a recorded response and the same response prepared for scoring is given in Figure 10.1.

FIGURE 10.1

RECORDING OF RESPONSE AND PREPARATION FOR SCORING



From this prepared data, three measures can be obtained: the length of the inter-figure axis, and the two angles made with this axis by the lines marking the orientations of the dolls (marked a^{o} and b^{o}) in the figure.

The length of the inter-figure axis in millimeters was used as the measure of distance. This will be referred to as the 'distance' of 'D' score. Because of the size of the base of the doll, this could never be less than 60mm with the first set of dolls (Experiments 1 and 2) or 50mm with the second set (the remaining experiments).

The selection of a suitable dependent measure for doll orientation was not so straightforward. The use of the two individual angle measures shown in the figure does not provide for comparability between items. For example, in comparing placements of a man and woman with those of two men, it would not be easy to decide which angles to compare. For this reason, angle measures were sought which were based on the individual angles, but which could be obtained from any placement, whatever it represented.

10.1.2 Differentiated versus undifferentiated situations

Part of the problem of selecting orientation measures arises from the fact that some of the situations described two interactors who were not differentiated from each other in any way. Such a situation will be called an 'undifferentiated' situation, and a situation involving two men quarrelling would be an example.

In other situations, the interactors were differentiated on the basis of sex, age or what they were doing in the encounter. An example of such a differentiated situation would be 'a man and a woman quarrelling'.

In the differentiated situation, the question as to which figure was represented in the more direct orientation can be asked, while in the undifferentiated case it cannot (except to obtain a trivial answer like 'the one on the right'). In the search for suitable orientation measures, therefore, scores were sought which would enable the schemata from differentiated situations to be compared with those from undifferentiated ones.

10.1.3 Selection of level of measurement

Since the two angles of the placement are measured on an interval scale, and since this is the most powerful level of measurement, and is associated with the most comprehensive range of techniques for statistical analysis, interval measures of orientation were sought.

However, no one interval measure completely describes the orientation pattern of a placement, and two separate measures have to be used, each of

which contains some of the information about it. Scoring of the orientation pattern using a single measure could be achieved by selecting a limited set of classes of pattern, and assigning each pattern to the appropriate class. This is in effect measurement on a nominal scale, and is the technique used by Gerber and Kaswan (section 6.3.1) and in the seating position questionnaire studies of Sommer and Cook (section 6.2).

The use of nominal measurement has several disadvantages. First of all, a good deal of the original information is lost when a pattern is assigned to a category, since different patterns will be assigned to the same category. Secondly, there is the problem of selecting categories which will be appropriate to comparisons of various different types of situation. Thirdly, there is the problem that while the χ^2 test can be employed to test hypotheses about differences between distributions obtained from independent groups of subjects, it cannot be used for comparisons involving repeated measures on the same subjects. Therefore, the use of interval measures was preferred.

10.1.4 Analysis of the orientation pattern

Two measures that are available from any orientation pattern, whether it represents an undifferentiated or a differentiated situation, can be obtained by adding the two individual angles together and by taking the difference between them. These measures will be referred to as the 'Angle Total' or 'AT' score and the 'Angle Difference' or 'AD' score respectively. The AT score could, of course, be halved to give a 'Mean Angle' score instead.

These measures, which were employed in the initial analysis of Experiment 1 (Edwards 1972a), take up much of the information that is available in the orientation pattern, but have the disadvantage that there tends to be a correlation between them. This is because, although patterns with large AT's can have low AD's (if they are symmetrical), patterns with large AD's cannot have very low AT's. Thus if the figures are placed at angles of 0° and 100°, the large angle of 100° contributes to a large value of both the AD and AT score.

The solution to this problem is to remove information about asymmetry

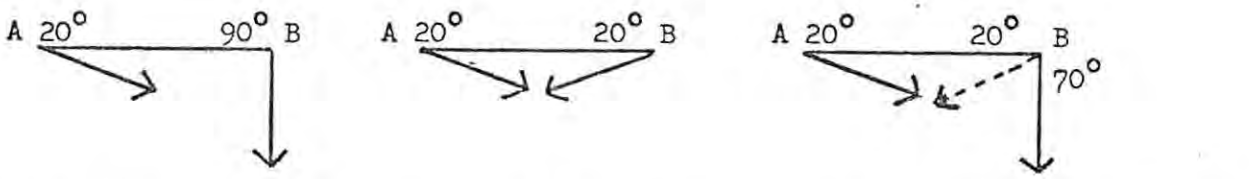
from the AT score by subtracting the AD score from it. This new score has the same value as the smaller of the two individual angles, and is called the 'Least Angle' or 'LA' score. Thus:

$$LA = AT - AD.$$

It might be thought that the LA score, being the angle of one of the two figures, did not represent a sufficiently general feature of the orientation pattern to be of interest. However, this is not the case. The use of the LA and AD scores imply a particular way of viewing an orientation pattern, as an instance of a symmetrical pattern (measured by the LA score) upon which a degree of asymmetry has been imposed by increasing one of the angles by a number of degrees (measured by the AD score). This is illustrated in Figure 10.2.

FIGURE 10.2

ANALYSIS OF A DYADIC ORIENTATION PATTERN



(i) pattern for analysis

(ii) basic symmetrical pattern

(iii) imposition of asymmetry upon basic pattern

In the example, figure A has an angle of 20°, and B an angle of 90°. The analysis into an LA of 20°and an AD of 70° means that the pattern is taken as a symmetrical pattern in which both figures have angles of 20°, which has been modified by B's being turned an additional 70° from the inter-figure axis.

10.1.5 A and Z orientation patterns

The analysis into LA and AD scores does not take up all the information in the pattern, even if an undifferentiated situation is being represented. This is because an orientation pattern in which both figures were turned away to the same side of the axis could have the same score as one in which one figure was turned to one side and the other to the other. These two possibilities are illustrated in Figure 10.3.

FIGURE 10.3

A AND Z ORIENTATION PATTERNS
WITH THE SAME LA AND AD SCORES

A pattern Z pattern

The first type of pattern, in which both figures are turned to the same side, will be termed an 'A' pattern, the second, in which the figures are turned to different sides, a 'Z' pattern. These names reflect the appearance of these patterns when they have been prepared for scoring. While it would be geometrically satisfactory to measure one of the angles in a Z pattern as a reflex angle, this does not make psychological sense, since what is being measured is the smallest number of degrees through which the doll must be turned in order to face straight down the inter-figure axis.

While it might be of interest to examine the incidence of Z patterns as a function of culture of subject or nature of the situation being represented, no attempt was made to do so in the present studies because rather few Z patterns were found.

10.1.6 The Signed Angle Difference Score (SAD)

In the case of an orientation pattern representing an undifferentiated situation, the value of the LA and AD scores, together with the knowledge that it is either an A or a Z pattern, exhaust the information about it. However, when the situation is differentiated, there is a further item of information available, namely which of the two figures is in the more direct orientation.

This information can be retained if, when calculating the difference between the angles, it is specified which angle is to be subtracted from which. Thus, if a situation representing a man and a woman has been represented, it can be specified that the man's angle is to be subtracted from the woman's. The resulting score will be positive if the man is in the more direct orientation and negative if the woman is. In the case of a symmetrical pattern, it

will, of course, be zero.

In order to differentiate it from the AD score, which is the absolute value of the difference between the angles, and cannot be less than zero, this score is called the 'Signed Angle Difference' or 'SAD'.

Because the SAD score cannot be calculated for undifferentiated situations, AD scores were used in the analysis of all types of situation, so that comparisons could be made between differentiated and undifferentiated situations. In addition, however, SAD scores were calculated for all differentiated situations.

Very often, there was an a priori expectation that one of the two interactors being represented would tend to have the more direct orientation, and in these cases it was standard practice to subtract the angle expected to be smaller from that expected to be larger. As a result, SAD's were positive rather more often than they were negative.

The mean SAD of a sample of placements gives an indication as to whether there was any consistent tendency for one or other figure to be given the more direct orientation. If it is close to zero, then there is no such tendency. If it is larger or smaller, then a tendency is indicated. A t-test can be conducted to discover whether the mean differs significantly from zero.

10.2 'IPOS' PROFILES AS AN INTEGRATED PRESENTATION OF THE DATA

10.2.1 Form of the 'IPOS' profile

The method of analysis described above breaks up a subject's response into D, LA, AD and SAD scores, and each of these are examined separately. In order to present a more unified picture of the pattern of responses obtained from a sample of subjects to a particular item, the means of these four scores can be presented side by side in the form of a graph. Such a graph will be termed an 'IPOS' profile, where IPOS stands for 'Interpersonal Proximity and Orientation Schemata'.

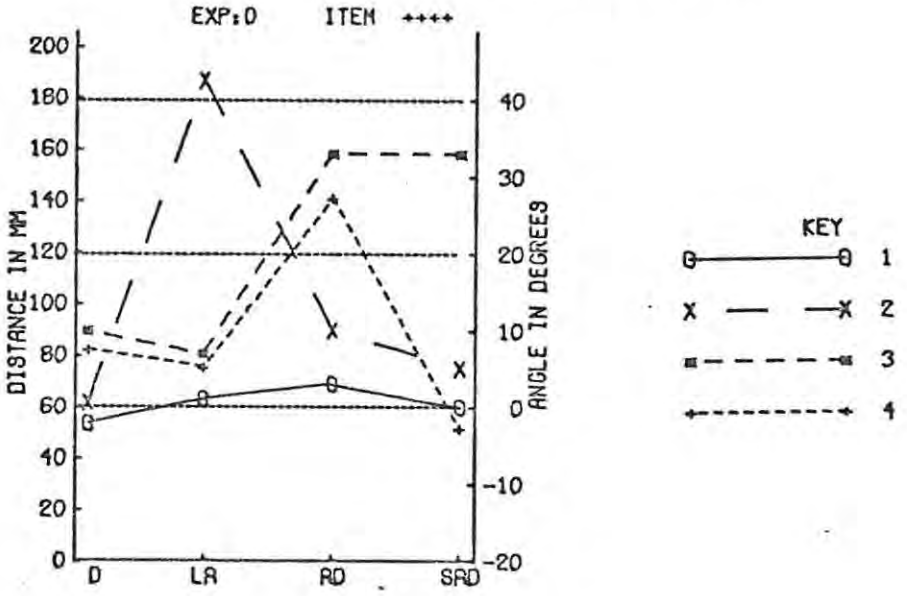
In order to facilitate comparison between responses obtained under different conditions, for example with different groups of subjects, or using different interaction descriptions, several IPOS profiles can be plotted within the

same co-ordinates.

Profiles differ in their shape according to the types of orientation pattern that predominate, and this is illustrated in Figure 10.4, where four profiles are plotted on the same co-ordinates.

FIGURE 10.4

EXAMPLE OF FOUR IPOS PROFILES



The scale for the D scores is given on the left hand y-axis, and that for the angle measures is given on the right. The horizontal broken lines are provided as reference lines and assist in reading the profiles.

The four profiles presented in Figure 10.4 were prepared from fictitious data and are intended to illustrate different shapes that the profile may take, depending on the predominant schemata in the sample it represents. The four shapes represent:

(1) A predominance of patterns with close distances and face to face orientation schemata. Accordingly all scores are low.

(2) A predominance of patterns with close distances and symmetrical orientation schemata in which figures are facing each other rather indirectly. The LA is, therefore, relatively large, but AD and SAD means are low.

(3) A predominance of patterns with larger distances, and with asymmetrical orientation schemata in which one figure is consistently placed at the more

direct angle. As a result the mean AD is high and so is the SAD.
(4) The same as (3), except that there is no consistency in placing the one figure at the more direct angle. As a result, while the AD is high, the SAD is low.

10.2.2 Preparation of the profiles

IPOS profiles were drawn by the graph plotter on the ICL 1901T computer at Rhodes using AMGRAPH and related routines (Terry 1976). A computer program, IPOS, was prepared by the writer to compute the mean scores from the raw data and plot them in the manner illustrated in Figure 10.4.

The profiles illustrated would be for differentiated interaction descriptions. In the case of undifferentiated situations, where no SAD is available, the last segment of the profile is suppressed.

To facilitate reading of the profiles, each is distinguished from the others by two features: the symbol marking each point, and the type of line connecting the points.

It would have been valuable to include, as an additional feature, a vertical bar through each point representing, by its length, the standard deviation of the scores in the sample. This could easily have been incorporated into the program using the available AMGRAPH routines. However, when more than one profile is plotted on the same axes, these would run into each other, and their value would be lost.

10.3 STATISTICAL PROCEDURES

10.3.1 Assumptions underlying parametric tests

Since each of the four dependent measures described above was on an interval scale hypotheses about means obtained under different conditions were tested using parametric statistical procedures, namely the analysis of variance and subsequent F-test and the t-test.

The purpose of these tests is to assess the degree of probability that the means of the populations from which samples were drawn are not the same.

However, unless certain assumptions are met, the validity of the procedure is called into question since the estimate of the probability is likely to be biased.

These assumptions are that distributions are normal, variances homogeneous, and, in the case of variables being examined through repeated measures on the same subject, the variance-covariance matrix homogeneous.

In the present experiments, departures from normality were found in the data, usually involving positive skewing. However, violation of the assumption of normality does not greatly affect the validity of the F-test, especially when departures take the same form in all samples (Kirk 1968; A.L. Edwards 1972), as was usually the case in the present data.

The assumption of homogeneity of variances was also frequently violated in the present data. The F-test is recognised to be robust in this respect also, provided that, as was the case here, the number of observations in each sample are the same (Kirk 1968; Petrinovich and Hardyck 1969).

However, violation of the assumption of symmetry of the variance-covariance matrix has the effect of positively biasing the F-test (Kirk 1968 p.142; A.L. Edwards p.271), and is more serious. It only applies to within-subjects variables with more than two levels, but several of the independent variables in the present project were of this type. Therefore Box's test was applied in these cases (Kirk 1968 p.139sqq), to discover whether the assumption of symmetry was tenable.

In many cases the assumption was violated, and steps were taken to overcome the problem thereby created. In the preliminary analyses of Experiment 2, several transformations of the data were tried, and these sometimes succeeded in rendering the variance-covariance matrix symmetrical. However this procedure proved unsatisfactory for two reasons: firstly the search for suitable transformations was time-consuming; secondly, different transformations were required for different sets of data. While the search for a suitable transformation for each set of data might have been worthwhile, had it affected the conclusions that would have been drawn from the analysis, it seemed unnecessarily

time-consuming when it was found that the size of the F-ratios was seldom greatly affected when a transformation was applied.

While these explorations suggested that the degree of positive bias to the F-test resulting from an asymmetrical variance-covariance matrix in the present data was not serious, additional caution was exercised in interpreting the results of analyses where the assumption of symmetry was violated. This was done by utilising the Geisser-Greenhouse conservative F-test (Kirk 1968).

This procedure arises from the discovery that the positive bias can be overcome by entering the F-tables with reduced degrees of freedom, the reduction being proportional to the degree of asymmetry of the variance-covariance matrix. Unfortunately, there is no simple way of estimating the proportion, but what is known is the lowest value that these degrees of freedom could be if the matrix were very heterogeneous. These lowest values are known as 'conservative' degrees of freedom.

In cases where the F-test is not significant with regular degrees of freedom, there is no problem of interpretation. It can be concluded that the evidence against the null hypothesis is not sufficiently strong. Where the F-ratio is significant using the conservative degrees of freedom, again there is no problem: it can safely be concluded that the effect is significant. However, where the F-ratio is significant according to the regular degrees of freedom, but not according to the conservative ones, a problem arises, since the regular degrees of freedom provide a criterion that is likely to be positively biased, while the conservative ones are likely to be too conservative.

If it was important formally to either accept or reject the null hypothesis in each case, this would pose a serious problem. However, in practice, the results of the statistical test are interpreted not in isolation but in the light of theoretical considerations, previous findings, and other data from the experiment. For this reason, it was felt that the fact that in a few cases there was some doubt as to the true significance level need not be a serious drawback to the procedures.

10.3.2 Use of non-parametric tests

While a solution to the problems discussed above could lie in the use of non-parametric tests, this latter procedure raises its own problems. While parametric procedures have been developed to provide comprehensive facilities for analysis of data in factorial designs, non-parametric procedures are only available for the examination of one variable at a time.

The significance level associated with the test statistic is calculated on the assumption that only one test is being made. Where many comparisons are made, these significance levels are positively biased and there is an increase in the risk of a type 1 error.

A factorial analysis of variance guards against this, since the significance levels are based on all the possible comparisons within the data being analysed. For this reason, the use of several non-parametric tests would be a less conservative procedure than the use of a parametric factorial analysis of variance.

Only in one type of case were non-parametric tests applied, and this was in examining whether mean SAD's were significantly different from zero. Here t-tests were applied to each comparison, but in cases where departures from normality were severe, the non-parametric Wilcoxon matched-pairs signed-ranks test was employed (Siegel 1956 p.75).

10.3.3 Analyses of variance

In the present project, a large number of analyses were performed on data from several experiments. While each set of data might have been examined and a search made for specific procedures suited to it, this would have been time-consuming and probably not very productive. Instead, a set of procedures was selected that could be applied to all data, and the most widely used was the analysis of variance, and related methods.

The basic procedure was to use an appropriate factorial analysis of variance. This would be a split-plot factorial design (Kirk 1968 p.245) which can be referred to as an 'SPF' analysis. In the event of significant effects being discovered, multiple comparisons between means were made using Tukey's

HSD procedure for pairwise comparisons or Scheffé's procedure for comparisons in which several means were combined (Kirk 1968 pp. 88-91). These procedures provide adequate safeguards against type 1 errors (Petrinovich and Hardyck 1969).

A drawback with the factorial design is that so much data is combined in the analysis that subtle effects of one variable upon a single level of another often become submerged. Thus no effect of variable A or of its interactions with other variables might be found, and yet, a significant effect might be found if the effect of that variable were examined in each group of subjects separately. This is not solely because the performance of separate analyses on each group of subjects increases the error rate (as it does), since often quite strong effects emerge within a single group that were submerged completely in the SPF analysis. It is also because variance heterogeneity inflates the error terms for comparisons involving a set of means with small variances.

For this reason, the data from each cultural group of subjects in any experiment was often examined alone using a within-subjects randomised block (RB) or randomised block factorial (RBF) design (Kirk 1968 chapters 5 and 7). In these analyses, variance-covariance matrices were examined for symmetry, and conservative F-tests performed where appropriate.

Dividing the data into separate analyses in this way increases the risk of a type 1 error, since the risk is greater, the more separate analyses are made. However, this problem arises whenever many separate analyses are performed and can be met by viewing with caution the finding of only a very small number of significant effects from a large number of analyses.

In the same way it was often preferred to examine certain comparisons between groups in isolation from the overall split-plot analysis. This would occur where the SPF analysis failed to indicate a significant interaction between cultural group and some other variable but where the results appeared to show an interactive pattern.

10.3.4 A priori comparisons

The t-test, in which the error rate is set per individual comparison, is usually reserved for a limited number of comparisons specified a priori (Kirk 1968). However, Petrinovich and Hardyck (1969) argue that even this procedure is questionable, since the same risk of a type 1 error is run whether a comparison is specified a priori or not. The application of a t-test, therefore, when there are many means, involves the adoption of a more lenient criterion for rejection of the null hypothesis.

In effect this means that the chance of a type 1 error is increased, while that of a type 2 error is decreased. It seems justifiable to make use of the t-test, therefore, in certain cases where one is willing to accept this. It could be argued that the specifying of comparisons a priori involves the specifying of a few special cases where one is willing to reduce the risk of a type 2 error at the expense of the type 1 error rate.

Another reason for using the a priori procedure is that the estimate of the probability that an effect is significant rests not only on the finding of a particular comparison, but also on previous findings, and on the context. Thus the probability that an effect is significant, if it is found significant at the 10% level in two consecutive experiments, is not ,1 but ,01, since the probabilites are multiplied. Often comparisons specified a priori are those which involve effects about which some prior odds are already entertained. It is the fact that the prior odds favour the hypothesis that makes the setting of a more lenient criterion for significance appropriate.

For this reason, the use of a t-test seems to be appropriate in cases where the result of a comparison can be predicted either on the basis of previous results or on the basis of theory. In such cases, the criterion can be made even more lenient by the use of a one-tailed test. This lenience reflects the fact that the comparison is not the only piece of evidence bearing on the issue.

t-tests were also employed in cases where pairwise comparisons did not involve two means taken from a set of several. For example, in examining

the question whether the mean SAD was different from zero, this is, in effect, a comparison of the two individual angles in the placement; there are no third or fourth angles with which these could be compared. Where several of these tests were employed, it was borne in mind that one out of 20 such comparisons is likely to be significant by chance alone.

PART THREE

PRELIMINARY EXPERIMENTS

CHAPTER ELEVEN

EFFECT OF FIGURE PAIRING AND TYPE OF SITUATION UPON SOCIAL SCHEMATA OF XHOSA LABOURERS AND WHITE STUDENTS

11.1 INTRODUCTION

Before the present project was conceived in the form set forth in Part One, two exploratory studies were made of the doll placements of Xhosas and Whites. Since there were weaknesses in the designs of these studies, particularly with regard to the choice of groups, they will not be described in detail. However, since the findings have a bearing on the later studies, they will be presented briefly.

Experiment 1, described in this chapter, was performed in 1972 using Xhosa labourers as subjects. Four figure pairings were represented: two men (MM), man and chief (MC), man and woman (MW) and man and youth (MY). Each was represented in a friendly (F) encounter and in a quarrel (Q).

The experiment was repeated as closely as possible later, using White students as subjects, and the results of a preliminary analysis (using AT and AD scores for orientation) of the results of the two groups was published (Edwards 1972a). Subsequently LA and SAD scores were examined and IPOS profiles prepared, and these will be presented here.

11.2 METHOD

11.2.1 Subjects and procedure

There were twenty subjects in each group. The Xhosas were employed as gardeners at Rhodes University and ranged in age from 16 to 67 (mean = 39,8). The Whites were undergraduate students with a very limited age range (mean = 20,0).

White subjects read the interaction descriptions from cards, while the

Xhosas heard them read by an interpreter. Items were presented in random order, except that the F items were all given first. After each placement, subjects made up a conversation for the figures. Fuller details of the procedure were presented in Chapter 10.

11.2.2 Interaction descriptions

Interaction descriptions used with the Whites could not always be direct translations of the original Xhosa versions. For example, a university professor was substituted for the chief, and other changes were also made so that situations would be familiar to subjects in each group. Below are given literal translations of the Xhosa descriptions, as well as the versions used with the Whites. The original Xhosa descriptions appear in Appendix B.

Situation MM-F

Black: Here are two men and they are friends. They live at the same location and are employed at the same place. Today is Saturday and they are not going to work. This man goes to the market and meets his friend. In the market place they chat.

White: These two men are friends. They are both post-graduate students at a university. Imagine that they have just met each other and have stopped to have a friendly chat.

Situation MC-F

Black: Look at these two men. This one is important; he is a chief. He is also wise and strong. One of his daughters is married to this man. One day the chief passes the market place and sees this man. They meet, greet each other and have a friendly chat.

White: Look at these two men. This one is a post-graduate student at the university and this one is his professor. Imagine that they have just met each other and have stopped for a friendly chat.

Situation MY-F

Black: Look at this man and this boy. They live at the same location and are employed at the same place. It is Saturday and they do not go to work. The man sees the boy in the market place and goes to greet him. Then they talk and chat in a friendly manner.

White: Look at this man and this boy. They are not in the same family but they live near each other and know each other. Imagine that they have just met each other and have stopped for a friendly chat.

Situation MW-F

Black: Look at this man and this woman. They live in the same location. It is quite clear that they know each other. One day the man meets the woman at the market place. He greets her in a friendly manner and they chat together.

White: Look at this man and this woman. They are both post-graduate students at the same university, and know each other. Imagine that they have just met each other and have stopped for a friendly chat.

Situation MM-Q

Black: These two men live in the same location. This one is angry with this other one. They are at the market and they begin to talk together. All the time this one talks angrily and they begin to quarrel.

White: These men are both post-graduate students at the same university. This one is very angry with this one about something. He speaks angrily to the other and they begin to quarrel.

Situation MC-Q

Black: Here are two men. This one is important. He is a chief; he is wise and strong. One of his daughters is married to this man. The chief does not like this man. One day the chief goes to the market and meets this man. He addresses him angrily and they begin to quarrel.

White: Look at these two men. This one is a post-graduate student at the university and this is his professor. Imagine that the professor is very displeased with the student about something. He addresses him angrily and they begin to quarrel.

Situation MY-Q

Black: Look at this man and this boy. They live in the same location and are working in the same place. The man is angry with the boy and goes towards him. They are in the market. He addresses him angrily and they begin to quarrel.

White: Look at this man and this boy. They are not in the same family, but they live near each other. Imagine that the man is very displeased with the boy about something. He addresses him angrily and they begin to quarrel.

Situation MW-Q

Black: Look at this man and this woman. They live in the same location. The man is angry with the woman. One day he sees her in the market and addresses her angrily and they begin to quarrel.

White: Look at this man and this woman. They are both post-graduate students at the same university. Imagine that the man is very displeased with the woman about something. He addresses her angrily and they begin to quarrel.

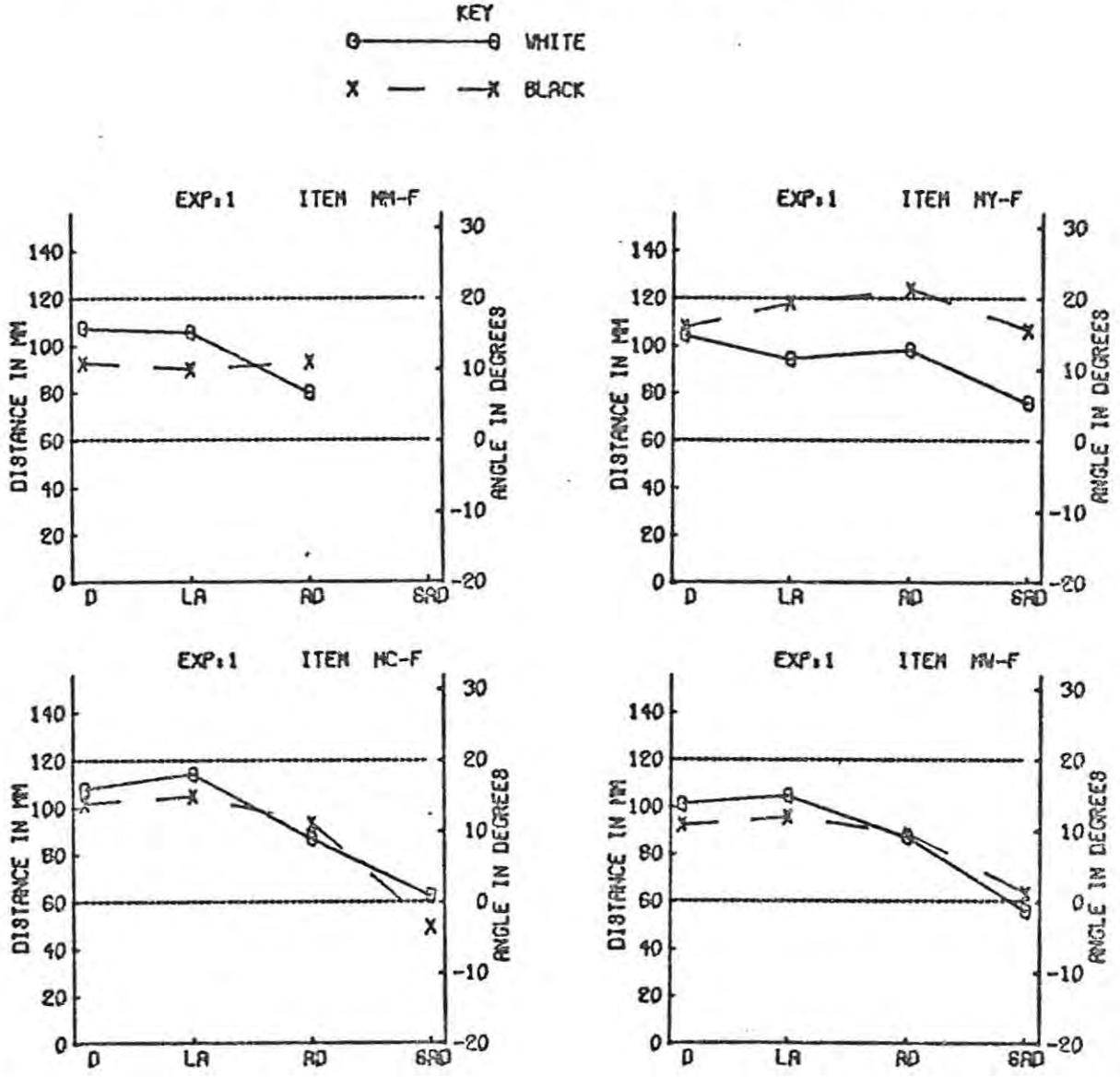
11.3 RESULTS

The results are presented in the form of IPOS profiles in Figure 11.1 (Friendly) and Figure 11.2 (Quarrel).

In the case of the D scores, there was no difference between the two

FIGURE 11.1

IPOS PROFILES OF THE FRIENDLY SITUATIONS IN EXPERIMENT 1

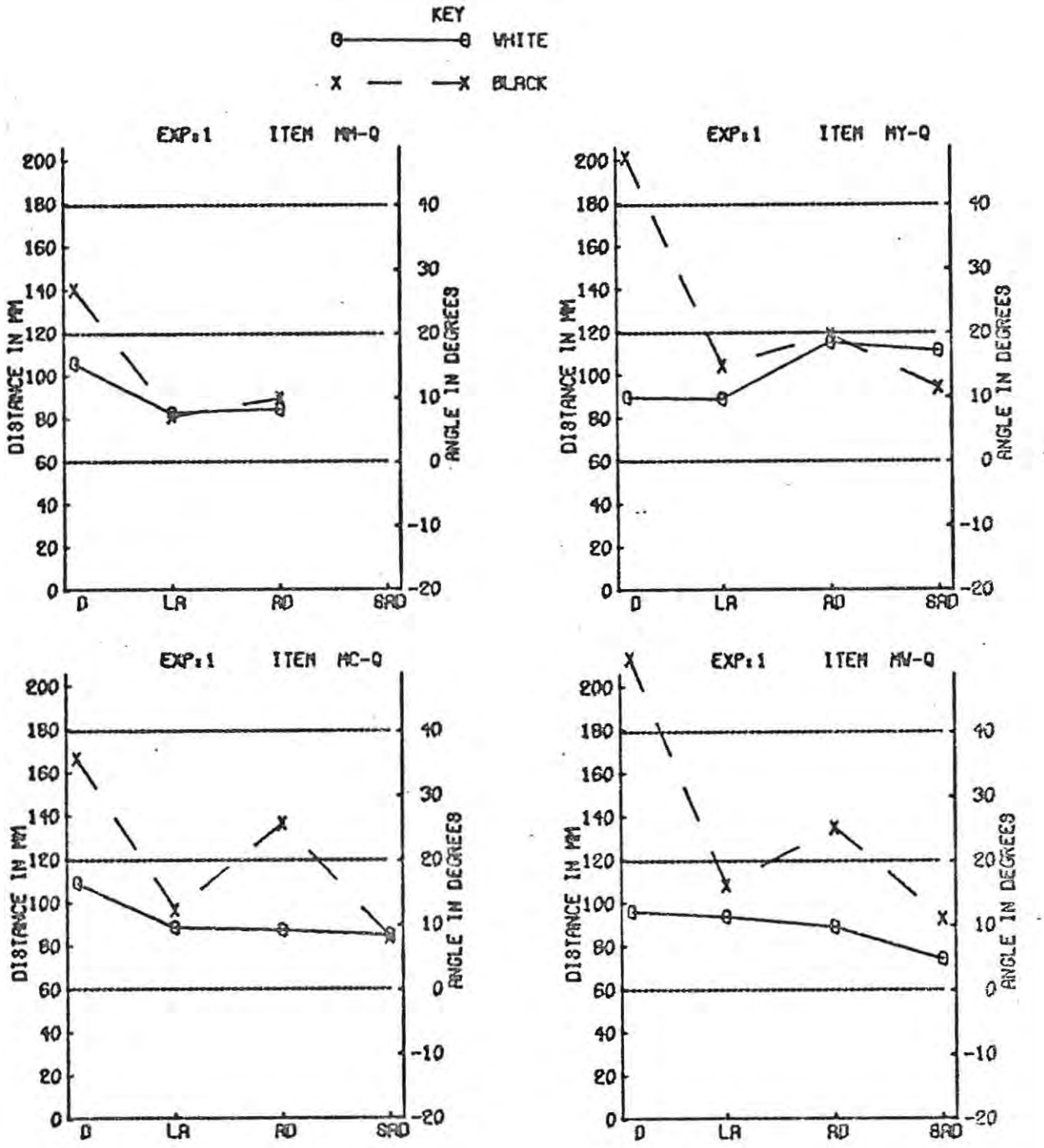


groups in the F condition, but in the Q condition the Xhosas used distances that were significantly larger than those of the Whites. Within the White group, distance was not affected by either Pairing or Motivation (F or Q), but in the Xhosa group there was a strong effect of Motivation ($p < .001$), with distances being larger in the quarrel, as well as an effect of Pairing which was confined to the Q condition ($p < .02$). This significant effect was due to the fact that distances used for MY-Q and MW-Q were significantly larger than those used for MM-Q.

In the case of LA scores, these were larger in the F than the Q items

FIGURE 11.2

IPOS PROFILES OF THE QUARRELS IN EXPERIMENT 1



(p<,025) and this was the only significant effect in the SPF analysis. Although there was no interaction between Groups and Motivation, this effect was stronger and more consistent among the Whites.

The pattern of AD's was complex, and there was a nearly significant triple interaction (Groups x Motivation x Pairing) in the SPF analysis (,1>p>,05). It was found that the Xhosas used significantly larger AD's than

the Whites in the case of MC-Q and MW-Q. The Xhosa AD's in these cases were significantly larger than those used in the F versions of these items. In the White group, AD's were significantly larger with the MY pairing than with the others ($p<,025$), although this effect was most marked in the Q situation.

Analysis of variance of the SAD scores indicated a single significant effect, that of Motivation. SAD's were significantly larger in the Q than the F versions ($p<,025$). Since SAD's were calculated by subtracting the angle of the lower status figure from that of the higher, this result indicated that there was a stronger tendency for the higher status figure to have the more direct orientation in the Q versions than in the F versions.

A set of t-tests was performed to examine whether SAD's differed significantly from zero. The results of these are presented in Table 11.1.

TABLE 11.1

MEAN SAD'S AND ASSOCIATED t VALUES IN EXPERIMENT 1

	Friendly				Quarreling				
	White		Xhosa		White		Xhosa		
Pairing	Mean	t	Mean	t	Mean	t	Mean	t	df
MC	0,9	0,24	-3,5	1,05	8,2	3,88***	8,0	0,88	19
MY	5,3	1,41	15,3	2,27*	17,1	2,85**	11,3	1,77	19
MW	-1,3	0,50	1,1	0,39	4,7	1,66	11,0	1,33	19
All	1,6	0,82	4,3	1,52	10,1	4,22***	10,2	2,22*	59

*$p<,05$ **$p<,01$ ***$p<,001$

A positive SAD that is significantly different from zero indicates a significant tendency for subjects to give the higher status figure the more direct orientation. There was no such tendency in the F items, except in the Xhosa group with the MY pairing. However, in the case of the Q items there was a significant tendency in both groups, although it was more consistent among the Whites.

The greater consistency in the WH group is not only apparent from the

higher t-value, but also from the IPOS profiles of the Q items. Here it will be noticed that the AD - SAD segment is close to horizontal in the White profiles, but shows a marked slope in the Xhosa profiles. When most SAD's are positive, AD and SAD means are close together so this section of the profile does not slope. When some SAD's are positive and others negative, the mean SAD is lower than the mean AD and this gives rise to the slope.

11.4 DISCUSSION

Two factors limit the generality of conclusions that might be drawn from these results, namely the difference in age ranges in the two samples, and the slight differences in the interaction descriptions. Nevertheless, it seemed likely that several of the effects might be due to differences between Xhosa and White culture.

A striking feature of the results was that in some cases the profiles of the two groups were very dissimilar (e.g. MW-Q, while in others they showed great similarity (e.g. MW-F). This suggested that while some situations were perceived in much the same way by the two groups, others were not.

A second striking finding was the large distances used by the Xhosas for the Q items. It was thought that this was possibly a response to the risk of physical violence erupting, and that the figures were seen as keeping their distance out of fear of this. This would explain the large distances with the MY and MW pairings, where one interactor is physically weaker than the other.

If the distances used can be taken as valid indicators of real interaction distances in the two cultures, the fact that distances were so similar in the two groups with the F items seems to bear out the general impression that there is no difference between them in preferred degrees of proximity (section 8.2.6).

Findings with the angle measures showed the value of making use of this data and of the analytical procedures employed. The use of smaller LA's with the Q items is in accordance with the use of direct gaze as a means of communicating dominance (section 3.3.3), and the preference for less direct body orientations in friendly situations (sections 6.1.3 and 6.2.2).

The role of direct gaze in establishing dominance is also suggested in the findings with the MY-Q item in the White group. Here orientation patterns were asymmetrical (large AD's), and there was a significant tendency for the man to face more directly (large SAD's). This suggests that White subjects saw the man as dominating the situation. With MC-Q the Whites also tended to give the higher status professor the more direct orientation, but the rather smaller AD and SAD scores suggest that the degree of threat was perceived as lower than with MY-Q. The low value of the SAD for MW-Q suggests that this group did not see the woman as likely to be dominated by the man.

In the Xhosa group, the youth tended to have the less direct orientation even in the friendly situation, and this seems to reflect the low status of the uncircumcised male in Xhosa society. In view of the greater emphasis on status differences in Xhosa society, it is perhaps surprising, therefore, that the Xhosas did not show a stronger tendency for the higher status figure to face more directly in the quarrels. Orientation patterns were often asymmetrical in the quarrels but there were a few cases in which the low status interactor was placed considerably more directly. An explanation of this had to await the results of Experiments 4 and 5.

CHAPTER TWELVE

EXPERIMENT 2A: EFFECT OF FIGURE PAIRING AND DEGREE OF ACQUAINTANCE ON SOCIAL SCHEMATA IN ONE WHITE AND THREE XHOSA GROUPS

12.1 INTRODUCTION

In Experiment 2, several placements were made by four groups of male subjects: White students, Xhosa students, urban Xhosa labourers, and Red blanket Xhosas. The placements were analysed in two parts, which will be referred to as Experiments 2A and 2B respectively.

Experiment 2A involved six placements with two pairings (two men = MM and man and woman = MW) being placed at each of three degrees of acquaintance (Friends = F, Acquaintances = A, and Strangers = S). The results have previously been published (Edwards 1973a).

Several studies have examined the effect of acquaintanceship on interpersonal distance and an inverse relationship between the two variables has generally been found both in real encounters (section 4.6.2) and in figure placements (sections 5.2 and 5.3 passim). The discovery of this same relationship in placements by Xhosa subjects, therefore, was sought as a means of validating the doll placement technique in this culture.

Although no difference between D scores of MM and MW placements was found in Experiment 1, it was thought possible that White subjects might use smaller distances for MW since mixed-sex pairs have been found to interact at closer distances than same-sex pairs (section 4.6.6). On the other hand, because of the status difference between man and woman among the Red Xhosa (section 8.2.4) it was thought that Red subjects might use larger distances for the MW pairing than for MM.

12.2 METHOD

12.2.1 Subjects and procedure

Four groups of thirty males participated in the Experiment. The White Student group (WS) consisted of English-speaking Rhodes students ranging in age from 17 to 26 (mean = 20,0; SD = 2,3). The Xhosa Student (XS) group consisted of Xhosa-speaking Black students from the University of Fort Hare with an age range of 19 to 26 (mean = 21,0; SD = 1,8). The Xhosa Urban (XU) group were Black garden labourers as in Experiment 1 whose ages ranged from 17 to 67 (mean = 38,4; SD = 13,9). Finally, the Xhosa Rural (XR) group were Red Xhosas interviewed at a trading store at Cizele near Idutywa in the Transkei; these ranged in age from 20 to 62 (mean = 43,1; SD = 12,2).

The six placements were made before any of those comprising Experiment 2B and the order was independently randomised for each subject. Subjects in the WS group read the interaction descriptions from cards. Those in the XS group did also, but half read them in Xhosa and half in English. Subjects in the XU and XR groups had the descriptions read to them by an interpreter. The general procedure was described in Chapter 10. Subjects were not required to provide a conversation after each placement, although they were sometimes questioned by the experimenter.

12.2.2 Interaction descriptions

The form of the interaction descriptions in English was as follows:

> These two men
> are ***********. They are talking together
> This man and this woman
> in a friendly way.

The phrase 'These two men' was used for the MM pairing, and 'This man and this woman' for the MF pairing. At the place marked by asterisks one of the following appeared: (F) 'very good friends', (A) 'acquaintances. They do not know each other very well', or (S) 'strangers. This is the first time they have met'.

The Xhosa versions are given in Appendix B.

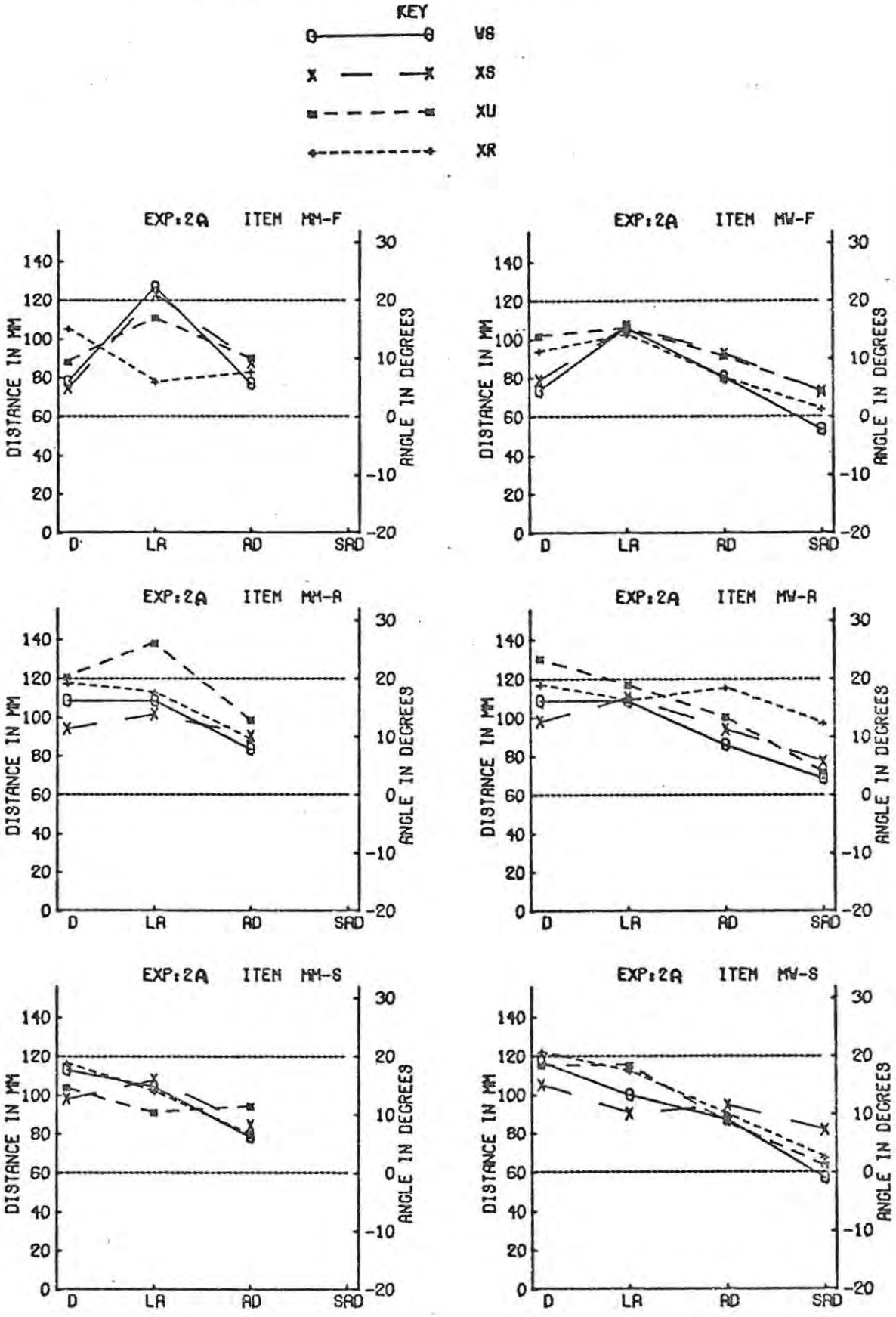
12.3 RESULTS

12.3.1 Distance scores

The results of the experiment are presented in the form of IPOS profiles in Figure 12.1.

FIGURE 12.1

IPOS PROFILES FROM EXPERIMENT 2A



In all four groups there was a significant effect of Acquaintanceship, ($p<,001$ in each case), and Stranger distances were significantly larger than those for Friends. In the WS, XS and XR groups, distances for Acquaintances were not significantly different from those for Strangers, however, but an unexpected finding in the XU group was that Strangers were placed closer than Acquaintances ($p<,05$).

The effect of Pairing was not significant except in the XU group where MM distances were closer than MW distances ($p<,05$). In no group was there a significant interaction between Acquaintanceship and Pairing.

In the SPF analysis of variance, there was a significant effect of Groups. Application of Tukey's test showed that the XS group used smaller distances than either the XR ($p<,01$) or the XU ($p<,05$) groups. Although in some cases WS distances were also smaller than those of the XR and XU groups, the overall effect was not significant using Tukey's test as a criterion. However, the Groups x Acquaintance interaction was significant ($p<,05$) so the effect of Groups was examined separately at each degree of acquaintance. In the case of Friends, Scheffé's test showed that the two student groups (WS and XS) used smaller distances than the other two groups (XU and XR).

12.3.2 Least Angle scores

There was a significant effect of Acquaintanceship on the LA's of both XU and XR groups ($p<,05$ in each case). Application of Tukey's test showed that in each case LA's for Acquaintances were larger than those for Friends or Strangers. This effect was most marked in the XU group with the MM pairing. There were no other effects in the RBF analyses.

In the SPF analysis, there was no overall effect of groups, but the triple interaction (Groups x Acquaintanceship x Pairing) was significant ($p<,05$). Differences between the LA's of the four groups were therefore examined separately in each of the six profiles. In the case of MM-F, application of Scheffé's test showed that the mean LA of the XR group was significantly smaller than that of the other groups taken together ($p<,01$). In the

case of MM-A, however, the large LA of the XU group was not found to be significantly different from that of the other groups, and in none of the other profiles did the effect of Groups on LA scores approach significance.

12.3.3 Angle Difference scores

The SPF analysis of variance of the AD scores showed a significant effect of Groups ($p<,05$). Application of Tukey's test discovered only one significant difference between means: AD's were smaller in the WH than in the XU group, but the overall difference was only 4^{o}.

There were no effects of Acquaintanceship or Pairing within the WS, XS or XU groups, but, in the XR group, both these effects, as well as the interaction between them, were significant. Closer investigation showed that XR subjects had used smaller AD's for MM than for MW in both the Acquaintance ($p<,01$) and Stranger ($p<,05$) conditions, and that in the case of the MW pairings AD's were larger in the Acquaintance than in either the Friends or Strangers conditions.

12.3.4 Signed Angle Difference scores

SAD scores were calculated by subtracting the angle of the man from that of the woman in the MW placements. A positive value of the mean SAD, therefore, indicates a tendency for the man to be the more directly facing.

In the XR group, SAD's were affected by the Acquaintanceship factor, being larger for Acquaintances than for either Friends or Strangers. Otherwise there were no effects of the independent variables.

Although there was no significant difference between the groups, the overall mean SAD of the WS group was very close to zero, while that of the Xhosa groups was in each case positive, and in each case significantly greater than zero (for XS $t = 3,61$; $p<,001$); for XU $t = 2,16$; $p<,05$; for XR $t = 2,99$; $p<,01$; $df = 69$ in each case). When individual placement conditions were examined, the mean SAD was significantly greater than zero in the XS group with both Acquaintances and Strangers, and in the XR group with Acquaintances.

There was thus a detectable tendency for Xhosa subjects to give the woman the less direct orientation when making MW placements.

12.3.5 Other analyses

Subjects in the XS group could be divided into two groups according to whether their home background was urban or rural. However, no differences between these two sub-groups were found on any score.

Responses of those XS subjects who read the instructions in Xhosa were compared with those who read them in English. There was a significant effect in the case of the D scores, with the Xhosa instruction subjects using the larger distances ($p < .05$).

12.4 DISCUSSION

One unexpected finding was that several XU and XR subjects seemed to perceive the Acquaintance condition as a hostile situation. This seems to account for the use of larger distances by the XU group in the Acquaintance than in the Stranger condition, and also for the large LA's of this group, especially with MM-A. This use of large LA's in a hostile situation was found with this group in Experiment 2B also. In the XR group the perceived hostility is reflected in the greater AD's used for Acquaintances, and for the strong tendency for the man to be the more directly facing in this condition.

Two possible accounts of this finding were suggested. The first was that the words used to render 'Acquaintance' in Xhosa carried a connotation of hostility. The second was that the Xhosas who were unfamiliar with English culture lacked the construct 'Acquaintance', and tended to regard the idea of a person who is known but not known well with some suspicion. This issue will be discussed again in the account of Experiment 6 in Chapter 18.

The fact that all groups showed a significant effect of the Acquaintanceship factor on D scores is evidence for the validity of the doll placement as a reflection of real behaviour in these groups. The fact that Acquaintance distances were not significantly closer than Stranger distances is probably

due to the use of the phrase 'they do not know each other very well', which suggests a low level of acquaintanceship. Perhaps if a phrase indicating an intermediate level of acquaintanceship had been employed, the mean distances would have been lower.

It is perhaps surprising, in view of the literature on the low status of Red women in traditional Xhosa culture, that XR subjects did not use larger distances to represent MW than MM. In the Friends condition the mean for MW was actually 11mm closer than that for MM. The findings suggest that the effects of the status differences between man and woman are rather overemphasised by the anthropological writers cited in Chapter 8. It seems likely that the role differentiation between men and women, being an accepted part of the structure of society, is not something that normally gives rise to anxiety, so that man and woman can meet and chat on much the same terms as man and man, so long as each accepts his or her appointed role. When there is conflict, however, as was perceived in the Acquaintance encounters, the encounter is affected by the dominance of the male with the result that he is perceived as having the more direct orientation than the woman. The Acquaintance condition was the only one in which the XR subjects showed a marked tendency for the woman to be the less directly facing (note the large SAD in the IPOS profile). Even in this condition, however, the mean distance of MW was no larger than that of MM.

The finding that XU subjects used smaller distances for MM than for MW had not been expected, since subjects from the same group used identifical distances for MM-F and MW-F in Experiment 1. The overall difference between MM and MW distances in the present case was only small (about 10mm), however, so possibly not too much should be made of it. If XU subjects really do see MM pairs as interacting at a slightly closer distance than MW pairs, this could perhaps reflect an estrangement between the sexes. This might arise from the loss of the security provided by the clear role distinctions of Red culture, without, at the same time, any norm of full social equality between the sexes. The fact that the XU subjects showed a small but significant tendency for the male to have the more direct angle in MW placements suggests that he tended to

be seen as the dominant partner. This effect was not at all strong, however, as can be seen from the SAD's in the profiles of this group.

Distances used by the Xhosa students were similar to those used by the Whites, and this supports the conclusion of Experiment 1 that distance preferences of Xhosa and Whites are very similar. The major difference between groups was within the Xhosa groups themselves, with the Xhosa students using smaller distances than the other two groups. This could be due to the difference in ages or educational levels of the groups. Possibly student sub-culture has a closer normative distance than less educated groups. Roger and Mjoli (1976) found that Xhosa students used smaller distances than unacculturated Xhosas of the same age when representing themselves with a peer, which suggests that the present effect is not due to age. The standard deviations of the distance scores of the XU and XR groups ranged from 25,7 to 60,6 while those of the student groups were much smaller, between 9,8 and 41,2. Possibly this means that the larger distances of the XU and XR subjects are not due to an intolerance of closer proximity, but to a greater separation tolerance. This would result in XU and XR subjects having a greater range of expected distances, and thus a larger mean value, than the student groups.

The similarity between the distance schemata of Black and White students was also matched by a similarity in orientation schemata, and in no case did the two groups differ on the orientation measures. The one exception to this was that while the WS group showed no clear tendency for the man to be the more directly facing in the MW placements, the XS subjects did show a clear tendency to do so. This suggests that these subjects were affected by the traditional dominant role of the male. As suggested above, this status difference seems to have a greater impact upon schemata in groups (like XS and XU) where there has been some breakdown of the traditional role boundaries.

It might perhaps have been expected that LA scores would have been larger with Friends than with Acquaintances or Strangers, because of the tendency for individuals to reduce eye-contact with closer distances and to adopt less direct orientations (sections 6.1.3 and 6.2.2). Although no such effect attained

significance, this pattern was in fact found in the two student groups, but only with the MM pairing. In both cases the MM-F LA was rather larger than that for MM-A and MM-S.

The use of higher AD's for the MW pairing than for MM by the XR subjects in representing Acquaintances and Strangers is interesting, especially since, in the Strangers condition, there was no corresponding large SAD. In other words, although more asymmetrical orientation patterns were used for MW-S than for MM-S this was not because of a tendency to give the woman a less direct orientation in the latter case. Possibly this reflects the uneasiness of an encounter between opposite sex strangers, although the size of the difference between MM and MW AD's was, though significant, a matter of less than 4^{o}.

In all Xhosa groups there was a significant tendency for the man to be in the more direct orientation when placed with the woman. This can be understood as the effect of the traditional dominance of the male role (section 8.2.4) and of the association between dominance and direct gaze (section 3.3.3). However, as can be seen from the profiles in Figure 12.1, these mean SAD's were not large. In the XR group, the effect was only clear in the acquaintance placements, which were perceived as hostile (the tendency for the lower status interactor to be in the less direct orientation in a hostile encounter, though not in a friendly one, was also noted in Experiment 1). Since the dominance of the male is strongest in traditional Red culture and becomes eroded in urbanised and westernised groups, it is therefore surprising that the effect was not strongest in the XR group. Instead, using as a criterion the probability levels at which the null hypothesis that mean SAD was equal to zero could be rejected (section 12.3.4), the effect was actually strongest in the XS group.

Finally, the use of larger distances by the Xhosa instruction subjects in the XS group was unexpected. Possibly the result is an effect of set (see section 7.3.6). The use of English may have predisposed subjects to construct their placements on the basis of the norms of the student subculture while the use of Xhosa may have produced a set towards the less acculturated home background.

CHAPTER THIRTEEN

EXPERIMENT 2B: SOME DETERMINANTS OF THE SYMMETRY OR ASYMMETRY OF ORIENTATION SCHEMATA IN THREE XHOSA AND ONE WHITE GROUP

13.1 INTRODUCTION

Experiment 2B was undertaken as a test of the theoretical analysis of the relation between doll orientation and the tolerance of and need for eye-contact of the people represented by the dolls that was presented in Chapter 6. Placements were made by the four groups taking part in Experiment 2 (WS, XS, XU and XR) of three situations which were expected to elicit symmetrical orientation patterns and another three which were expected to elicit asymmetrical ones. A finding of the predicted patterns in the four groups would be evidence for the validity of this framework for the groups in question. The results for the WS group were presented in the writer's Master's thesis (Edwards 1973b) and have been published (Edwards 1973c).

13.2 METHOD

Seven situations were selected, to be presented in each of three versions. However only three of the situations, in each of two versions, were subjected to intensive analysis. To the first or 'A' version of the situation, it was expected that subjects would respond with symmetrical orientation patterns, while to the second, or 'B' version, responses with asymmetrical patterns in which one specified interactor had the more direct orientation, were expected.

The English versions of the six descriptions examined in this chapter are given below and the Xhosa versions appear in Appendix B.

Situation 1: This was a friendly encounter described as follows:

'A' (symmetrical) version

These two men are both warm and friendly people. They are talking together about their wives and children and other domestic matters. They get on well with each other.

'B' (asymmetrical) version

One of these men is warm and friendly. He is eager to talk to the other about his family and other domestic matters as he enjoys chatting. The other is a quiet and shy person who does not at the moment want to talk. There are some problems he wants to think about and he wants to be alone. However at the moment he is listening to the other's conversation because he is too polite to go.

Situation 2: This was a quarrel described as follows:

'A' (symmetrical) version

These two men are in disagreement about something. They are both very angry and they are arguing. Each is determined to bring the other round to his point of view.

'B' (asymmetrical) version

These two men are in disagreement about something. One is determined to change the mind of the other and to make him agree with him. The other cannot accept the arguments of the first man, but he is shy and confused and does not know what to say in reply. He feels threatened by the first man and does not answer very much.

Situation 3: This involved a request for help.

'A' (symmetrical) version

One man is asking a request of the other. The other is very pleased to help him.

'B' (asymmetrical) version

One man is asking a request of the other. It is very important that the request is granted. The other does not want to grant the request, but he is a kind person and does not really want to refuse either. He is uncertain what to do.

Each of these items has been discussed fully by Edwards (1973b) and more briefly by Edwards (1973c).

The twenty-one items from which these six were taken were presented to the subjects (described in section 12.2.1) in an order that was independently randomised for each subject after the six placements of Experiment 2A had been made.

13.3 A PRIORI HYPOTHESES

The main object of interest in this experiment was the orientation

patterns associated with the A and B items. In the A items, these patterns were expected to be symmetrical, while in the B items they were expected to be asymmetrical, with the less active or more anxious interactor having the less direct orientation (i.e. the 'quiet and shy' character in 1B, the 'shy and confused' character in 2B, and the one who is 'uncertain what to do' in 3B).

SAD scores could be calculated for the B items, and also for item 3A. In the B items, these were obtained by subtracting the angle of the more active participant from that of the less active one, and in the case of item 3A (as with 3B) by subtracting the angle of the person asking from that of the person asked.

Therefore hypothesis one was that mean AD would be greater with the B than with the A items, and hypothesis two that mean SAD in the case of each B item would be greater than zero. In the case of item 3A it was not expected that either figure would be given the more direct orientation consistently, so hypothesis three stated that mean SAD for item 3A would not differ significantly from zero.

An additional three hypotheses were advanced concerning the D scores. Since anxiety and uncertainty are associated with enlarged interpersonal distances (section 4.6.2), and since one of the interactors in each B situation is described as anxious or uncertain, hypothesis four predicted that distances would be larger in the B than in the A situations. Based on the results of Experiment 1, Whites were expected to use similar distances for the friendly item (1A) and the quarrel (2A), while Xhosas were expected to use larger distances in the quarrel. Thus hypothesis five stated that in the WS group items 1A and 2A would not elicit different distances, while hypothesis 6 stated that in the Xhosa groups distances would be greater with item 2A than item 1A.

A final hypothesis concerned the LA scores. Item 2A was designed to elicit very direct face to face orientation patterns, while less direct patterns are associated with more friendly encounters (see section 6.2.2). Hypothesis 7, therefore, stated that LA scores would be larger with item 1A than with item 2A.

13.4 RESULTS

The results are presented in the form of IPOS profiles in Figure 13.1. It can be seen that in every group AD scores for the B items were considerably larger than those for the A items in accordance with hypothesis one. In each group the F ratio for this effect was large and significant well beyond the ,001 level. In addition, SAD scores in the B items were also large and positive, in accordance with hypothesis two. With one exception, mean SAD's were significantly greater than zero beyond the ,001 level. The exception was the mean of the XU group for item 1B where the significance level was better than ,01. As expected, therefore, the B items elicited asymmetrical orientation patterns in which the interactor who would have been expected to have less tolerance of eye-contact was consistently placed in the less direct orientation.

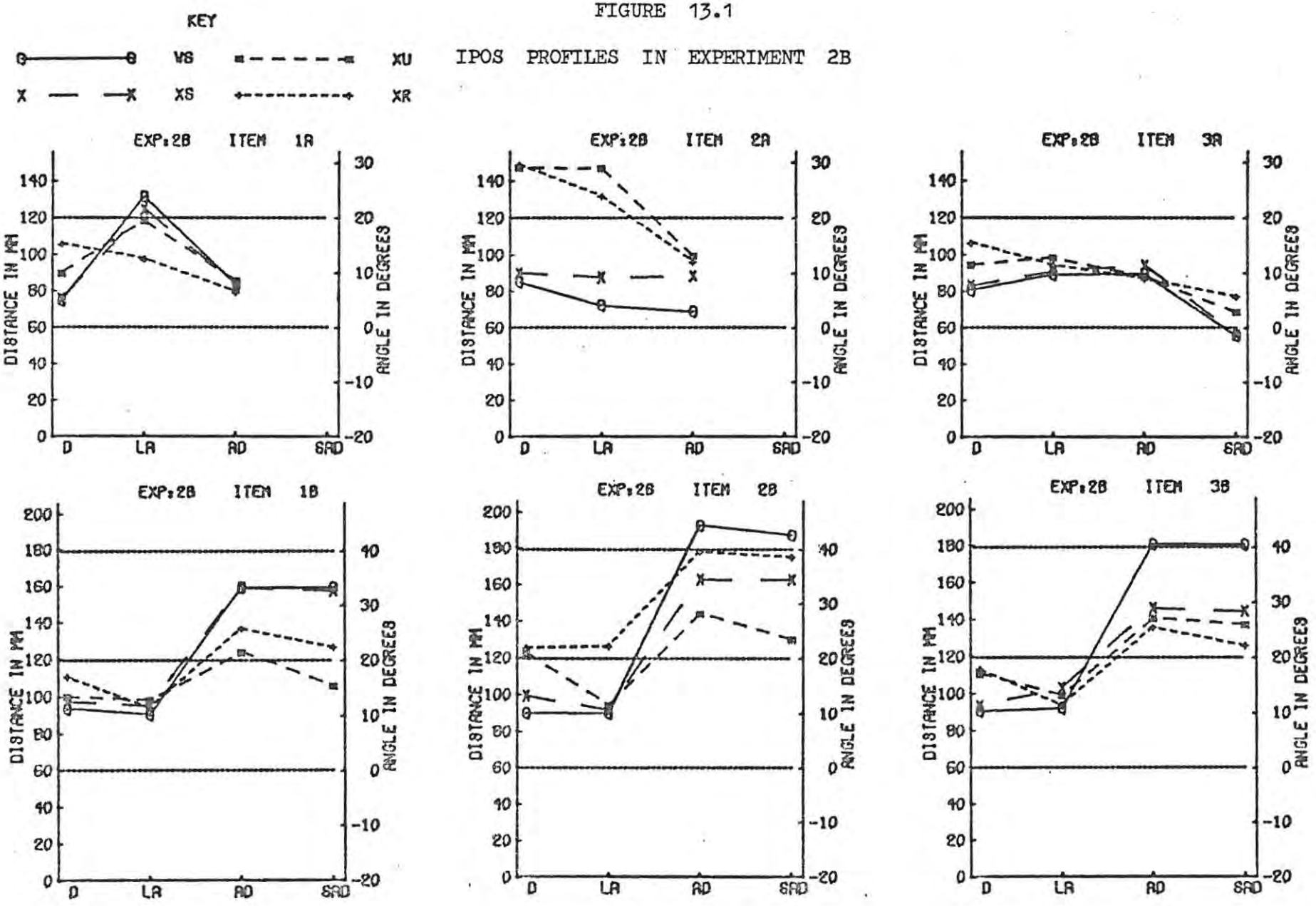
In the case of item 3A, AD's were as expected, lower than in item 3B, and SAD's were also considerably lower. In accordance with hypothesis three the mean SAD with item 3A was not significantly different from zero in the case of the WS, XS and XU groups. The XR SAD, on the other hand, though not very large (5,7) was significantly different from zero at the ,02 level (t = 2,584; df = 29). Thus, while the other groups showed no consistent tendency for asker or asked to have the more direct orientation, the XR group tended to give the more direct orientation to the asker.

Hypothesis four, which predicted larger distances in the case of the B than the A items was well supported in both the WS and XS groups (p<,001 in each case according to the analysis of variance). In the case of the XU and XR groups, however, it was not supported. With items 1 and 3 the means with the B version were a little larger than those from the A versions, but the effect did not approach significance except in the case of item 3 in the XU group where the effect was just significant using a one-tailed t-test as a criterion (p<,05). With item 2, on the other hand, the effect was opposite to that predicted in both XU and XR groups, with the distance being larger in item 2A than in 2B (p<,02 and <,01 respectively, based on t-tests).

When the D scores in items 1A and 2A were compared, in the WS group the

FIGURE 13.1

IPOS PROFILES IN EXPERIMENT 2B



mean for item 1A was 10mm smaller than that for item 2A, a difference which was significant at the ,05 level (t = 2,018; df = 145). Thus hypothesis five, which predicted no difference, was not supported although the magnitude of the difference was small. A similar result was found in the XS group where the mean D for 2A was 14mm larger than that for item 1A and again the difference was significant (t = 2,043; df = 145; p<,05). This was in accordance with hypothesis six. In the XU and XR groups the mean D in item 2A was considerably larger than that in 1A and the effect was significant well beyond the ,001 level in each case. Thus hypothesis six held most strongly in these groups.

The prediction of hypothesis 7, that LA's would be smaller with item 2A than 1A, was well supported in the two student groups. However, in the XU and XR groups, item 2A was, unexpectedly, associated with large LA's. These were actually larger than those of item 1A, an effect which was not significant in the XU group, but which was in the XR group (p<,01 by Tukey's test).

The pattern of responses in each of the two student groups was similar on all measures, as was the pattern in the two other Xhosa groups. While there were differences between the responses of the different groups, the form varied from item to item, and this was reflected in the significance of several of the interaction terms in the SPF analyses. In the case of the D scores, there was a significant effect of Groups (p<,001) which indicated that the distances used by the two student groups were smaller than those used by the XU and XR subjects, but the interaction of Groups with Symmetry condition (A or B) and Situation (1, 2 or 3) were both significant. If the profiles are examined it can be seen that the D scores of the groups differ more strongly in the case of the A items than with the B items, and more strongly with Situation 2 than with 1 or 3. The strongest effect was with item 2A.

In the case of the LA scores there was a significant triple (Groups x Symmetry x Situation) interaction. When each of the six items was examined separately, the only significant effects of Groups were in the cases of items 2A and 2B. With item 2A application of Scheffé's test showed that the combined

mean of the student groups was significantly smaller than that of the combined mean of XU and XR ($p < .01$), while in the case of 2B, the mean of the XR group was significantly larger than the combined mean of the three remaining groups by Scheffé's test ($p < .001$).

In the case of the AD scores there was a significant Groups x Symmetry interaction. With the A items no differences between groups existed, but with the B items the AD's of the WS group were significantly larger than those of the XU ($p < .01$ by Tukey's test). When SAD's in the four differentiated items were examined together, the same pattern was found, with SAD's significantly larger in the WS than the XU group ($p < .05$) and the other groups being intermediate and not significantly different from either. The profiles of the B items give the impression that there were large differences between groups with regard to both AD and SAD scores, but variances were large for these scores so that apparently large differences were not always significant.

When the effects of language of instruction and home background (urban or rural) was examined in the XS group, they were not found to be significant, although the Xhosa instruction subjects did have a slightly higher mean distance than the English instruction ones, as had been found in Experiment 2A.

13.5 DISCUSSION

The main aim of the experiment, which was to establish that the orientation measures were related to eye-contact needs of the interactors represented, was accomplished for all groups, since in each case asymmetrical orientation schemata were discovered for the B items, with the figure expected to have lower tolerance for eye-contact being placed consistently in the less direct orientation.

The fact that the XU group had smaller AD's and SAD's than the WS group probably does not mean that low eye-contact tolerance is less reliably rendered by large angles in this group, because the large LA's in this group with item 2A show that large angles are used by this group when an appropriate occasion arises. The result may rather reflect a difference in the extent to which the

B situations are perceived as reducing an individual's tolerance for eye-contact.

The fact that SAD's were significantly greater than zero with item 3A in the XR group, may similarly reflect a difference between groups in the perception of eye-contact needs and tolerance in this situation. However, since a comparison with the mean SAD's of the other groups in this situation was not significant, the present result cannot be regarded as a clear indication that this is the case.

The orientation schemata of the XU and XR groups for item 2A were unexpected. Although the large distances were of the same order as those found in the MM quarrel of Experiment 1 with Xhosa subjects, the large LA's were a new feature.

Discussion with Xhosa informants suggested two possible explanations of the large LA's. The first is that a quarrel is a public affair in Xhosa culture, so that the participant is as much concerned to state his case to real or potential bystanders as to his opponent. For this reason he is often represented in an indirect orientation, facing the bystanders. In western culture, on the other hand, a quarrel is something to be settled between the participants, and intervention by bystanders is not typically expected or welcomed, so that the participants reserve their attention for each other.

The second explanation is that the level of arousal in a quarrel tends to be higher in the XR and XU groups, so that not only large distances, but also avoidance of direct gaze have to be adopted in order to prevent the participants' emotions getting out of control. The role of avoidance of direct gaze in quarrels in the XR group became clearer in the analysis of Experiment 4, and will be discussed in that context.

The similarity of the schemata of the two student groups noted in Experiment 2A was again evident here. The XS group did not have quite such direct orientation patterns as the Whites with item 2A or such large AD's and SAD's with items 2B and 3B, but none of these differences was large enough to be significant.

The profiles from item 1A are similar to those obtained with item MM-F

in Experiment 2A. This is not surprising since the two situations both involve friendly encounters between two men. In each case the XR profile stands out from the rest in having a large distance and low LA, indicating that this group used placements with more direct orientation patterns as well as with larger distances. Although the LA was not significantly lower than that of the other groups in either case, the fact that the pattern was found with both these items suggests that the effect may well be a genuine one.

While the XU and XR subjects used much larger distances for the quarrel item 2A than did the two student groups, there were four subjects in the XR and five in the XU who used distances of less than 80mm. In the WS and XS groups the numbers were 11 and 18 respectively. Thus, while XU and XR subjects used larger distances than the student groups on average, this was partly because the range of scores tended to be larger: the largest distance in the WS group was 178, in the XU group 412, and in the XR 339. These large distances never occurred in the WS group; although one Xhosa student also had a large distance of 351, this was atypical since the next highest score was only 176.

This same conclusion, that the XU and XR subjects see a larger range of distances as appropriate than do the students, can be drawn for the friendly encounter also, and has already been suggested in the discussion of Experiment 2A. With item 1A of the present experiment, scores ranged between 60 and 102 in the WS group and between 60 and 114 in the XS group. In the other groups, the ranges were much larger: 60-165 in the XU group and 60-219 in the XR group.

As suggested in the previous chapter, therefore, what may distinguish the student groups from the others is not a closer norm for interpersonal distance but a greater range of distances within which interaction is still comfortable.

CHAPTER 14

EXPERIMENT 3: AN ASSESSMENT OF SCALING ABILITY IN RED XHOSA WOMEN

14.1 INTRODUCTION

It was noted in the previous chapter that Red and urban Xhosa subjects had higher variances than the student subjects in their distance scores. While it was suggested that this meant that XU and XR subjects had a greater range of distances over which they were comfortable than did the students, another explanation of this is that subjects in these groups make scale representations inaccurately so that the range is artificially increased.

Limitations in the perceptual abilities of Black mine-workers were noted in the 1940's, although they mostly involved difficulties in reading out depth from pictures (Hudson 1967), and Jahoda and McGurk (1974a) have shown that limitations in this respect have been overestimated because of the test materials used.

Grant (1972) administered 15 tests measuring 5 cognitive factors to urban and rural Venda males. Rural illiterates were inferior to urban subjects on all factors, and the rank order of groups was (poorest first) rural illiterate, urban illiterate, rural literate, urban literate. The factors included a spatial one measuring the ability to perceive spatial patterns accurately and compare them with each other.

Similarly Page (1971, 1973), who administered a number of Piagetian tasks to Zulu youths, noted that poorer performance was largely associated with educational level rather than with whether background was urban or rural. Page also noted (personal communication) that subjects did not always use the size of models of huts and trees as a basis for making distance judgements to the appropriate scale.

Poor performance in a representational task was also noted by Jahoda and

McGurk (1974b) in Scottish children. When using dolls to copy three dimensional scenes, errors were sometimes made of the same type as were found in copying depth from pictures.

These studies suggest that the illiterate or barely literate XR and XU subjects would have a poorer level of development of perceptual skills than the other groups, and that this might have a detrimental effect on the accuracy of their representations of human interactions with dolls. Experiment 3 was undertaken to examine whether this was the case.

14.2 METHOD

A second trip was made to Cizele, near Idutywa, where the Red subjects of Experiment 2 had been interviewed. Seventeen Red Xhosa women acted as subjects. Their mean age was 29,2 (SD = 9,5) and all but one had had no schooling at all.

Subjects made twelve doll placements in response to different interaction descriptions, and after making each one they directed two other women ('actresses') to stand in the same way as the dolls had been placed. Subjects were therefore recruited in groups of three, so that two could be actresses. If subjects had time they served as actresses afterwards and actresses later served as subjects.

Placements were made at the door of a store-room, and the actresses were positioned outside, behind the subject in such as way that both dolls and actresses could not be seen simultaneously. This arrangement is illustrated in Plate 14.1.

Doll positions were recorded in the usual way. Distance between actresses was taken as the length of a line joining the points half-way between the ankles of each, and the angles at which they were standing were also measured.

The twelve items used were as follows (Xhosa versions are given in Appendix B):

PLATE 14.1

The subject (left) instructs the two actresses (centre). The doll placement that is being represented can be seen on the table in the store-room through the open door.

---

1. Two friends talking together beside the road.
2. Two acquaintances talking together beside the road.
3. Two strangers talking together beside the road.
4. These two women are disagreeing. They are not angry.
5. These two women are disagreeing. They are arguing and are rather angry.
6. These women are disagreeing. They are arguing and are very angry.
7. Two women talking about the drought.
8. Two women talking in a friendly way about their husbands and children.
9. A woman accuses a boy of lying. The boy denies the accusation and is very angry.
10. A woman accuses a boy of lying. The boy is hurt and does not know what to say.
11. The first woman accuses the second of lying to her. The second is hurt and does not know what to say.
12. One woman is asking a request of the other. The other does not want to grant the request, but she is a kind person and does not want to refuse either. She is uncertain what to do.

14.3 RESULTS

14.3.1 Error in distance scaling

For each doll placement the expected distance between the actresses was computed assuming that the subject had made an accurate scale representation of her doll placement. For this purpose, it was assumed that all actresses were 1,65m in height, which was the mean height of all actresses who participated (the range was 1,6 to 1,72m). Four measures of error were then obtained:

(1) Signed error: this was expected distance minus obtained distance and was positive if the actress distance was too large and negative if too small;

(2) %Signed error: this was signed error expressed as a percentage of the expected distance;

(3) Absolute error: this was the absolute value of the Signed error; and

(4) %Absolute error: which was the absolute value of the %Signed error.

These scores were obtained for all 204 placements made, and the means of each, both for the whole experiment, and separately for each subject, are shown in Table 14.1. Over all placements the %Signed error was very low, indicating that subjects did not consistently over- or under-estimate distance. However, some subjects were persistent over-estimators (e.g. numbers 10 and 15) and others persistent under-estimators (e.g. numbers 2 and 9).

Because over-estimations and under-estimations cancel each other out in the grand mean of the %Signed error, the mean of the %Absolute Signed error provides a measure of the amount of error of either type. It can be seen that subjects ranged in this respect from 6% to 23% with a mean of 14%.

14.3.2 Validity coefficients for distance

Product moment correlations ('validity coefficients') were computed between doll and actress distances separately for each subject and for all placements combined. The values for individual subjects are only based on twelve scores, and are very sensitive to the range of responses. The Spearman rank correlation between values of the validity coefficient and the standard

TABLE 14.1

VALIDITY COEFFICIENTS AND MEAN ERROR SCORES IN EXPERIMENT 3

Subject	r		Signed error	%Signed error	Absolute error	%Absolute error
1	,90		-12,3	-10,3	15,4	14,6
2	,47		-21,8	-18,3	21,8	18,3
3	,71		-12,1	-3,2	29,1	22,3
4	,79		0,5	0,3	9,8	14,1
5	,55		3,2	5,1	10,6	12,8
6	,84		-4,3	-3,6	8,3	10,1
7	,36		-3,4	-2,9	6,3	5,7
8	,15		-1,6	-1,0	8,4	8,3
9	,91		-29,9	-15,0	32,2	17,0
10	,91		12,8	13,5	14,8	14,8
11	,87		-8,3	-3,1	16,3	11,6
12	,92		13,6	16,0	14,6	16,6
13	,90		-31,8	-8,3	42,3	22,0
14	,85		4,4	6,0	15,4	13,0
15	,79		24,5	22,5	24,5	22,5
16	,75		4,7	4,7	13,7	10,8
17	,51		10,0	9,3	10,7	9,9
All subjects	,83	Mean	-3,1	0,7	17,3	14,4
		SD	24,3	18,2	17,3	11,1

deviations of each subject's score was therefore large (,93). This means that subjects who had high validity coefficients were those who used a wide range of distances in their twelve doll placements. The low validities of subjects 7 and 8, therefore, do not indicate poor performance, only that their responses fell in a limited range. In fact these were the two most accurate subjects making an average of less than 10% Absolute error.

The size of the validity coefficient over all placements (,83) indicates a high degree of common variance between doll and actress distances.

14.3.3 Validity of orientation measures

305 of the 408 actress angles in the experiment were 0° and these corresponded to doll angles from 0° to 15° with a mean of 3,8° and a standard deviation of 3,59. Error scores were only calculated for the remaining cases, where actress angles were large, mostly between 45° and 120°; there was a mean Absolute error of 12,2°, and Signed errors ranged from -46° to +37° with a mean of 6,1 and a standard deviation of 14,9. This means that were some cases of extreme over- or under-estimation, and that on average actress angles were rather larger than doll angles.

Because several subjects made only face to face placements with both dolls and actresses, validity coefficients could only be calculated for 10 subjects. The values in these cases were high, however, ranging from ,90 to ,99.

14.4 DISCUSSION

The experiment showed that doll placements by Red Xhosa women provide fairly accurate scale representations of real encounters. The amount of error, which is perhaps greater than would be expected in an educated group, is not sufficient to account for the larger mean distances of the XR group when compared to the student groups in Experiment 2. In the friendly items, for example, the larger XR mean could only be accounted for in this way if the mean %Signed error was of the order of -30% (i.e. if doll distances were 30% larger than the real distance). But the present results show that although errors of this size occurred in individual cases these were nearly balanced out by under-scaling of the same order.

The results suggest that although scaling inaccuracy may provide a partial explanation for the relatively large variances of the distance scores in illiterate subjects, it cannot account for all of it. And there is no doubt that when large distances are used by these subjects they represent an expectation that real distance will be large. Thus the results support the validity of the subject's placement as a measure of her schema.

The subjects in this experiment were particularly unsophisticated. One

had never visited a town, although most had been to the nearby town of Idutywa, and only one had been to school. It would be expected that cognitive skills would be particularly under-developed in this group. The degree of accuracy that was found was, therefore, encouraging.

As Ferguson points out (cited by Grant 1972 p.392), 'cultural patterns prescribe what shall be learned and at what age'. It seems likely that the basic skills required for fairly accurate doll placement are acquired within the normal course of development in Red culture. Certainly Red subjects generally seem familiar with the dolls and most respond to the task with the same spontaneity as more educated subjects.

It is quite possible that the present experiment provides a measure of scaling accuracy which underestimates the actual accuracy in the doll placement task itself. The present task involved an analytic comparison of one representation with another, while the doll placement is normally made without conscious effort after accurate reproduction in a way that involves more synthetic mechanisms.

A number of errors in angle reconstruction seemed to be due to a lack of skill in using the co-ordinate system of Euclidean geometry, a skill poorly developed in illiterate rural people (Page 1971, 1973). For example, one subject failed to render a Z orientation pattern by a Z pattern with the actresses. It seems unlikely that the subject could not tell the difference between the two arrangements, and more likely that she had difficulty copying her doll placement using the actresses because of poor co-ordinate skill. It is not necessarily the case that such co-ordinate skill would be required in making the doll placement in the first place.

It might be felt that a better test of the subject's scaling accuracy would have been to present her with an actress arrangement, and ask her to copy it by means of the dolls. This was not done, because Kuethe (1962a and b) has shown that subjects' schemata bias reconstructions in such a case. Possibly the experiment might have been conducted by attempting to elicit a schema using the actresses first, and then copying that. One reason for having the dolls

placed first was that they are so much easier for the subject to manipulate. However, should the experiment be repeated with actress placements being made first it seems unlikely that a different result would be obtained.

It seems reasonable to conclude that differences between the schemata of literate and illiterate subjects cannot be put down to differences in the development of perceptual skills in the two groups. While such differences may contribute some unwanted variance, the obtained schemata can be fairly interpreted in terms of the expectations subjects have about real spatial regulation in social interaction.

CHAPTER FIFTEEN

EXPERIMENT 4 : SOCIAL SCHEMATA OF RED XHOSA AND WHITE ENGLISH-SPEAKING SUBJECTS FOR CERTAIN FAMILY RELATIONSHIPS

15.1 INTRODUCTION

In Chapter 8, where social relations in Red Xhosa culture were discussed, it was shown that considerable formality exists between members of different generations. In addition, a special degree of respect is required of a wife towards her father-in-law and of a husband towards his mother-in-law. Although all between-generation relationships are characterised by the showing of respect (hlonipha), these two will be referred to as the 'hlonipha relationships' because of this greater requirement for respectful behaviour.

In the present experiment Red Xhosa social schemata were investigated for a number of relationships including these two 'hlonipha relationships' and compared with those of White English-speaking subjects. This study, together with Experiment 5, was intended as a means of identifying situations which elicited different schemata from these two modal groups with a view to employing them in Experiment 6 with urbanised and educated Xhosas.

15.2 METHOD

15.2.1 Subjects

Red Xhosa subjects were obtained during the visit to Cizele during which Experiment 3 was conducted. Initially it had been intended to use male subjects, as in Experiments 1 and 2. Few males were available, however, because of their absence on labour contracts, and after several had been interviewed, females were also approached. Since these were able to perform the doll placement tasks competently, an equal number of males and females were taken as subjects. At this point it was provisionally decided to employ females as

subjects exclusively for the remainder of the project, and this decision was confirmed when no difference between the schemata of male and female subjects was found in the analysis of the data (section 15.4.1).

Xhosa subjects all identified themselves as Reds. There were fifteen of each sex, the males having a mean age of 42,5 (SD = 11,14) and the females of 38,5 (SD = 16,7). The greater age of the males and the smaller standard deviation reflects the difficulty of obtaining young males as subjects. All but three of the men and all of the women had been married. Subjects were given a small quantity of groceries for participating.

White subjects were married or widowed women resident in Grahamstown who were contacted by phone. Their names were obtained from acquaintances of the writer and from previous subjects. The mean age was 39,8 (SD = 13,1). Most were interviewed in their homes, while a few came to the university.

15.2.2 Interaction descriptions

Placements were made of encounters between one 'older generation' (OG) and one 'younger generation' (YG) figure. There were two YG characters, a young wife and a young husband, and two OG figures, the father and mother of the young wife and the father and mother of the young husband. There were thus 2 x 4 = 8 OG-YG pairings, and each of these was placed both to represent a friendly encounter and a quarrel, so that there were sixteen interaction descriptions altogether.

Each description will be referred to by means of a four-letter code. The first letter denotes the YG interactor (H = husband, W = wife), the second two the OG interactor (HF = husband's father; HM = husband's mother; WF = wife's father, and WM = wife's mother) and the fourth the type of encounter (F = friendly; Q = quarrel). Thus 'WHFQ' denotes a young wife and her husband's father quarrelling.

Interaction descriptions were all of the same form and need not be given in full. Examples of a Friendly and a Quarrel item are given below in both languages:

ITEM HWMF - ENGLISH

Here is a young husband and his wife's mother.
They are talking together in a friendly way.

ITEM HWMF - XHOSA

Nanku umfana osemtsha kunye nonina womfazi wakhe.
Bayancokola kunye ngendlela ebonisa ubuhlobo.

ITEM WHMQ - ENGLISH

Here is a young wife and her husband's mother.
They are quarrelling.

ITEM WHMQ - XHOSA

Nanku umfazi osemtsha kunye nonina womyeni wakhe.
Bayancokola kunye ngendlela ebonisa ukuxabana.

15.2.3 Procedure

The procedure has been described in Chapter 9. The order of interaction descriptions was independently randomised for each subject. Communication with the Xhosas was through a male interpreter, while the Whites read the descriptions from cards. Because the situations were so similar, careful checking was undertaken to make sure that the right relationship had been represented. After each placement subjects were questioned about the topic of the conversation supposed to be taking place, but were not forced to give a response if they had no immediate one to offer.

15.3 A PRIORI HYPOTHESES

On the basis of the results of Experiments 1 and 2 and of the material reviewed in Part One, several hypotheses were advanced about the results. Six of these related to the distance scores:

Hypothesis D.1: Smaller distances will be used in the Friendly than in the Quarrel situation, but this effect will be stronger in the Xhosa than in the White group.

Hypothesis D.2: YG figures will be placed closer to their own parents than to their parents-in-law, because better acquainted with the former.

Hypothesis D.3: Xhosa subjects will use the largest distances for the 'hlonipha

relationship' WHF and next largest for the other 'hlonipha relationship', HWM.

Hypothesis D.4: Xhosa subjects will place YG figures closer to their mothers than their fathers because of the authoritarian role of the father in Red society.

Hypothesis D.5: Xhosa subjects will use larger distances than Whites. This was expected partly because of the use of larger distances by Red subjects than by White students in Experiment 2, and partly because of the greater formality between the generations in Red culture.

One hypothesis related to the LA scores:

Hypothesis LA.1: White subjects will use larger LA's in the Friendly than in the Quarrel situation, as was found in Experiments 1 and 2B. Since the Xhosas had used larger LA's for the quarrel in Experiment 2B, but rather smaller ones in Experiment 1, when compared to friendly items, no prediction was made in the present case.

One hypothesis related to the AD scores:

Hypothesis AD.1: AD scores will be higher in the Quarrel than in the Friendly situation. This was based on the results of Experiment 1 with items involving a status difference.

SAD scores were calculated by subtracting the angle of the OG from that of the YG figure. A positive score thus indicates that the OG figure is in the more direct orientation. Five hypotheses concerned these scores:

Hypothesis SAD.1: SAD's will be larger in the Q- than in the F-situation, as had been found in Experiment 1.

Hypothesis SAD.2: Xhosa subjects will have a mean SAD greater than zero in all conditions, because of the respect required of a YG towards an OG person.

Hypothesis SAD.3: In the White group mean SAD will be greater than zero in the quarrel but not in the F-situation.

Hypothesis SAD.4: Because hlonipha rules specifically forbid the young wife to make eye-contact with her father-in-law, Xhosa subjects will have a higher SAD with the WHF pairing than with any other.

Hypothesis SAD.5: Because of the greater formality between the generations in the Xhosa group, this group will have larger SAD's than the Whites.

15.4 RESULTS

15.4.1 Effect of sex of subject in the Xhosa group

First of all four split plot analyses of variance with three factors were run to discover whether the schemata of the males differed from those of the females in the Xhosa group. The three factors were Sex of Subject, Situation (F or Q) and Pairing (the eight YG-OG combinations). An analysis was carried out for each of the dependent measures (D, LA, AD and SAD) and in none of these did any F-ratio for the factor of Sex of subject, or for the interaction of this factor with one or both of the others even exceed 1,0 in value. It was concluded that there was no effect of Sex of subject, and the 30 Xhosas were treated as a single group for the remainder of the analysis.

15.4.2 Analysis and presentation of results

Within each group, each of the four dependent measures was submitted to an RBF analysis of variance (section 10.3.3) with three factors (Situation x OG x YG). SPF analyses combining the data from both groups, were also run, in which the OG and YG factors were combined into a single factor of Pairing. In addition IPOS profiles were prepared for each item. The results of these analyses are presented below.

15.4.3 Distance scores

Means and standard deviations of the D scores are presented in Table 15.1. Analyses within each group separately will be discussed first, and then the results of the comparisons between them. The mean distances of the White group are presented in Figure 15.1. The strongest feature is the larger distances for the Q than for the F items ($\underline{F}$ = 66,749; $\underline{df}$ = 1/435; $\underline{p}$<,001). This effect was stronger than had been expected, although it had been predicted in hypothesis D.1.

A second feature of the White distance data is the cross-over of the graphs of the husband's and wife's distances from the OG figures. This

TABLE 15.1

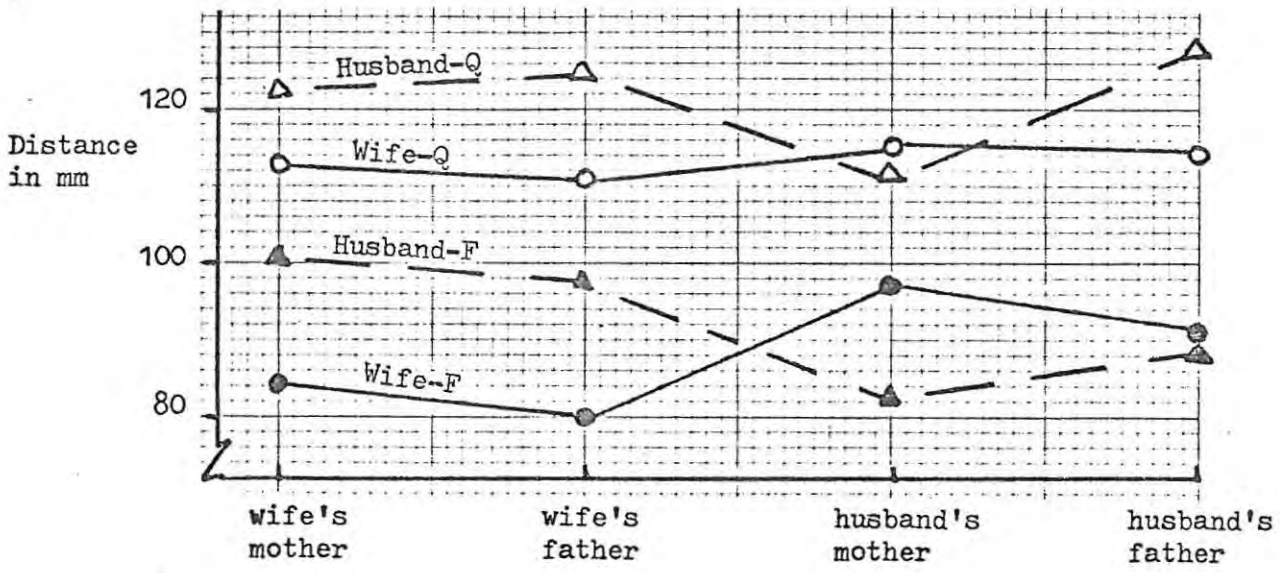
MEANS AND STANDARD DEVIATIONS OF THE DISTANCE SCORES IN EXPERIMENT 4

		HWMF	WWMF	HWFF	WWFF	HHMF	WHMF	HHFF	WHFF	ALL F
WHITE	MEAN	101.5	83.6	93.2	79.5	82.7	97.2	88.3	90.8	90.2
	SD	42.9	28.3	36.2	27.7	32.0	44.2	29.3	36.6	35.5
XHOSA	MEAN	193.5	122.8	136.5	133.3	139.2	123.5	136.4	222.2	150.9
	SD	60.3	45.5	46.4	47.6	61.5	43.0	46.1	73.8	63.2

		HWMQ	WWMQ	HWFQ	WWFQ	HHMQ	WHMQ	HHFQ	WHFQ	ALL Q
WHITE	MEAN	123.1	113.3	125.0	111.0	111.9	115.3	128.4	114.2	117.8
	SD	61.0	51.4	43.6	65.1	39.7	50.3	74.9	55.7	55.8
XHOSA	MEAN	191.6	141.1	166.9	163.3	166.9	156.6	166.7	221.5	171.8
	SD	69.6	38.4	53.6	54.0	65.7	52.6	54.8	67.9	61.5

FIGURE 15.1

GRAPH OF MEAN DISTANCE SCORES OF THE WHITE GROUP IN EXPERIMENT 4



occurred with both F and Q items and was reflected in a significant OG x YG interaction effect (F = 2,865; df = 3/145; p<,05). Tests of simple main effects showed that the wife was placed significantly closer than was the husband to her mother (F = 4,225; df = 1/145; p<,05) and to her father (F = 5,898; df = 1/145; p<,01). Although the husband was placed closer

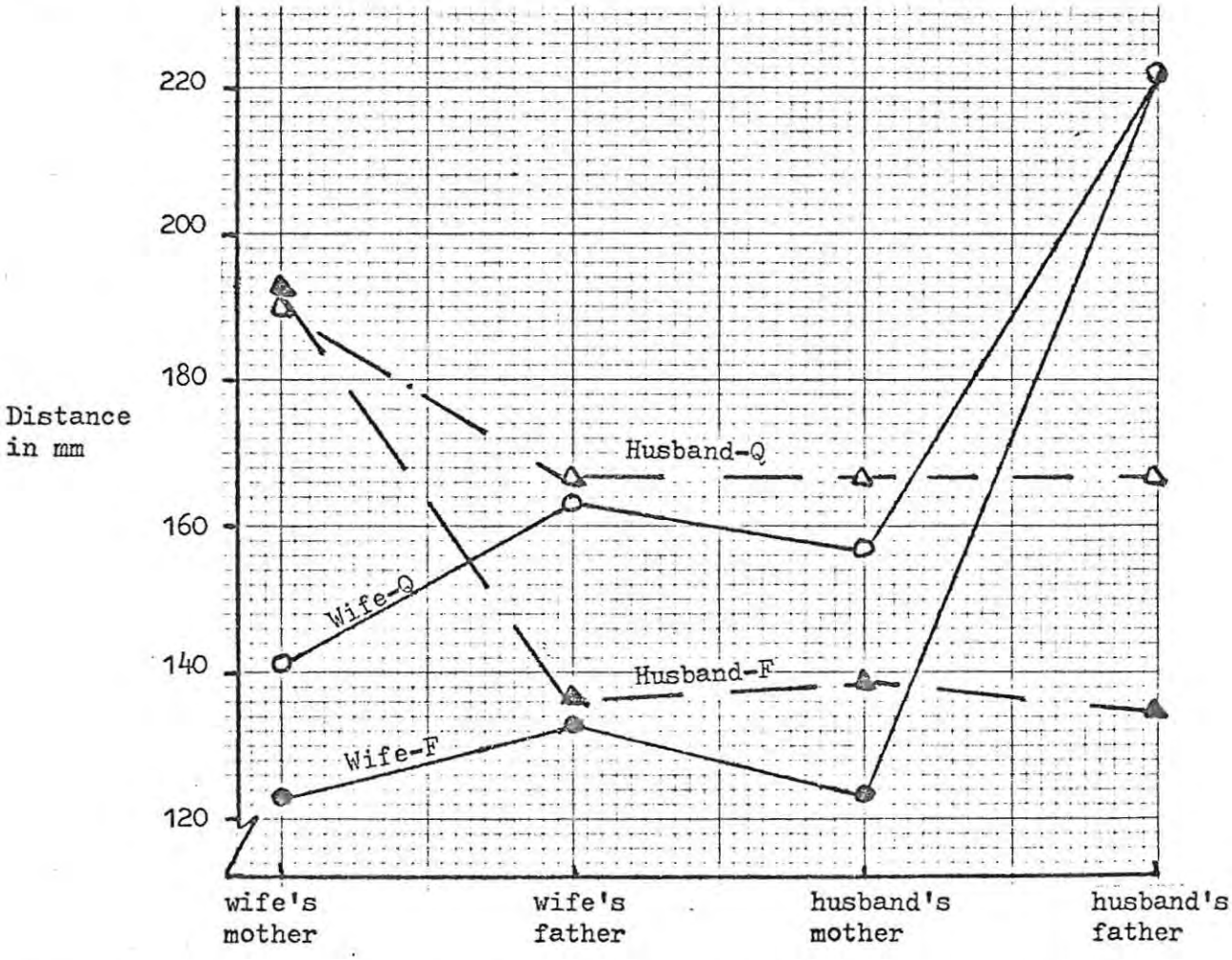
than the wife to his mother, this effect was not significant, nor was there a significant difference between the distances of the YG figures towards the husband's father.

Hypothesis D.2, which predicted that YG figures would be placed closer to their own parents than to their parents-in-law was supported in the White group. The mean of all YG-with-own-parent distances was 99,8 as compared to 108,2 for YG with parent-in-law, and this difference was significant (t = 2,470; df = 239; p<,01 one-tailed).

In the Xhosa group the pattern of mean distances was different from that of the Whites, and is shown graphically in Figure 15.2. It is dominated by

FIGURE 15.2

GRAPH OF MEAN DISTANCE SCORES OF THE XHOSA GROUP IN EXPERIMENT 4



the large distances used for the two hlonipha relationships WHF and HWM, a finding in accordance with hypothesis D.3. As predicted by this hypothesis,

mean distance for WHF was greater than that for HWM (t = 4,000; df = 177; p<,001) and that for HWM was greater than that of the largest mean of any other pairing, namely HHM (t = 5,067; df = 177; p<,001). Because the largest distance of each YG figure was with a different OG figure, there was a strong OG x YG interaction in the analysis of variance (F = 52,111; df = 3/435; p<,001).

A second strong feature was the use of larger distances in the Q- than in the F-situation (F = 52,111; df = 1/435; p<,001). This was in accordance with hypothesis D.1. It will be noted, however, that greater distances were not used in the quarrels in the case of the two hlonipha relationships WHF and HWM.

Hypothesis D.2 stated that YG figures would be placed closer to their own parents than to their parents-in-law. This obviously applied to the Xhosas in the case of the opposite sex OG figures, but in these cases it was not an effect due to degree of acquaintance, but to the formal requirements of Xhosa custom. In the case of the same sex OG figures the hypothesis was not supported: the husband was placed at the same distance from his own and his wife's father, and though the wife was placed slightly closer to her own than to her husband's mother, the effect was not significant.

Hypothesis D.4 which predicted that YG figures would be placed closer to their mothers than their fathers because of the authoritarian role of the father was not supported in the case of the husband, who was placed at the same distance from both his mother and father, but it was in the case of the wife (t = 2,658; df = 59; p<,01 one-tailed).

In the next stage of analysis, the data from the two groups were compared using an SPF design. Xhosa distances were found to be significantly larger than those of the Whites (F = 39,962; df = 1/58; p<,001), as predicted by hypothesis D.5. There was also a strong interaction between Groups and Pairing (F = 16,932; df = 7/406; p<,001). This reflects the fact that Pairing affected distance differently in the two groups, as can be seen from Figures 15.1 and 15.2.

15.4.4 Least Angle scores

Means and standard deviations of the LA scores are presented in Table 15.2. In the SPF analysis of variance, the effects of Groups (F = 28,852),

TABLE 15.2

MEANS AND STANDARD DEVIATIONS OF THE LEAST ANGLE SCORES IN EXPERIMENT 4

		HWMF	WWMF	HWFF	WWFF	HHMF	WHMF	HHFF	WHFF	ALL F
WHITE	MEAN	31.9	34.0	35.6	38.0	33.5	33.7	35.5	35.0	34.6
	SD	16.0	15.8	19.6	17.7	17.2	14.7	17.7	17.7	17.0
XHOSA	MEAN	15.7	12.0	11.6	14.4	13.5	12.0	13.9	15.8	13.6
	SD	21.1	15.9	13.0	15.4	17.8	15.2	20.0	15.2	16.7

		HWMQ	WWMQ	HWFQ	WWFQ	HHMQ	WHMQ	HHFQ	WHFQ	ALL Q
WHITE	MEAN	16.3	14.6	16.3	15.0	13.9	17.5	15.2	19.7	16.1
	SD	14.7	18.2	16.2	21.5	10.9	20.5	24.0	25.4	19.3
XHOSA	MEAN	11.8	8.9	8.1	9.9	13.4	9.1	9.2	8.0	9.8
	SD	17.6	8.9	7.9	10.5	17.6	10.7	11.5	8.5	12.2

Situations (F = 53,037) and the Groups x Situation interaction (F = 23,075) were all significant beyond the ,001 level (df = 1/58 in each case).

It can be seen that LA's were higher in the White than in the Xhosa group, and higher for the friendly situation than for the quarrel. This latter effect had been predicted for the White group in hypothesis LA.1. The interaction effect was significant because mean LA was very high in the White group in the friendly condition. The effect of Situation was therefore higher in this group than in the Xhosa group, and the difference between groups was greater in the F than in the Q situation.

15.4.5 AD and SAD scores

Means and standard deviations of the AD and SAD scores are presented in Table 15.3 and 15.4.

TABLE 15.3

MEANS AND STANDARD DEVIATIONS OF THE ANGLE DIFFERENCE SCORES IN EXPERIMENT 4

		HWMF	WWMF	HWFF	WWFF	HHMF	WHMF	HHFF	WHFF	ALL F
WHITE	MEAN	12.1	10.3	8.7	10.2	13.6	12.6	8.6	7.7	10.5
	SD	13.5	7.0	12.5	9.8	9.2	15.5	8.5	7.6	10.9
XHOSA	MEAN	15.7	9.8	11.0	12.9	11.1	11.6	9.9	21.6	13.0
	SD	18.3	10.6	14.3	14.4	11.6	16.3	13.2	19.9	15.4

		HWMQ	WWMQ	HWFQ	WWFQ	HHMQ	WHMQ	HHFQ	WHFQ	ALL Q
WHITE	MEAN	22.7	16.0	20.3	28.0	19.0	25.0	27.1	16.8	21.9
	SD	31.9	24.3	29.4	33.1	28.6	35.0	42.0	21.9	31.2
XHOSA	MEAN	23.7	20.4	19.8	18.9	15.7	19.0	19.1	29.0	20.7
	SD	34.4	33.4	24.8	23.8	15.9	27.6	19.4	30.5	26.8

Mean AD was higher in the Q than in the F situation in both the White (F = 32,022; df = 1/435; p<,001) and Xhosa (F = 19,219; df = 3/435; p<,001) groups, an effect predicted in hypothesis AD.1. There were no other effects in the White group, but in the Xhosa group there was also a significant OG x YG interaction (F = 3,331; df = 3/345; p<,025). This was because the AD with WHF was larger than that of any other.

The pattern of means found with the AD's was also found with the SAD's. Again scores were higher in the Q than the F situation both in the White (F = 17,525; df = 1/435) and Xhosa (F = 8,833; df = 1/435) groups, an effect significant beyond the ,001 level in each case. This effect had been predicted in hypothesis SAD.1. Again there was a significant OG x YG interaction in the Xhosa group (F = 4,496; df = 3/435; p<,01), due to the fact that mean SAD was larger in the case of WHF than in any other pairing. This was in accordance with hypothesis SAD.4.

When the AD scores of the two groups were compared, there was no overall difference between them (F = 0,052; df = 1/58), but there was a significant Groups x Pairings interaction (F = 2,480; df = 7/406; p<,05). This was because the AD's of the Xhosa group were significantly greater than those of

TABLE 15.4

MEANS, STANDARD DEVIATIONS AND ASSOCIATED t VALUES FOR THE SIGNED ANGLE DIFFERENCE SCORES OF EXPERIMENT 4

		Friendly			Quarrel		
	Pairing	Mean	SD	t^+	Mean	SD	t^+
WHITE	HWM	-0,8	18,3	-0,194(z)	13,2	37,0	1,953*
	WWM	-2,5	12,4	-1,093	9,4	27,6	1,116(z)
	HWF	-3,6	14,8	-1,264(z)	5,9	35,5	0,916
	WWF	1,9	14,1	0,749	14,6	41,1	1,950*
	HHM	-3,0	16,3	-1,016	6,3	33,9	1,017
	WHM	-6,8	18,9	-1,154(z)	17,7	39,4	2,186(z)**
	HHF	0,3	12,3	0,134	0,5	50,2	1,719(z)*"
	WHF	0,8	10,9	0,402	1,8	27,7	0,349
	All	-1,7	15,0	-1,766*	8,7	37,1	3,626***
XHOSA	HWM	8,6	22,7	2,069**	16,6	38,4	2,386(z)***
	WWM	0,2	14,6	0,075	11,1	37,7	1,319(z)
	HWF	6,0	17,1	1,586(z)	14,7	28,2	2,355(z)***
	WWF	2,3	19,4	0,641	8,9	29,2	1,676
	HHM	3,0	15,9	1,045	2,1	22,4	0,522
	WHM	3,7	19,8	0,285(z)	15,4	29,9	2,206(z)**
	HHF	1,6	16,5	0,173(z)	10,0	25,5	2,147**
	WHF	19,0	22,5	4,607****	18,2	38,2	2,605**
	All	5,5	19,3	4,436*****	12,1	31,6	5,941*****

* $p<,1$ ** $p<,05$ *** $p<,01$ **** $p<,001$

two-tailed probabilities

+ Where distributions departed severely from normality, the Wilcoxon matched pairs signed ranks test was used. In this case the test statistic is z and this is indicated by a (z) next to the value. For values of t, df = 29.

" The mean is very low because of two very large negative scores.

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the Whites in the case of WHF ($p<,01$) but not in any other case.

The SAD's of the Xhosas tended to be rather larger than those of the Whites, in accordance with hypothesis SAD.5. The means over all items were:

White 8,8; Xhosa 3,5. This difference was rather small and not significant in the analysis of variance ($F = 3,623$; $df = 1/58$; $,1>p>,05$). It is significant, however, if the more lenient criterion of a one-tailed t-test is employed ($t = 1,903$; $df = 58$; $p<,05$), which may be acceptable since the effect was predicted *a priori* (section 10.3.4). Although the difference between the SAD's of the two groups was largest in the case of WHF, there was no significant Groups x Pairing interaction ($F = 1,552$; $df = 7/406$) as there had been with the AD scores.

To conclude, therefore, in the case of the Q-items, both groups used more asymmetrical orientation patterns and showed a greater tendency to give the OG figure the more direct angle than with the F-items. In the Xhosa group, both these effects were greater with the WHF pairing than with the others. There was also a tendency for the Xhosas to use larger SAD's than the Whites, although this was most marked in the case of WHF, a pairing for which they also used larger AD's.

15.4.6 Direction of angle difference

Each of the sixteen items was examined to see whether there was a significant tendency for one or other figure to face the more directly. The results of this analysis are presented in Table 15.4. t-tests were used to discover whether the null hypothesis that mean SAD = zero could be rejected (except in a few cases, indicated in the table, where the non-parametric Wilcoxon test was employed). Two-tailed probabilities are shown in the table. However, it was predicted *a priori* that SAD would be greater than zero in the White group in the quarrels, and in the Xhosa group in both situations, and in these cases the tabled values of p can be halved to give a one-tailed criterion.

In the case of the White group there was no significant tendency for either YG or OG figure to be the more directly facing in the friendly situation, although there was an overall tendency for the OG figure to have the more direct orientation in the quarrel. This was in accordance with hypothesis

SAD.3. However, there was only one of the eight pairings where this effect emerged at all strongly, namely WHM.

In the Xhosa group there was a significant tendency for the OG figure to have the more direct orientation in both F- and Q-situations, as predicted by hypothesis SAD.2. The effect was only clear, however, in the case of HWM and WHF in the friendly situation and was rather weak in the cases of WWM, WWF and HHM in the quarrel.

15.5 IPOS PROFILES

The results of the experiment are presented in the form of IPOS profiles in Figures 15.3 - 15.5. Profiles from the pairings WWM, HWF and WWF are in Figure 15.3, those for HHM, WHM and HHF in Figure 15.4, and those for the two hlonipha relationships WHF and HWM are together in Figure 15.5.

The profiles in Figures 15.3 and 15.4 all show the same basic pattern. In each case Xhosa distances were much larger than those of the Whites, and White LA's were much larger than those of the Xhosas in the case of the F-items, and to a lesser extent in the case of the Q-items. With the friendly items, the AD's of the two groups were practically identical and, although there was some divergence between the groups on this score in the Q-items, it will be recalled from section 15.4.5 that in none of these cases was the difference significant. Differences between the groups on the SAD scores were also slight. Although a weak tendency for the Xhosas to have higher SAD's than the Whites was noted in section 15.4.5, this effect was not at all clear in about half of these twelve profiles.

The profiles for the wife with her father-in-law shown in Figure 15.5 exhibit a marked difference between groups on all four scores. In both the F and Q versions the Xhosa distance was exceptionally large, and, as with the other profiles, their LA's were smaller than those of the Whites. With both the AD and SAD scores there was a clear divergence between the scores of the two groups, with those of the Xhosas being higher. The factorial analyses of variance showed that the difference was significant in the case of the AD

FIGURE 15.3

IPOS PROFILES IN EXPERIMENT 4 FOR WWM, HWF AND WWF

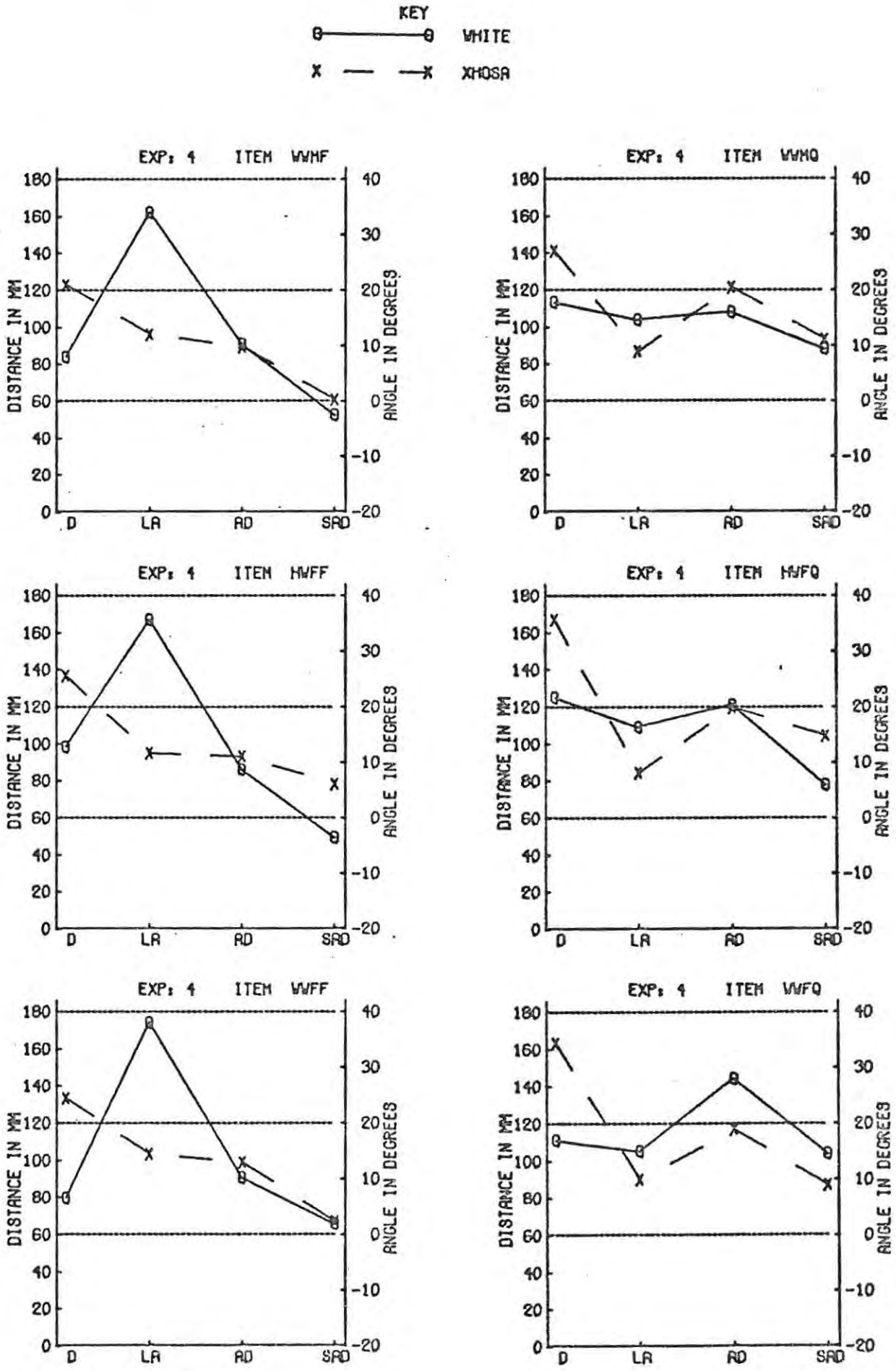


FIGURE 15.4

IPOS PROFILES IN EXPERIMENT 4 FOR HHM, WHM AND HHF

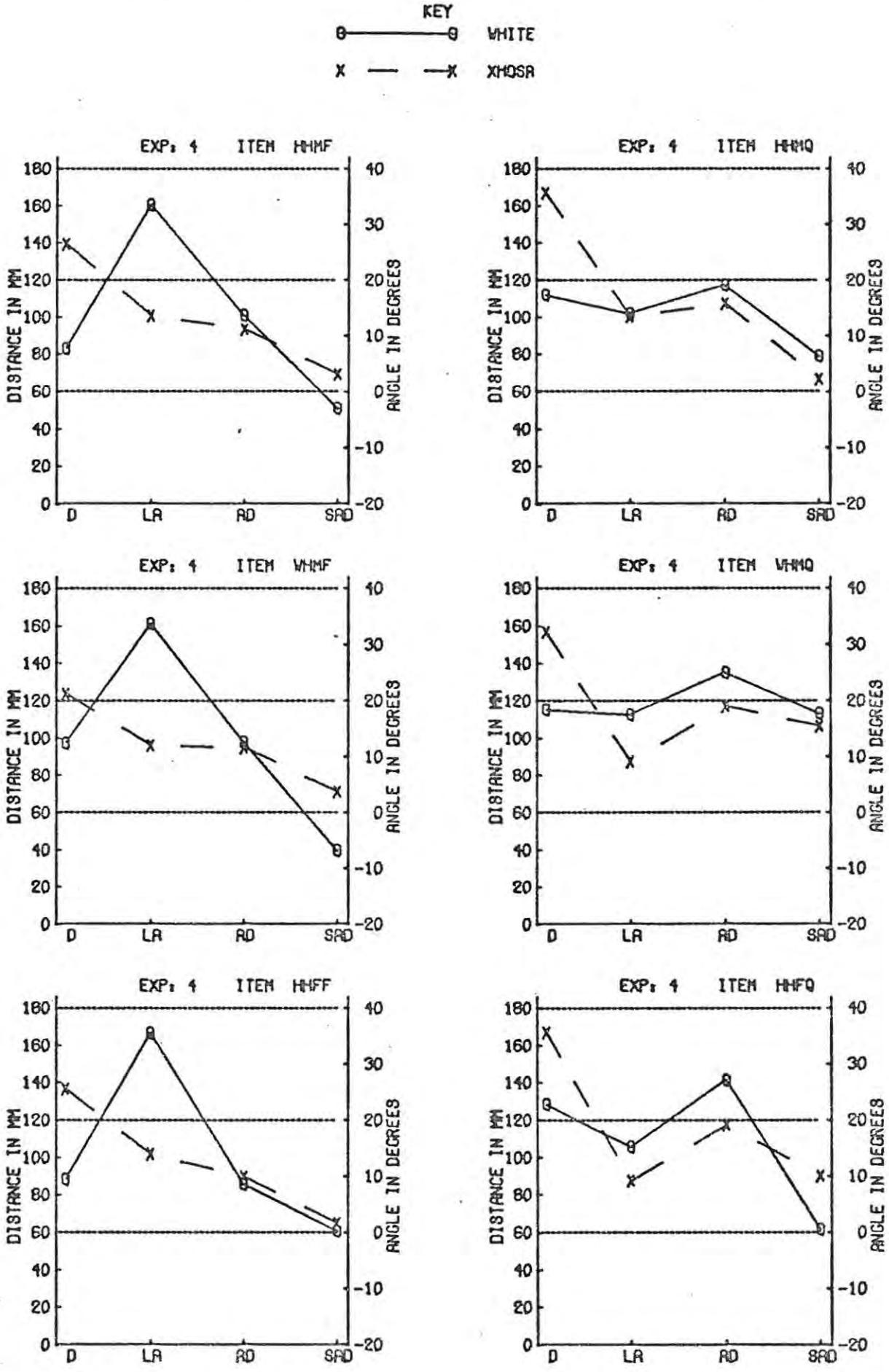
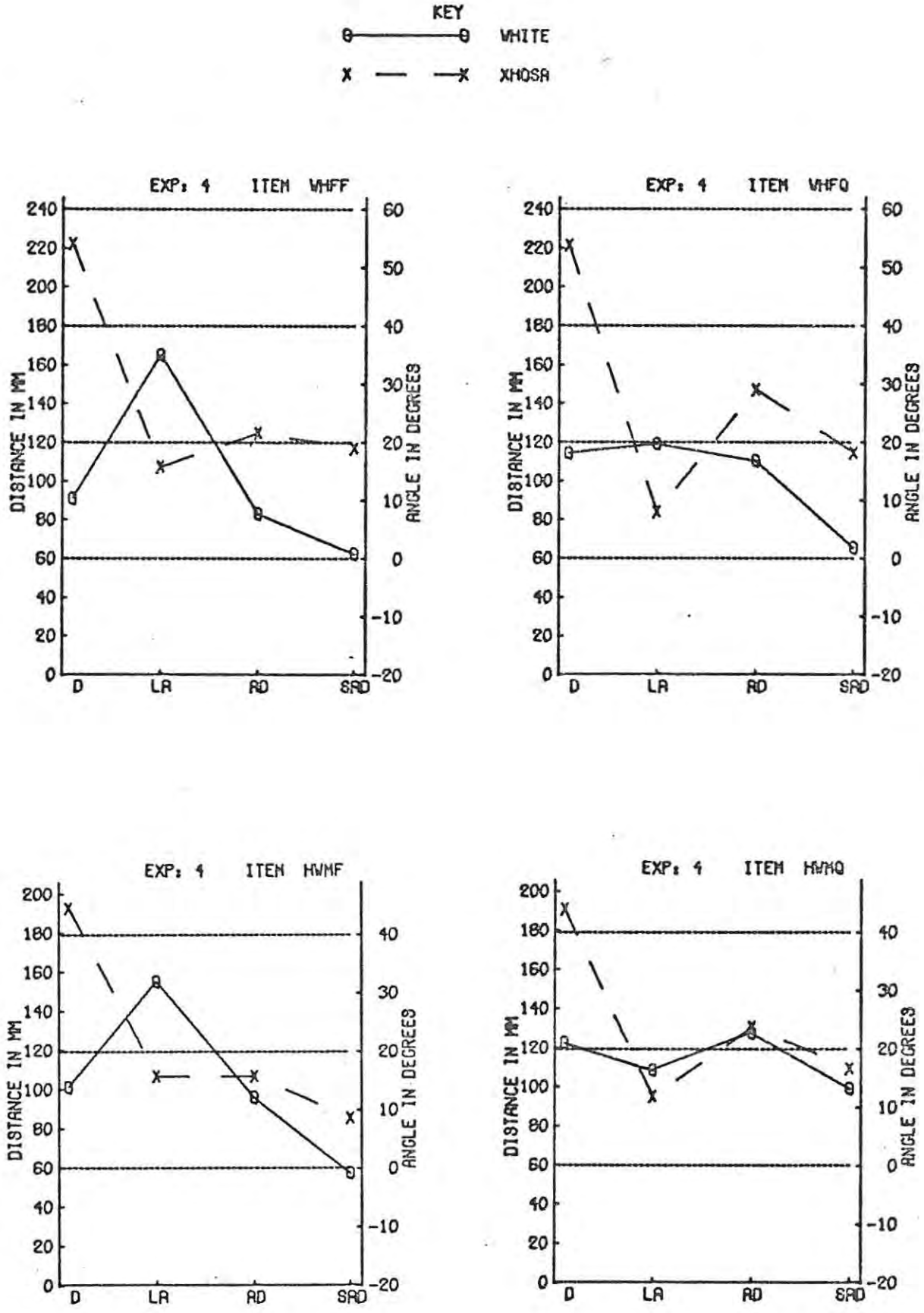


FIGURE 15.5

IPOS PROFILES IN EXPERIMENT 4 FOR WHF AND HWM



scores (section 15.4.5) but not in the case of the SAD's. However, when the two SAD's were compared using a one-way analysis of variance, a highly significant effect was indicated for WHFF (F = 15,785; df = 1/58; p<,001), although for WHFQ the result was not quite significant (F = 3,623; df = 1/58; ,1>p>,05).

The profiles of the Xhosa group for the husband with his wife's mother differ from those of the six relationships covered in Figures 15.3 and 15.4 mainly in their larger distance scores, but also in that HWM was the only relationship, apart from WHF in which there was a significant tendency for the OG figure to have the more direct orientation even in the F-situation. Otherwise these profiles are not very dissimilar to the majority of the others.

15.6 EFFECTS OF AGE AND STATUS

15.6.1 Effects of age

Each sample was dichotomised at the median age (White 39,0; Xhosa 38,5) and a three-factor split plot analysis of variance run on the D, LA, AD and SAD scores. The factors were Age (younger vs. older) x Situation (Friendly vs. Quarrel) x Pairing (the eight YG-OF pairings).

In the Xhosa group only one significant F-ratio was obtained for an effect involving age. This was for the Age x Pairing interaction in the case of the LA scores (p<,01). It was found that the two age groups differed only in the case of the husband with his father, where the younger subjects used larger (mean = 16,2) LA's than the older (mean = 6,2).

In the White group, there were three significant effects of age. In the case of the D scores there was significant triple interaction (p<,025). When this was investigated it was found that the younger group used larger distances than the older when representing HHFQ. This was the only one of the sixteen items to yield an effect of Age.

Secondly, there was a significant Age x Situation interaction (p<,025) in the analysis of the LA scores. When this was investigated, it was found that whereas LA's were similar for the F-situation in both groups (about 17°), the

older group used larger LA's (mean = 10,3) than the younger (mean = 5,8) for the quarrel items.

Thirdly, there was a significant triple interaction in the case of the AD scores ($p<,05$). When this was investigated an age effect on two of the sixteen items was found. In the case of WHMQ the older subjects used larger AD's (33,4) than the younger (16,6), while in the case of HHFQ the younger group used the larger AD's (28,3 as opposed to 15,9).

Out of the eight analyses performed, only one significant F-ratio would have been expected by chance alone. It is clear, therefore, that schemata were effected by age to some extent.

The single finding in the Xhosa group, where younger subjects used larger LA's than the older for HHF has no compelling explanation.

In the White group, item HHFQ elicited schemata that differed in the two age groups in a number of ways. The younger group used greater distances and AD's and when the LA's were examined it was found that these were also larger in the younger group (12,7 as opposed to 5,7) contrary to the trend with the other Q-items where the older subjects used larger LA's. The findings show that the younger subjects saw the husband and his father as reducing immediacy (by increasing distance and orientation) to a greater extent than the older subjects. This suggests that the older subjects pictured a more frank quarrel in which the participants were seen as having it out, while the younger subjects saw the participants as acting defensively and trying to avoid a direct confrontation.

In general, however, the data suggest that it is the older subjects who tended to use the less direct orientations, and therefore see the quarrels as more defensive since this group used larger LA's in the quarrels and larger AD's in the case of WHMQ.

15.6.2 Effects of status in the White group

The possibility that schemata might be affected by the subjects' social status was examined in the White group. Subjects ranged in education from

being graduates to not having reached matriculation. Those that were employed were shop assistants, clerks, secretaries or teachers. Husband's occupations included: university professor and lecturer, dentist, schoolmaster, accountant, church minister, electrical contractor, technician, mechanic and farmer.

On the basis of information about education and occupation of such subject and her husband, subjects were ranked on a scale of social status by Dr J. Coetzee, a senior lecturer in Sociology. Criteria laid down by Caplow (1964) were employed. The sample was then divided into a high and low status group and the effect of this variable examined in a series of factorial analyses of variance as had been done when examining for the effects of age. No effect of Status alone or in interaction with Situation or Pairing approached significance in any of the four analyses.

15.7 DISCUSSION

15.7.1 Xhosa distances in the Friendly situation

Whereas in Experiment 2 there was a tendency for the Red Xhosa subjects to use larger distances than the White students when representing friendly items, this effect was considerably stronger in the present experiment. Even excluding the two hlonipha relationships, the mean D for the Xhosas was over 40mm larger than that of the Whites. The Whites used distances which were only a little larger than those used to represent strangers.

These large distances of the Xhosas cannot be put down to the fact that a different set of dolls was used for the present experiment (see section 9.2), since subjects in Experiment 3, where the second set of dolls was also employed, had a mean distance of only 109mm for an item representing two women strangers, which is smaller than any of the means in the Xhosa group in the present experiment.

The results thus supported hypothesis D.5, that the Xhosas would use larger distances than the Whites, and this must be due to the formality between the generations characteristic of traditionalist cultures (see section 8.2).

15.7.2 Schemata in the Quarrel situation in the White group

For the Quarrel items White subjects used distances that were consistently larger than those used for the F-situation. This effect was much clearer in the present experiment than it was in Experiments 1 and 2 with the male students. In Experiment 1 these subjects used similar distances for both types of item, while in Experiment 2B they used slightly larger distances for a quarrel item (2A) than a friendly one (1A).

The most likely explanation for this is that the quarrels represented here were ones in which the interactors were often seen as defensive and attempting to avoid open conflict, while the students had tended to represent confrontations which were more frank and openly aggressive. This type of quarrel was described in item 2A or Experiment 2B and elicited close face to face patterns from the White students. In the present experiment, not only did the White subjects use relatively large distances, but also larger LA's and AD's than found in the White responses to the quarrels in the previous experiments. It would be expected that a defensive quarrel would be characterised by a reduction in physical immediacy as a means of avoiding the generation of excessive arousal which might become channelled into open aggression.

15.7.3 Schemata in the Quarrel situation in the Xhosa group

In the Xhosa group, the large LA's characteristic of the quarrel in Experiment 2B were not found. Instead, LA's were low and AD's high. Typically, then, one interactor was represented in a direct and the other in a rather indirect orientation. The comments made by many of the Xhosa subjects showed how reduction in immediacy, either by maintaining a large distance or by avoiding direct gaze, was seen as a way of preventing the quarrel from becoming a physical fight.

Thus, when the YG figure was placed at a large angle, this was sometimes explained as an expression of respect, but, in other cases, especially where the YG figure was the husband, it was explained that gaze was avoided in case he became so angry that he engaged in physical violence. A subject who placed

the husband at 123° to his mother commented that the husband turned away to 'hold his anger inside; if he looks he may even stab her'.

Paradoxically, one subject who placed the wife at 88° with her mother-in-law at 4° explained that the wife avoided gaze out of disrespect. She evidently saw the wife as being indignant and disdainful and as refusing to listen to her mother-in-law. Thus turning away does not always imply submission or defeat. It may act as a signal to the other that an individual is scornful of the other's point of view, even though he or she lacks the strength to attack it openly, or is afraid that in doing so open violence will erupt.

When one considers the importance of the status difference between the generations in Xhosa culture, it is perhaps surprising that SAD's were not larger, particularly in the quarrels. Because of his higher status, it might have been expected that the OG figure would be able to dominate the YG figure and thus maintain a more direct gaze. SAD's were significantly greater than zero with the Q items, as predicted, and this in part reflects the expected result, namely that the YG figure would be placed in a less direct orientation because he or she was acting submissively. However, there were other factors at work which had the opposite effect.

First of all, the YG figure was sometimes represented as staring at the OG figure in case the OG figure attempted to strike him or her. Thus the feedback function of direct gaze (section 3.2.1), rather than its function in signalling threat (section 3.3.3) was what was expressed in the subject's schema. As one male subject implied, however, these two functions cannot easily be separated. He said that the wife looked at the father-in-law because she was afraid of being struck, but that this only made him more angry.

Secondly, the YG figure was sometimes represented as acting aggressively towards the OG figure despite his or her low status. This resulted in a direct angle for the YG figure, although even in such cases, some subjects saw the YG figure as turning aside.

Thirdly, the OG figure was sometimes represented in a very indirect orientation. A variety of reasons were given for this. One was that he or

she was shocked by the insulting behaviour of the YG figure; presumably the indirect orientation implied that he or she was uncertain how to respond to it. Another was that the OG figure turned aside to prevent himself becoming so angry that he hit the YG figure; this occurred with the male OG figures.

Thus the Xhosa subjects appreciated the provocative, arousing nature of direct gaze since they recognised that both YG and OG figures would avoid direct gaze in order to prevent arousal becoming so high that violence erupted. And it was not necessarily perceived that the interactor who was turned away wanted to avoid provoking an attack from the other, but often that he wished to prevent himself from becoming violent.

These responses reflect the Xhosa attitude to physical violence. While it emerged from the present experiment that it is allowed for an OG figure to strike a YG figure, in general it is regarded as shameful for adults to fight each other physically. While boys are encouraged to fight with sticks and engage in games which may even result in severe physical injury, men are expected to settle their disputes verbally (Mayer and Mayer 1970, p.173). Several subjects pointed out that the OG figure would strike the YG one, but it was generally implied that this was a formalised act, and quite different from an attempt to beat the YG figure into submission. While many subjects clearly recognised that serious violence lay only just below the surface of the quarrel, they also recognised that the interactors would avoid coming to blows if at all possible. Thus either could be depicted in an indirect orientation, and sometimes one was described as ready to leave as a means of avoiding a physical fight.

In Experiment 2B, Red Xhosa subjects used large LA's in representing the quarrel item 2A. Such schemata occurred in the present case only infrequently. It seems possible that the way the quarrel was described in the earlier experiment was responsible for the frequent large LA's, since it used a situation in which two men were engaged in an apparently irreconcilable disagreement. If what has been said above is correct, then the large LA's probably represent an attempt to prevent arousal becoming too high in very provocative circumstances.

In the present experiment, one subject represented the husband with his mother using angles of 71° and 60°, and a distance of 386mm. He said that they were very angry and avoiding direct eye-contact, although they would look at each other out of the corner of their eyes. This seems to represent this extreme form of reduction of immediacy in the face of intense anger.

In the discussion of Experiment 2B, another explanation of these large distances and angles was suggested, namely that the quarrel was public in nature and that each participant was directing his arguments as much to bystanders as to his opponent. In the present experiment none of the comments of the subjects provided any support for this explanation.

When the comments on the quarrels by the Xhosa and White subjects were compared, the Xhosas apparently perceived much higher levels of emotion being generated than did the Whites. No White subject suggested the possibility that a serious physical fight might break out or that one might stab the other, while this was implied in the responses of several Xhosas, and although some Whites saw one or other figure in an indirect orientation because they wanted to avoid getting involved, this was usually because they did not want to get angry at all, rather than that they were afraid of beating or stabbing the other.

15.7.4 Patterns of distance scores across the eight pairings

A striking feature of the results of this experiment was the different patterns that emerged in the two groups when the means were plotted graphically as a function of the eight pairings. In the White group (Figure 15.1), the main feature of the pattern was that YG figures were placed closer to their own parents than to their parents-in-law. The exceptions to this were (1) the relatively large distance of the husband with his father in the quarrel, and (2) the use of similar distances for the wife with all OG figures in the quarrel.

In the Xhosa group, the pattern was dominated by the very large distances for the hlonipha relationships, with that of WHF being larger than that of HWM. In addition the pattern suggests that outside the hlonipha relationships the wife was placed rather closer than the husband to the OG figures, and that the

wife was placed closer to her mother than to her father.

As a result of the different patterns in the two groups, there were differences in the way in which each OG figure was seen to be related to the two YG figures.

In the case of the wife's mother, both groups concurred in giving the wife a closer distance than the husband although the difference was particularly large in the Xhosa group because of the effect of the formal hlonipha requirements.

In the case of the wife's father, both groups placed the wife closer than the husband. But while this was a clear effect in the White group the difference was small and not significant statistically in the Xhosa group. This might be the effect of the authoritarian nature of the father role in Xhosa culture which prevents a father from being as close to his daughter as a mother can.

In the case of the husband's mother, there is an interesting reversal. While the Xhosas tended to place the wife rather closer than the husband, the Whites placed the husband closer than the wife. This reflects the very different relationship between wife and mother-in-law in the two societies. In Xhosa culture, the mother-in-law is a second mother to the wife. When she marries into her husband's kraal, it is the mother-in-law who is her teacher, who instructs her in the duties of a wife, and who protects her from threats from other members of the kraal. The two have an additional bond, because the mother-in-law, like the new wife, will herself have come in from outside, and so not be a member by blood of the family.

By contrast, the relationship between wife and mother-in-law in western society is often one of conflict. The wife seldom moves into the same house as the mother-in-law, and even when she does, does not expect her to be her primary teacher, since her own mother is expected to have seen to it that she is domestically competent. In addition, there is often competition for the husband's affection or conflict over child-rearing methods or modes of domestic management. As a result, the Whites seem to see the relationship with the

mother-in-law as the least intimate of all for the wife (using mean distance in this experiment as a criterion), while for the Xhosas it is one of the most intimate, similar to that which she has with her own mother.

Finally, while the Xhosas placed the husband considerably closer to his father than they placed the wife, in the White group, the distances used for the two YG figures towards the husband's father were practically identical. In the Xhosa group, the large distance of the wife is the result of the strict hlonipha rules governing the relationship.

15.7.5 Xhosa schemata for the wife with her father-in-law

For a westerner the most striking feature of the results is the schemata elicited from the Xhosas for the wife interacting with her father-in-law. These illustrate the extent to which these two individuals are prevented from forming any but the most formal relationship by the requirements of custom.

Replies to questions about these requirements revealed that the two may not touch each other physically, not even to shake hands, and that a large distance is mandatory. Most stated that eye-contact had to be avoided, although some said that the wife could look briefly at the father-in-law's face, provided he was not looking at her.

In the friendly situation, the wife was seen as receiving instructions from the father-in-law about the day's work, to which she made monosyllabic and polite replies. However, the conversation was not entirely one-sided. For example, she was said, in one case, to be asking where the oxen should plough first. The requirements of hlonipha are represented in the large distance between the dolls, and the consistency with which the father-in-law was given the more direct orientation. This effect of the OG figure being the more direct was confined to the two hlonipha relationships in the F-situation (see Table 15.4).

In the quarrels the Xhosas consistently saw the father-in-law as initiating the encounter with a complaint against the wife's behaviour, and in most cases she was said to be replying in a respectful manner. In a few cases she

was seen as being disrespectful and angry. This was recognised to be a very serious matter, however, that would probably result in her being sent home to her parents even if she were to apologise. One subject saw the father-in-law as being shocked by the disrespectful behaviour and being unable to speak. As a result there was rather less consistency in the Q-situation about giving the wife the less direct orientation, although even here the effect was stronger than with any other pairing.

15.7.6 Xhosa schemata for the husband with his mother-in-law

The Xhosa schemata for the husband with his mother-in-law also reflect the requirements of custom. The large distance is the main feature and subjects agreed that the two might never touch even when greeting each other. However, most subjects said that there was no formal prohibition of eye-contact. Some felt that the son-in-law would show respect by avoiding direct gaze and represented him in the less direct orientation, but at least one subject said that the mother-in-law would show respect by looking sideways. Despite the lack of a formal rule prohibiting eye-contact, the mean SAD in the friendly situation was significantly greater than zero, though not as large as that for the wife with her father-in-law (see Table 15.4).

In the quarrels, the tendency for the husband to be in the less direct orientation was more pronounced. While some subjects saw the husband as being openly aggressive, others saw him as respectful, and all agreed that whatever happened he could not strike her.

15.8 CONCLUSIONS

It is encouraging that several of the hypotheses advanced on the basis of previous results were confirmed with the rather different subject populations sampled here. This suggests that what is being studied here is a relatively stable phenomenon.

Perhaps the most interesting features of the results were the contrasting patterns of the mean distances presented in Figures 15.1 and 15.2, and the

schemata obtained from the two hlonipha relationships.

The interview data provided some useful background for interpreting the meaning of some of the schemata elicited, although subjects' comments were sometimes very uninformative, amounting to little more than re-descriptions of their schemata, and showing that they often had little insight into what determined them.

CHAPTER SIXTEEN

EXPERIMENT 5: SOCIAL SCHEMATA OF RED XHOSA AND WHITE ENGLISH-SPEAKING SUBJECTS FOR AN ENCOUNTER INVOLVING AN ACCUSATION

16.1 INTRODUCTION

Only six of the items employed in Experiment 2B were discussed in Chapter 13 (see section 13.2). One of the remaining items, however, elicited some unexpected schemata. The situation described a man accusing a boy of lying and the boy angrily denying the accusation. What had been expected was face to face orientation schemata, and this was found in the group of White students. In the three Xhosa groups, however, there was a significant tendency for the boy to face less directly than the man ($p < ,02$ in each case). While the mean SAD in the White group was only 2,4, in the XS, XU and XR groups it was, respectively, 15,2, 18,8 and 23,0. The positive values indicate that the man was the more direct.

The tendency to put the boy in the less direct orientation suggested that Xhosa subjects did not perceive him as being able to maintain control over the course of the encounter when faced with the man's accusation. The result did not, however, make it clear whether it was his status relative to the man, or his role as accused, which was responsible for this effect. While it seemed likely, in the view of the low status of a boy relative to a man among the Xhosa in the traditional culture, that the former factor was the most important, the possibility could not be ruled out that in any situation, in which one individual made an accusation towards another, Xhosa subjects would tend to give the accused the less direct orientation. This might arise if they tended to see the accuser as retaining the initiative he had taken in opening the matter in the first place, and to see the accused, despite his denial, as being taken aback by the situation in which he found himself.

In the present experiment, the accusation situation was employed with various characters in the role of accuser and denier, and was administered to Red Xhosa and White English-speaking women. In addition, a second version of the accusation situation, in which the accused was described as hurt and not knowing what to do, was also employed.

16.2 METHOD

16.2.1 Subjects

The Xhosa sample was 16 Red married women ranging in age from 17 - 25 (mean = 31,9; SD = 11,6) who were obtained during the visit to Cizele in which Experiments 3 and 4 were conducted.

The White sample consisted of 16 White English-speaking residents of Grahamstown obtained in the same way as the White subjects of Experiment 4. Ages ranged from 23 - 60 (mean = 40,6; SD = 12,6). In view of the limited effects of age in the previous experiment, the difference between the ages of the two samples was considered acceptable (see section 21.8.1 for data on effects of age on some of these items in Experiment 6).

16.2.2 Interaction descriptions

Two types of item were employed. The first was a denial (D) item in which the accused made an angry denial. The second was a passive (P) item, in which the accused felt hurt by the accusation and did not know what to do.

These two types of item were employed with each of five figure pairings. In each pairing the figure mentioned first is the accuser. These were: man-man (MM), man-youth (MY), youth-man (YM), man-woman (MW), and woman-man (WM). The resulting ten items were administered in an order that was independently randomised for each subject.

Items will be referred to by a three letter code indicating the pairing (MM, MW etc.) and the situation (D or P). The items need not all be presented in full, but an example of a D and a P item are given below in both languages:

ITEM MYD - ENGLISH

The man accuses the boy of lying to him.
The boy denies the accusation and is very angry.

ITEM MYD - XHOSA

Indoda ityhola inkwenkwe ngobuxoki. Inkwenkwe iyasikhanyela esi sityholo kwaye ishushu ngumsindo.

ITEM MMP - ENGLISH

The first man accuses the second of lying to him.
The second man feels hurt and does not know what to do.

ITEM MMP - XHOSA

Indoda yokuqala ityhola eyesibini ngobuxoki. Indoda eyesibini iziva idanile kwaye ingazi ukuba mayithini.

The method of administration of the items was the same as for Experiment 4.

16.3 A PRIORI HYPOTHESES

A number of hypotheses as to the results were formulated a priori. Although these largely concerned the AD and SAD scores, two concerned the distances.

Hypothesis D.1 was that the White subjects would use larger distances for the P than for the D items. This was expected on the basis of the findings of Experiment 2B where larger distances were found with the 'B' items which involved a passive interactor than with the 'A' items.

Hypothesis D.2 predicted that the Xhosas would use larger distances than the Whites. This was found in Experiment 2B with the man-youth items in both denial and passive versions.

It was expected that the accuser would normally be represented in a direct orientation, and his or her angle was subtracted from that of the accused to obtain the SAD score. It was expected that the Whites would give the accused a direct orientation in the denial version, but an indirect one in the passive version. This gave rise to the following hypotheses:

Hypothesis AD.1: In the White group AD's will be higher with P than with D items.

Hypothesis SAD.1: In the White group SAD scores will be higher with P than with D items.

Hypothesis SAD.2: In the White group SAD scores will be greater than zero with the P items, but not significantly different from zero with D items.

In the Xhosa group, the accuser was also expected to be placed in a direct orientation. In the P version, the accused would, it was expected, be placed in an indirect orientation. In the D version, on the other hand, it was expected that the accused would tend to face indirectly when of lower status than the accuser. No prediction was made for items in which the accused was of equal status or higher in status than the accused. The following hypothesis was therefore advanced:

Hypothesis SAD.3: In the Xhosa group, the SAD for items MYD and MWD and for all the P items will be significantly larger than zero.

16.4 RESULTS

16.4.1 Distance scores

Means and standard deviations of the D scores are presented in Table 16.1. In the White group distances were larger with the P items as predicted by hypothesis D.1 (F = 12,233; 1/59; p<,001) and there was no effect of Pairing. In the Xhosa group neither Situation (D or P) nor Pairing had a significant effect on the D scores. The prediction of hypothesis D.2 that the Xhosas would use larger distances than the Whites was well supported (F = 11,485; df = 1/30; p<,01).

16.4.2 Least Angle scores

Means and standard deviations of the LA scores are presented in Table 16.2. In the White group LA's were larger in the P than the D situations (F = 32,533; df = 1/135; p<,001) and there was no effect of Pairing.

In the Xhosa group neither the effect of Situation nor Pairing was significant, but there was a significant effect of the interaction between them (F = 2,611; df = 4/135; p<,05). When this was investigated, a significant

TABLE 16.1

MEANS AND STANDARD DEVIATIONS OF THE DISTANCE SCORES IN EXPERIMENT 5

		MM D	MY D	YM D	MW D	WM D	MM P	MY P	YM P	MW P	WM P	ALL
WHITE	MEAN	74.5	87.5	76.3	85.1	78.4	97.8	92.5	91.5	84.7	88.9	85.7
	SD	25.0	40.2	29.1	27.3	26.2	25.7	28.1	27.3	25.8	27.0	28.6
XHOSA	MEAN	122.8	126.1	124.9	118.1	125.1	116.8	126.4	126.3	122.6	122.9	123.2
	SD	44.3	42.6	57.7	43.2	41.3	33.2	43.1	64.9	42.7	38.3	44.8

TABLE 16.2

MEANS AND STANDARD DEVIATIONS OF THE LEAST ANGLE SCORES IN EXPERIMENT 5

		MM D	MY D	YM D	MW D	WM D	MM P	MY P	YM P	MW P	WM P	ALL
WHITE	MEAN	9.6	9.7	7.0	8.0	12.6	21.2	16.4	18.4	14.4	16.2	13.4
	SD	8.8	10.0	9.1	9.6	12.9	13.6	13.1	12.8	12.4	13.0	12.2
XHOSA	MEAN	3.7	5.6	10.2	13.4	7.1	7.7	13.7	11.1	7.1	12.2	9.2
	SD	3.1	7.8	11.6	18.2	7.0	8.3	18.0	8.7	10.2	17.5	12.2

TABLE 16.3

MEANS AND STANDARD DEVIATIONS OF THE ANGLE DIFFERENCE SCORES IN EXPERIMENT 5

		MM D	MY D	YM D	MW D	WM D	MM P	MY P	YM P	MW P	WM P	ALL
WHITE	MEAN	10.2	24.8	11.7	28.4	32.2	61.4	58.9	56.0	69.6	54.4	40.8
	SD	12.4	38.9	16.4	44.1	38.8	36.5	30.8	23.0	27.4	34.0	37.2
XHOSA	MEAN	17.8	46.7	48.6	45.9	31.7	49.8	64.6	70.8	75.6	55.1	50.7
	SD	30.2	58.8	52.0	51.7	52.4	59.9	50.9	52.2	59.6	45.8	53.2

effect of Pairing was found in the D Situation ($p<,05$), and when Tukey's test was applied the largest LA, that of MWD, was found to be significantly larger than the smallest, that of MMD. In addition LA's were found to be greater in the case of MYP than MYD ($p<,05$). These effects in the Xhosa group should not, however, be regarded as well established since the variance-covariance matrix associated with the ten items was highly asymmetrical ($X^2 = 157,3$; $df = 53$; $p<,001$) and the interaction effect was not significant according to a conservative F-test (see section 10.3.1).

The LA's of the two groups were not significantly different ($F = 2,488$; $df = 1/30$).

16.4.3 AD and SAD scores

Means and standard deviations of the AD and SAD scores are presented in Tables 16.3 and 16.4 (SAD = accused's angle minus accuser's angle).

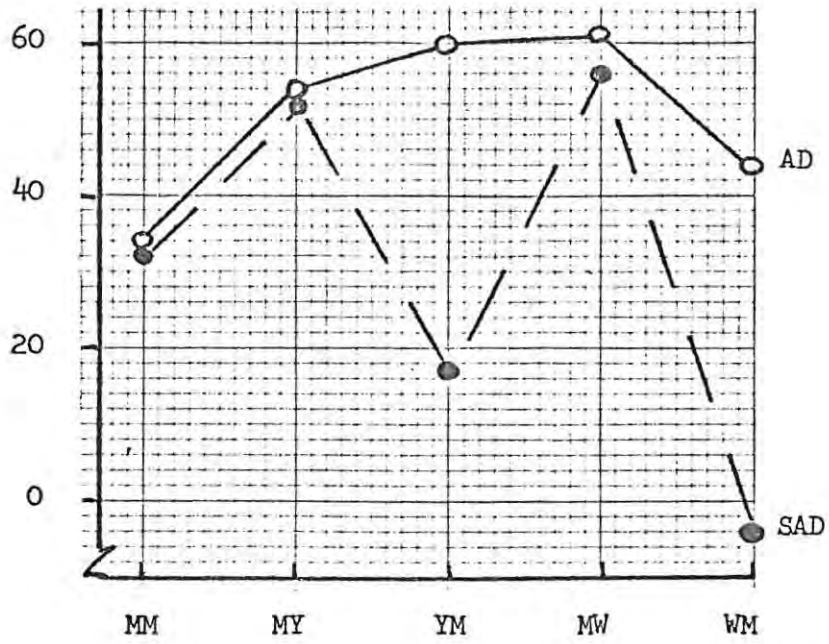
In the White group both AD and SAD scores were higher with the P items than the D items ($F = 62,114$ and $72,045$ respectively; $df = 1/135$; $p<,001$). This was in accordance with hypotheses AD.1 and SAD.1. Neither score was affected by Pairing.

In the Xhosa group too, both AD's and SAD's were greater with the P items than the D items ($F = 20,876$ and $12,208$ respectively; $df = 1/135$; $p<,001$). But there was also an effect of Pairing in each case ($F = 3,632$; $df = 4/135$; $p<,01$ for AD, and $F = 6,230$; $df = 4/135$; $p<,001$ for SAD). In both cases the variance-covariance matrices were asymmetrical. However the effect of Pairing on SAD was still significant even with conservative degrees of freedom of 1/15 beyond the ,025 level. In the case of the AD's, the effect of Pairing was not quite significant using the conservative procedures, but since the degree of asymmetry in the matrix was relatively small it seemed reasonable to accept that the effect was a genuine one.

In the Xhosa group the pattern of mean SAD's across the various pairings was not identical to that of the mean AD's. The two different patterns are illustrated in Figure 16.1. Since the pattern was the same in both D and P

FIGURE 16.1

GRAPH OF MEAN AD AND SAD SCORES IN THE XHOSA GROUP IN EXPERIMENT 5 AS A FUNCTION OF FIGURE PAIRING



situations, means of the two are combined. In the case of the AD scores, the mean was lower in the case of MM than the other pairings, an effect significant at the ,01 level by Scheffé's test. The pattern of SAD's was less simple. Scores were high for the two cases where man accused either woman or youth, low for the cases where man was accused by woman or youth, and intermediate for the MM pairings. Application of Scheffé's test showed that SAD's were significantly larger with MY and MW (taken together) than with YM and WM (taken together) beyond the ,001 level. However, the mean for MM was neither significantly larger than the former nor smaller than the latter.

When the AD scores of the two groups were compared, the Groups x Pairing interaction was close to significance (F = 2,333; df = 4/120; critical value of F at 5% level = 2,450). This reflects the finding of a significant effect of Pairing on AD's in the Xhosa but not in the White group. When the effect of Groups for each pairing was examined, there was only one significant effect: the AD's of the Xhosa group were larger than those of the Whites in the case of the YM pairing ($p < ,05$); for the other pairings the difference between the groups

did not approach significance.

There was also a Groups x Pairing effect in the case of the SAD scores (F = 2,499; df = 4/120; p<,05). Again this reflects the fact that SAD's were affected by Pairing only in the Xhosa group. When each pairing was examined for an effect of groups, only one effect even approached significance. The mean SAD of the White group was significantly larger than that of the Xhosa group (p<,025) in the case of the WM pairing.

16.4.4 Direction of Angle Difference

Each SAD mean was examined to see if it differed significantly from zero. The values of t are presented in Table 16.4.

In the White group, as predicted in hypothesis SAD.2, means were significantly greater than zero for all P items, indicating a great deal of consistency in giving the accused the less direct orientation. The other part of this hypothesis was not so clearly supported, however. It predicted that White subjects would have SAD's no different from zero for the denial items. While there was no case in which the mean was significantly greater than zero at the 5% level, in three cases the means were unexpectedly high (namely MYD, MWD and WMD) and the t values are associated with two-tailed p's of ,2, ,1 and ,2 respectively. In these cases, therefore, the odds against the null hypothesis are about 4:1, 9:1 and 3:1 respectively. Thus, for these items, although no definite tendency for White subjects to put the accuser in the more direct orientation was demonstrated, the possibility that such a tendency existed could not be rejected with confidence.

In the case of the Xhosa group, it was predicted in hypothesis SAD.3 that SAD's would be greater than zero for all the P items, as in the White group. This hypothesis was supported except in the two cases where the man was accused by the lower status woman or youth. In the former case no tendency for the man to face less directly was apparent; in the latter the tendency for the man to face directly was present, but only significant at the 5% level by one-tailed test.

TABLE 16.4

MEANS, STANDARD DEVIATIONS AND ASSOCIATED t VALUES FOR THE SIGNED ANGLE DIFFERENCE SCORES IN EXPERIMENT 5

		Denial			Passive		
	Pairing	Mean	SD	t^+	Mean	SD	t^+
WHITE	MM	2,1	16,1	0,527	58,7	41,0	5,719***
	MY	15,8	43,6	1,451	56,4	35,4	6,368***
	YM	-3,9	20,0	-0,774	56,0	23,0	9,741***
	MW	22,9	47,4	1,936	67,7	32,0	8,459***
	WM	16,1	48,4	1,334	53,9	34,8	6,194***
XHOSA	MM	15,2	31,7	2,357++	49,6	60,1	3,300**
	MY	41,6	62,7	2,650*	64,6	50,9	5,075***
	YM	-5,5	72,1	-0,305	39,1	80,3	1,946
	MW	37,2	58,8	2,532*	75,6	59,6	5,072***
	WM	-12,6	60,4	-0,832	5,0	72,9	0,274

* $p<,05$ ** $p<,01$ *** $p<,001$ + df for t = 15

++ Distribution not normal so Wilcoxon test applied. Test statistic is z and $p<,02$.

All probabilities are two-tailed.

The second prediction of hypothesis SAD.3 was that the mean SAD would be greater than zero for items MYD and MWD. This was supported in each case at the $2\frac{1}{2}\%$ level of confidence by one-tailed test. There was also a significant tendency for the accuser to face more directly in the MM pairing, but not in the cases of YMD and WMD.

The consistency with which the Xhosa subjects gave the accuser the more direct angle for items MMD, MYD and MWD is apparent from Figure 16.1, where it can be seen that the SAD's were very close to the AD's in these cases (indicating

few negative SAD's in the sample). This is in marked contrast to the inconsistency in this respect with the other two pairings, where the SAD was considerably lower than the AD.

16.5 IPOS PROFILES AND DISCUSSION

16.5.1 Denial items MMD, MYD and MWD

IPOS profiles for the five denial items are presented in Figure 16.2. The profiles for the three items in which the man was the accuser are discussed in this section.

It had been expected that the 'typical' schema for the denial items in which the accused angrily denied the accusation, would be a face to face orientation pattern, with the exception that the Xhosa might put the accused in an indirect orientation pattern with items MYD and MWD where the accuser was of higher status.

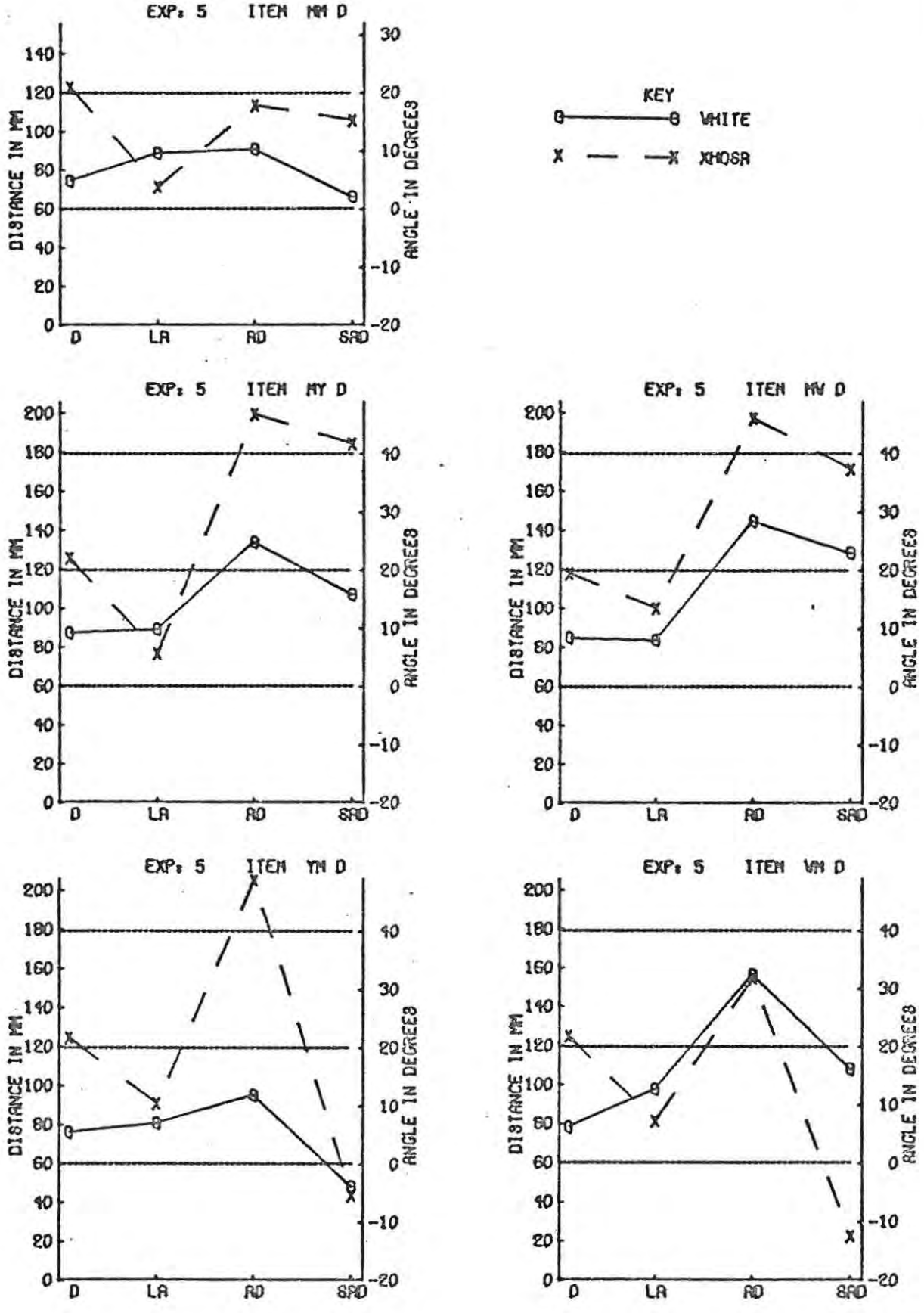
In the case of MMD, the White group responded in the expected way, using fairly direct orientation schemata, but the Xhosas did not. The asymmetrical schemata expected for MYD and MWD appeared here also. Although the degree of asymmetry was not as great as for MYD and MWD, there was considerable consistency in giving the accused the less direct angle, and there were only three face to face patterns.

It was clear from the comments of Xhosa subjects that the accused man was seen to have turned away in order to reduce immediacy and thereby the risk of his anger becoming uncontrollable. One subject said that the encounter could end in a fight, while another stated explicitly that the accused was turned away in order not to become involved in a fight. The accused's indirect orientation, therefore, reflects the fact that if he looked he would be likely to generate more anger than could be channelled into verbal argument alone.

A similar pattern of results was obtained in the Xhosa group with the denial items in which the accused was a youth or woman and the accuser the man. Here the orientation schemata were even more asymmetrical than with MMD, and again there was a consistent tendency for the accused to be the less directly

FIGURE 16.2

IPOS PROFILES FOR THE DENIAL ITEMS OF EXPERIMENT 5



facing. The reason given by subjects was the same as described above, that to engage in a direct gaze would lead to physical conflict. One subject said of MYD, 'If the boy looks, the anger in him will be out of control and he will stab his own father'.

The fact that orientation asymmetry was rather larger in these cases than in MMD stems from the weakness, physical or social, of the lower status interactor. A number of Xhosa subjects mentioned the powerlessness of the woman in this situation. For woman or youth the cost of allowing emotions to get out of control would be greater than for a man because of their physical weakness and the weight of social sanction that could be brought against them.

Orientation schemata in which youth or woman were in very indirect orientation were not, however, confined to the Xhosa group. In the case of MYD there were four relatively large SAD's in the White group (22°, 84°, 88° and 128°), and another four (81°, 83°, 104° and 132°) in the case of MWD. It is these cases which account for the relatively large AD's and SAD's in the White group for these two items, even though for neither item was the tendency for the accused to face less directly significant over the whole group.

White subjects who used these asymmetrical schemata, unlike the Xhosas, were unable to provide articulate explanations of the phenomenon.

It probably reflects a perception of the male as dominant and the weaker youth or woman as unable to respond effectively in a face to face position, presumably because the arousal thus generated would disrupt performance. It seems unlikely that the Whites saw the turning of the back as a means of preventing physical violence breaking out or that emotions were perceived to be as strong by the Whites as by the Xhosas. The perception of strong emotions in the quarrels on the part of the Xhosas, as well as their awareness of the possibility of violence, and the consequent fear in the interactors is what probably accounts for the use of larger distances by this group.

16.5.2 Items YMD and WMD

In the two denial items in which woman and youth accused the man,

schemata were rather different from those in which woman or youth were accused by the man.

The Xhosa subjects still used asymmetrical orientation patterns, but there was no consistency as to which figure was the more directly facing. As a result the SAD's for YMD and WMP were considerably lower than those for MYD and MWD. Thus in the case of YMD, four Xhosa subjects had large positive SAD's (22°, 85°, 88° and 130°), while another four had large negative ones (-34°, -98°, -104° and -154°). In the case of WMD there was only one large positive SAD (128°) and three large negative ones (-82°, -97° and -156°) while the remaining placements were symmetrical. With these items, therefore, the tendency for Xhosas to place the accused in the less direct orientation (that was found with MMD) was counteracted by the tendency for the lower status individual to have the less direct angle. As a result the mean SAD in each case was not significantly different from zero.

Once again, Xhosa subjects explained indirect orientations by saying that interactors were trying to control their anger and avoid a fight. Of YMD one subject said, 'If the man looks at the boy he will strike and badly injure him', while another, who put the youth in an indirect orientation, said that the youth would stab the man if he looked. Sometimes youth or woman was seen as turned away not so much to control his or her own anger but to avoid provoking the man to violence.

The White subjects used fairly symmetrical face to face schemata for YMD, and as can be seen in the IPOS profile for this item there was a large difference between the AD's of the two groups (this was the only pairing in which this effect was significant: see above, section 16.4.3). In the case of WMD, however, there were 7 cases of AD's above 20°, five of which were above 60°, and the mean AD was as large as that of the Xhosa group. Although neither SAD was significantly different from zero, it will be recalled that this was the one pairing in which there was a significant difference between the SAD's of the two groups, with that of the Whites being higher. This would seem to reflect the helplessness of the woman when in conflict with a man in traditional Xhosa

society where the weight of social sanction is considerably greater than in White English-speaking culture.

16.5.3 Responses to the Passive items

In the case of the passive items, in which the accused responded by feeling hurt and not knowing what to say, it was expected that he or she would be placed in an indirect orientation so that AD's and SAD's would be high. This expectation was confirmed in all cases in the White group, and in the three cases in which the man was accuser in the Xhosa group. Thus the profiles of the two groups for these items, which are presented in Figure 16.3, were very similar. It can be seen that there was a great deal of orientation asymmetry in each case, and that there was considerable consistency in giving the accused the more direct orientation (as evidenced by the lack of slope of the AD-SAD part of each profile).

Profiles for the two remaining passive items, in which the accused was the man, and the accuser youth or woman, are presented in Figure 16.4. The White subjects showed the same pattern as with the other three P items: both AD's and SAD's were large. However, the Xhosas, who also had large AD's, showed much less consistency in placing the passive man in the less direct orientation. This can be seen from the steep slopes of the AD-SAD parts of these two profiles.

In the case of YMP the slope down to the SAD is due to two schemata in which the boy had his back to the man, for in twelve of the remaining cases SAD's were 30° or above and four were above 100°. However, even in these cases, where the man was in the less direct orientation, the man was often perceived as turning away so as not to strike the boy, just as in the denial situation, rather than being quietly hurt and unable to speak. Where the boy had the less direct orientation he was described by one subject as afraid to look in case the man struck him; in other words he was afraid to provoke the man further.

The inconsistency as to which figure was the more direct appears even more striking in the case of WMP, where the mean SAD is close to zero despite the large AD. This effect is largely due to three schemata in which the woman

FIGURE 16.3

IPOS PROFILES OF ITEMS MMP, MYP AND MWP IN EXPERIMENT 5

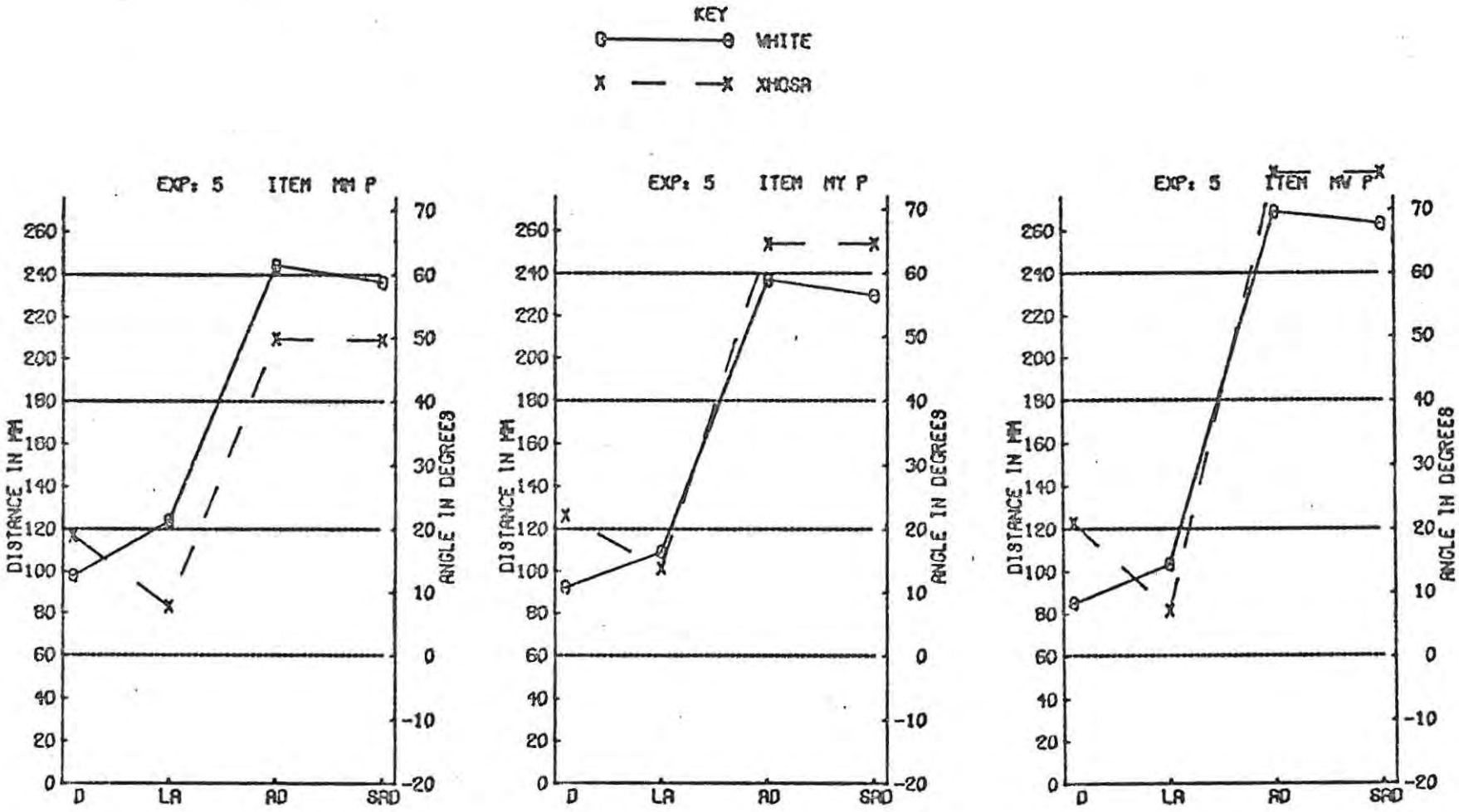
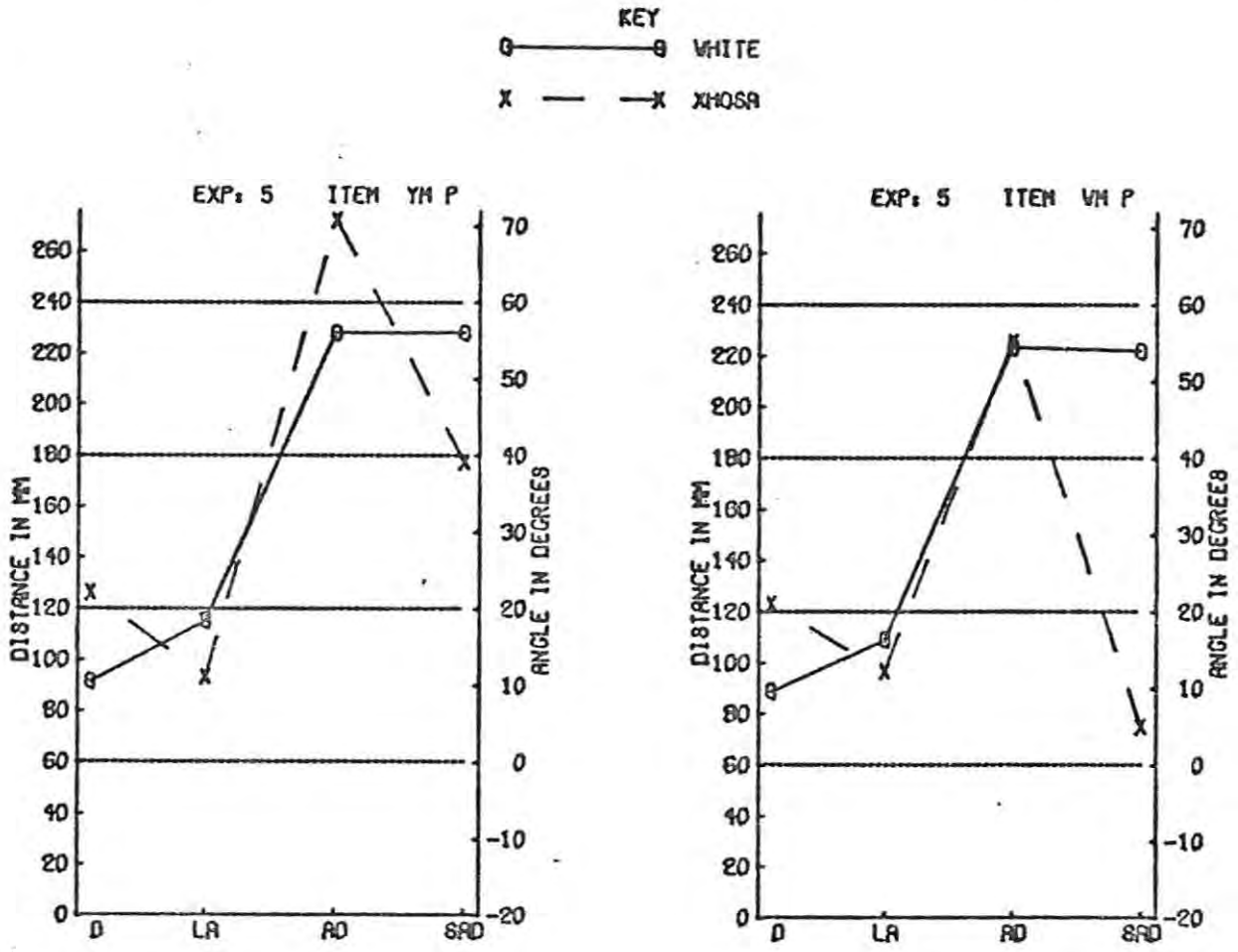


FIGURE 16.4

IPOS PROFILES OF ITEMS YMP AND WMP IN EXPERIMENT 5



had her back to the man (SAD's were -100°, -134° and -150°), although there were three other low negative SAD's. There were eight cases in which the man had a very indirect orientation (with SAD's ranging from 40° to 75°), but again most subjects saw this as a way in which the man attempted to keep his anger under control. Where the woman was turned away this was again to prevent the man being provoked further in a situation in which the woman was powerless to achieve anything. Thus one subject remarked, 'Even though she has accused him, he will continue to lie.' There was, however, one case in which the man was seen as apologising to the woman and a face to face schema was used.

16.5.4 Effects of Situation (Denial vs. Passive) in the White group

In the White group, all four scores were larger in the P than in the D

situation. Thus schemata elicited by the P items were less immediate in all respects than those for the D items.

The larger distances, which were predicted, probably arise from the uncertainty and inability to act on the part of the passive interactor, since this is a case in which arousal must be prevented from becoming at all high if any solution to the position in which he or she finds himself is to be arrived at (see section 4.4.4).

The use of larger LA's in the P situations by the White group means that the accuser tended to be given a larger angle in that case. While this might reflect the perception that the accuser was trying to prevent him- or herself from becoming more angered, the more probable explanation is that, having made the accusation, and observed its effects in reducing the other to passivity, the accuser reduced direct gaze in order to be less threatening to the accused, and so allow him or her to recover from consternation. With the White subjects tending to see emotion as less powerful than the Xhosas, the elevated LA's with the P items may even reflect a perception that the accuser was embarrassed and uncertain in the face of the accused's response.

16.6 CONCLUSIONS

The pattern of orientation schemata in the Xhosa group suggested that there were two determining factors. The first was for the accuser to be placed in the more direct orientation than the accused; the second was for a man to be placed in the more direct orientation when placed with a youth or woman. This applied to both denial and passive versions of the situation.

When these factors worked together, with items in which man accused woman or youth, the clearest tendency for the man to have the more direct orientation was found. Where only the first factor acted, as where man accused man, the accuser tended to face more directly, but orientation asymmetry was not so great. Where the factors worked against each other, as when woman or youth accused man, there was as much asymmetry in the orientation patterns as when man accused woman or youth, but practically no consistency as to which figure

had the more direct orientation.

While it had been expected that the White group would use largely face to face schemata for the denial items, there were several occasions in which the accused was represented with a large angle when the accuser was the man. Although in these cases the mean SAD was, therefore, rather larger than expected, the tendency over the whole group to give the accuser the more direct orientation was not statistically significant. In fact, in the White group no effect of Pairing upon orientation schemata was found to be significant at all.

A feature of the present set of interaction descriptions was the large range of orientation schemata elicited. Many face to face placements were made, as well as asymmetrical placements with the accused at a large angle, and others with the accuser at a large angle. There were even a few cases where both figures had a large angle.

Because of this, variances in the angle measures tended to be large, and points plotted on the IPOS profiles indicate patterns in the responses that can often be only regarded as suggestive. Items eliciting such a wide range of schemata need to be explored with larger numbers of subjects, and it is unfortunate that the present experiment was carried out at the end of a visit to Cizele so that there was no time to test more than seventeen.

PART FOUR

EXPERIMENT 6: A STUDY OF SOCIAL SCHEMATA IN THREE XHOSA AND ONE WHITE GROUP

CHAPTER SEVENTEEN

INTRODUCTION AND METHOD

17.1 INTRODUCTION

The experiments described in Part Three showed that Xhosa social schemata differ in a number of ways from those of Whites. They also brought to light certain social situations in which differences were particularly marked, and, in the case of Experiment 2, suggested that the schemata of different Xhosa sub-cultures differ among themselves.

Experiment 6 was undertaken to examine how the schemata of traditionalist Red Xhosas compared with those of Xhosas exposed either to the urban environment or the urban environment and education. The possibility was considered that as the schemata of Xhosa groups who were more urbanised and literate were examined, so they would come to resemble those of White English-speaking subjects. In addition the experiment was intended as a means of clarifying questions raised but unanswered by the previous experiments.

Twenty-one interaction descriptions were selected, based on items employed in the earlier experiments. These fell into five sets, which will be referred to as Sets A, B, C, D and E respectively. Each subject in the experiment made placements representing each of these items. In addition, two of the items were repeated to provide a measure of the reliability of measurement. Since each of the five sets of items forms a sub-experiment in itself, the presentation of interaction descriptions and of hypotheses concerning them, together with the results and discussion, is offered separately for each set in different chapters (Chapters 18 - 22), and the reliability data is presented in Chapter 23.

In the present chapter, the four groups of subjects who participated in the study will be described. In accordance with the decision made during the conducting of Experiment 4, all subjects were women. Only women who were or had been married were chosen, and there were thirty in each of the four groups.

The groups are described in the following sections, and there is a final section to the chapter in which some details of the method employed are discussed.

17.2 SUBJECTS: THE XHOSA RURAL GROUP

In order that the social schemata of traditionalist Red Xhosas might be examined, a group of rural women from Cizele near Idutywa, in Transkei, were tested. These will be referred to as the Xhosa Rural or XR group.

A visit to Cizele was made at the end of January 1975, and a sample of thirty suitable subjects was tested. Two subjects who showed poor comprehension of the interaction descriptions were rejected so that 32 women in all were tested. Only those who dressed traditionally and identified themselves as Red were included in the sample. 50c was paid for participation.

All subjects lived within a few kilometers of the trading store where the interviews took place, and had been brought up in the area. None had any paid employment. Eight had been to school for periods ranging from one to seven years; the standards reached by these were: Sub. B: 2; Standard 1: 2; Standards 2-5: 1 each.

Of the husbands, only one had had any education (Standard 2), ten had no paid employment, 19 were migrant labourers, and one was a watchman.

17.3 SUBJECTS: THE XHOSA URBAN (XU) GROUP

Subjects in the Xhosa Urban (XU) group were chosen so that the schemata of Xhosas whose environment was urban, and who had little education, could be examined. The criteria for considering an environment urban are discussed in section 17.4.

Subjects were accosted at a supermarket in the East London township of Duncan village and tested in a room at the back of the supermarket. R1-00 was paid to participants. A government official estimated the present population of the township (which, geographically, is in the heart of East London), to be 43 000, but pointed out that over 70 000 had been moved out to new housing

in Mdantsane since 1964. The total population of East London is 120 000 (Rosenthal 1973).

Twenty-seven of the sample were tested in January and three in September 1975. Women who showed any signs of adhering to Red ways (called by Mayer 1963 'encapsulated Reds') were not accepted, and an attempt was made to keep the educational level as low as possible. However, subjects with less than two years of schooling were not easily found. Educational levels in the final sample of thirty were: Sub. B : 3; Sub. A : 1; Standard 1: 6; Standard 2: 9; Standard 3: 3; Standard 4: 6; and Standard 7: 2.

Twenty-seven of the sample had been born, and had lived the best part of their lives, in one of the East London townships. The other three had been born in King William's Town and moved to East London at the ages of 5, 23 and 24.

Most of the subjects had no current paid employment. Of the six who were employed, two were domestic servants and four factory workers.

Of the husbands, 22 were labourers or factory workers, two were drivers, two disabled, one a council employee, one a pensioner and one a constable. Schooling ranged from 0 to 10 years with a mean of 5 years.

17.4 SUBJECTS: THE XHOSA NURSES (XN) GROUP

17.4.1 Selection of sample

Subjects in the Xhosa Nurses group were chosen so that the schemata of Xhosas who were from an urban environment and had been exposed to a high level of education could be examined.

Only two occupations are open to educated Black women in large numbers - nursing and teaching. The occupation of nurse is much sought after. For example Nyquist (1972 p.405) found that 69% of a sample of rank and file African women in Grahamstown chose this occupation when asked what they would like to be, given they had sufficient education. Nursing is preferred to teaching because it is more highly paid and requires a higher educational qualification for entry. In addition, nurses do not run the risk of losing their jobs when they get married, as do teachers. In the past Junior

Certificate (Standard 8) was required, but at present the entrance requirement for the nursing course is Senior Certificate (Standard 10 or Matriculation).

The criterion set for subjects to be 'from an urban environment' was that they should have been born and lived most of their lives in an urban area. While Grant (1975) defined an urban area as one having a population of 100 000 or more, a definition which includes East London, for the present study, smaller Eastern Cape towns were also counted as urban, namely Grahamstown (population 41 086[1]), Queenstown (population 39 552) and King William's Town (population, including Zwelitsha, 37 000).

Subjects were nursing at Frere Hospital in East London, and tested in January or September 1975. They were paid R1-50 for their participation. It became necessary to count smaller towns as urban because a large proportion of the nursing staff of the hospital had not been born and brought up in East London or another urban centre of comparable size. Initially subjects were told that to qualify they must have lived all their lives in an urban area. However, two-thirds of the subjects who presented themselves under these conditions had been born in small Transkei and Ciskei towns such as Ngqamakwe, Cofimvaba, Peddie and Alice. Since living in town has a major effect on patterns of social interaction (see Chapter 8, section 8.3.2), it was important to exclude subjects with a rural background so that the sample would represent Xhosas under the impact both of the urban environment and a high educational level.

In retrospect it would have been best to have employed Grant's Urban-Rural scale (Grant 1975) in assessing urbanisation in both this and the XU group, so that the two groups could have been equated. The scale was not employed initially because Grant found that being born in an urban area (of population 100 000 or more) had a loading of ,87 on his Urbanisation factor. Therefore, it was considered sufficient to use being born in an urban area as the criterion for being urbanised. In addition, the scale has been developed and standardised for Zulu males, not Xhosa females.

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[1] Population sizes taken from Rosenthal (1973).

Since the difficulty that was found in obtaining subjects born and bred in East London itself had not been anticipated, these reasons for not using the scale seemed compelling; however the scale would have been very valuable, since, even though not standardised for Xhosa females, it at least has face validity for this group.

Rather belatedly a shortened version of Grant's scale, using ten items with the highest loadings on the Urbanisation factor, but without repeating themes, was administered to the last twenty nurses tested. In addition, an attempt was made to give a revised paper and pencil version of this shortened scale to all who had previously served as subjects. One of the nurses who was a psychology graduate agreed to administer this, but after nearly a year, only 20 of the total of 50 nurses who had been tested had filled it in. The scale, with 'urban' responses filled in, is shown in Figure 17.1.

Thus, three criteria were available for assessing the degree of urbanisation of subjects. Firstly, for all subjects, there was data on place of birth and main places of residence. Secondly, for 20 subjects, there was the result of the verbal form of the shortened Grant scale. Thirdly, for twenty subjects (who overlapped the former group partially) there was the response to the written form of the scale.

Of the original 50 subjects, 24 had been brought up in an urban area with a population of 100 000 or more, and formed the bulk of the final sample of 30. None of these from whom questionnaires were available exhibited rural characteristics. Another three were included who had been born in the smaller Eastern Cape towns whose populations were given above, but had moved to a large urban area during childhood. Another, born in Queenstown, had only moved to a larger urban area at the age of 24, but responded to the verbal form of the questionnaire in an urban manner. Only two of the final sample had been born in very small urban centres. The one, born in Burgersdorp (population 8 197) had moved to East London at the age of three. The other, born at Mqanduli (population 369!) had moved to East London at the age of 9: she gave a highly urban response to both versions of the scale and was rated as highly urbanised by the nurse who

FIGURE 17.1

WRITTEN VERSION OF THE URBAN-RURAL SCALE AS USED WITH SOME XN SUBJECTS

1. Where were you born? — Urban area

2. Where do your parents live? (If deceased, where were they living at the time of death?) — Urban area

3. Where do you expect to be living in five years time? (Tick one box only)
   - East London or other large urban area — ✓
   - small town or rural area —

4. If you could afford it, which would you choose? (Tick one box only)
   - to have a small farm and own some cattle and live in the Transkei or Ciskei —
   - to have a business and own a car and live in Mdantsane — ✓

5. Which would you regard as the more important achievement in a woman's life? (Tick one box only)
   - to go to the top of her profession and to further her education — ✓
   - to have 8 children and bring them up happily at home —

- - - - - - - - - - - -

ANSWER THE FOLLOWING QUESTIONS BY DRAWING A CIRCLE ROUND "YES" OR "NO".

6. Does your father or mother own land in a rural area? (If they are deceased, did they own such land at the time of death?) — YES (NO)

7. Are tribal chiefs important to <u>you personally</u>? — YES (NO)

8. Do you attend bioscopes?(Or did you when younger?) — (YES) NO

9. Do you believe that a sick person may die if touched by someone who is 'umlaza', for example by a menstruating woman? — YES (NO)

- - - - - - - - - - - -

10. How many brothers and sisters have you, and how much education has each had? (For each one, write the word "brother" or "sister" against one of the spaces below, followed by the education completed. Example: 1. brother matric 2. brother standard 10 etc).

1. _____ Mean 5. _____
2. _____ of 4 6. _____
3. _____ or more 7. _____
4. _____ years. 8. _____

assisted in the administration of the scale. It was clear that she was more urbanised than other subjects born in larger centres.

It can be concluded that, despite the rather unsystematic manner in which urbanisation was assessed, all subjects with a strong rural background were

excluded from the final sample of thirty. The six subjects not actually born in a large urban area were relatively highly urbanised by Grant's criteria.

17.4.2 Education and occupation

Prior to taking up nursing, nine of the final sample had taken the matriculation examination (one of these had failed), twelve had passed Junior Certificate, followed by a two-year teacher's course, and nine had only Junior Certificate.

With regard to qualifications within the career of nursing, one subject was a Sister Tutor (a registered nurse with a Diploma in Nursing Education), nineteen were registered nurses (or Sisters), four were auxiliary (or staff) nurses, one was a nursing assistant, and four had failed an examination in the basic training and were working as receptionists.

The husbands of the sample comprised three graduates, twelve matriculants, eleven who had passed Junior Certificate (including four who also had a teaching qualification), and four who had not taken the Junior Certificate. The occupations of the husbands comprised one doctor, one student, three teachers, a Baptist Minister, a male nurse, seven clerks, seven salesmen, two policemen, a store owner and six labourers.

17.4.3 Language medium of interview

Half of the final sample were tested in Xhosa and the others in English. With the English instruction subjects, the normal procedure was followed of having the subject read the initial instructions and the interaction descriptions from typed cards, as with the White group. With the Xhosa instruction sample, two methods were used. During the first visit, they were tested by the interpreter in the presence of the writer in the same way as the other Xhosa subjects, and had instructions and interaction descriptions read to them (five of the final sample). During the second visit, no interpreter was available, and they read the instructions and descriptions in Xhosa from cards, but all other verbal communication was in English (ten subjects).

17.5 SUBJECTS: THE WHITE (WH) GROUP

The White (WH) sample consisted of married women living in Grahamstown who were English-speaking. Addresses were collected by taking random selections from the Electricity Accounts books of Grahamstown Municipality. A total of 124 letters were sent to these addresses between June and November 1975. These gave the author's address as the Institute for Social and Economic Research, and invited potential subjects to offer themselves for an interview lasting about 45 minutes involving questions not of a personal or embarrassing nature.

The letter explained that to be suitable, subjects had to be English-speaking Whites who were (or had been) married and were now between the ages of 20 and 55. A 'standard fee' of R2-00 was offered.

Recipients of the letters were asked to return a form in a stamped addressed envelope which was enclosed with the letter. They were asked to check one of the following three statements: 'I regret there is no-one suitable in this household', 'I am suitable for the interview but am unable to assist you', and 'I am suitable for the interview and am willing to assist you'.

Sixty-six forms were returned, of which thirty-four were from households with no suitable person, five from suitable subjects who were unable to assist, and twenty-seven from persons who were suitable and willing to be interviewed. These twenty-seven were contacted and served as subjects.

In order to obtain the remaining subjects so that they would be of the ages required by the matching procedure (see below, section 17.6), the author approached a female acquaintance and asked her to suggest three women of the particular ages required. She obtained volunteers of the required ages from mothers at a children's play group, and these completed the sample.

Of this sample, seven were graduates, fourteen had matriculated, but not graduated, and nine had left school without matriculating. The husbands had a rather higher educational level: seventeen were graduates, eight were matriculants, and five had not reached matriculation.

Sixteen of the sample had no current paid employment, although two of these were trained nurses. Of those working, one was a nurse, one a physiotherapist, one an oral hygienist, one a laboratory technician, three were librarians, one a university graduate assistant, one a student and one a credit controller in a shop. The occupations of the husbands were: university lecturer (four), university sports officer, university computer manager, teacher (five), chemist, attorney, accountant, town clerk, businessman (three), salesman (two), technician, mechanic, carpenter, policeman, municipal installation inspector, and chef.

A large proportion of the sample were either themselves employed at the university or schools, or were married to men employed at these institutions. This is the result of two factors. Firstly, a relatively large proportion of the population of Grahamstown is connected with schools or university, because of the large number of educational institutions in the city and the small amount of industry. Secondly, women connected with these institutions were probably more willing to declare themselves willing for interview because of familiarity with life at a university.

17.6 AGES, NUMBER OF CHILDREN AND MARITAL STATUS

In all four samples, all subjects were married with the exception of one separated woman in the XN group, six widows in the XU group, and four widows in the XR group.

The mean number of children in each sample was: WH 2,2; XN 2,2; XU 3,4; and XR 2,5.

Subjects were matched fairly closely for age across the samples, although subjects were sometimes matched with another subject whose age differed by one or two years. For example, the ages of the eight oldest subjects in each group were 28 (WH), 29 (XN), 27 (XU) and 28 (XR). The only case of a large discrepancy was in the case of the oldest subjects whose ages were 54 (WH), 50 (XN), 56 (XU) and 54 (XR). An older subject could have been chosen for the XN group, but this would have meant including one of the less clearly urbanised

subjects.

Mean ages were as follows: WH 35,1 (SD = 9,25); XN 34,8 (SD = 7,80); XU 35,0 (SD= 9,06), and XR 35,4 (SD = 8,68).

In the XN group, the mean age of the English instruction group was 34,8 (SD = 7,4) and that of the Xhosa instruction group 34,7 (SD = 8,44).

17.7 METHOD

The main details of the doll placement method have been laid out in Chapter 9, and only three points require mention here.

Firstly, the five sets of placements were made in the order A,B,C,D,E, but within each set the order of items was independently randomised for each subject.

Secondly, as usual, careful checking was undertaken in order to ensure that the items had been correctly understood, especially with less literate subjects. However, subjects were not asked to talk about every placement as was the case in Experiments 4 and 5.

Thirdly, the interpreter who was employed with the XU, XR and Xhosa instruction XN subjects was a final year male Psychology student at the university of Fort Hare, who had served as interpreter for Experiments 3 - 5. However, for three of the XU subjects, who were interviewed during a later visit, the interpreter was a clerk at the Bantu Affairs Administration Board who was on leave.

CHAPTER EIGHTEEN

EXPERIMENT 6A: EFFECT OF DEGREE OF ACQUAINTANCE

18.1 INTRODUCTION

18.1.1 Effect of degree of acquaintance in Experiment 2A

In Experiment 2A, the effect of degree of acquaintance between interactors represented by the dolls was examined in one White and three Xhosa groups. While it had been expected that distances would increase as acquaintanceship decreased, acquaintances were placed at distances which were not significantly smaller than those used for friends in the XR, XS and WS groups. This appeared to be because the description of 'acquaintances' included the phrase 'they do not know each other very well', implying a low level of acquaintanceship.

In addition, XU and XR subjects appeared to perceive the acquaintance relationship as hostile, and this was reflected by large angles, in some cases, and, in the XU group, in distances which were significantly larger than those used for strangers.

Two explanations of this latter finding were considered. The first, the 'mistranslation' explanation, was that the words used to render the concept of acquaintance into Xhosa carried a connotation of hostility which was not present in the English. An objection to this explanation was that educated Xhosa who were consulted on the issue could find no word carrying such a connotation in the Xhosa version of the 'acquaintance' item. However, the possibility remained that such a connotation was present for an illiterate Xhosa.

A second explanation, the 'dichotomous construct' explanation, was that the Xhosa have a dichotomous construct of acquaintanceship, so that an individual is either classified as 'friend' or 'stranger', as opposed to having the continuous dimension of acquaintanceship recognised among English-speakers.

This might arise in traditional Xhosa society because of its close-knit nature. A person would probably know all of the individuals living in the neighbourhood, and would develop an agreeable relationship with them. In such

a small community, a person would only not know another well if there was some good reason such as a difference in generation or status (see section 8.2.2) or a clash of interests. In other words, although a relationship of mere acquaintanceship does not necessarily connote distance or hostility, it would in practice be such in a small community because otherwise the interactors would know each other well and not be mere acquaintances.

One objection to this explanation is that it applies much better to traditionalist Red Xhosa than to urban Xhosa, but it was in the urban group in Experiment 2A that the effect was most marked. Secondly, the existence of a word for acquaintance, 'aqelene', counts against the existence of a dichotomous construct, since it implies that an intermediate relationship is recognised. However, the fact that the Xhosa students did not show the effect of seeing acquaintances as hostile could be understood by supposing that they had acquired the construct of an acquaintance when they learned the English language.

18.1.2 Degree of acquaintance interaction descriptions in Experiment 3

In Experiment 3, which was described in Chapter 14, and in which the scaling accuracy of Red women was studied, the opportunity was taken to explore the matter further. Three of the items used were ones which described interactors at three different degrees of acquaintance, but a different translation for the acquaintance item was used.

In Experiment 2A, the acquaintances (when both men) were described as 'Aqelene nje. Akazani ncam ncam.' This literally means: nje = just or only; aqelene = acquainted; akazani = they do not know each other (a + ka + azi + an + i = negative + subject concord + know + each other + negative suffix); ncam ncam = well, intimately.

In Experiment 3, the acquaintances (in this case both women) were described as 'bazana kancinci'. This can be analysed as follows: bazana = they know each other (ba + azi + an + a = subject concord + know + each other + verbal suffix); kancinci = a little. In this case the words aqelene and ncam ncam employed in Experiment 2A were avoided.

In Experiment 3, the rendering of 'friends' was also problematic, as the Red Xhosa subjects did not appear to be familiar with the Xhosa word 'umhlobo', which is the usual (in town) word for friend. Instead they suggested 'izihlobo', which literally means 'relative'. This will be discussed more fully in section 18.6.2.

The rendering of 'strangers' by 'ngabahambi' in Experiment 2A was also not accurate, since the word literally means 'travellers'. It is doubtful, however, whether this was very important since the word was qualified by 'ayaqala ukubonana' (literally 'they are beginning to see each other for the first time'). In Experiment 3, 'are strangers' was rendered more exactly by 'abangazaniyo tu' (literally 'are people who do not know each other at all').

The three acquaintance items in Experiment 3 used the situation of two women talking together beside the road.

18.1.3 Effect of degree of acquaintance on distance in Experiment 3

Because the conditions of testing in Experiment 3 were not ideal, since subjects had often already acted as models for other subjects before making their placements, only the distance scores were subjected to analysis. When the three acquaintance items discussed above were subjected to analysis of variance, a strong effect of the Acquaintanceship variable was obtained (F = 10,634; df = 2/32; p<,001). The means were: Friends 94,3; Acquaintances 165,8; Strangers 109,2. The results thus present a further instance of the use of large distances to represent acquaintances; distances for acquaintances were significantly larger than those for strangers (t = 3,461; df = 32; p<,01). The difference between the distances for friends and strangers was not significant (t = 0,909).

The results therefore seem to support the 'dichotomous construct' theory that was outlined above. They also raise the question as to why large acquaintance distances were found in this case and not in the case of the XR subjects of Experiment 2A. While the possibility must be considered that it is an effect of sex of subject, since subjects were males in Experiment 2A and females

in the present case, it seems more likely that the difference between the two sets of results is due to procedural differences. In Experiment 2A subjects who attributed hostile or unfriendly conversations to the figures were asked to make new placements representing a friendly situation, while in the present case no conversations were even asked for, so the subject's first placement was always accepted.

The findings do not entirely rule out the 'mistranslation' explanation. Possibly the use of the verb -azi- modified by a negative (in Experiment 2A) or by kancinci ('a little') in the present case, carried a connotation of hostility. This explanation is weakened, however, by the fact that 'strangers' was rendered by 'abangazaniyo tu' ('they do not know each other at all') in the present case, which also uses the verb stem -azi- with a negative; this was not associated with distances as large as those used for 'acquaintances'.

18.1.4 Interaction descriptions in the present experiment

In the present experiment, three degrees of acquaintance were again employed. A man-woman pairing was selected, so that SAD scores could be examined, and the interactors were not described as talking in a friendly way so that subjects who perceived the encounter as hostile would be free to represent it as such. However it was stated that they had already greeted each other because in previous experiments a few subjects had attempted to represent the act of shaking hands, and it was felt that the close distance associated with these schemata represented an accommodation to the physical requirements of this act rather than a measure of the intimacy of the relationship.

In the intermediate condition, interactors were merely described as 'acquaintances', and the phrase 'they do not know each other very well' used in Experiment 2A was dropped. It was therefore expected that acquaintance distances would not be so close to the stranger distances in the White group. In the Xhosa version the use of the verb stem -azi- was avoided in the acquaintance description, and the phrase 'bagelene nje' ('they are just acquaintances') was used. This provided an opportunity to discover whether it was the use

of the -azi- stem that had provided the connotation of hostility in the XU and XR groups previously.

The basic English description was:

> "This man and woman are ----------. They have already exchanged greetings and are talking together."

According to the placement condition, either the word 'friends', or 'acquaintances' or the phrase 'strangers. This is the first time they have met', was inserted in the blank space.

The basic Xhosa description was:

> "Le ndoda nalo mfazi ----------. Sebebambene ngezandla kwaye bayathetha kunye."

Either the word 'ngabahlobo' ('are friends'), or the phrase 'baqelene nje' ('are just acquainted') or the phrase 'abazani. Kokuqala bedibana' ('are strangers. This is the first time they meet') was inserted in the space.

As pointed out above (section 18.1.2), the XR subjects did not know the word abahlobo ('friends'), and azizihlobo, which they were familiar with, was employed instead.

Each of the three interaction descriptions was given a four-letter code: AMWF for friends, AMWA for acquaintances, AMWS for strangers.

18.2 A PRIORI HYPOTHESES

Although it was not certain whether the perception of acquaintances as unfriendly would again occur with the present Xhosa translation, several hypotheses were advanced on the assumption that this would be so. Thus, on the basis of previous studies the following hypotheses were advanced concerning the distance scores:

Hypothesis A/D.1: In the WH group mean distances will be in the order (lowest first), AMWF, AMWA, AMWS. The same was expected in the XN group since they were expected to respond similarly to the Xhosa students of Experiment 2A.

Hypothesis A/D.2: In the XU and XR groups, mean distances will be in the order (lowest first), AMWF, AMWS, AMWA.

Hypothesis A/D.3: Mean distances will be larger in the XU and XR groups than

in the XN and WH groups.

No hypotheses concerned the LA scores. An expectation that these would be a function of acquaintanceship had been entertained in Experiment 2A because of the inverse relationship between eye-contact levels and proximity (section 3.1.2) but had received little support. In Experiment 2A the XU and XR groups used larger LA's for acquaintances than for friends or strangers, but this was not a clear effect with the man-woman pairings being used in the present experiment.

Assuming that hostility was perceived by them, the XU and XR subjects were expected to use larger AD's for the acquaintances than for the other two conditions. This gave rise to two hypotheses:

Hypothesis A/AD.1: In the XU and XR groups, mean AD will be greater for AMWA than for AMWF or AMWS.

Hypothesis A/AD.2: Mean AD for AMWA will be larger in the XU and XR groups than in the XN and WH groups.

Three hypotheses concerned the SAD scores which were calculated by subtracting the man's angle from the woman's so that a positive SAD indicated that the man was placed in the more direct orientation. In Experiment 2A White SAD's were no different from zero while those of the Xhosa groups were. This gave rise to the following:

Hypothesis A/SAD.1: In the WH group mean SAD will be no different from zero in any of the three situations.

Hypothesis A/SAD.2: In the XN, XU and XR groups mean SAD will be significantly greater than zero over all situations taken together and in each individual situation.

Hypothesis A/SAD.3: Mean SAD will be lower in the WH group than in the Xhosa groups.

18.3 RESULTS

18.3.1 Distance scores

Means and standard deviations of the D scores are presented in Table 18.1

and the split plot analysis of variance is summarised in Table 18.2.

TABLE 18.1

MEANS AND STANDARD DEVIATIONS OF THE DISTANCE SCORES IN EXPERIMENT 6A

		AMWF	AMWA	AMWS	ALL
WH	MEAN	74.8	87.3	107.5	89.9
	SD	23.6	21.7	30.1	28.5
XN	MEAN	65.9	73.2	100.2	79.7
	SD	17.9	25.1	37.6	31.5
XU	MEAN	67.7	94.1	121.9	94.6
	SD	22.3	29.8	53.8	43.5
XR	MEAN	80.9	84.2	101.4	88.8
	SD	27.5	31.9	45.1	36.4
ALL	MEAN	72.3	84.7	107.7	88.3
	SD	23.6	28.1	42.9	35.7

TABLE 18.2

SUMMARY OF ANALYSIS OF VARIANCE OF DISTANCE SCORES IN EXPERIMENT 6A

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	200159.6	119		
GROUPS (A)	10372.3	3	3457.43	2.113
SUBJ.W.GROUPS	189787.4	116	1636.10	
WITHIN SUBJECTS	256551.3	240		
ACQUAINTANCESHIP(B)	77479.4	2	38739.70	53.074**
A X B	9730.1	6	1621.68	2.222*
B X SUBJ.W.GROUPS	169341.9	232	729.92	
TOTAL	456711.0	359		

* $p < .05$ ** $p < .01$

The distance means of the groups were very similar, and no significant differences between them over all were indicated by the analysis of variance. In hypothesis A/D.3 it had been predicted that mean distance would be greater in the XU and XR than in the WH and XN groups. This was poorly supported, since, using t-tests, the mean of the WH group did not differ from those of

either the XU or XR groups and the mean of the XN group did not differ from that of the XR group. However, the mean of the XU group was significantly larger than that of the XN group (t = 2,459; df = 116; p<,01 one-tailed).

The analysis of variance did indicate an interaction between Groups and Acquaintanceship. Because of the large variances with AMWS, each item was examined separately for an effect of Groups using one way analyses of variance and one effect was found in the case of AMWA (see section 18.4).

There was a strong effect of the Acquaintanceship variable, and the pattern of means was the same in each group (see Table 18.1). In each, they were in the order: friends, acquaintances, strangers. In each group, two t-tests were performed to compare the mean of AMWF with that of AMWA and the mean of AMWA with that of AMWS. The AMWA mean was significantly greater than that of AMWF in the WH (p<,05) and XU (p<,01) groups, but not in the XN and XR groups (t = 1,206 and 0,549 respectively, df = 58). The AMWS mean was significantly greater than that for AMWA in all groups (p<,001 for XN and WH; p<,01 for XU and XR). These probabilities are two-tailed.

18.3.2 Least Angle scores

TABLE 18.3

MEANS AND STANDARD DEVIATIONS OF THE LEAST ANGLE SCORES IN EXPERIMENT 6A

		AMWF	AMWA	AMWS	ALL
WH	MEAN	20.1	22.5	13.8	18.8
	SD	20.5	15.9	11.8	16.7
XN	MEAN	20.7	24.2	23.8	22.9
	SD	26.1	26.3	29.0	26.9
XU	MEAN	13.8	9.3	12.9	12.0
	SD	18.0	11.1	15.9	15.2
XR	MEAN	11.4	15.0	9.9	12.1
	SD	19.8	18.2	13.1	17.2
ALL	MEAN	16.5	17.7	15.1	16.4
	SD	21.4	19.4	19.2	20.0

TABLE 18.4

SUMMARY OF ANALYSIS OF VARIANCE OF LEAST ANGLE SCORES IN EXPERIMENT 6A

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	76774.3	119		
GROUPS (A)	7748.8	3	2582.94	4.341 **
SUBJ.W.GROUPS	69025.5	116	595.05	
WITHIN SUBJECTS	67140.7	240		
ACQUAINTANCESHIP(B)	411.2	2	205.59	0.734
A X B	1754.0	6	292.33	1.044
B X SUBJ.W.GROUPS	64975.5	232	280.07	
TOTAL	143915.0	359		

** $p < .01$

Means and standard deviations of the LA scores are presented in Table 18.3 and the analysis of variance is summarised in Table 18.4. There was only one significant effect, that of Groups. Inspection of the means over all three items suggested that this meant that the LA's of the WH and XN group were larger than those of the XU and XR groups, and application of Scheffé's test showed this to be the case ($p < .025$).

18.3.3 Angle Difference scores

Means and standard deviations of the AD scores are presented in Table 18.5 and the analysis of variance is summarised in Table 18.6.

TABLE 18.5

MEANS AND STANDARD DEVIATIONS OF THE AD SCORES IN EXPERIMENT 6A

		AMWF	AMWA	AMWS	ALL
WH	MEAN	16.0	11.2	15.0	14.1
	SD	14.9	9.3	10.6	11.9
XN	MEAN	13.2	10.3	14.5	12.7
	SD	8.1	7.9	17.6	12.1
XU	MEAN	6.6	10.5	14.5	10.5
	SD	6.1	11.7	18.7	13.5
XR	MEAN	6.9	9.4	11.2	9.2
	SD	6.0	14.3	15.9	12.8
ALL	MEAN	10.7	10.3	13.8	11.6
	SD	10.2	11.0	15.9	12.7

TABLE 18.6

SUMMARY OF ANALYSIS OF VARIANCE OF ANGLE DIFFERENCE SCORES IN EXPERIMENT 6A

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	25949.7	119		
GROUPS (A)	1290.2	3	430.07	2.023
SUBJ.W.GROUPS	24659.5	116	212.58	
WITHIN SUBJECTS	31670.7	240		
ACQUAINTANCESHIP(B)	870.3	2	435.16	3.388*
A X B	1006.3	6	167.72	1.306
B X SUBJ.W.GROUPS	29794.0	232	128.42	
TOTAL	57620.4	359		

* $p < .05$

There was a significant effect of Acquaintanceship in the analysis of variance. Inspection of the means over all groups suggests that this is because AD's were larger with AMWS than with the other two items. However, this pattern was not apparent at all in the XN and WH groups. In addition, since the variance-covariance matrices were asymmetrical in the three Xhosa groups, the F ratio may be positively biased.

If the groups are examined individually, there is a significant effect of acquaintanceship only in the XU group, but the effect is not significant with the conservative degrees of freedom which ought strictly to be applied in the presence of the asymmetrical variance-covariance matrix. It should perhaps be concluded that no effect has been clearly demonstrated.

18.3.4 Signed Angle Difference scores

Means and standard deviations of the SAD scores are presented in Table 18.7 and the analysis of variance is summarised in Table 18.8. The only significant effect indicated by this analysis was one of Groups. Application of Tukey's test showed no significant difference between the Xhosa groups. Since it had been predicted in hypothesis A/SAD.3 that mean SAD would be lower in the WH than in the Xhosa groups, the WH mean was compared with that of each of the other groups by means of one-tailed t-tests. In each case the WH mean SAD

TABLE 18.7

MEANS AND STANDARD DEVIATIONS OF THE SAD SCORES IN EXPERIMENT 6A

		AMWF	AMWA	AMWS	ALL
WH	MEAN	1.4	-4.8	-5.8	-3.1
	SD	22.0	13.9	17.6	18.2
XN	MEAN	3.2	4.6	10.8	6.2
	SD	15.3	12.3	20.2	16.4
XU	MEAN	0.0	3.4	4.9	2.8
	SD	9.1	15.5	23.3	16.9
XR	MEAN	3.8	-0.6	5.9	3.0
	SD	8.4	17.2	18.6	15.5
ALL	MEAN	2.1	0.6	3.9	2.2
	SD	14.6	15.1	20.7	17.0

TABLE 18.8

SUMMARY OF ANALYSIS OF VARIANCE OF SAD SCORES IN EXPERIMENT 6A

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	45234.9	119		
GROUPS (A)	4014.7	3	1338.24	3.766*
SUBJ.W.GROUPS	41220.2	116	355.35	
WITHIN SUBJECTS	59049.3	240		
ACQUAINTANCESHIP(B)	652.4	2	326.22	1.348
A X B	2258.7	6	376.45	1.556
B X SUBJ.W.GROUPS	56138.2	232	241.97	
TOTAL	104284.2	359		

* $p < .01$

was significantly lower, with the effect being strongest with the XN group. The t values were (with 116 df): WH with XN 3,295 ($p < .001$); WH with XU 2,078 ($p < .025$); WH with XR 2,160 ($p < .025$).

18.3.5 Direction of angle difference for each item in each group

A series of t-tests was run to see whether the null hypothesis that mean SAD = 0 could be rejected. These were performed for each item in each

group (in three cases, where the distribution departed severely from normality, the non-parametric Wilcoxon test, which yields a z statistic, was employed). The results of these analyses are presented in Table 18.9.

TABLE 18.9

VALUES OF t (OR z) ASSOCIATED WITH SAD SCORES IN EXPERIMENT 6A

		WH		XN		XU		XR	
	df	Mean	t	Mean	t	Mean	t	Mean	t
AMWF	29	1,4	0,349	3,2	1,156	0,0	0,020	3,8	2,457**
AMWA	29	-4,8	-1,893=	4,6	2,034*	3,4	1,201	-0,6	0,054+
AMWS	29	-5,8	-1,802=	10,8	2,890++	4,9	1,144	5,9	1,139+
Combined	89	-3,1	-1,597	6,2	3,577***	2,8	1,552	3,0	1,840*

*p<,05 one-tailed **p<,025 one-tailed ***p<,001 one-tailed

\+ z value from Wilcoxon test (n.s.)

++ z value from Wilcoxon test (p<,005 one-tailed)

= n.s. by two-tailed test

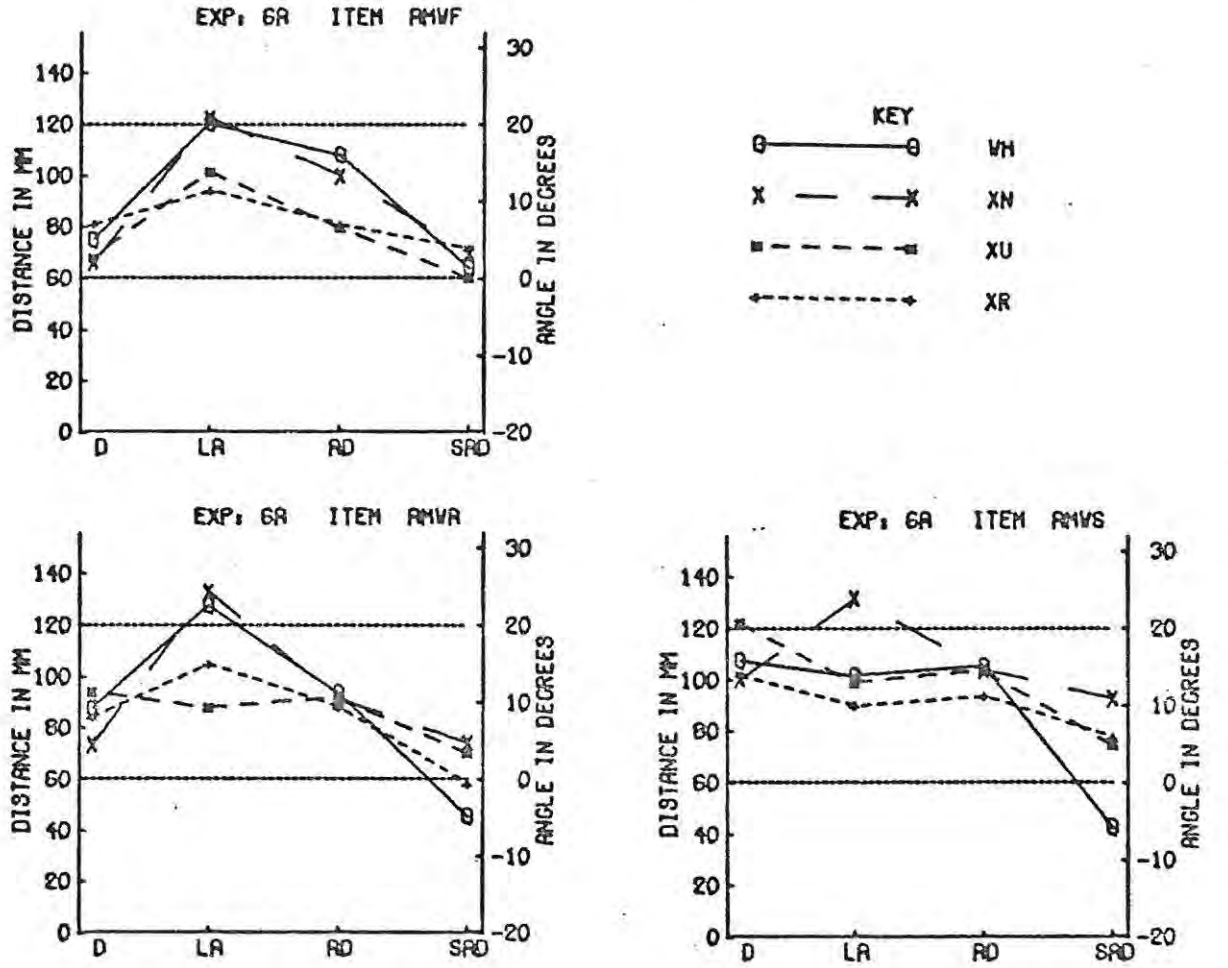
In the WH group the mean SAD's were not significantly different from zero, and this was in accordance with hypothesis A/SAD.1. In the Xhosa groups one-tailed tests were used since hypothesis A/SAD.2 predicted that in these cases SAD's would be greater than zero. This hypothesis was fairly well supported in the XN group, although not with the AMWF item. The effect was much weaker in the XU group and did not reach significance in any case. In the XR group the hypothesis received some support as there was a significant effect over all conditions and also in the case of AMWF, although the mean SAD was in that case very small.

18.4 IPOS PROFILES

The results of the Experiment are presented in the form of IPOS profiles in Figure 18.1. The increase in mean distances from AMWF to AMWA and on to

FIGURE 18.1

IPOS PROFILES IN EXPERIMENT 6A



AMWS can be clearly seen. Although in hypothesis A/D.3, it was predicted that the WH and XN groups would use smaller distances than the XU and XR groups, this pattern did not emerge clearly in any of the profiles, and the hypothesis cannot be said to have been supported.

The analysis of variance of the Distance scores (Table 18.2) indicated that the Groups x Acquaintance interaction was significant. One way analyses of variance gave a significant effect of Groups on Distance for item AMWF ($p < .05$) and AMWA ($p < .05$). In the case of item AMWF, however, no pairwise comparisons between means were significant by Tukey's test, and the XR mean was not significantly larger than that of XU and XN taken together by Scheffé's test. In the case of AMWA only the comparison between XN and XU was significant ($p < .05$).

The use of greater LA's by the WH and XN groups than by the XU and XR groups, that emerged from the analysis of variance in Table 18.3 is also clear in the three sets of profiles. The only exception is item AMWS where the WH mean is rather low.

In the case of items AMWA and AMWS the AD scores were very similar. However, those of the WH and XN groups were rather larger in AMWF than those of the other two groups. In the absence of a significant Groups x Acquaintance interaction in the analysis of variance, this may well be a chance effect. However, when a one-way analysis of variance was applied to the AMWF AD's the F ratio was significant beyond the ,001 level (F = 7,291; df = 3/116).

In the case of the SAD scores, the use of smaller SAD's by the WH group than by the Xhosa groups' emerged most clearly in the case of AMWS. With AMWF the SAD's were very similar in all groups.

18.5 EFFECT OF AGE AND LANGUAGE OF INSTRUCTION

18.5.1 Effect of age

Each of the four samples was dichotomised at the median age and the two halves of each sample compared using a split-plot analysis of variance on each of the four dependent measures. There were thus sixteen separate analyses (four groups x four scores).

Only one significant effect involving age was obtained: the Age x Acquaintanceship interaction was significant in the analysis of the SAD scores of the XR group ($p<,05$). This effect was because the younger subjects had a mean SAD of -6,9 for AMWA while all other SAD's in this group, and all in the older group, were positive.

Since this is the only effect from sixteen analyses, and since there is no compelling explanation of the finding, it seems likely that it is simply due to chance.

18.5.2 Effect of language of instruction in the XN group

Another series of split-plot analyses of variance was run comparing the

XN subjects who had received instruction in Xhosa with those who had been instructed in English. A separate analysis was carried out for each dependent measure, and in no case was the effect of Language of instruction significant. However, in the case of the LA scores, both the main effect of Language ($F = 3,996$; $df = 1/28$) and the interaction between Language and Acquaintanceship ($F = 2,205$; $df = 2/56$) were fairly large. Mean LA for the English group was 15,2, while that for the Xhosa group was 30,6.

In the case of the D, AD, and SAD scores, where the F-ratios were small, it can be stated with some confidence that language of instruction had no effect. In the case of the LA scores it cannot be stated with confidence that language medium did affect the results, but neither can it be stated with certainty that it didn't. If, as in the present case, one is interested in establishing the null hypothesis, the finding of an F ratio significant beyond the 10% level (as with the main effect in the present case) suggests caution, since the odds are 9:1 against the null hypothesis being true. In fact, in the case of the B items, the LA's of the Xhosa instruction subjects were significantly larger than those of the English instruction group, and a possible account of this effect is offered in section 19.9.2.

18.6 DISCUSSION

18.6.1 Acquaintance placements in the XU and XR groups

The first finding of importance was that the XR and XU subjects did not perceive the acquaintance items as connoting distance or hostility. Subjects in these groups did not use the large distances and angles found in Experiments 2A and 3, nor make comments that the encounters were unfriendly.

As a result hypothesis A/D.2, which predicted that XU and XR groups would have a larger mean distance with the acquaintance than with the stranger item was not supported; nor was hypothesis A/AD.1 which predicted that in the XU and XR groups mean AD for acquaintances would be larger than mean AD's for friends or strangers, nor hypothesis A/AD.2 which predicted a larger mean AD in the acquaintance condition in the XU and XR groups than in the WH and XN

groups.

It is clear, therefore, that the phrase used for 'are acquaintances', 'baqelene nje', did not carry any connotation of estrangement or hostility for XR and XU subjects. This provides some support for the 'mistranslation' hypothesis set out in section 18.1.1. It suggests that it is renderings of 'acquaintance' using the verb stem -azi- (know) with a negative or the adverb kancinci ('a little') that carry a connotation of unfriendliness for illiterate Xhosa subjects, since such renderings were employed in Experiments 2A and 3 where large distances and angles were found.

However, the use of -azi- + a negative does not necessarily connote unfriendliness in Xhosa. First of all, it did not do so for the Xhosa students of Experiment 2A. Secondly, a negative form of this verb was used to render 'are strangers' in Experiment 3 ('abangazaniyo tu'), and in that case the distance was not significantly larger than that used for 'friends'. Thirdly, a negative form of this verb was also used to render 'are strangers' in the present experiment ('abazani'), but the XU distances were not as large as those used for acquaintances in Experiment 2A, nor were the XR distances as large as those used by the XR group for acquaintances in Experiment 3. The mistranslation account of the earlier findings is thus not unequivocally supported in the present experiment.

However, neither is there support in the present findings for the 'dichotomous construct' explanation of the large acquaintance distances of the earlier experiments (see section 18.1.1), since in the XU group the acquaintance mean distance was intermediate between that for friends and that for strangers. Nevertheless, it is interesting to note that in the XR group the mean distance for acquaintances was only marginally larger than that for friends, and not significantly so. Possibly, therefore, for this group, the category 'acquaintance' does not occupy a distinct place intermediate between 'friends' and 'strangers'. However, such an interpretation is made more difficult because of the difficulty of rendering 'friends' in Xhosa for this group (see section 18.6.2 below).

Perhaps the most satisfactory account of the large acquaintance distances of the earlier experiments that can be arrived at on the basis of the present research includes components of both the 'mistranslation' and 'dichotomous construct' explanations. It is that the verb -azi- in the negative carries a connotation of unfriendliness or estrangement when applied to a relationship in which two individuals would normally be expected to know each other.

If this were the case it would carry no such connotation when applied to strangers meeting each other for the first time. However, in the context of the close-knit community of the Red Xhosas, it would when applied to people of whom it is implied that they are neighbours, since neighbours would normally be expected to know each other well unless separated by formal role boundaries or unless they had quarrelled.

It is not so clear that the same connotation would be carried among an urban African community, however, which is less close-knit than the rural one. However, the Grahamstown male Xhosas of Experiment 2A who used large distances when representing acquaintances, may have retained a degree of country rootedness, for, although they had been born in Grahamstown, many still had family ties on farms and in rural areas.

If this explanation is correct, it would not apply to White subjects. In the more diffuse urban community of the White, and with the cultural norm of individualism rather than interdependence between neighbours, this group would not be expected to infer hostility between people described as not knowing each other well. Casual acquaintanceship and limited knowledge of each other is a common form of relationship in western urban society (e.g. Alexander 1972).

The Xhosa students of Experiment 2A did not infer hostility either, whether the acquaintance relationship was described in English or Xhosa, and this was despite the fact that many of the sample were from rural backgrounds. This finding suggests that the expectation that many relationships will be relatively superficial may have developed in this group as a result of their contact with western culture through the medium of education, so that for them too the suggestion that two people know each other but not very well does not imply that they have quarrelled or are otherwise estranged.

18.6.2 Translation of 'friend' in the XR group

It was pointed out in section 18.1.2 above, that XR subjects in previous experiments did not appear to be familiar with the word 'umhlobo' which is the normal town Xhosa word for 'friend'. Instead they suggested 'izihlobo'. This was simply substituted by the interpreter for 'umhlobo' on the assumption that it was a local variant of 'umhlobo'. After completion of all the experiments, it transpired that 'izihlobo' literally means a 'relative', rather than a 'friend', and does not appear to be an exact rendering of the English 'friend'.

However, no equivalent of the English 'friend' appears to exist in Xhosa, and even the word 'umhlobo' which has this meaning in modern town Xhosa has only acquired this meaning with the breakdown of traditional ways of life. Its original meaning is also 'relative' (Kropf and Godfrey 1915).

However, 'izihlobo' applies to relationships between relatives which are warm and friendly, rather than to relationships between relatives separated by their role. This is clear from the results of the present experiment, where the mean XR distance for AMWF was only marginally larger than of the other groups and not significantly so (see section 18.4), and was considerably smaller than that found with Set B items such as 'young husband with his mother', where the relationship between relatives is across the generations (see next chapter).

In retrospect, therefore, it seems that the use of 'izihlobo' for 'umhlobo' in the XR group represented the best solution to the problem of translation that was available.

18.6.3 Degree of acquaintance and distance

One of the clearest features of the present results was the relationship between degree of acquaintance and proximity, with distances increasing as acquaintanceship decreased in every group. This confirmed the findings of many previous experiments (sections 4.6.2 and 5.2 and 5.3).

Unlike Experiment 2A, distances for AMWA were intermediate between those of AMWF and AMWS rather than being very close to the distances obtained for 'strangers'. This is because the phrase 'they do not know each other very

well' was included in the description of acquaintances in Experiment 2A, implying a low level of acquaintanceship. The omission of this phrase in the present case meant that a higher degree of acquaintanceship was perceived.

It was noted (section 18.3.1) that in all groups distances for AMWS were significantly larger than those for AMWA, but that distances for AMWA were only significantly larger than those for AMWF in the WH and XU groups. In the XR group this might, perhaps, reflect a lack of differentiation between 'friends' and 'acquaintances' arising out of the close-knit social networks of the rural community. As such the finding may be evidence for the 'dichotomous construct' theory discussed above (section 18.1.1).

If this is the case, it could mean that the use of similar distances for friends and acquaintances by members of a group provides an indication that members of that group constitute a close-knit community, while the use of larger distances for acquaintances is an indication that subjects live in a more diverse social milieu where the relationship between acquaintances is more clearly differentiated from that of friends.

18.6.4 Effect of Groups on Distance

In Experiment 2A, the two student groups used smaller distances than the XU and XR groups when representing friends. In addition, the Xhosa students used closer distances than the XU and XR groups over all three acquaintance conditions. This gave rise to hypothesis A/D.3 that in the present experiment the WH and XN subjects would use smaller distances than the XU and XR subjects. However, this hypothesis received practically no support (see section 18.4).

The present result might be taken as suggesting that the smaller distances of the two student groups in Experiment 2A were due to the differences in age between these groups and the less acculturated XU and XR groups. However, Roger and Mjoli's work (1976) showed that unacculturated Xhosa used larger distances than Xhosa students when age was controlled. Nevertheless, both these experiments may have obtained the results they did because students as a group

tend to use smaller distances than other groups. The results may therefore reflect the level of intimacy that pertains in student sub-culture, rather than a general effect of acculturation as such.

The only comparison that yielded a significant result in accord with hypothesis A/D.3 was that between XU and XR groups both for the three items together (section 18.3.1) and item AMWS alone (section 18.4). A possible explanation for this effect is that the XU subjects live in a social milieu which is more threatening and dangerous than do the XN group, because the better paid XN subjects can afford to live in the less crowded and more congenial areas. While this does not appear to affect intimacy between friends (means for the two groups were the same with AMWF), it may be that relationships between people less familiar with each other are less intimate in the XU than the XN group because of a greater interpersonal suspiciousness that often characterises residents in poor areas (cp. Rainwater 1972).

It was suggested in section 13.5, where the results of Experiment 2B were discussed, that what distinguished the XR and XU groups from the two student groups in that experiment was that for the former there was a greater range of distances over which they were comfortable. This was supported by the fact that standard deviations were much higher in the two illiterate groups. However, this finding was not repeated in the present experiment. For example, with the item MWF in Experiment 2A, standard deviations were: WS 9,8; XS 18,5; XU 49,8; XR 39,6. In the present experiment, however, for AMWF, the standard deviations were WH 23,6; XN 17,9; XU 22,3; XR 23,6. Thus, while the present XN group had a range that was similar to that of the XS group of the earlier experiment, the present WH group had a larger one than the WS group, and the present XU and XR groups had ones that were considerably smaller than those found earlier, so that what appeared as a strong difference in the previous experiment was not evident here at all.

The fact that SD's were so large in the XU and XR groups in Experiment 2A may be an effect of the sex of the subjects. Possibly males from these sectors of Xhosa society see friendly encounters as taking place over a larger

range of distances than do women, who prefer the shorter distances within the range.

18.6.5 Effect of Groups on LA scores

The finding that the WH and XN groups used larger LA's than the XU and XR groups had not been expected on the basis of the results of Experiment 2A where the LA's of the various groups were generally very close together.

However, with item MMF of Experiment 2A, as well as the friendly item 1A of Experiment 2B, the XR group did have rather lower LA's than the other groups, although in neither case was the effect significant. In Experiment 4 there was a significant tendency for Red Xhosas to use smaller LA's than White subjects in placements of older-younger generation pairings. Thus the present finding was not entirely unforeshadowed by previous results, even though such a clear result was not expected.

If it is assumed that the smaller LA's of the XU and XR groups reflect the use of a greater degree of direct gaze in these groups than in the XN and WH groups, the finding suggests that the latter see a lower level of arousal as being appropriate for casual social encounters, and perceive the interaction as less formal and more relaxed.

18.6.6 Effect of Acquaintanceship on LA scores

As in Experiment 2A there was no effect of degree of acquaintance on LA scores. As pointed out in section 18.2, it might perhaps have been expected that LA's would have been a function of acquaintanceship because of the evidence that levels of eye-contact are an inverse function of interpersonal distance. In the WH group, the LA for AMWS was rather lower than that for AMWF or AMWA, and possibly this is due to this. However, the effect was not significant so that the result is merely suggestive.

Experiments which demonstrate different eye-contact levels at different distances (reviewed in section 3.1.2) have used distances of up to twelve feet between interactors. On the other hand, the largest means in the WH and XN

groups in the present experiment represent an eye to eye distance of rather less than a meter. It seems likely, therefore, that the absence of a clear relationship between LA and degree of acquaintance reflects the relatively small range of distances represented.

18.6.7 AD scores

No clear effects of Groups or Acquaintanceship upon AD scores were demonstrated in this experiment. Although there was a significant effect of Acquaintanceship, the pattern of means within each group was rather different and the only group in which an effect was discovered when taken alone was the XU. However, as pointed out above, these results could be biased because of asymmetry in the variance-covariance matrices (section 18.3.3). It seems safest to conclude that if there is an effect of Acquaintanceship on AD scores, this is largely confined to the XU group, where AD's increased as acquaintanceship decreased. However, even this is not clearly established by the present data.

While the Groups and Groups x Acquaintanceship F-ratios were not significant (Table 18.6), there was an apparently strong difference between groups in the case of AMWF, where the AD's of the WH and XN groups were some 8^{o} larger than those of the XU and XR groups. This difference is not large in absolute terms, but when a one-way analysis of variance was applied to this item alone, the F-ratio was significant beyond the ,001 level. Although this finding is apparent by eye when the IPOS profile is inspected , (being accentuated by the fact that the XN and WH groups also had larger LA's than the other groups (Figure 18.1)), in the absence of a significant interaction F-ratio in the analysis of variance, and of any compelling explanation, it cannot be regarded as clearly established.

18.6.8 Direction of angle difference

The expectations concerning the SAD scores were fairly well confirmed. Mean SAD's of the WH group were not significantly different from zero, as

predicted by hypothesis A/SAD.1, and they were significantly smaller than those of the three Xhosa groups, as predicted by hypothesis A/SAD.3. The fact that the overall mean of the WH SAD's was actually a little less than zero contributed to the significance of this effect. Had the WH mean been exactly zero, the effect would not have been so strong, and it is unlikely that the difference between WH on the one hand and XU and XR on the other would have proved significant.

While the mean SAD of the XU group was significantly larger than that of the WH group, in neither group was the mean SAD significantly different from zero, and the difference between the overall means of the two groups was rather small (less than 6^{o}). Hypothesis A/SAD.2, which predicted that mean SAD's would be greater than zero in the Xhosa groups, was not supported in the XU group, therefore. It was supported in the XR group, however, although the mean of only 3^{o} was very low, and the effect only just significant by one-tailed test (see Table 18.9). The strongest support for this hypothesis was in the case of the XN group, where the effect was particularly strong in the case of AMWS.

These results do support the view, therefore, that while White subjects do not tend to see either man or woman as having the more direct orientation, Xhosa subjects tend to see the man as being more direct. The present results thus replicate the findings of Experiment 2A.

However, both in this experiment and in Experiment 2A, it is clear that the effect is a rather subtle one. It is particularly difficult to detect in XU subjects, where it was significant over all three items in Experiment 2A, but not for any item taken individually, and where no significant effect was found in the present case. It is only a little clearer in the XR subjects, and is clearest of all among more educated subjects, the students of Experiment 2A and the nurses in the present experiment, where, in each case, the effect over all three items was significant beyond the ,001 level, and where, again in each case, there was a significant effect for both strangers and acquaintances when taken alone.

Because of the function of direct gaze in communicating dominance, and that of gaze aversion in communicating submissiveness, it might have been expected that members of Red culture, where the status of women is so clearly marked off from that of the male, would have shown the clearest tendency to give the woman the less direct orientation. This was clearly not so, however, as the findings of both this experiment and Experiment 2A show. The Xhosa nurses also showed a greater consistency than the other groups as to which figure should face the more directly in other parts of Experiment 6, and the point is discussed more fully in the next chapter (section 19.10.6).

18.6.9 Effect of language of instruction on distance

In Experiment 2A Xhosa students who received instruction in English used closer distances than those instructed in Xhosa. It was suggested that this was because the language of instruction disposed subjects to construct their schemata on the basis of expectations derived from either their home milieu (Xhosa) on the one hand or their university milieu (English) on the other.

In the present experiment, nurses instructed in English did not use smaller distances than those instructed in Xhosa. Thus the finding of Experiment 2A was not replicated. However, in Experiment 2A, XU and XR subjects used smaller distances than WS subjects, whereas there were no clear differences between groups in the present case. Thus, even if it were to be supposed that the use of English would make the schemata of the nurses more like those of the WH group, and the use of Xhosa would make them more like those of the XU group, since the distances of the XU and WH groups were much the same in the present experiment, no difference between the groups instructed in the different languages would be expected.

CHAPTER NINETEEN

EXPERIMENT 6B:

OLDER GENERATION - YOUNGER GENERATION RELATIONSHIPS

19.1 INTRODUCTION

Placements in Set B represented each of the eight older-younger generation relationships that had originally been explored in Experiment 4. In that experiment, the pattern of distances used by the Red Xhosas was very different from that of the Whites, while there were also a number of differences between the groups with respect to the angle measures.

The intention of the present experiment was to replicate the results of Experiment 4. In addition, it was expected that the XU and XN groups would show patterns of responses that differed from those of the XR group partly because of the weakening of Red customs (e.g. the strict hlonipha rules governing a young wife's relationship to her father-in-law), and partly due to the impact of the different living conditions of urban life (for example the fact that in town the young wife does not necessarily live with and learn from her mother-in-law as does her rural counterpart).

19.2 INTERACTION DESCRIPTIONS

When the two younger generation (YG) figures (young wife and husband) are paired with each of the four older generation (OG) figures (wife's mother and father and husband's mother and father), eight pairings are obtained. While in Experiment 4 these were placed in both friendly and quarrelsome situations, in the present case only a single neutral situation was employed, so that each subject could represent the encounter as friendly or hostile according to their natural expectation.

The form of the English interaction description was:

A young -------- and --------- talking together.

In the first space either the word 'wife' or 'husband' was placed, and in the second, an appropriate phrase such as 'his mother', 'her father', 'his wife's mother' and 'her husband's father' according to the pairing being described.

The form of the Xhosa description was:

Nanku --------- kunye --------. Bayathetha kunye.

In the first space either the phrase 'umfana osenomfazi' (a young man who has recently married), or 'umfazi osemtsha' (a young wife) could be inserted. In the second, if the YG figure was with its own parent either the word 'noyise' (father) or the word 'nonina' (mother) was inserted. If the YG figure was with a parent-in-law, the word for mother or father was qualified by one of the phrases 'womyeni wakhe' (of her husband) or 'womfaze wakhe' (of his wife) following it.

In addition to this, subjects were carefully checked to ensure that the correct relationship had been represented, and, in the Xhosa groups, the interpreter sometimes used colloquial words for the various relationships if these were better understood.

Four-letter codes for the B items began with the letter B. The next letter indicated the YG figure (W = wife, H = husband), and the next two the OG figure (WM = wife's mother, HF = husband's father etc.). Thus, for example, BWHM refers to the young wife with her husband's mother.

19.3 A PRIORI HYPOTHESES

19.3.1 Distance scores in the WH group

In Experiment 4, in the White group, there was a strong tendency for YG figures to be placed closer to their own parents than to their parents-in-law, except that the young husband was placed further from his father than from his mother, so that the distance between young husband and his father was similar to that between young husband and father-in-law. This pattern gave rise to the following hypotheses which involve seven a priori comparisons between means:

Hypothesis B/D.1: In the WH group the wife will be placed closer than the

husband to the wife's mother.

Hypothesis B/D.2: In the WH group the wife will be placed closer than the husband to the wife's father.

Hypothesis B/D.3: In the WH group the husband will be placed closer than the wife to the husband's mother.

Hypothesis B/D.4: In the WH group the husband will be placed closer to his own than to his wife's mother.

Hypothesis B/D.5: In the WH group the husband will be placed closer to his mother than to his father-in-law.

Hypothesis B/D.6: In the WH group the wife will be placed closer to her mother than to her mother-in-law.

Hypothesis B/D.7: In the WH group the wife will be placed closer to her father than to her father-in-law.

19.3.2 Distance scores in the XR group

The pattern of distance means of the Xhosa group in Experiment 4 was dominated by the very large distance between wife and father-in-law, and the large, but slightly smaller distance between husband and mother-in-law. The other six means were considerably closer, but two features suggested themselves, firstly a tendency for the wife to have closer distances than the husband in those relations not dominated by strict hlonipha rules (i.e. all except WHF and HWM), and for the wife to stand closer to her father than to her mother. The following seven hypotheses were chosen for a priori tests:

Hypothesis B/D.8: In the XR group, distances will be larger with BWHF than with BHWM.

Hypothesis B/D.9: In the XR group, distances will be larger with BHWM than with BHWF. The BHWM mean was expected to be larger than any (except BWHF) and BHWF was chosen to represent the rest.

Hypothesis B/D.10: In the XR group, the wife will be placed closer to her mother than to her father.

Hypothesis B/D.11: In the XR group, the mean distance in the three pairings

involving the husband in a non-hlonipha relationship (i.e. BHWF, BHHM and BHHF) will be larger than the mean distance in the three pairings involving the wife in a non-hlonipha relationship (i.e. BWWM, BWWF and BWHM).

Hypothesis B/D.12: In the XR group, the husband will be placed further than the wife from the wife's mother.

Hypothesis B/D.13: In the XR group, the husband will be placed further than the wife from the husband's mother.

Hypothesis B/D.14: In the XR group, the husband will be placed closer than the wife to the husband's father.

19.3.3 Distance scores in the XN and XU groups

The responses of the XN and XU groups were expected to show a transition away from the XR pattern towards the WH pattern. This transition was expected to be greatest in the XN group. The two major features which distinguished the WH from the XR pattern of means were the large distances in the two hlonipha relations in the XR group, and the fact that the wife was placed relatively close to the husband's mother by the XR group and relatively far from her by the WH group. Seven a priori comparisons were chosen so that the basic pattern of responses in the XN and XU groups could be examined for significant effects. In a few cases no actual prediction was made; but the comparisons are listed as 'hypotheses' for the sake of uniformity of presentation.

Hypothesis B/D.15: In the XU and XN groups the wife will be placed closer than the husband to the wife's father (this effect was clear only in the White group in Experiment 4).

Hypothesis B/D.16: In the XU and XN groups the wife will stand further than the husband from the husband's mother (this was the White pattern in Experiment 4, while the Xhosas had the means in the opposite order. It is assumed that the Xhosa pattern reflects the protective role of the mother-in-law in the rural way of life, while the White pattern reflects the rivalry between mother-in-law and daughter-in-law which are a consequence of the urban way of life).

Hypothesis B/D.17: A comparison will be made between BWHF and BHHF, in the XN

and XR groups. No prediction was made as to whether the wife would have the larger distance (as expected in the XR group due to hlonipha) or whether the difference would be small as in the White group in Experiment 4).

Hypothesis B/D.18: In the XU and XN groups, a comparison will be made between BHWM and BHWF (in the WH group no difference was expected, while the BHWM distance was expected to be larger in the XR group).

Hypothesis B/D.19: In the XU and XN groups, a comparison will be made between BWHF and BWHM (in the WH group little or no difference was expected; in the XR group the BWHF distance was expected to be larger).

Hypothesis B/D.20: In the XU and XN groups, a comparison will be made between the mean distances of BWHM and BWHF (where no difference was expected in the WH group, while in the XR group the BWHF distance was expected to be larger).

Hypothesis B/D.21: In the XU and XN groups, a comparison will be made between the mean distances of BWHF and BHWM (no difference was expected in the WH group, while in the XR group the BWHF distance was expected to be larger).

Finally, hypothesis B/D.22 predicted that mean distance in the XR group would be greater than that of the WH group (as had been found in Experiment 4) and than those of the XU and XN groups because of the reduction in formality between generations that occurs among Xhosa in town (see section 8.3.2).

19.3.4 A priori hypotheses: Angle scores

Only one hypothesis, based on the findings of Experiment 4, was advanced concerning the LA scores. This was hypothesis B/LA.1 that mean LA would be higher in the WH than in the XR group.

Two hypotheses were advanced concerning the AD scores:

Hypothesis B/AD.1: In the XR group, the mean AD was expected to be larger with item BWHF than with any others, as found in Experiment 4. Since this pattern reflects the impact of traditional hlonipha observance, it was not expected to be found in any of the other groups.

Hypothesis B/AD.2 follows from the above, and stated that in the case of the BWHF item mean AD would be larger in the XR group than in any other.

Three hypotheses concerned the extent to which SAD scores would show a

tendency to be greater than zero:

Hypothesis B/SAD.1: In Experiment 4, White subjects showed no significant tendency for either figure to face less directly than the other, although in the case of WHF there was a tendency which approached significance for the wife to be more direct. It was predicted, therefore, that SAD's would not differ from zero in the WH group of the present experiment.

Hypothesis B/SAD.2: In Experiment 4, the Red Xhosa subjects showed a significant tendency for the YG figure to be less directly facing in the friendly situation in the cases of HWM and WHF, as well as for all pairings combined. It was, therefore, expected that the SAD's of the XR group in the present experiment would be greater than zero in the case of these two pairings and for all pairings combined.

Hypothesis B/SAD.3: Since the observance of hlonipha rules was not expected to be a significant factor in the XN and XU groups, it was not expected that there would be a strong tendency for the YG figure to face less directly in the BWHF and BHWM pairings. However, since both Xhosa students and urban males had shown a tendency to place a male in a more direct orientation than a female in Experiment 2A, it was predicted that both these groups would show an overall tendency to give the OG figure the more direct angle.

A number of hypotheses follow from the above concerning comparisons between pairs of mean SAD scores:

Hypothesis B/SAD.4: In the XR group mean SAD's will be larger with BWHF than with other pairings, and mean SAD for BHWM will be second largest.

Hypothesis B/SAD.5: Mean SAD of the XR group with BWHF and BHWM will be larger than the means for these pairings in any other groups.

Hypothesis B/SAD.6: Over all pairings mean SAD will be smaller in the WH group than in any of the Xhosa groups.

19.4 RESULTS: DISTANCE SCORES

19.4.1 Means, standard deviations and split-plot analysis of variance

Means and standard deviations of the D scores are shown in Table 19.1 and

the split-plot analysis of variance is summarised in Table 19.2.

TABLE 19.1

MEANS AND STANDARD DEVIATIONS OF DISTANCE SCORES IN EXPERIMENT 6B

		BWHF	BHHF	BWHM	BHHM	BWWF	BHWF	BWWM	BHWM	ALL
WH	MEAN	88.1	86.5	88.1	82.1	76.5	88.5	71.3	96.7	84.7
	SD	22.1	27.9	32.4	26.6	25.2	25.9	22.2	29.3	27.3
XN	MEAN	114.7	75.1	89.3	77.4	74.0	88.5	66.9	113.4	87.4
	SD	38.3	19.5	26.4	23.3	18.4	25.6	18.4	38.9	31.7
XU	MEAN	130.2	82.9	95.7	86.2	87.6	97.3	71.6	115.7	95.9
	SD	54.4	25.2	45.8	25.3	34.2	37.5	23.4	39.2	40.6
XR	MEAN	195.8	102.4	97.7	111.4	96.0	106.7	88.7	166.6	120.6
	SD	66.6	35.7	24.6	39.2	29.6	33.3	23.9	58.6	54.8
ALL	MEAN	132.2	86.7	92.7	89.3	83.5	95.3	74.6	123.1	97.2
	SD	62.2	29.1	33.2	31.8	28.5	31.5	23.4	49.8	42.4

TABLE 19.2

SUMMARY OF ANALYSIS OF VARIANCE OF DISTANCE SCORES IN EXPERIMENT 6B

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	725338.0	119		
GROUPS (A)	192760.7	3	64253.56	13.995*
SUBJ.W.GROUPS	532577.4	116	4591.18	
WITHIN SUBJECTS	996604.6	840		
OG-YG PAIRING (B)	334786.2	7	47826.60	74.025*
A X B	137195.1	21	6533.10	10.112*
B X SUBJ.W.GROUPS	524623.3	812	646.09	
TOTAL	1721942.7	959		

* $p < .001$

A two factor analysis of variance design was employed, as with the other parts of Experiment 6, with one between-subjects factor (Groups) and one within-subjects factor (Pairing).

In the analysis of variance all three F-ratios were highly significant. The effect of Groups was due to the large distances of the XR group. In hypothesis B/D.22 it was predicted that the mean distance in the XR group would be greater than that in any other group. This hypothesis was well

supported, the XR mean over all pairings being significantly larger than the mean of each of the other groups beyond the ,001 level in each case (for XR with WH, t = 5,810; for XR with XU, t = 4,003; for XR with XN, t = 5,372; df = 116 in each case). The overall means of the WH and XN groups were very close together, and that of the XU group, although a little larger, was not significantly greater than either using Tukey's test as a criterion.

The effect of Pairing was very strong and mainly reflects the large distances used for BWHF and BHWM. Since these effects were contributed largely by the Xhosa groups, they will be examined in detail group by group in the next sections.

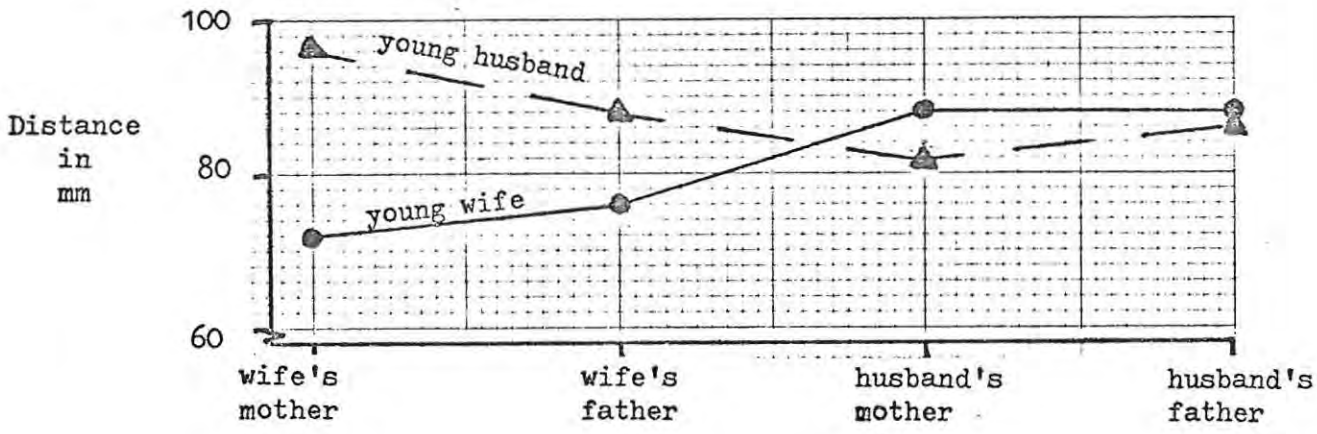
19.4.2 Distance scores in the WH group

In the analysis of variance of the Distance scores of the WH group, the effect of Pairing was significant beyond the ,001 level (F = 5,032; df = 7/203). Since the variance-covariance matrix was asymmetrical (χ^2 = 73,3; df = 34) a conservative F-test may be preferred; in this case the significance level is beyond the 5% point (df = 1/29). It was therefore clear that even by the cautious, conservative procedure, there was a clear effect of Pairing.

The mean distances are presented graphically in Figure 19.1. It is

FIGURE 19.1

GRAPH OF MEAN DISTANCES OF THE WH GROUP IN EXPERIMENT 6B



interesting to compare this with the results for the White subjects of Experiment 4 representing the same eight pairings (see Figure 15.1). The two graphs have a similar pattern, and as a result, most of the a priori hypotheses based upon the results of Experiment 4 were supported.

First of all, hypothesis B/D.1, which predicted that the wife would be placed closer than the husband to the wife's mother, was confirmed (t = 5,100; df = 203; p<,001). Secondly, the prediction of hypothesis B/D.2 that the wife would be placed closer than the husband to the wife's father was also confirmed (t = 2,403; df = 203; p<,01 one-tailed). Hypothesis B/D.3 predicted that the husband would be placed closer to the husband's mother than would the wife. The means were in the predicted order, as can be seen from the graph. However, the difference was not as large as it had been in Experiment 4, and was not large enough to be significant (t = 1,198; df = 203; p<,15 one-tailed). Nevertheless, when the result is taken in conjunction with that of Experiment 4, it is supportive, rather than contradictory.

Hypothesis B/D.4, which predicted that the husband would be placed closer to his own than to his wife's mother, was also well supported (t = 2,938; df = 203; p<,005 one-tailed). However, there was poor support for hypothesis B/D.5 which predicted that the husband would be placed closer to his mother than to his father-in-law. The mean of BHHM was in fact slightly smaller than that of BHWF, as predicted, but the effect was not significant at the 5% level (t = 1,285; df = 203; p<,15 one-tailed).

Hypothesis B/D.6, which predicted that the wife would be placed closer to her mother than to her mother-in-law was well supported (t = 3,360; df = 203; p<,001). There was also support for hypothesis B/D.7 which predicted that the wife would be placed closer to her own than to her husband's father (t = 2,323; df = 203; p<,025 one-tailed).

In Experiment 4, the responses of the White subjects were summarised by saying that the pattern of means was dominated by a tendency for YG figures to be placed closer to their own parents than to their parents-in-law. This also provides a convenient summary of the present results which confirm the pattern

of Experiment 4 in most respects. However, the pattern is not quite so strong as in Experiment 4, mainly because in the present case mean distances of the husband towards his father-in-law and of the wife towards her mother-in-law were a little smaller than in the earlier experiment.

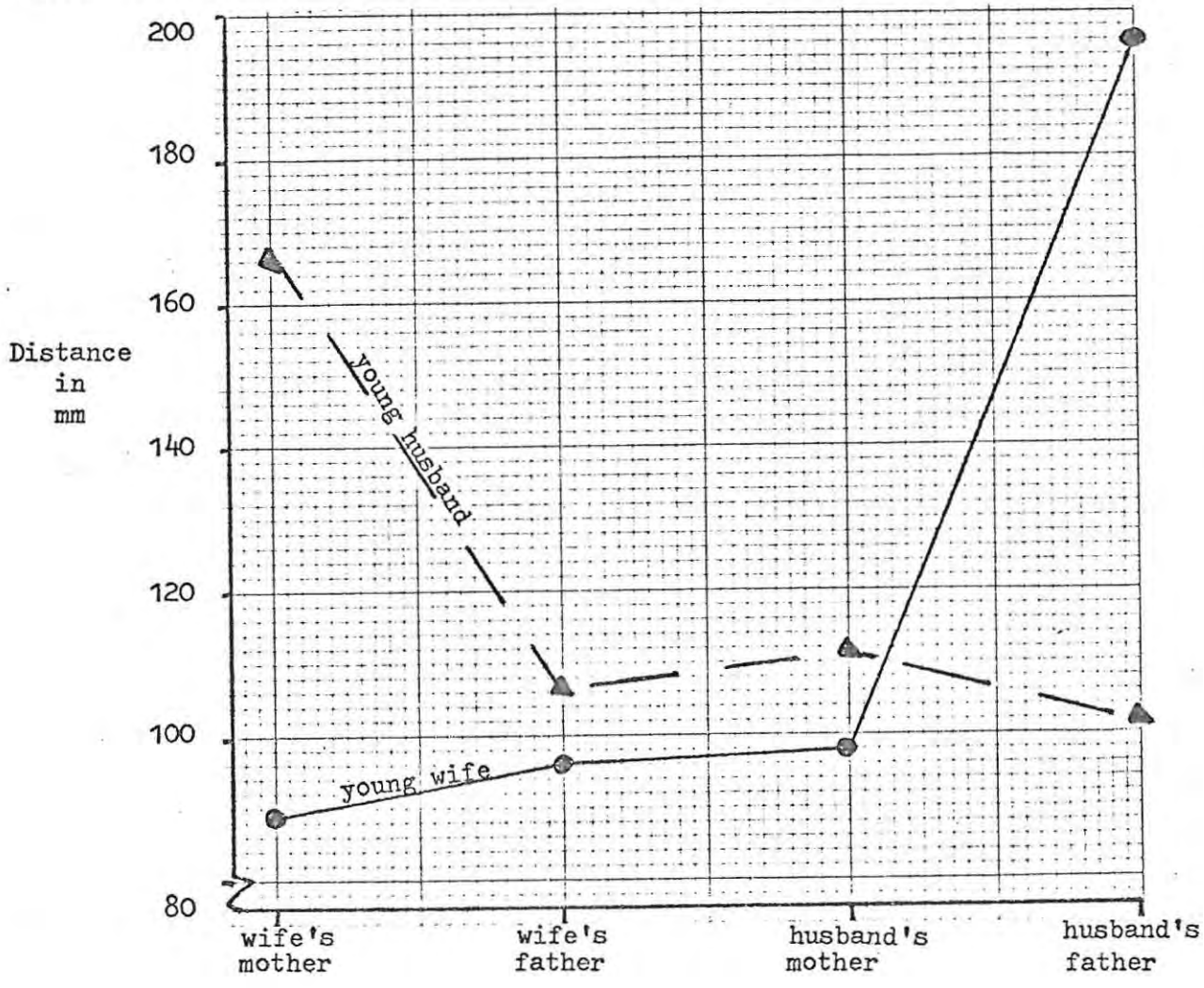
19.4.3 Distance scores in the XR group

A discussion of the Distance scores of the XR group is presented before that of the XN and XR groups, because the WH and XR results represent contrasting patterns in the light of which the XU and XN results can more profitably be discussed. In the XR group the F-ratio for the Pairing effect was high (47,989) and significant beyond the ,001 level even with the conservative degrees of freedom of 1/29 which might be thought preferable since Box's χ^2 was significant (= 140,1; df = 34; p<,001).

The means are presented graphically in Figure 19.2. It is interesting

FIGURE 19.2

GRAPH OF MEAN DISTANCE SCORES OF THE XR GROUP IN EXPERIMENT 6B



to compare this graph with that obtained with the same eight pairings in Experiment 4 (Figure 15.2). If this is done, it will be seen that the basic pattern is very much the same. As was the case with the WH group, therefore, most of the a priori hypotheses were supported.

As expected, the largest distance was in the case of BWHF, and this was significantly greater than the distance found with BHWM (t = 3,689; df = 203; p<,001) in accordance with hypothesis B/D.8. Again, in accordance with expectation, apart from BWHF, the BHWM distance was larger than any others, and significantly larger than that of BHWF (t = 7,567; df = 203; p<,001) as predicted by hypothesis B/D.9.

The prediction that the wife would be placed closer to her mother than to her father, made in hypothesis B/D.10, was not, however, well supported. Although the means were in the predicted order, the difference was too small to be significant at the 5% level (t = 0,922; df = 203; p<,2 one-tailed). Nevertheless, if taken in conjunction with the results of Experiment 4, where the effect was considerably stronger, the present results are supportive rather than contradictory.

In hypothesis B/D.11, it was predicted that if the two hlonipha relationships (BWHF and BHWM) were excluded, the husband would be found to have larger distances than the wife. This hypothesis was supported, and the combined mean of BHWF, BHHM and BHHF was significantly larger than that of BWWM, BWWF and BWHM (t = 2,779; df = 203; p<,005 one-tailed).

The husband was placed considerably further than the wife from the wife's mother as predicted in hypothesis B/D.12 (t = 9,841; df = 203; p<,001), and he was also placed further than the wife from the husband's mother as predicted in hypothesis B/D.13 (t = 1,739; df = 203; p<,05 one-tailed).

Finally, the prediction of hypothesis B/D.14, that the husband would be placed closer to his father than would the wife was strongly supported (t = 11,791; df = 203; p<,001).

The main features of the present results are to be found in the results of Experiment 4. They are: the very large BWHF distance, the BHWM distance

that was also large, and the tendency for the husband to have larger distances than the wife in the non-hlonipha relationships. The tendency for the wife to have a larger distance with her father than with her mother did not emerge as strongly as in the previous experiment, but the tendency for the husband to stand further than the wife from the wife's father was stronger in the present experiment than it had been previously.

19.4.4 Distance scores in the XU and XN groups

The patterns of Distance scores in the XN and XU groups were remarkably similar to each other, although distances were slightly, though not significantly, larger in the XU group. In each case the pattern has features in common with that of the WH group as well as some features of that of the XR group. The means are presented graphically in Figure 19.3 (XU Group) and Figure 19.4 (XN Group).

It can be seen that in each case there were some features of the pattern reminiscent of the XR pattern. Firstly there were the large distances for the two hlonipha relationships, BWHF and BHWM. Secondly there was the fact that the BWHF distance was larger than the BHWM distance (in the XU group only). Thirdly there was the fact that the wife stood closer to her mother than to her father (an effect that was clearest in the XU group).

However, a major feature of the pattern that is reminiscent of the WH results is the cross-over of the YG and OG graphs at the centre owing to the fact that the wife's distance from the husband's mother was larger than that of the husband, unlike the pattern of the XR results.

The randomised block analyses of variance showed that there was an effect of Pairings significant beyond the ,001 level in both the XN (F = 18,717; df = 7/203 and XU (F = 14,237; df = 7/203) groups. In both cases the variance-covariance matrices were highly asymmetrical, but the F values were significant beyond the ,001 level even with conservative degrees of freedom of 1/29.

In both groups the means followed the prediction of hypothesis B/D.15 that the wife would be placed closer than the husband to the wife's father.

FIGURE 19.3

GRAPH OF MEAN DISTANCE SCORES OF THE XU GROUP IN EXPERIMENT 6B

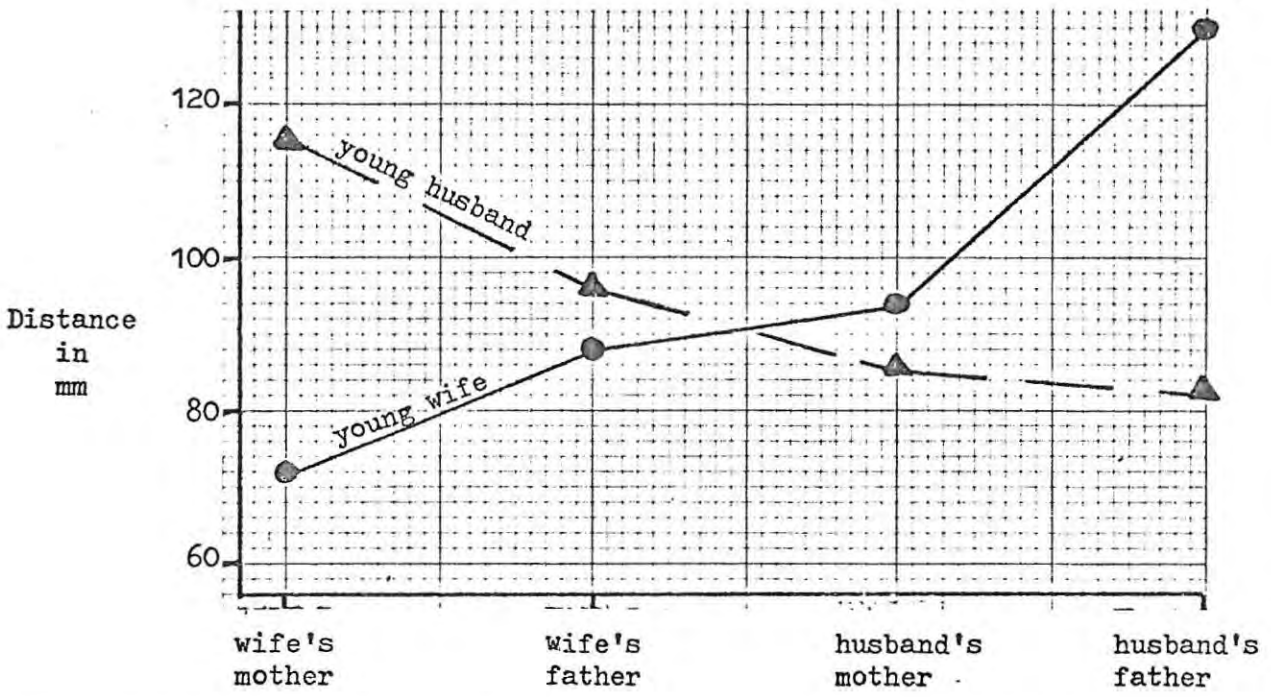
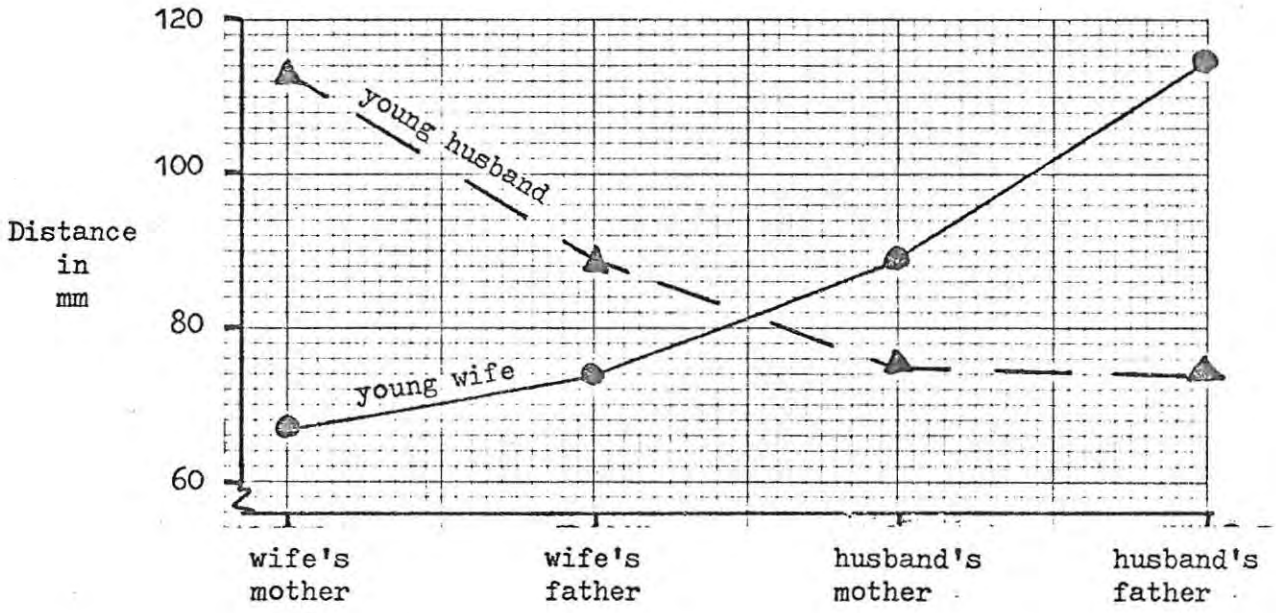


FIGURE 19.4

GRAPH OF MEAN DISTANCE SCORES IN THE XN GROUP IN EXPERIMENT 6B



However, the effect was not significant in the XU group (t = 1,375; df = 203; p<,1 one-tailed), although it was in the XN group (t = 2,471; df = 203; p<,01 one-tailed). Similarly, in both groups the means followed the prediction

of hypothesis B/D.16 that the wife would stand further than the husband from her husband's mother, but again the difference was not significant in the XU group (t = 1,342; df = 203; p<,1 one-tailed) although it was in the XN group (t = 2,013; df = 203; p<,025 one-tailed).

In both groups, distances with the husband's father followed the XR rather than the WH pattern with the wife having a considerably larger distance than the husband. The difference in both cases was significant beyond the ,001 level (for XN, t = 6,723; for XU t = 6,684; df = 203; comparison in accordance with hypothesis B/D.17).

In both groups a comparison was made between the means of BHWM and BHWF in accordance with hypothesis B/D.18. In each case the mean of BHWM was significantly larger, following the pattern of the XR group rather than that of the WH group (for XN t = 4,212; df = 203; p<,001; for XU t = 2,595; df = 203; p<,01 two-tailed).

The results of both groups also followed the pattern of the XR group in respect of the comparison made in terms of hypothesis B/D.19. In both groups the wife was placed considerably closer to her husband's mother than to her husband's father (for XN t = 4,314; for XU t = 4,880; df = 203 and p<,001 in each case).

Hypothesis B/D.20 specified a comparison between BWWM and BWWF. Originally it had been expected that the wife would be placed closer to her mother by the XR subjects, but the effect did not emerge at all strongly in the present XR results. However the wife's distance from her mother was found to be closer than that from her father in the XU group (t = 2,266; df = 203; p<,05) but not in the XN group (t = 1,193; df = 203; p<,3 two-tailed).

Finally, a comparison was made between the means of BWHF and BHWM, the two hlonipha relationships for the XR group in terms of hypothesis B/D.21. The XU group followed the pattern of the XR data (although considerably less strongly) in having a larger distance for BWHF (t = 2,049; df = 203; p<,05 two-tailed), while in the XN group the means were practically identical (t = 0,232; df = 203; n.s.).

19.5 RESULTS: LEAST ANGLE SCORES

Means and standard deviations of the LA scores are presented in Table 19.3 and the analysis of variance is summarised in Table 19.4. This analysis

TABLE 19.3

MEANS AND STANDARD DEVIATIONS OF LEAST ANGLE SCORES IN EXPERIMENT 6B

		BWHF	BHHF	BWHM	BHHM	BWWF	BHWF	BWWM	BHWM	ALL
WH	MEAN	22.3	25.7	22.7	24.7	20.6	24.2	22.9	20.4	22.9
	SD	16.1	20.7	15.2	17.1	15.2	22.4	18.3	16.9	17.7
XN	MEAN	22.0	17.0	18.7	17.7	20.5	18.9	19.6	20.8	19.4
	SD	18.7	15.4	15.1	17.6	19.1	17.3	17.4	21.0	17.6
XU	MEAN	15.5	9.5	20.5	9.9	12.8	14.6	12.0	10.9	13.2
	SD	20.9	11.6	23.8	13.2	14.9	21.0	15.5	13.7	17.4
XR	MEAN	8.4	13.6	11.0	11.5	18.1	11.3	13.3	6.9	11.8
	SD	10.0	18.9	13.9	17.1	26.5	18.0	22.3	10.4	18.0
ALL	MEAN	17.1	16.5	18.2	16.0	18.0	17.3	16.9	14.7	16.8
	SD	17.7	17.8	17.8	17.2	19.5	20.1	18.9	16.9	18.2

TABLE 19.4

SUMMARY OF ANALYSIS OF VARIANCE OF LEAST ANGLE SCORES IN EXPERIMENT 6B

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	155662.6	119		
GROUPS (A)	19859.6	3	6619.85	5.655 *
SUBJ.W.GROUPS	135803.1	116	1170.72	
WITHIN SUBJECTS	163081.4	840		
OG-YG PAIRING (B)	1057.8	7	151.11	0.784
A X B	5476.6	21	260.79	1.353
B X SUBJ.W.GROUPS	156547.0	812	192.79	
TOTAL	318744.0	959		

* $p < .01$

indicated only a single effect, that of Groups, and from inspection of the means combined over all pairings shown in Table 19.3, it can be seen that the prediction that mean LA would be greater in the WH than in the XR group (as

set out in hypothesis B/LA.1) was well supported. However, the pattern of means is better summarised by saying that scores were larger in the WH and XN groups than in the XU and XR groups, and this effect is significant beyond the ,01 level by Scheffé's test.

19.6 RESULTS: ANGLE DIFFERENCE SCORES

Means and standard deviations of the AD scores are presented in Table 19.5 and the analysis of variance is summarised in Table 19.6.

TABLE 19.5

MEANS AND STANDARD DEVIATIONS OF ANGLE DIFFERENCE SCORES IN EXPERIMENT 6B

		BWHF	BHHF	BWHM	BHHM	BWWF	BHWF	BWWM	BHWM	ALL
WH	MEAN	16.4	16.1	15.7	14.8	15.5	13.0	14.2	17.1	15.4
	SD	17.1	16.4	12.8	11.6	14.3	14.5	12.5	16.9	14.5
XN	MEAN	20.8	10.6	14.3	9.6	12.5	12.0	9.5	14.2	12.9
	SD	18.6	11.6	15.0	10.4	11.1	11.3	8.2	15.6	13.4
XU	MEAN	23.9	8.5	17.7	10.0	10.6	15.6	10.7	16.5	14.2
	SD	29.4	8.5	22.9	10.1	10.4	17.7	13.4	24.7	19.0
XR	MEAN	13.4	13.5	14.0	9.7	11.3	9.2	14.3	9.7	11.9
	SD	17.4	18.8	15.6	9.8	9.7	10.6	22.8	14.7	16.1
ALL	MEAN	18.6	12.2	15.4	11.0	12.5	12.5	12.2	14.4	13.6
	SD	21.4	14.5	16.9	10.6	11.5	15.2	15.2	18.4	15.9

TABLE 19.6

SUMMARY OF ANALYSIS OF VARIANCE OF ANGLE DIFFERENCE SCORES IN EXPERIMENT 6B

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	88176.1	119		
GROUPS (A)	1629.6	3	543.18	0.728
SUBJ.W.GROUPS	86546.6	116	746.09	
WITHIN SUBJECTS	153978.9	840		
OG-YG PAIRING (B)	5113.5	7	730.50	4.116 **
A X B	4744.7	21	225.94	1.273
B X SUBJ.W.GROUPS	144120.6	812	177.49	
TOTAL	242155.0	959		

** $p < ,001$

The analysis of variance gave a highly significant effect of Pairing. It can be seen from Table 19.5 that mean AD with BWHF was rather higher than most other pairings. However, the pattern of means was by no means the same in each group, so, despite the fact that the interaction F ratio was not significant, the results of separate analyses of variance applied to each group will be presented.

The pattern of means, with that of BWHF being larger than the others was predicted in hypothesis B/AD.1 for the XR group. However, the hypothesis was not supported. As can be seen from Table 19.5 the BWHF mean in the XR group was similar to that for several other pairings, and the F ratio for the effect of Pairing was less than 1.0 in value.

Hypothesis B/AD.2 did not predict a larger mean AD with item BWHF in the other Xhosa groups, since this reflects the observance of hlonipha custom. However, in the XU and XN groups the AD's fell into just this pattern. It can be seen from Table 19.5 that in each of these groups the BWHF mean AD was markedly higher than the others. In both groups the effect of Pairing was significant beyond the ,01 level (df = 7/203; F for XN = 3,282 and F for XU = 3,480).

In each case the variance-covariance matrix was asymmetrical and these F ratios are not significant with the conservative degrees of freedom of 1/29. However, in each case a planned comparison between the mean of BWHF on the one hand and that of the remaining items on the other is implied in hypothesis B/AD.1. When a t-test was applied, these comparisons were in each case significant beyond the ,001 level (df = 203; for XU t = 3,721; for XN t = 4,374).

In the WH group, as expected, there was no effect of Pairing on AD and the F value was less an 1,0.

It can be concluded, therefore, that the main effect of Pairing in the split-plot analysis was entirely due to the use of larger AD's for BWHF than for the other items in the XN and XU groups. Since this did not accord with hypothesis B/AD.1 the other hypothesis concerning AD scores, B/AD.2, which followed from the first, and predicted that in the case of BWHF mean AD of the

XR group would be larger than that of the other groups, was not supported either.

19.7 RESULTS: SIGNED ANGLE DIFFERENCE SCORES

19.7.1 Means, standard deviations and values of t

In each case the null hypothesis that mean SAD = zero was examined by means of a t-test (or, in a few cases where distributions were abnormal, by the Wilcoxon test). These statistics, together with the means and standard deviations of the SAD scores are presented in Table 19.7.

Hypothesis B/SAD.1 predicted that mean SAD's would not differ from zero in the WH group. In the case of the mean over all pairings, this hypothesis was well supported. Nevertheless, with the two items in which the YG figure is paired with the opposite sex parent-in-law (BWHF and BHWM), mean SAD was found, unexpectedly, to be significantly less than zero (i.e. the OG figure tended to be in the less direct orientation). It should be noted, however, that in Experiment 4 mean SAD for these two cases was very close to zero.

Hypothesis B/SAD.2 predicted that in the XR group mean SAD would be greater than zero in the two hlonipha relationships (BWHF and BHWM) as well as for all pairings combined. The hypothesis was confirmed for all pairings combined (even though the mean of 4,7 was not large) as well as for item BWHF. In the case of BHWM, however, the hypothesis was not supported; although the mean was positive it was not large enough to be significant.

There were two other pairings in which the XR group had a mean SAD significantly larger than zero, namely BWWF and BWWM (both cases of the wife with her parents). It should however be noted that no significant effect was obtained with these pairings in Experiment 4 (see Table 15.4).

Hypothesis B/SAD.3 predicted that mean SAD over all items would be greater than zero in the XN and XU groups. This hypothesis was clearly confirmed in both groups. In fact, using the value of t as a criterion, the effect was considerably stronger in the XN group than in the XR group. Although the hypothesis did not specifically predict an SAD significantly greater than zero

TABLE 19.7

MEANS, STANDARD DEVIATIONS AND VALUES OF *t* OR *z* FOR THE SIGNED ANGLE DIFFERENCE SCORES IN EXPERIMENT 6B

	WH GROUP			XN GROUP		
Pairing	Mean	SD	t^+	Mean	SD	t^+
BWHF	-5,4	23,3	-2,098* (z)	17,5	21,9	4,373***
BHHF	7,7	21,9	1,938	6,9	14,2	2,650*
BWHM	1,4	20,4	0,376	10,1	18,2	3,036**
BHHM	5,7	18,1	1,729	3,3	13,9	1,289
BWWF	-6,7	20,1	-1,833	4,4	16,3	1,480
BHWF	2,9	19,3	0,823	-0,1	16,6	-0,033
BWWM	-1,7	19,1	-0,488	5,3	11,5	2,517*
BHWM	-8,6	22,6	-2,083*	8,9	19,2	2,536*
All	-0,6	21,1	-0,428	7,0	17,2	6,309***
	XU GROUP			XR GROUP		
Pairing	Mean	SD	t^+	Mean	SD	t^+
BWHF	19,5	32,6	3,270**	8,5	20,3	2,114* (z)
BHHF	0,4	12,1	0,166	4,6	22,8	1,114
BWHM	11,4	26,8	1,867 (z)	-1,2	21,1	-0,321
BHHM	-0,2	14,3	-0,076	1,7	13,8	0,688
BWWF	4,0	14,4	1,531	6,0	13,7	2,393*
BHWF	2,4	23,7	0,051 (z)	3,2	18,7	0,410 (z)
BWWM	3,7	16,8	1,438 (z)	11,2	24,5	2,061* (z)
BHWM	5,7	29,2	0,877 (z)	3,3	17,4	0,276 (z)
All	5,8	23,0	3,941***	4,7	19,5	3,719**

+ *df* for *t* = 29 for the individual means and 239 for the combined (all) means. Where Wilcoxon tests were performed, the values are of *z*, and this is indicated by (*z*) appearing after the value.

* $p<,05$ ** $p<,01$ *** $p<,001$

Probabilities are two-tailed

for the two hlonipha relationships BWHF and BHWM, this effect was significant for both pairings in the XN group and for BWHF in the XU group. In the XN group, mean SAD was also significantly larger than zero with BHHF, BWHM and BWWM.

19.7.2 Analyses of variance

The analysis of variance of the SAD scores is summarised in Table 19.8. The F ratio for Groups was just too small to be significant. However, it was

TABLE 19.8

SUMMARY OF ANALYSIS OF VARIANCE OF SAD SCORES IN EXPERIMENT 6B

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	126419.5	119		
GROUPS (A)	8102.9	3	2700.95	2.648
SUBJ.W.GROUPS	118316.6	116	1019.97	
WITHIN SUBJECTS	275968.9	840		
OG-YG PAIRING (B)	6187.5	7	883.93	2.868 **
A X B	19520.6	21	929.55	3.016 ***
B X SUBJ.W.GROUPS	250260.8	812	308.20	
TOTAL	402388.4	959		

** p<,01 *** p<,001

predicted in hypothesis B/SAD.6 that mean SAD would be smaller in the WH group than in any of the Xhosa groups, and this hypothesis was tested by means of three t-tests comparing the grand mean of the WH group with that of each of the others. The t-values (with 116 df) were: WH with XN 2,607 (p<,01); WH with XU 2,206 (p<,025); WH with XR 1,801 (p<,05) (one-tailed probabilites). The hypothesis was thus well supported.

Following the significant effect of the Pairing factor, Tukey's test was applied. This showed that the mean SAD of item BWHF was significantly larger than any other (with the exception of BWHM where the effect was only just short of significance) at the 5% level. However, because of the significance of the Groups x Pairing F ratio, it is more instructive to examine the effect of Pairings separately in each group. This was done in a series of randomised block analyses.

In the WH group, no effect of Pairing on SAD's had been expected. However,

a significant effect was in fact obtained (F = 2,756; df = 7/203; p<,01; variance-covariance matrix symmetrical). When Tukey's test was applied, a single pairwise comparison was significant, that between the largest mean (BHHF) and the smallest (BHWM).

In the XN group the effect of Pairing was significant beyond the ,001 level (F = 3,616; df = 7/203). The variance-covariance matrix was asymmetrical, and the effect was not significant using the conservative df or 1/29. However, in view of the high significance level with regular df, and the fact that the pattern of means is meaningful, the effect can be regarded as genuine with some confidence. The effect was due to the large mean SAD with the BWHF pairing, which, using Tukey's test, was larger than those of BHHM and BHWF beyond the ,01 level and than those of BWWF and BWWM beyond the ,05 level. This pattern had not been expected in the XN group, but it had been predicted for the XR group.

In the XU group, the pattern was virtually the same as in the XN group. The effect of Pairing was significant beyond the ,01 level (F = 3,421; df = 7/203) but again the variance-covariance matrix was asymmetrical and the effect did not attain significance with conservative df of 1/29. The pattern of means was similar to that of the XN group, with that of BWHF being larger than the others. According to Tukey's test, the BWHF mean was larger than those of BHHF and BHHM at the ,01 level, and than those of BWWF, BHWF and BWWM beyond the ,05 level.

The XR group was the only one in which an effect of Pairing on SAD's had been predicted (hypothesis B/SAD.4). Surprisingly, therefore, it was the only group in which no significant effect was found (F = 1,968; df = 7/203). It had been expected that the largest SAD would be with BWHF and the second largest with BHWM. It can be seen in Table 19.7, however, that the means did not follow this pattern well, and a t-test comparing the mean for BHWF with that of the remaining pairings combined yielded a non-significant result (t = 1,527; df = 203; p<,1 one-tailed).

In summary, therefore, the effect of Pairings on SAD was very similar to

that found in the case of the AD scores. No strong or easily interpretable effects were found in the case of the WH and XR groups, while in the XN and XU groups the mean for item BWHF was larger than those in the other pairings.

19.8 IPOS PROFILES

19.8.1 Introduction

The results are presented in the form of IPOS profiles in Figure 19.5. Three effects described above appear fairly clearly in most of these profiles. These are the use of larger distances by the XR group than by the other groups, the use of larger LA's by the WH and XN groups than by the XU and XR groups, and the absence of any difference between groups in the case of the AD scores (even in a case such as that of BWHF where the differences between mean AD's appear relatively large the effect was not significant).

The present profiles differ from those of Experiment 4 (friendly condition) in two general respects. Firstly, the distances used by the XR group were larger in the former experiment (see section 19.10.2); secondly, the LA's used by the WH subjects were larger in the former experiment (see section 19.10.3).

Individual sets of profiles will be discussed in the following sections.

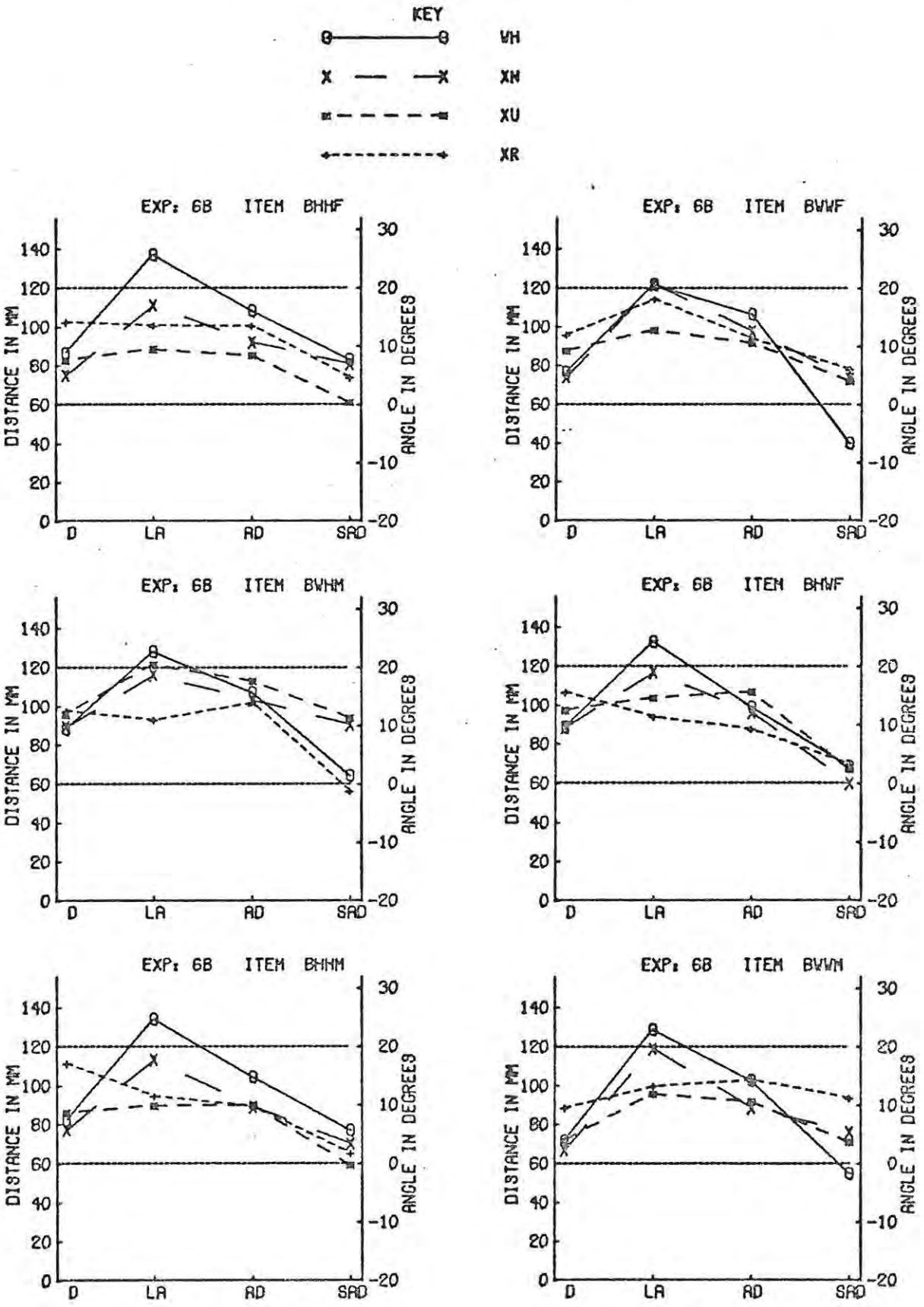
19.8.2 Wife with husband's father

The relationship between wife and father-in-law is the one to which the strictest hlonipha rules apply in Red Xhosa culture, rules which require avoidance of proximity and eye-contact. This is reflected in the XR profile in which the distance is very large, and the mean SAD significantly greater than zero (Table 19.7). Nevertheless both the SAD and the AD were markedly lower than those obtained from the XR group in Experiment 4, and a higher SAD was expected in the present case. A possible explanation for the discrepancy in terms of assimilation is discussed in section 19.10.4 below.

It had been expected that the schemata of the XN and XU subjects would not be affected by expectations derived from the traditional hlonipha rules, but this proved not to be the case. Both these groups used distances which were

FIGURE 19.5

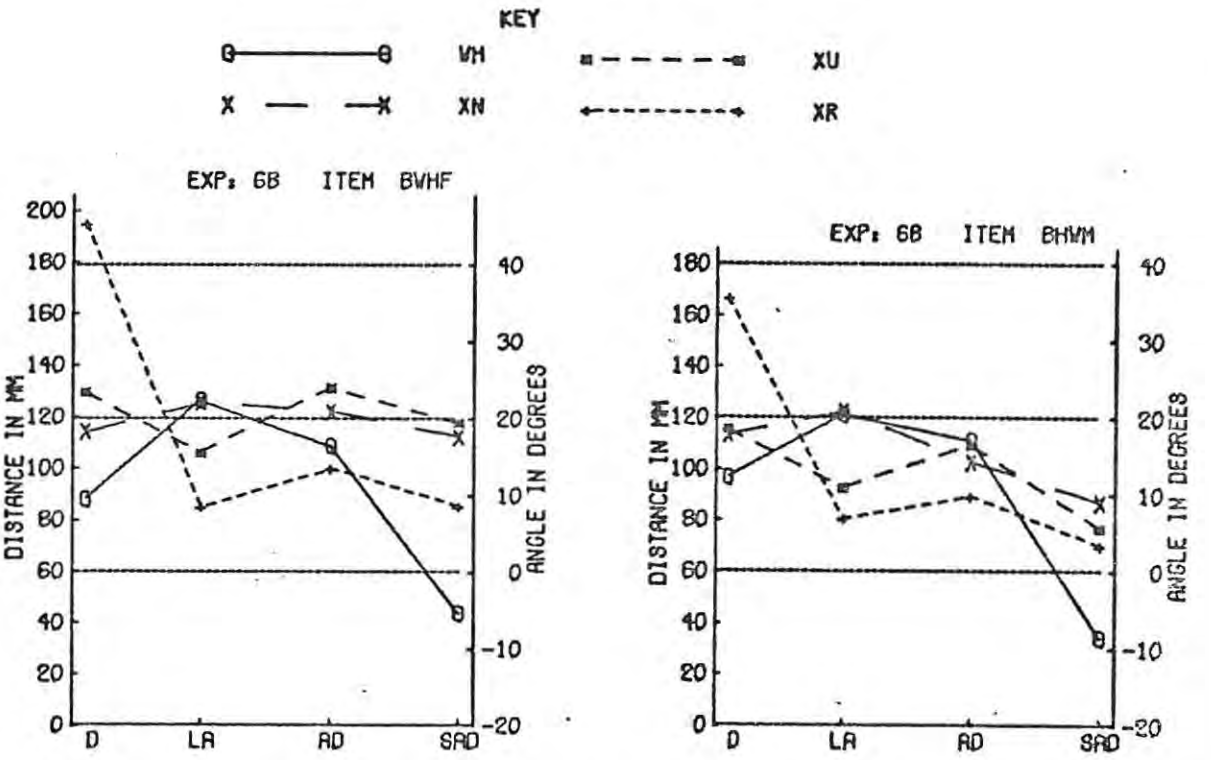
IPOS PROFILES IN EXPERIMENT 6B



(continued on next page)

FIGURE 19.5 (CONTINUED)

IPOS PROFILES IN EXPERIMENT 6B



significantly larger (when taken together) than those of the White group ($p<,01$ by Scheffé's test), although in each case they were significantly smaller than those of the XR group ($p<,01$ in each case by Tukey's test).

Since the mean distances of the XU and XN groups with the other items were considerably closer to those of the WH group, the present finding shows that even for members of these urban Xhosa groups, the impact of the traditional avoidance of proximity is not entirely lost in this relationship, even though it is not so strong as in the XR group itself.

The influence of traditional practices is also evident in the fact that mean SAD's in the XU and XN groups were significantly greater than zero (see Table 19.7), reflecting the avoidance by the wife of direct gaze towards her father-in-law. It is surprising that the mean SAD's of these groups were actually larger than that of the XR group. This does not accord with hypothesis B/SAD.5, where it was predicted that the XR SAD would be larger than that in any other group. This hypothesis was confirmed with the WH group, where the mean SAD was significantly smaller than that of the XR group ($t = 2,149$; $df =$

116; $p<,025$ one-tailed). The SAD's of the XN and XU groups were not significantly larger than that of the XR group (t = 1,389 and 1,699; df = 116); however, they were significantly larger than that of the WH group using Tukey's test as a criterion ($p<,01$).

19.8.3 Husband with his father

The profiles for the husband with his father show the features found in the experiment as a whole: the larger distance of the XR group when compared to other groups, larger LA's in the XN and WH groups and absence of any significant difference between the AD's of the groups.

The SAD of the WH group was rather higher than usual, but not significantly different from zero. In fact the only SAD that did differ from zero significantly was that of the XN group. It will be noticed that the slope of the AD - SAD part of the profile is much less steep in this than in the other groups, indicating their greater consistency in giving the father the smaller angle.

19.8.4 Wife with husband's mother

This is the one pairing in which the XR group had a mean distance that was not markedly greater than that of the other groups. In fact a one-way analysis of variance of the distance scores of this item showed that there was no difference between the groups (F = 0,597; df = 3/116). In Experiment 4 also the Xhosa subjects used a relatively close distance for this pairing, while the Whites used a relatively large one, although in that case the Xhosa distance was still significantly larger than that of the Whites.

It was pointed out in the discussion of Experiment 4 (section 15.7.4) that for the Red Xhosa wife the mother-in-law is her teacher and protector, the person to whom she can turn in the milieu of her husband's kraal and kin. This relationship is probably enhanced by the fact that the mother-in-law, like the wife, is also an outsider, living away from her kin.

In western urban society, on the other hand, the relationship between wife and mother-in-law is often one of conflict and rivalry, and since the newly-

married wife does not usually move in with her parents-in-law nor expect them to teach her, the relationship does not develop in such an intimate way as it does in traditional Xhosa society.

It is interesting to note, therefore, that like the WH group, the two urban Xhosa groups, XU and XN, both used a considerably larger distance for the wife with her mother-in-law than for the wife with her own mother, while in the XR group the distances in these two pairings were similar. This demonstrates the way in which the relative intimacy of the relationship between wife and mother-in-law in the XR group depends on the structure of the society and the custom of the new wife's moving into the kraal of her husband's family, a practice which falls away in the different residential environment of the city.

The similarity between the XU and XN profiles for this relationship is notable, and suggests concordance in the way in which this relationship is perceived. The XU LA was higher than usual and did not fall below that of the XN group as it did in the other profiles. Perhaps not too much should be made of this, however, since no significant effect of Pairing on LA was discovered in the XU group. The SAD's of the XU and XN groups were also similar, and larger than those of the other groups. It will be seen from Table 19.7 that that of the XN group was significantly greater than zero, although that of the XU group was not. However the XU SAD was one of the cases where the distribution was abnormal and a Wilcoxon test was employed, and it should perhaps be noted that a t-test does give a significant result, while the result of the Wilcoxon test approaches significance ($p < .1$).

The results suggest, therefore, that both XN and XU subjects tended to see the mother-in-law as having the more direct orientation, whereas XR subjects did not. Possibly this also reflects the fact that for the XR subject this is largely a supportive relationship, while for the town Xhosa it is often one of rivalry in which the mother-in-law is seen as dominant. However, it will be recalled that the difference between the mean SAD's of the XU and XN groups on the one hand and that of the XR group on the other is not statistically significant, so that this suggestion is seen to be speculative (see section 19.10.6).

19.8.5 Husband with his mother

In the WH, XN and XU groups the husband was, in general, placed closer to his mother than to the other OG figures, while in the XR group the distance was similar to that used with his father and father-in-law, although, of course, considerably closer than that used with the mother-in-law. As a result, the XR distance in this profile was markedly larger than that of any of the other groups, and significantly different from each of them (by Tukey's test following a one-way analysis of variance: $p<,01$ in each case).

The LA scores show the pattern found generally in this experiment, with those of the WH and XN groups being larger than those of the XU and XR groups. However, the AD and SAD scores were similar in all groups and there were no significant differences. As in Experiment 4, in no case was the mean SAD significantly different from zero.

19.8.6 Wife with her father

The relations between the profiles of the groups for the wife with her father are the relations found generally in the experiment. In the case of the D scores, that of the XR group is largest, followed by that of the XU group, with those of the XN and WH groups rather lower. In the case of LA scores those of the WH and XN groups are larger than those of the XU and XR groups, although, in the present case the LA of the XR group is relatively large. This, however, may be a chance phenomenon. In the case of the AD's there were no significant differences, while in the case of the SAD's the Xhosa means were all significantly larger than that of the WH group ($p<,01$ in each case by one-tailed t-test in accordance with hypothesis B/SAD.6).

Although this latter finding suggests that in this relationship in particular the WH subjects tended to see the OG figure as more passive and less dominant than did the Xhosa groups, the data are only suggestive of this conclusion, since none of the SAD's were very different from zero, and only that of the XR group was significantly so (see Table 19.7). In addition, with this pairing in the friendly condition in Experiment 4, mean SAD's of the White and Xhosa groups

were both even closer to zero than in the present case and practically identical to each other in value.

19.8.7 Husband with wife's father

The general pattern of findings in the experiment was again found in the profiles for BHWF, except that in this case the SAD's were very close together and very close to zero. It should perhaps be noted, however, that in Experiment 4 there was a rather greater spread between the mean SAD's of the Xhosa and White groups, although there too neither mean was very different from zero in value.

19.8.8 Wife with her mother

In all groups item BWWM produced the closest distance of all, an effect that was particularly marked in the XU group. As in most other cases, however, the XR distance was larger than that of the other groups, an effect significant by Tukey's test following a one-way analysis of variance in which the F-ratio was significant at the ,01 level.

Once again the LA's of the WH and XN groups were larger than those of the XU and XR groups, the AD's were closer together, and the WH SAD was rather lower than those of the Xhosa groups.

Two of the Xhosa SAD's, those of XN and XR, were significantly different from zero (Table 19.7). While the finding of a lower SAD in the WH group can be regarded as part of the general pattern of SAD's in this experiment (see section 19.7.2), the fact that the XR SAD was a little larger than those of the XN and XR groups can only be considered a chance effect, since a one-way analysis of variance of all the SAD scores for this item did not yield a significant F-ratio.

19.8.9 Husband with his wife's mother

The relationship between husband and mother-in-law is governed in Red culture by a hlonipha rule requiring avoidance of proximity and physical contact. This accounts for the very large distances used by the XR group, which

had been predicted (hypothesis B/D.9), and which were significantly larger than those of any other group by Tukey's test (following a one-way analysis of variance in which the F-ratio was significant beyond the ,001 level).

The distances of the XN and XU groups were also relatively large, and suggest that there is still some influence of the traditional hlonipha practice in these groups. It can be seen in Figures 19.3 and 19.4 that in both the XN and XU groups the husband was placed considerably further from his wife's mother than from his wife's father, while he was not placed noticeably further from his own mother than his own father, and this pattern in the means that is illustrated in these Figures again suggests the impact of the traditional custom.

In Experiment 4, the White subjects did not use a larger distance for the husband when placing him with his mother-in-law than with his father-in-law. In the present experiment, however, they did, as can be seen in Figure 19.1. In fact the distance used for BWHM was the largest of all the eight in the WH group.

As a result of this, the WH mean distance for the present item was not very much smaller than those of the XU and XN groups, and the difference between the WH mean and the combined mean of the XN and XU groups was not significant (even at the ,25 level) by Scheffé's test.

It might be argued, therefore, that the relatively large distances used for BHWM by the XU and XN groups merely reflect the fact that this relationship is generally not a very intimate one in the circumstances of the urban milieu, since such a lack of intimacy is also evident in the WH group from whom, in this case, the XU and XN groups did not differ significantly. It should be pointed out, however, that whereas in both the XU and XN groups the husband was placed significantly further from his mother-in-law than from his father-in-law (section 19.4.4, hypothesis B/D.18), the comparison of these two items in the WH group using the same criterion (a two-tailed t-test) is not quite significant ($t = 1{,}650$; $df = 203$; $p < ,1$).

The relationship between husband and mother-in-law is one which would not be expected to develop in an intimate way as a rule both in an urban and a

rural milieu, since the mother's parents do not necessarily live close to the newly-married couple, and even if the opportunity for the husband to get to know them arises, he is likely to find more in common with his father-in-law than with his mother-in-law because he will share male interests with him.

This also applies to the traditional Xhosa, where, since the wife comes in to the husband's kraal, husband and mother-in-law always live in different areas. Nevertheless, in this case, any development of intimacy that might occur is formally prevented by the traditional hlonipha rules. It does not seem unlikely from the present results that a residuum of the traditional hlonipha practice still acts to hinder the development of intimacy between wife and mother-in-law, should any occasion for such development arise, even among urbanised and educated Xhosas.

In Experiment 4, the Xhosa subjects had a rather larger SAD with this item (in the friendly condition) than with the others (except WHF), while that of the WH group was close to zero. It was therefore predicted in hypothesis B/SAD.5, that in the present case the mean SAD of the XR group would be larger than that of any other group. This was based on the assumption that the XR group tended to give the husband the less direct angle because, although he was not required by custom to avoid direct gaze, he did so as part of a general pattern of respectful behaviour. It was also based on the assumption that such respect would be reduced in the milieu of the XU and XN groups.

In the present experiment, however, the XR group had a very low mean SAD that was not significantly different from zero, and a similar result was obtained in the XU group. The largest SAD occurred in the XN group, and this was significantly different from zero(see Table 19.7). Thus the pattern of mean SAD's in the Xhosa group was not in accordance with hypothesis B/SAD.5.

There was limited support for the hypothesis in that the WH SAD was significantly smaller than that of the XR group (t = 2,048; df = 116; p<,025 one-tailed). However this was because the WH SAD was lower than expected, not because the XR SAD was as large as expected. In fact the WH SAD in this case was unexpectedly low, and significantly different from zero (Table 19.7), a

result not found in Experiment 4. It was not only lower than that of the XR group but also than that of the XN group (by Tukey's test $p<,05$) and nearly significantly lower than that of the XU group (Tukey's $q = 3,46$ against a critical value at the 5% level of 3,68).

Thus the first assumption mentioned above, that the XR subjects would give the husband the less direct orientation as part of a pattern of respectful behaviour was not borne out. Nor was the second, that such a pattern would be less evident in the XN and XU groups, since just such a pattern was found in the XN group more clearly than in the XR group.

19.9 EFFECTS OF AGE AND LANGUAGE OF INSTRUCTION

19.9.1 Effects of age

As was the case with the Set A items, sixteen analyses of variance were performed to compare the scores of subjects above the median age in each group with those of the subjects below it. In each analysis there were two factors, Age and Pairing.

Three significant effects were obtained from these analyses, rather more than would have been expected by chance. Firstly, in the WH group, there was a significant Age x Pairing effect with the Distance scores ($F = 2,215$; $df = 7/196$; $p<,05$). However, when each pairing was examined separately for an effect of age, there was no case in which the mean distances of the two age groups differed significantly.

Secondly, significant main effects of Age were found with the AD and SAD scores of the XR group ($F = 4,398$ and $5,025$ respectively; $df = 1/28$; $p<,05$). In each case the younger group had the larger mean. The mean AD's (over all pairings) were: younger 16,1 and older 7,7. The mean SAD's were: younger 9,7 and older -0,4. Thus the younger XR subjects made placements that were more asymmetrical, and which showed a greater tendency to give the OG figure the more direct angle than did the older ones. Indeed, the older subjects, with a mean SAD of -0,4, showed no tendency at all to give the OG figure the smaller angle.

This finding may indicate that younger XR subjects were more aware of the importance of showing respect than the older ones. This could follow from the fact that younger subjects have to be more careful in their attention to hlonipha customs since they have more to lose by breaking them through being censured by their elders.

Finally, it is interesting to note that, in the XU and XN groups also, mean AD and SAD were larger in the younger than the older group. In these cases, however, the differences were much smaller and did not approach significance.

19.9.2 Effect of language of instruction in the XN group

Two significant effects were obtained when the scores of the English instruction XN subjects were compared with those of the Xhosa instruction group.

Firstly, there was a main effect of language on the LA scores ($F = 5,676$; $df = 1/28$; $p < ,025$). The means were 25,2 in the Xhosa instruction group and 13,6 in the English instruction group. A similar effect with the Set A items was not quite significant (see section 18.5.2).

One way in which language of instruction might affect the results is by providing a set for the subject to base his expectations upon encounters in which that particular language is used. In the case of the nurses, this would mean that English would provide a set towards the milieu of their occupation, while Xhosa would provide a set towards the milieu of their home. Alternatively the set might be towards the whole culture and value system associated with the language. However, if this were the case in the present experiment, the English instruction subjects should have had larger LA's (like the WH subjects), and the Xhosa instruction subjects smaller ones (like the XU subjects). In fact, however, the opposite was the case here.

A tentative explanation of the finding might be that subjects tended to imagine the encounter being represented as one in which the language used was that of the language used for the interaction description in the experiment. If subjects themselves feel more confident and relaxed when speaking Xhosa than

when speaking English (which is their second language), this might perhaps result in their selecting less immediate orientation schemata when instructed in Xhosa, since these, representing a lower level of direct gaze, and thus reduced arousal and tension, are suitable for a more relaxed type of encounter. Those instructed in English, on the other hand, would, according to this explanation, select the more immediate orientation because, being less at home when speaking English, they would perceive the encounter as less casual and relaxed in nature, and as creating a need for feedback about the way their performance was being evaluated by their fellow interactor (see Edwards 1973c p.546).

The second significant effect was that of the Language x Pairing interaction in the analysis of the AD scores ($\underline{F}$ = 2,510; $\underline{df}$ = 7/196; $\underline{p}$<,025). Tests of simple main effects showed that Language affected AD only in the case of the BWHF item ($\underline{p}$<,001), where the mean of the Xhosa instruction subjects was 29,9 and that of the English instruction subjects 11,7. Although there were no significant effects of Language in the analysis of the SAD scores, these were also higher in the Xhosa instruction (mean = 26,3) than in the English instruction group (mean = 8,67) with item BWHF. This means that the Xhosa instruction subjects not only used more asymmetrical orientation patterns with BWHF, but also showed a greater tendency to give the father-in-law the more direct orientation. This is a pattern that would be associated with the traditional Xhosa norm of extreme respect for her father-in-law on the part of a young wife (even though such a pattern did not actually emerge clearly in the XR group of the present experiment).

When it is considered that the XN group as a whole showed a stronger tendency than any other group to give OG figures the less direct orientation (see Table 19.7), the present finding shows that the use of Xhosa as a medium of instruction rather than English, tended to enhance this effect. This conclusion is supported by the fact that in the analyses of the AD and SAD scores the main effect of language of instruction also approached significance ($\underline{F}$ = 3,868 and 3,153; $\underline{df}$ = 1/28; $\underline{p}$<,1), and that in each case it was the Xhosa instruction group that had the larger mean score. However, the effect was particularly

enhanced in the case of BWHF, the relationship to which, traditionally, the strictest hlonipha rules apply, which is a finding which itself supports the view that the use of Xhosa as a language of instruction increased the attention of these subjects to the traditional norms of their culture.

19.10 DISCUSSION

19.10.1 Concordance between present results and those of Experiment 4

An important aspect of the present results is the extent to which they replicate the findings of Experiment 4 in the data of the WH and XR groups. As has been shown, the patterns of mean distances in these groups were very similar to those obtained with the 'friendly' items of the earlier experiment. If these distances can be regarded as a measure of the intimacy which characterises these relationships, the scores obtained here can be used with some confidence in this respect, because the replication of the patterns of means in the WH and XR groups attests to their reliability.

The finding of Experiment 4 that Red Xhosa subjects used smaller LA's than Whites was also replicated here. The same effect was found with the items of the present experiment also. This consistent finding may reflect the greater formality of social interaction in traditional Xhosa society as compared to the greater degree of casualness and ease among the Whites. The face to face orientation pattern provides greater interpersonal immediacy, a greater availability of information between interactors at the non-verbal level, and is more physiologically arousing than a less direct one. It is thus less relaxing than the latter, but it provides the security afforded by the continuous information about the reaction of the other to one's behaviour.

19.10.2 XR distances as compared to those of Experiment 4

The distances used by the XR group were noticeably smaller than those used by the Red Xhosa subjects of Experiment 4 when representing friendly encounters. Over all pairings the mean distances were: Experiment 4 150,9 and Experiment 6B 120,7. No such effect was found in the WH group where the equivalent

means were: Experiment 4 90,2 and Experiment 6B 84,7.

There are three ways in which Experiment 4 differed from the present one which might account for this effect. Firstly, in Experiment 4 the friendly encounter was specifically described as friendly, while in the present case it was not. Secondly, in Experiment 4 subjects were questioned about each relationship after making the placement, while in the present case few questions were asked, and these served to check that the right relationship had been represented. Thirdly, in Experiment 4 the 'friendly' items were mixed up with 'quarrel' items, while in the present case the placements were made before any quarrel items had been represented.

It is the third of these differences which provides the most promising explanation of the larger distances in Experiment 4. It is possible that the quarrel items in Experiment 4 served to create a set so that XR subjects tended to base their schemata upon their expectations concerning encounters which were less friendly than those used in the present case. This would be a case of an assimilation effect (section 7.3.6) in which the framework developed for one item is used in the interpretation of another.

The fact that the effect did not occur in the White group may mean that these subjects have a greater ability to differentiate between similar situations, and could be understood as a consequence of the greater field independence of western groups when compared to unacculturated subjects (Witkin and Berry 1975).

19.10.3 WH LA's as compared to Experiment 4

While the present distances of the WH group did not differ from those of Experiment 4, the LA's were noticeably lower. The means were: Experiment 4 (friendly items) 34,6 and Experiment 6B 22,9.

One possible explanation is that subjects in Experiment 4, who were specifically asked to represent a friendly encounter, did so by using large LA's (which are associated with casual informality) while, in the present experiment, where the situation was not specifically described as friendly, a less relaxed type of encounter was represented, on the whole. However, if this was the case

it might also be expected that the distance scores would have been larger in the present case, but this was not found.

It seems more likely that in Experiment 4 the White subjects, like those of the Xhosa group, had their schemata affected by the presence of the hostile items. However, instead of showing an assimilation effect, as was suggested for the Xhosas, they showed a contrast effect. In other words, instead of making their friendly placements more like unfriendly ones than they would otherwise have done, the presence of the hostile items served to elicit schemata which were less like them, so that the contrast between the two sets of schemata was heightened. If this happened, it would result in an increase in the LA scores, since it is large LA's as opposed to small ones which particularly distinguished friendly from hostile items in the White group.

If it is supposed that the White subjects have a higher degree of psychological differentiation than the Red Xhosas, and are thus more field independent, this would account for the fact that they showed a contrast effect (in which the differentiation of the field is heightened) while the Xhosas showed an assimilation effect (in which the differentiation of the field is reduced) (see section 24.1.4).

19.10.4 XR SAD's compared to Experiment 4

In Experiment 4, the XR group used AD's and SAD's when representing the wife with her father-in-law that were higher than those used with the other pairings, even in the friendly condition. In the present experiment, however, this finding was not replicated, since the AD's and SAD's of the XR group for this item were similar to those found with the others.

The finding of Experiment 4 could well be an assimilation effect similar to that proposed above to account for the large distances used by the XR group (section 19.10.2). The use of asymmetrical schemata in which the younger interactor had the larger angle was typical of the Xhosa responses to the quarrel items in that Experiment. If the presence of the quarrel items caused the friendly items to be perceived as rather less friendly than they might otherwise

have been, this would perhaps have its strongest effect upon the schemata of the wife and father-in-law relationship, where strict respect is required, and where the wife's position in case of conflict is particularly weak.

19.10.5 Interpretation of the mean SAD

In both this experiment and Experiment 4, there was a significant tendency over all eight pairings for the XR group to give the YG figure the larger angle, while no such effect was found in the WH group. However, the pattern of SAD's across the individual pairings was not the same in the two experiments.

For example, the XR group had a mean SAD in Experiment 4 significantly greater than zero with the friendly versions of the two hlonipha relationships. In the present experiment the effect was replicated for WHF, but not for HWM, and it was significant for an additional item, WWM (compares Tables 15.4 and 19.7).

Similarly in the WH group, the pattern of SAD's in the two experiments differed. In Experiment 4 there were no cases of an SAD significantly different from zero, while in the present experiment there were two cases in which it was significantly less than zero (BWHF and BHWM) and two other cases in which the difference from zero approached significance (BHHF and BWWF). These were all pairings which, in Experiment 4, yielded SAD's particularly close to zero.

These observations show that caution must be exercised in interpreting cases where mean SAD differs significantly from zero but where the absolute difference from zero is low. These findings must be taken in conjunction with a comparison between SAD's from different placement conditions, since, even though one mean may be different from zero and another not, the two means may not differ significantly from each other. In the present experiment, for example, three mean SAD's in the XR group differed significantly from zero, but analysis of variance indicated that none of these three could be regarded as being significantly different from those of other pairings where the mean SAD was not different from zero.

Thus, while it can be concluded (from Table 19.7) that the XR group when

placing BWHF, tended to give the wife the larger angle, it cannot be concluded that this tendency is stronger than the tendency to give the husband the larger angle in placements of BHWM, even though the mean SAD was significantly greater than zero in the former but not in the latter case.

It seems clear from the results of this experiment and Experiment 4 that, when a large number of observations are obtained, Red Xhosa subjects (and XN subjects too) tend to give the OG figure the smaller angle. This effect is rather a subtle one (since mean SAD's generally tend to be less than 10° in value), but nevertheless well established. However, with the exception of the relationship between wife and father-in-law, it may be very much a matter of chance as to which relationships the effect attains significance in when only 30 subjects are used.

It can be concluded that the Xhosa rule of showing respect for an elder by reducing the amount of direct gaze is reflected in the orientation schemata of the two experiments, and that it does so most consistently in the case of the one relationship (wife with father-in-law) in which such a rule applies most strictly. Nevertheless the effect is not entirely absent from representations of other relationships as well.

19.10.6 SAD's in the XN and XU groups

It had been expected that because of the erosion of traditional practices under the impact of education and urbanisation, the XU and XN subjects would not show as strong a tendency to give the OG figure the less direct angle as the XR group (see hypothesis B/SAD.3, section 19.3.4).

In fact, however, in both XN and XU groups the tendency to give the wife the less direct angle when paired with her father-in-law was stronger than in the XR group itself, and XN subjects showed rather more consistency in giving the OG figure the more direct angle than the XR group, if the size of the values of t in Table 19.7 are taken as a criterion for this. Since the SAD's of the three Xhosa groups did not differ significantly among themselves, it cannot, of course, be stated with confidence that this effect was stronger in the XN group

than in the XR group. But the fact that the SAD's of the XN group were even of the same order as those of the XR group requires explanation.

The first explanation is in terms of the greater cognitive development of the XN group (and to a lesser extent the XU group) when compared with the XR group. This could result in these subjects being more careful in making their placements, so that there was less 'noisy' interference from random factors in between the presentation of the interaction descriptions and the making of the placement. This would mean that the XN group, even though considerably less under the impact of hlonipha practices, would show a greater tendency to give the OG figure the smaller angle, which would compensate for this. It is possible that this explanation accounts for the rather larger XN SAD's when compared to the other Xhosa groups throughout this experiment.

The second explanation, which does not exclude the first, is that traditional forms of respect still play a part in determining the behaviour between the generations, particularly in the case of the two hlonipha relationships. While the schemata of many XN and XU subjects for these relationships did not manifest large distances or angles for the YG figure, those that did often seemed to arise from the fact that these customs were still followed to some extent. Questioned about the traditional form of her schema for BWHF, for example, one XN subject commented, 'Yes, even in town these customs are followed and there is talk if they are broken'. Thus, while for some the impact of traditional custom is minimal, for others it is sufficient to be measurable in their orientation schemata (as well as in their distance schemata).

A third explanation, which to some extent provides an alternative to the second, is that XN and XU subjects gave traditionalist schemata in response to the demand characteristics of the experimental situation. They may have felt that the experimenter was interested in their knowledge of traditional practices and would be pleased if they were to show this. While this explanation may apply to some subjects, the fact that several XN subjects who were questioned about traditionalist schemata elicited by the hlonipha relationship affirmed that their responses represented present day behaviour patterns suggests that

it cannot completely account for the degree to which traditionalist schemata occurred in the experiment. Nevertheless, it would perhaps be valuable in future to make explicit the fact that what is of interest to the experimenter is not traditional customs as such but current norms of everyday behaviour.

A fourth explanation is in terms of the poor validity of the orientation measures as an index of visual behaviour. Considerable evidence from western cultures that figure orientation and perceived visual behaviour are closely related was presented in Chapter 6. Evidence that this applied to various Xhosa groups also was obtained in Experiment 2B. In traditional Xhosa practice, however, avoidance of gaze as a sign of respect is often expressed formally either by looking down, or even by turning the neck and head through 90° so that the individual is effectively looking over his or her shoulder. Both these occur while the interactor maintains a direct body orientation.

XR subjects who made face to face placements often remarked that one of the figures (invariably the lower status one) would be looking down. In such a case, of course, the visual behaviour is not reflected at all in the orientation schema. While the studies discussed in Chapter 6 suggest that in the absence of other constraints individuals tend to select an orientation appropriate to their comfortable level of direct gaze, the existence of these formal customary requirements among the Reds would reduce the validity of the orientation schema as a measure of visual behaviour in those situations in which they operated. The present findings could, therefore, be interpreted as meaning that in the XR group the full impact of the hlonipha requirements is still felt, but that this is expressed imperfectly in their orientation schemata, while, in the XU and XN groups, where avoidance of gaze by stylised head-bowing and head-turning has fallen away, so that body orientation is adjusted to match gaze levels, orientation schemata are more closely related to the amount of direct gaze that takes place in the situation represented.

19.10.7 SAD's in the WH group

The SAD's in the WH group accorded with prediction in that in no case was there a mean significantly greater than zero and in that the overall mean was close to zero. Nevertheless, the finding that in the case of the two pairings

involving the YG figure with the opposite sex parent-in-law the mean was significantly less than zero had not been anticipated.

In neither of these cases did the mean SAD show any substantial departure from zero in Experiment 4 in the friendly condition, so the present finding would require replication before any importance was attached to it. However, in view of the significant effect of pairing on SAD in the WH group, significant at the ,01 level, some exploratory suggestions are perhaps apposite.

The first possibility is that subjects often perceived the OG figure as playing the more passive role in the encounter. Passivity was associated with an indirect orientation in all groups in Experiment 2B item 1B (see Chapter 13), and the comments of several WH subjects in the present experiment showed that often the figure with the more direct orientation was perceived as more active. Such perception of passivity might have been particularly the case where the OG figure was perceived as elderly and therefore not as quick-witted as the YG figure. If there is respect for age, as among the Red Xhosa, this protects against any loss of initiative that the elderly may undergo on this account, but where, as in western culture, it is the personal qualities of each interactor which largely determine his role in the interaction, age provides no such protection.

A second possibility is that asymmetrical schemata may sometimes represent the individual who is talking by means of the less direct orientation and the listener by means of the more direct orientation. This might reflect the greater use of direct gaze that is known to characterize listener's when compared to speakers (e.g. Kendon 1967). This, taken in conjunction with direct gaze as a means of communicating attention and interest, could mean that sometimes the individual doing the speaking (and therefore more active) would be represented in the more direct orientation. If this were to occur frequently, it might be expected that the higher status figure would have the larger rather than the smaller angle, since, presumably, he would tend to take the initiative in talking.

While either of the above explanations would account for a tendency for

the YG figure to be placed in the more direct orientation, neither can explain why such a tendency should be found more strongly with some relationships than with others, nor why it should have been found with the WHF and HWM pairings in the present experiment, but not in Experiment 4. Because of the very different types of situation that an asymmetrical orientation can represent, and in the absence of any anticipation of the present low WH SAD's with items BWHF and BHWM in Experiment 4, no firm conclusion can be drawn.

19.10.8 Patterns of distance means

The most striking feature of the results of the present experiment was the distinct pattern into which the distance scores of each group fell.

In the WH group there was a fairly clear tendency for YG figures to be placed closer to their parents than to their parents-in-law, as in Experiment 4.

In the XR group, the pattern was dominated by the very large distances used for the two hlonipha relationships, BWHF and BWHM, and there was also a tendency for the husband to have a larger distance than the wife with the other relationships. Again this followed the results of Experiment 4.

The patterns of the XN and XR groups were remarkably similar, having the same cross-over pattern as that of the WH group, but considerably more clearly, while maintaining relatively large distances for the two hlonipha relationships, in common with the XR group. This latter effect showed that the impact of the traditional hlonipha practices is not entirely lost among these urban groups. The reduction of this impact, however, which is documented in the anthropological literature (see section 8.3) is clear in the present results where the distances used for the hlonipha relationships by these groups were considerably smaller than those used by the XR subjects.

The cross-over effect resulted from the fact that, like the WH group, both XU and XN subjects placed the wife further than the husband from the husband's mother. Indeed, this effect was stronger in the present experiment in the XU and XN subjects than in the WH group, although it was also clearer among the White subjects of Experiment 4 than with the present WH group. It was

suggested above that this effect was a consequence of the different residential patterns of the urban and rural environments (see section 19.8.4).

One feature of the results of Experiment 4 was that Red Xhosa subjects placed the wife closer to her mother than to her father, while no such effect was found in the White group. It was supposed that this reflected the authoritarian nature of the father role. However, this effect was not significant in the XR group of the present experiment even though the means were in the predicted order (see section 19.4.3 , hypothesis B/D.10). However, the means were also in this order in the WH group, but again with only a small difference, and the same was true of the XN group. The only group to show a significant effect in this respect was the XU group. It cannot therefore be concluded on the basis of the present evidence that the use of a smaller distance between wife and mother than between wife and father is a feature that particularly differentiates between the schemata of Xhosa and White.

19.10.9 Distance scores of sets A and B compared

The distance scores obtained with the B set of items (Table 19.1) can profitably be compared with those obtained with the three items of set A (Table 18.1), as a means of assessing the intimacy of relationships between the generations in the various groups.

In the WH, XN and XU groups, the mean distance for the eight B items was in each case very close to that for the three A items. In the WH group the two items involving the wife with her parents used distances similar to those used for friends, while most of the other relationships were represented by distances similar to those used for acquaintances. Only the distance for BHWM was much larger, and even that was not as large as that used for strangers.

In the XN group, only the wife with her mother had a distance as close as that used for friends, while, for the remaining relationships with the exception of the two hlonipha ones distances were similar to those used for acquaintances or a little larger (acquaintance distances were particularly close in this group). In the case of the two hlonipha relationships, however, the distances were well above those used for strangers.

In the XU group, only the distance of the wife with her mother approached that used for friends, and even then the latter was the smaller. With the exception of the hlonipha relationships, the remaining means were fairly close to that used for acquaintances (which was rather larger than that of the XN group). In the case of the hlonipha relationships, distances were similar to that found for strangers, being slightly smaller for BHWM and rather larger for BWHF.

In the case of the XR group none of the eight means of the present experiment was as close as that used for either friends or acquaintances, and most were similar to those used for strangers. That for the wife with her mother was only a little larger than that used for acquaintances, however. The distances used for the two hlonipha relationships were considerably larger than those used for strangers.

Thus in the WH, XN and XU groups, the degree of intimacy between interactors of the two generations is that between acquaintances, or, in a few cases, friends. The only exception to this is that the two Xhosa groups see the hlonipha relationships as being only as intimate as (or even less intimate than) the relationship between strangers. For the XR subjects, however, the formality between the generations is such that even the closest relationship is not as intimate as that between friends, and most are seen as like those between strangers. The fact that distances for the two hlonipha items were so much larger than those used for strangers shows clearly how formal these relationships are.

The large distances used by the XR group for this set clearly reflect the high degree of formality that exists in traditional Xhosa culture between members of different generations (as documented by writers cited in section 8.2.5). The fact that distance schemata were considerably closer in the XU and XN groups attests to the extent to which these formal avoidance practices break down in the urban milieu, as shown by the literature cited in section 8.3.2. However, the results suggest that the extent of this reduction is not typically sufficient to allow husband and wife's mother or wife

and husband's father to develop any greater intimacy than that typical of strangers.

The results also suggest that this relaxation of formality is rather greater in the educated XN group than in the less literate XU group since the XN mean distance was a little smaller than that of the XU group in several of the eight relationships. Nevertheless, the overall difference between the distances used by these two groups was less than 10mm, and did not approach significance, so that this conclusion is certainly not established, but merely suggested.

CHAPTER TWENTY

EXPERIMENT 6C: QUARRELS

20.1 INTRODUCTION AND INTERACTION DESCRIPTIONS

Set C comprised four items involving quarrels. In previous experiments, quarrels had been represented by rather larger distances than friendly encounters, especially by Xhosa subjects, and, again mainly with Xhosa subjects, lower status figures tended to be placed in the less direct orientation.

Four figure pairings were chosen for representation in quarrels. These, together with the four letter codes used to identify them, were as follows: two men (CMMQ), two women (CWWQ), a man and woman (CMWQ), and a man and a youth (CMYQ).

The basic form of the interaction description in English was

' ---------- talking together in a quarrelsome manner.'

A phrase in the blank space indicated which pairing was to be represented, as follows: 'Two men' (CMMQ), 'Two women' (CWWQ), 'A man and a woman' (CMWQ), and 'A man and a youth' (CMYQ).

The basic form of the description in Xhosa was

' ---------- -thetha kunye ngendlela ebonisa ukuxabana'.

The '-' before 'thetha' indicates that an appropriate noun concord was added as a prefix, and these concords are followed by '-' in the phrases below. The blank space was filled by one of the following: 'Amadoda amabini ba-' (CMMQ), 'Abafazi ababini ba-' (CWWQ), 'Indoda nomfazi ba-' (CMWQ), or 'Indoda nenkwenkwe baya-' (CMYQ).

20.2 A PRIORI HYPOTHESES

20.2.1 Distance scores

Quarrel items had previously been used in Experiments 1, 2B and 4, so a number of hypotheses could be formulated on the bases of the results of these.

In these experiments illiterate Xhosa subjects used distances for quarrels that were considerably larger than those for friendly encounters, and distances were particularly large for pairings in which there was a status difference. White subjects in Experiments 2B and 4 also used larger distances for quarrels than for friendly items, but the difference was not as large as that found in the Xhosa groups. The Xhosa students of Experiment 2B used distances which were comparable to those of the White students and not as large as those of the illiterate Xhosa subjects.

No quarrel item used previously had used the 'two women' pairing. It was included here for several reasons: firstly, because it was felt that subjects, being women, could more easily identify with it than with the 'two men' item; secondly, because it was felt possible that the factors determining interpersonal distance in quarrels between women might differ from those determining it between men, because of a lower risk of recourse to physical violence. As a result it was tentatively thought that CWWQ distances might be smaller than those for CMMQ in the less literate Xhosa groups, since it was the risk of violence that was suggested as a factor behind the large distances in these groups (section 11.4).

The following hypotheses were advanced concerning the distance scores:

Hypothesis C/D.1: Mean distance will not be affected by pairing in the WH and XN groups.

Hypothesis C/D.2: In the XU and XR groups, mean distance for CMMQ will be smaller than that for CMWQ or CMYQ.

Hypothesis C/D.3: Mean distance will be larger in the XR and XU groups than in the WH and XN groups.

20.2.2 Angle scores

No specific hypotheses were advanced regarding the LA scores. In the WH group they were expected to be fairly low, following the pattern of the previous experiments. Xhosa subjects had likewise used small LA's when representing quarrels in Experiments 1 and 4, but in Experiment 2B the XU and XR subjects

had often used large ones. It was thought that the particular form of the description used in Experiment 2B might have been responsible for these large LA's, and, in order to check on this the item was included in the present experiment in Set E (see Chapter 21).

In Experiment 1, White students and urban Xhosa used fairly symmetrical schemata for the MM pair, but AD's were larger in both groups with the MY pairing and, in the Xhosa group only, with the MW pairing. In the case of the MY pair, both groups showed a tendency to give the man the more direct angle although this was not quite significant in the Xhosa group. In the case of MW, mean SAD was greater than zero in both groups, but not significantly so (although the mean in the Xhosa group was as large as that for MY).

In the present experiment, it was expected that similar symmetrical orientation schemata would be elicited by the CMMQ and CWWQ items, since neither pairing involved a status difference. It was expected that all groups would tend to give the youth the less direct orientation with item CMYQ. In the case of CMWQ, it was expected that the Xhosa groups would tend to give the woman the less direct orientation, especially the XR group. This same expectation was also held for the XN group, because Xhosa students in Experiment 2A had shown the same effect even for a friendly situation. In the WH group, however, it was not expected that either man or woman would have the more direct orientation.

These observations were expressed in the following hypotheses:

Hypothesis C/AD.1: In all groups mean AD will be larger for CMYQ than for CMMQ.

Hypothesis C/AD.2: In all groups there will be no difference between the mean AD's of CMMQ and CWWQ.

Hypothesis C/AD.3: In the Xhosa groups, mean AD for CMWQ will be larger than that for CMMQ.

Hypothesis C/AD.4: In the WH group mean AD for CMWQ will not differ from that for CMMQ.

Hypothesis C/AD.5: In the case of item CMWQ mean AD will be larger in the Xhosa groups than in the WH group.

Hypothesis C/SAD.1: In the WH group mean SAD with CMYQ will be larger than that for CMWQ.

Hypothesis C/SAD.2: In all groups the mean SAD will be greater than zero with item CMYQ.

Hypothesis C/SAD.3: In the WH group, mean SAD for CMWQ will not be greater than zero.

Hypothesis C/SAD.4: In the Xhosa groups, mean SAD will be greater than zero with item CMWQ.

Hypothesis C/SAD.5: In the case of item CMWQ, mean SAD will be smaller in the WH group than in the Xhosa groups.

20.3 RESULTS: DISTANCE SCORES

Means and standard deviations of the D scores are shown in Table 20.1, and the analysis of variance is summarised in Table 20.2. The means are also presented graphically in Figure 20.1.

TABLE 20.1

MEANS AND STANDARD DEVIATIONS OF THE DISTANCE SCORES IN EXPERIMENT 6C

		CMMQ	CWWQ	CMWQ	CMYQ	ALL
WH	MEAN	99.8	96.2	100.5	96.5	98.2
	SD	33.6	28.6	36.4	25.2	30.9
XN	MEAN	102.6	95.6	124.6	129.2	113.0
	SD	57.9	46.3	54.5	59.2	55.9
XU	MEAN	126.9	133.5	143.5	141.5	136.8
	SD	56.4	61.2	65.7	67.2	62.3
XR	MEAN	111.2	118.4	125.6	127.6	120.7
	SD	42.6	66.0	54.4	50.3	53.7
ALL	MEAN	110.6	110.9	123.6	123.7	117.2
	SD	49.4	54.3	55.3	54.8	53.7

The analysis of variance showed significant effects of Groups and Pairing. The effect of Groups accorded with the prediction of hypothesis C/D.3 that mean distance would be larger in the XU and XR groups than in the XN and WH groups. Using a t-test, it was found that the mean of the XU and XR groups together

TABLE 20.2

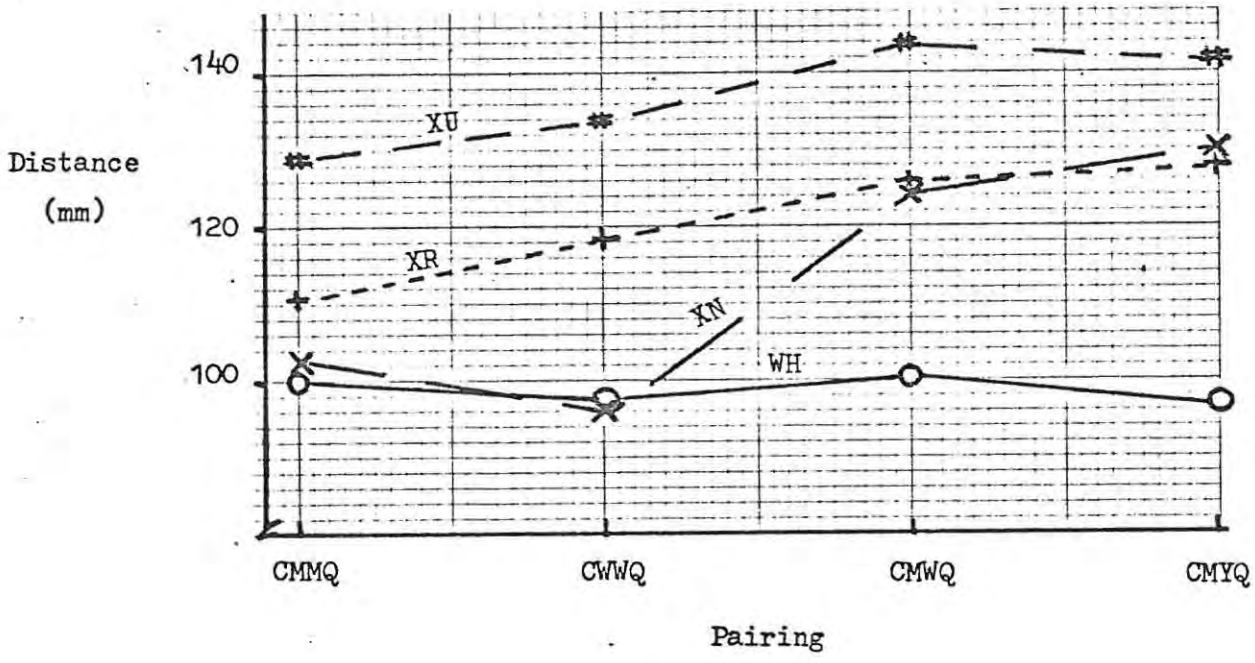
SUMMARY OF ANALYSIS OF VARIANCE OF DISTANCE SCORES OF EXPERIMENT 6C

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	940950.4	119		
GROUPS (A)	93081.2	3	31027.08	4.245 *
SUBJ.W.GROUPS	847869.2	116	7309.22	
WITHIN SUBJECTS	442125.8	360		
PAIRING (B)	19808.2	3	6602.73	5.629 **
A X B	14100.8	9	1566.76	1.336
B X SUBJ.W.GROUPS	408216.8	348	1173.04	
TOTAL	1383076.2	479		

*$p < ,01$ **$p < ,001$

FIGURE 20.1

GRAPH OF MEAN DISTANCE SCORES IN EXPERIMENT 6C



differed from that of the combined mean of the WH and XN groups beyond the ,001 level of confidence (t = 5,934; df = 116). Although the overall mean of the XU group was larger than that of the XR group, the difference was not significant by Tukey's test (q = 2,069; df = 116; critical value at ,05 level = 3,68).

The significant effect of Pairing was due to the fact that mean distances for the two undifferentiated items CMMQ and CWWQ were smaller than those of the differentiated items CMWQ and CMYQ. This is clear if the means over all groups combined are examined in Table 20.1.

The interaction F was not significant. Nevertheless, the pattern of means graphed in Figure 20.1 shows that there was no effect of Pairing in the WH group, while it was strongest in the XN group. Because two hypotheses concerned the effect of pairing in each group, the data for each group was examined separately, by comparing the CMMQ mean with each of the three others by means of t-tests.

In the WH group, the prediction of hypothesis C/D.1 that mean distance would not be affected by pairing was confirmed, since all three t-values were less than 1,0.

In the XN group, however, the same prediction, that there would be no differences between the means of the pairings, was not upheld. The mean of CMWQ was significantly larger than that of CMMQ ($t = 2,120$; $df = 87$; $p<,05$) and so was the mean of CMYQ ($t = 2,558$; $df = 87$; $p<,02$). The mean of CWWQ did not differ from that of CMMQ ($t < 1,0$).

The pattern found in the XN group had been predicted for the XU and XR groups by hypothesis C/D.2, where it was anticipated that mean distance for CMWQ and CMYQ would be larger than that for CMMQ. The effect was not however so strong in these groups as in the XN group, although the means were in the predicted order. In the XU group the CMMQ mean was significantly smaller than that of CMWQ ($t = 2,083$; $df = 87$; $p<,025$ one-tailed) and than that of CMYQ ($t = 1,799$; $df = 87$; $p<,05$ one-tailed) and did not differ from that of CWWQ ($t < 1,0$). However in the XR group the CMMQ mean was not significantly different from either the CMWQ mean or the CMYQ mean ($t = 1,416$ and $1,606$; $df = 87$). It did not differ from that of CWWQ either ($t < 1,0$).

Because of these different effects of Pairing in the different groups, the main effect of Groups which indicated that distances were larger in the XU and XR groups than in the XN and WH groups only describes the pattern of means from the CMMQ and CWWQ items. In the other two cases the XN mean was considerably larger than that of the WH group. This will be discussed in more detail when the IPOS profiles are presented in section 20.7.

20.4 RESULTS: LEAST ANGLE SCORES

Means and standard deviations of the LA scores are presented in Table 20.3 and the analysis of variance is summarised in Table 20.4. These values are comparable to those obtained in Experiment 1, and there were no effects of the independent variables.

TABLE 20.3

MEANS AND STANDARD DEVIATIONS OF THE LEAST ANGLE SCORES IN EXPERIMENT 6C

		CMMQ	CWWQ	CMWQ	CMYQ	ALL
WH	MEAN	10.2	8.0	15.2	11.1	11.1
	SD	16.0	11.3	28.1	11.8	18.1
XN	MEAN	9.3	10.9	11.4	15.8	11.8
	SD	7.8	20.3	11.5	12.4	13.8
XU	MEAN	17.2	16.7	18.8	18.1	17.7
	SD	29.9	29.4	30.9	27.8	29.1
XR	MEAN	10.2	14.8	11.3	9.0	11.3
	SD	10.5	15.6	16.4	11.4	13.7
ALL	MEAN	11.7	12.6	14.2	13.5	13.0
	SD	18.2	20.3	23.1	17.4	19.8

TABLE 20.4

SUMMARY OF ANALYSIS OF VARIANCE OF LEAST ANGLE SCORES IN EXPERIMENT 6C

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	131876.5	119		
GROUPS (A)	3559.5	3	1186.51	1.073
SUBJ.W.GROUPS	128316.9	116	1106.18	
WITHIN SUBJECTS	56493.5	360		
PAIRING (B)	403.1	3	134.36	0.860
A X B	1741.2	9	193.47	1.239
B X SUBJ.W.GROUPS	54349.2	348	156.18	
TOTAL	188370.0	479		

20.5 RESULTS: ANGLE DIFFERENCE SCORES

Means and standard deviations of the AD scores are presented in Table 20.5 and the analysis of variance is summarised in Table 20.6.

TABLE 20.5

MEANS AND STANDARD DEVIATIONS OF THE AD SCORES IN EXPERIMENT 6C

		CMMQ	CWWQ	CMWQ	CMYQ	ALL
WH	MEAN	12.5	10.4	22.6	24.6	17.5
	SD	28.5	11.2	36.7	32.2	29.1
XN	MEAN	10.3	13.3	32.9	49.1	26.4
	SD	9.9	21.1	31.3	45.7	33.6
XU	MEAN	11.9	10.8	21.2	17.2	15.3
	SD	12.0	8.7	35.0	20.5	21.7
XR	MEAN	23.4	25.4	31.3	39.0	29.8
	SD	46.2	31.9	45.4	55.1	45.3
ALL	MEAN	14.5	15.0	27.0	32.5	22.2
	SD	28.4	21.0	37.3	41.9	34.0

TABLE 20.6

SUMMARY OF ANALYSIS OF VARIANCE OF AD SCORES IN EXPERIMENT 6C

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	293811.2	119		
GROUPS (A)	17361.2	3	5787.06	2.428
SUBJ.W.GROUPS	276450.1	116	2383.19	
WITHIN SUBJECTS	258697.3	360		
PAIRING (B)	28801.6	3	9600.54	15.331**
A X B	11967.0	9	1329.67	2.123*
B X SUBJ.W.GROUPS	217928.6	348	626.23	
TOTAL	552508.5	479		

* $p<.05$ ** $p<.001$

The effect of Groups was not quite significant at the 5% level, but there was a strong effect of Pairing, as well as a significant interaction between Groups and Pairing. Investigation of the interaction showed that there were significant effects of Groups for some pairings, and these analyses are presented later, in section 20.7 when the IPOS profiles are given.

It can be seen from the combined means for each pairing over all groups (Table 20.5) that the effect of Pairings indicates that mean AD's for CMMQ and CWWQ were significantly smaller than the means for CMWQ and CMYQ. Application of Tukey's test showed that the comparisons between CMMQ or CWWQ on the one hand and CMWQ and CMYQ on the other were all significant beyond the ,01 level.

This result lends general support to hypothesis C/AD.1 which predicted that mean AD would be larger with CMYQ than with CMMQ in all groups. Nevertheless the effect was clearer in some groups than in others. When t-tests were applied to this comparison in each group separately, the CMYQ mean was significantly higher in the WH group (t = 1,948; df = 87; $p<,05$ one-tailed), in the XN group (t = 5,572; df = 87; $p<,001$), and in the XR group (t = 2,123; df = 87; $p<,15$ one-tailed), but not in the XU group(t = 1,049; df = 87; $p<,15$ one-tailed) although the means in this group were in the predicted order. Hypothesis C/AD.2 which predicted that mean AD with item CWWQ would not differ from that of item CMMQ was well supported in each group, since in each case the means were very close together.

Hypothesis C/AD.3 predicted that the mean AD for CMWQ would be greater than that for CMMQ in the Xhosa groups. This hypothesis received general support from the order of means over all groups: in all Xhosa groups the CMWQ mean was higher than that for CMMQ, an effect that was significant in the XN group (t = 3,245; df = 87; $p<,001$), and in the XU group (t = 1,835; df = 87; $p<,05$ one-tailed), but not in the XR group (t = 1,075; df = 87; $p<,15$ one-tailed).

Hypothesis C/AD.4 predicted that in the WH group mean AD with CMWQ would not differ from that of CMMQ. This hypothesis was not confirmed however. The mean for CMWQ was larger, as in the other groups, although not significantly so (t = 1,628; df = 87). Since this t value is associated with a probability between ,1 and ,2 (two-tailed) it indicates that the odds against the null hypothesis lie between 9:1 and 4:1.

20.6 RESULTS: SIGNED ANGLE DIFFERENCE SCORES

Since the interactors were not differentiated in items CMMQ and CWWQ, no SAD scores were available from these items. SAD's were calculated for CMWQ and CMYQ by subtracting the angle of the man from that of the woman or youth, in accordance with usual practice. Means, standard deviations, and associated t-values are presented in Table 20.7. The t-tests test whether the null hypothesis that mean SAD = zero can be rejected.

TABLE 20.7

MEANS, STANDARD DEVIATIONS AND ASSOCIATED t OR z VALUES FOR THE SIGNED ANGLE DIFFERENCE SCORES OF EXPERIMENT 6C

	CMWQ			CMYQ		
Group	Mean	SD	t^+	Mean	SD	t^+
WH	9,4	42,2	0,812(z)	21,8	34,2	3,482***
XN	22,4	39,7	3,092**	45,3	49,6	5,002***
XU	16,6	37,4	2,519(z)**	2,2	26,9	0,843(z)
XR	14,8	53,3	2,389(z)**	24,2	63,3	2,094*

$^+$A (z) after the value indicates that the statistic is z obtained from the Wilcoxon matched-pairs signed-ranks test which was applied where distributions were abnormal. Df for t = 29.

*p <,025 one-tailed **p <,01 one-tailed ***p <,001 one-tailed

Hypothesis C/SAD.2 predicted that mean SAD would be greater than zero in all groups with item CMYQ. The hypothesis was supported in all except the XU group where the mean was very close to zero.

Hypothesis C/SAD.3 predicted that in the WH group mean SAD for CMWQ would not be greater than zero. This was fairly well supported. Although the mean of 9,4 was above zero, the probability of obtaining an absolute value of z as high as or higher than that obtained here from a population in which the null

hypothesis is true is ,42.

Hypothesis C/SAD.4 which predicted that mean SAD would be greater than zero in each of the three Xhosa groups for item CMWQ was well supported in each case.

The analysis of variance of the SAD scores is summarised in Table 20.8. The only significant effect was that of Groups. Application of Tukey's test showed that only one pairwise comparison between groups was significant: mean SAD was greater in the XN than in the XU group (q = 3,96; df = 116; p<,05).

The F ratio for the interaction did not reach significance at the 5% level, but was significant at the 10% level. Simple main effects were therefore investigated. Each item was examined separately to investigate whether there was an effect of Groups. The results of these analyses are presented with the IPOS profiles in section 20.7.

TABLE 20.8

SUMMARY OF ANALYSIS OF VARIANCE OF SAD SCORES IN EXPERIMENT 6C

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	284313.6	119		
GROUPS (A)	19394.7	3	6464.90	2.831 **
SUBJ.W.GROUPS	264918.9	116	2283.78	
WITHIN SUBJECTS	212812.0	120		
PAIRING (B)	3405.1	1	3405.07	1.992
A X B	11160.7	3	3720.23	2.177 *
B X SUBJ.W.GROUPS	198246.2	116	1709.02	
TOTAL	497125.6	239		

* p<,1 ** p<,05

The mean of item CMWQ was compared with that of CMYQ in each group separately. It was predicted in hypothesis C/SAD.1 that in the WH group that of CMYQ would be larger. This prediction was confirmed, although the effect was only just significant by one-tailed test (t = 1,732; df = 29; p<,05). It had not been expected that the two means would differ in the Xhosa groups, and no difference was found in either the XU or XR groups (F = 2,752 and 0,359; df = 1/29) even though the mean of CMWQ was rather larger than that of CMYQ in the XU group. In the XN group, however, the mean of CMYQ was significantly larger than that of CMWQ (F = 6,610; df = 1/29; p<,025).

20.7 RESULTS: IPOS PROFILES

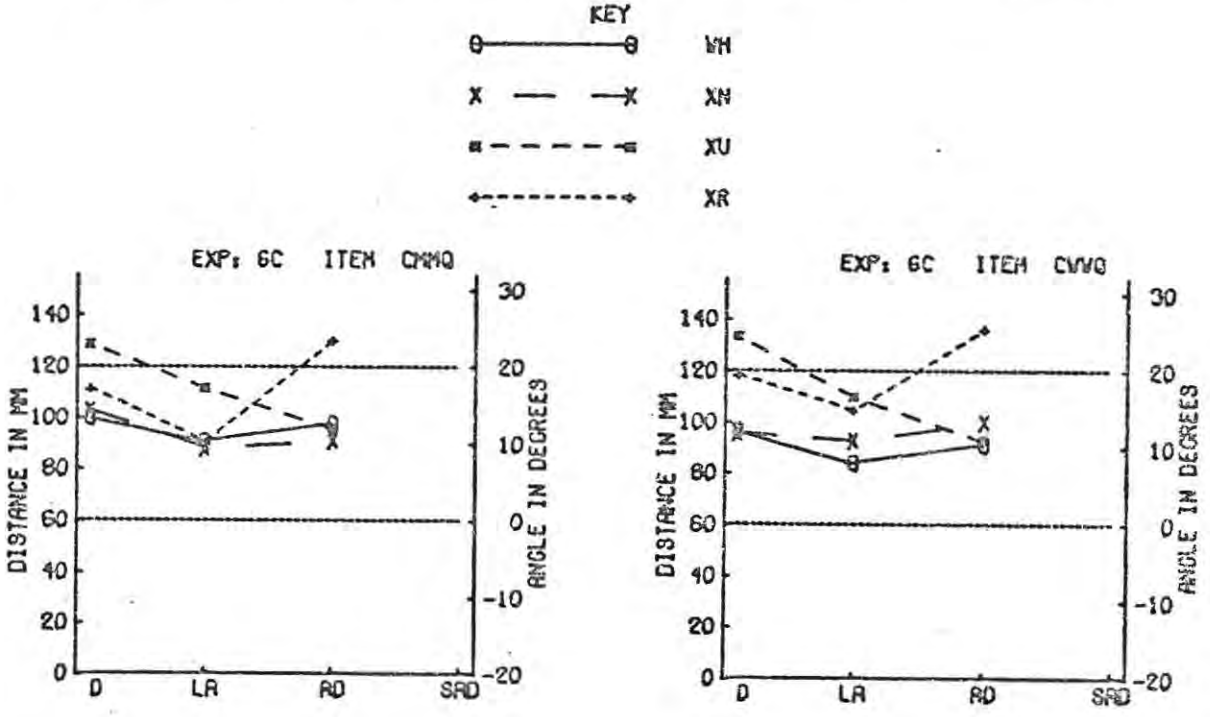
20.7.1 Items CMMQ and CWWQ

Profiles for items CMMQ and CWWQ are presented in Figure 20.2. Although individual subjects often had very different schemata for these two items, in each sample the profiles obtained for the two items were very similar.

In the case of the D scores, the profiles both exhibit the general pattern found in the experiment as a whole, with the means of the XN and WH groups being smaller than those of the XU and XR groups (see section 20.3), although the XR mean was rather close to that of the XN and WH groups in the case of CMMQ.

FIGURE 20.2

IPOS PROFILES FOR ITEMS CMMQ AND CWWQ IN EXPERIMENT 6C



The profiles show that XU and XR subjects used rather less immediate orientation patterns than the XN and WH groups, with the XU group giving both figures slightly larger angles (indicated by the higher LA score) and the XR group using more asymmetrical schemata (indicated by the larger AD's). As section 20.4 showed, however, there were no significant differences between the LA means. In the case of the AD scores, following the significant Groups

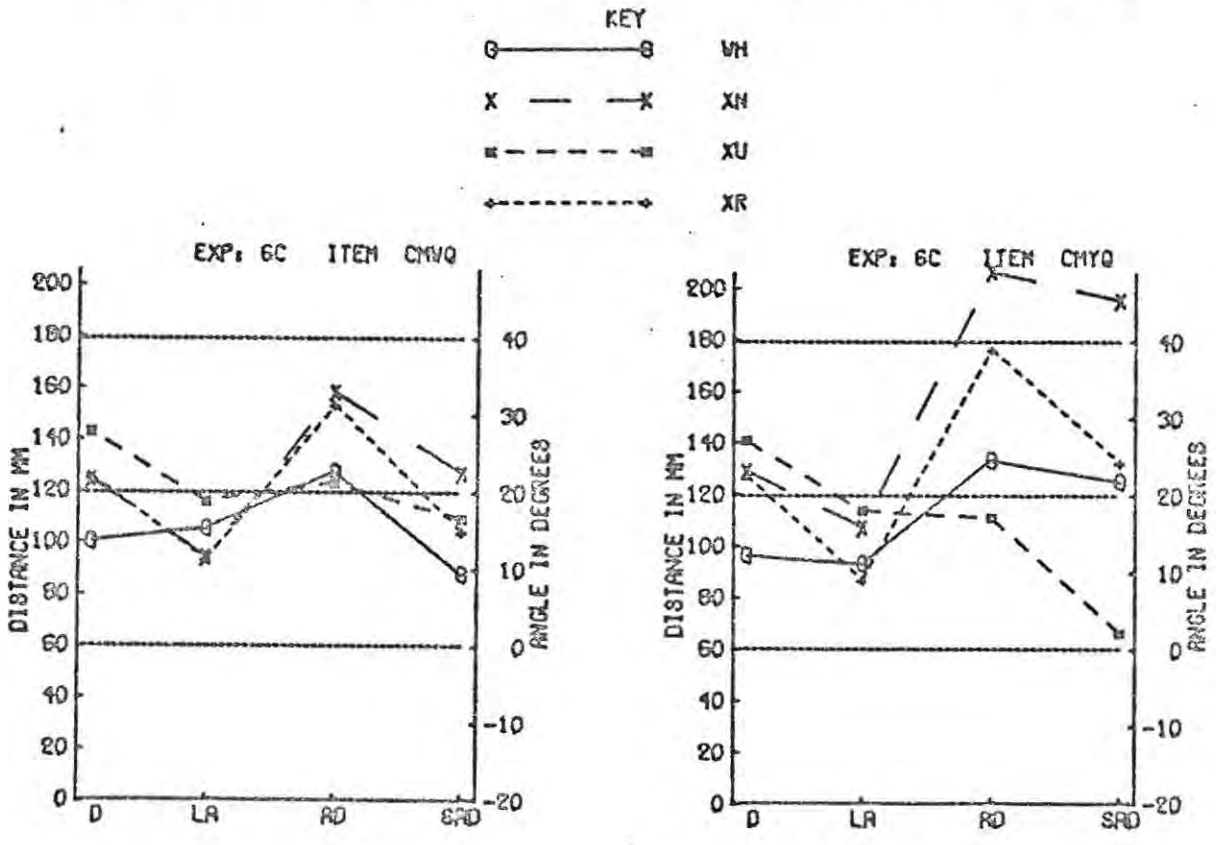
x Pairing interaction in the analysis of variance, the effect of Groups was examined separately for each item. Although the XR group had a larger AD than the other groups with both items, this effect was not significant in the case of CMMQ ($\underline{F}$ = 1,349; $\underline{df}$ = 3/116), but in the case of CWWQ, it was ($\underline{F}$ = 3,608; $\underline{df}$ = 3/116; $\underline{p}$<,025) and application of Scheffé's test showed that the XR mean was significantly larger than that of the three other groups combined.

20.7.2 Items CMWQ and CMYQ

IPOS profiles for items CMWQ and CMYQ are presented in Figure 20.3.

FIGURE 20.3

IPOS PROFILES FOR ITEMS CMWQ AND CMYQ IN EXPERIMENT 6C



In both cases the pattern of D scores was slightly different to that found with the previous two items because the XN mean was not as low as that of the WH group. Although there was no interaction effect in the analysis of variance (see section 20.3) one-way analyses of variance were applied in each case, and the XN mean was found to be significantly larger than that of the WH

group in the case of CMYQ (by Tukey's test following a significant F for Groups $p<.05$), although not in the case of CMWQ. The use of larger distances by the XU and XR groups than by the WH group was a feature of all the items in this set (see section 20.3).

Although the profiles for CMWQ suggest that the XN and XR groups had schemata which were rather less symmetrical than those of the XU and WH groups, and that the tendency to give the man the more direct angle was stronger in the Xhosa groups (see also Table 20.7), no significant differences were found between the orientation schemata of the groups. One-way analyses of variance on the AD and SAD scores of CMWQ yielded non-significant F ratios, and t-tests comparing the mean AD and SAD of the WH group with that of each of the Xhosa groups (in terms of hypotheses C/AD.5 and C/SAD.5) did not reveal a single case in which a comparison approached significance. These hypotheses, therefore, which predicted that mean AD and SAD would be smaller in the WH group, were not supported. Nevertheless in section 20.6 it was shown that the Xhosa groups tended to give the woman the less direct orientation, while the WH group did not, a finding in line with the prediction of hypothesis C/SAD.5.

In the case of CMYQ, divergences between the orientation schemata of the groups were rather larger. The profile of the WH group was very similar to that obtained with a similar item from White male students in Experiment 1 (compare Figure 11.2, item MY-Q, p.126). In each case there was a moderate degree of asymmetry and considerable consistency in giving the youth the less direct angle (as indicated in the lack of slope of the AD-SAD part of the profile). The XU group used schemata that were a little less asymmetrical, and differed from the WH group in that there was no consistency at all as to which figure faced more directly.

Orientation schemata were considerably more asymmetrical in the XN and XR groups, with the XN group being highly consistent in giving the man the more direct angle. Although the XR group were much less consistent about this, they still showed a significant tendency to do so (see Table 20.7).

One-way analyses of variance yielded significant F ratios for the effect

of Groups on both the AD (F = 3,728; df = 3/116; p<,025) and SAD scores (F = 4,459; df = 3/116; p<,01). However in each case only the largest difference between groups, that between XN and XU, was significant when Tukey's test was applied (for AD q = 4,306; p<,05; for SAD q = 5,163; p<,01).

20.8 EFFECT OF AGE AND LANGUAGE OF INSTRUCTION

20.8.1 Effect of Age

As with Sets A and B, sixteen analyses of variance were performed in order to discover whether Age had any effect on schemata. There was only one significant effect and this was in the XR group, where mean AD was larger in the younger age group (F = 5,596; df = 1/29; p<,025). The mean AD of the younger XR subjects was 45,1, while that of the older group was 14,5. There was no comparable effect on the SAD scores (F = 0,622), so the younger group used more asymmetrical orientation schemata, but showed no greater tendency than the older group to give youth or woman the less direct angle in the differentiated items.

Two explanations for this finding can be advanced, although each is tentative. Firstly, because of their lesser social experience, younger subjects might themselves have been unable to tolerate such high levels of arousal during quarrels as the older subjects. They might therefore have represented their own most likely response, a reduction of immediacy by turning away. This would happen if it supposed that an individual becomes more able to control strong emotions with age.

A second possibility is that the younger subjects were more afraid of violence erupting than the older ones, perhaps because they felt less able to cope with it. Since turning away reduces the risk that violence will erupt (see section 15.7.3), they would then have been more likely than the older subjects to represent this.

While this explanation could apply equally well to the XN and XU groups, in whom no such effect was found, it will be noted (Table 20.5) that AD's were rather lower in the XU group than in the XR group, suggesting that the

turning away response to the quarrel was less strong in this group as a whole. As for the XN group, it might be speculated that the turning away response occurs even though arousal levels are lower than in the XR group, so that large AD's in this group do not represent the same phenomenon as they do in the XR group.

20.8.2 Effect of language of instruction

When the scores of the English instruction XN subjects were compared with those of the Xhosa instruction XN subjects, significant effects were found upon the AD and SAD scores. In the case of the AD scores there was a significant Language x Pairing interaction (F = 3,393; df = 3/84; p<,025). This indicated that the English instruction group used smaller AD's than the Xhosa instruction group with the two differentiated items CMWQ and CMYQ. In the case of CMWQ the means were 39,3 and 26,5, a difference that was not quite significant (F = 3,350; df = 1/112; p<,1), while in the case of CMYQ they were 66,4 and 31,8, a difference that was significant beyond the ,01 level (F = 10,659; df = 1/112). The English instruction group also used smaller SAD's with these two items (F = 5,575; df = 1/29; p<,05). In the case of CMWQ the means were 31,3 and 13,7, and in the case of CMYQ they were 66,4 and 24,2.

Thus the Xhosa instruction subjects tended to use a larger angle for the lower status individual than the English instruction group. It seems most likely that this is the effect of the different sets induced by the two languages of instruction which caused subjects to base their constructions of the situation either on the basis of the traditional, authoritarian norms of the home culture (Xhosa instruction) or on the more egalitarian norms of western culture (English instruction). It was shown above (Table 20.7) that XN subjects showed a clear tendency to give the lower status interactor the less direct orientation with both items CMWQ and CMYQ. The fact that this occurred most strongly in the Xhosa instruction group suggests that the need for the junior interactor to show respect was the dominant factor in giving rise to this effect.

It can be seen from the mean AD and SAD scores of this group, given above, that they showed considerable consistency in giving the man the more direct angle (this is clear from the fact that mean AD and SAD were almost the same in each case), far more consistency than the XR subjects (see Figure 20.3). This suggests that for XR subjects it was the high arousal level envisaged in quarrels that was seen as requiring one interactor to turn away, while for the XN group, it was the need for the junior interactor to be submissive. In the former case either interactor may turn away (although it is more often the junior one), while in the latter it must be the junior one that does so.

20.9 DISCUSSION

20.9.1 Comparison of CMWQ with Set A items: WH group

First of all it is instructive to compare the representation of man and woman in a quarrel (CMWQ) with that of man and woman in the more neutral situation used with the Set A items.

In the WH group, the profile for CMWQ is very similar to that for man and woman as strangers (AMWS see Figure 18.1). This is particularly so in the case of the D and LA scores. In Experiments 2B and 4, White subjects used smaller LA's for quarrels than for friendly encounters. In the present case the quarrel LA is comparable to that obtained in Experiment 4, which, as pointed out above, was larger than the very small LA of the White students of Experiment 2 for item 2A. This CMWQ LA was rather smaller than those used for friends and acquaintances in the present experiment, but not markedly so, and, as pointed out above, very close to that used for strangers. Thus the contrast between quarrel and friendly LA in the present case was not as large as might have been expected. This is partly because LA's were not as large with the Set A items as they might have been (they are about 15° smaller than those used in Experiment 4 by the White group), and partly because many subjects seemed to use indirect orientations for CMWQ because they imagined that the man and woman would try to prevent the conflict from developing too openly, and were avoiding direct

gaze to reduce the risk of provocation and to allow emotional arousal to remain low.

When the CMWQ AD's and SAD's are compared with those for AMWS, those of the quarrel can be seen to be rather larger. In terms of the sizes of the standard deviations of these scores, however, the differences, of $7\frac{1}{2}^{o}$ in the case of the AD's, and 15^{o} in the case of the SAD's, cannot be regarded as substantial. The results do no more than suggest a tendency to use slightly more asymmetrical schemata for the quarrel, and to favour the man for the more direct angle in the quarrel, whereas it is the woman who is favoured with AMWS. But since neither SAD was significantly different from zero no firm statement can be made (see section 20.9.5 below).

What is most remarkable about responses to the two items is not the differences between the mean scores illustrated in the IPOS profiles, but the fact that a greater variety of schemata were employed for the quarrel item. This is clear when the standard deviations of CMWQ scores are compared with those of the items of Set A. These are shown in Table 20.9, where the SD for Set A is for all three items combined. It can be seen for the WH group that SD's were higher with CMWQ, particularly in the case of the AD and SAD scores.

This suggests that for the WH group there was a wide variety of interpretations of item CMWQ with different subjects envisaging different ways in which the conflict between man and woman expressed itself. This is perhaps not surprising since a quarrel can raise strong or weak emotions, different emotions can predominate, and a dominant emotion might be attributed to the man by one subject but to the woman by another.

TABLE 20.9

STANDARD DEVIATIONS OF SCORES FOR ITEM CMWQ AND COMBINED SET A ITEMS

		D	LA	AD	SAD			D	LA	AD	SAD
WH	Set A	28,5	16,7	11,9	18,2	XN	Set A	31,5	26,9	12,1	16,4
	CMWQ	36,4	28,1	36,7	42,2		CMWQ	54,5	11,5	31,3	39,7
XU	Set A	43,5	15,2	13,5	16,9	XR	Set A	36,4	17,2	12,8	15,5
	CMWQ	65,7	30,9	35,0	37,4		CMWQ	54,4	16,4	45,4	53,3

20.9.2 Comparison of CMWQ with Set A items: XN group

In the XN group there was a much greater contrast between the CMWQ profile and those of the Set A items than was found in the WH group. The distance score was 29mm larger than that used for strangers, and there was a far greater range of distances, which included one of only 50mm. Thus the SD of the CMWQ distances was considerably larger than that for the Set A items (see Table 20.9).

On the other hand, XN subjects were fairly consistent in using a small LA with CMWQ whereas there was a greater standard deviation and a higher mean score with the A items. CMWQ schemata were also considerably more asymmetrical than those of the Set A items, and the mean AD was some 20° larger than that for the A items. However, a few symmetrical schemata also occurred with CMWQ: the standard deviation was thus larger than that for the A items, and the range was from 0° to 99°.

Finally, although the XN group had tended to give the woman the less direct angle with Set A, especially with AMWS, this effect emerged rather more strongly with CMWQ where mean SAD was 12° larger than that for AMWS. Nevertheless a few schemata occurred in which the woman had the more direct orientation, so that there was quite a degree of slope in the AD - SAD section of the CMWQ profile (Figure 20.3).

Like the WH group, therefore, the XN group used a greater range of schemata when representing CMWQ than for the A items. However, the quarrel schemata were more consistent in one respect in that they tended to have low LA's. Thus although the emotional arousal that usually characterises a quarrel was seen by the XN subjects to express itself in various ways, there was consistency in having one of the figures, usually the man, in a fairly direct orientation. This suggests that the man tended to be seen as using direct gaze as a means of establishing his dominance and threatening the woman while the woman, with the less direct orientation usually, was seen as either submissive, or, because of the dominance of the male, unable to recapture the initiative despite her anger. Such an effect did not emerge so strongly with the A items, presumably because, in the absence of strong emotions, the dominant figure has no need to use direct

gaze as a threat, while the weaker one is not forced to reduce arousal by exaggerated turning away.

20.9.3 Comparison of CMWQ with Set A items: XU group

The profile for CMWQ in the XU group is different from those of the A items at all points. Firstly, the CMWQ distance was some 20mm larger than that used for strangers, as was the case in the XN group. Secondly, the mean LA of 18,8 was rather larger than that of 12,0 found with the Set A items. While this difference is rather small, it should be noted that the XU group used larger LA's for all the C items than they did for the A items. It should also be noted that although no differences between groups were found in the present experiment with regard to the LA scores, 13 XU subjects had LA's of 30 or over for CMWQ as compared to only 2 in the WH and XN groups and 3 in the XR group.

The use of a large LA for a quarrel was found in both XU and XR groups in Experiment 2B (Item 2A). The present result seems to offer a partial replication of that previous finding, even though the mean LA here was some 10° lower (see also section 20.9.8).

The CMWQ profile also shows that XU subjects used more asymmetrical schemata than they did for the friendly items. In addition they also showed a clear tendency to give the man the more direct orientation, something that did not emerge as a significant effect with the A items at all.

These comparisons indicate that the XU group used schemata for the quarrel which were less immediate than those employed for the friendly items in all respects. In addition the range of schemata employed for the quarrel was greater than that for the friendly items, as can be seen from the large standard deviations of all scores with item CMWQ (see Table 20.9).

The quarrel schemata can be seen as expressing the greater arousal of the quarrel situation, and steps taken by the participants to prevent arousal from becoming too high. The large distance, larger than between two men, may express the fear of the woman that she will be struck by the man who is stronger than she. The rather large LA's suggest that both figures were seen as avoiding

a direct confrontation to some extent in order to prevent the situation getting out of control, while the large AD, with the tendency to give the man the more direct angle, suggests that the woman was seen as acting submissively, probably because of her unwillingness to provoke the man in a situation in which she felt herself the weaker participant.

20.9.4 Comparison of CMWQ with Set A items: XR group

As with the other Xhosa groups, XR subjects used distances which were some 20mm larger than those used for AMWS when placing CMWQ. LA scores were practically the same as those used for the friendly items, both with regard to their means and standard deviations, but mean AD was 22° larger and there was a much stronger tendency to give the woman the less direct angle in the CMWQ schemata.

Although there is quite a steep slope in the AD - SAD section of the CMWQ profile, this is almost entirely due to a single large negative SAD which depressed the mean considerably (the value was -167°). There were a few other negative SAD's but these were close to zero. This large negative SAD probably represented the situation in which the man, having been provoked to extreme anger by the quarrel, turns away in order to prevent himself from hitting the woman. This type of situation was often encountered in Experiments 4 and 5 with the Red Xhosa subjects.

As was the case with the other groups, the range of schemata elicited by CMWQ was greater than that elicited by the friendly items, as can be seen from the larger standard deviations of the former (see Table 20.9). The quarrel schemata had a limited range of LA scores, however, and it can be seen from Table 20.9 that the standard deviation of these scores was relatively low. Thus, whatever their other features, they all tended to have one or other figure in a fairly direct orientation. In these respects the data are similar to those of the XN group, and differ from those of the WH and XU groups.

As was found in previous studies (e.g. Experiments 1 and 4), the tendency to give a lower status figure the less direct orientation does not tend to

emerge strongly in friendly situations, but does so in a quarrel. Thus, in the present case, the SAD was larger than that obtained with the friendly items.

As was the case in the other Xhosa groups, the schemata express the greater degree of arousal perceived in the quarrel as compared to the friendly situation. In the present case this is done through the larger distances, and the larger AD, both of which reflect a reduction in immediacy. The fact that both mean distance and mean LA were rather smaller than those of the XU group, suggests, perhaps, that arousal was perceived as higher by the XU than by the XR group, although the lower AD of the XU group for this item partially compensates for the higher D and LA means.

20.9.5 Orientation and distance schemata in the WH group

Schemata in the WH group tended to be similar to those obtained with AMWS, except that there were a few cases of very asymmetrical orientation patterns with the quarrel items. There was only one major effect of pairing on schemata: asymmetry was greater with the differentiated items, CMWQ and CMYQ than with the undifferentiated. In Experiment 1, on the other hand, the White students did not use larger AD's for a man and woman than for two men, although they did so for man and youth.

Both in Experiment 1, and in the present case, the large AD's for the man-youth quarrel, accompanied as they were, by a clear tendency for the men to have the more direct orientation, show that the youth was perceived as being dominated by the man and unable to maintain control of the conflict situation.

In Experiment 1, where the man-woman quarrel was not characterised by large AD's, nor by a significant tendency for the man to have the more direct orientation, it was concluded that the White male students of that experiment did not see the man as dominant, but the man and woman as interacting on equal terms.

In the present case, however, there is evidence that some subjects did tend to see the male as dominant, although the effect was rather weak. There were only four very asymmetrical schemata for item CMWQ with AD's greater than

40°, but this was more than were obtained with CMMQ and CWWQ where there was only one in each case. In each of these four cases it was the woman who was given the larger angle, and it is these four responses that are responsible for the larger AD of CMWQ when compared to CMMQ.

It can be concluded, therefore, that the WH subjects responded to CMWQ in much the same way as to CMMQ, on the whole, with there being no strong tendency to see the sex difference in the former as affecting the schema. However, a small number of subjects did see the male as the dominant participant and gave the woman a fairly indirect angle, but while the responses of these subjects were sufficient to bring about a noticeable elevation of the AD mean, they were not sufficient to allow a firm conclusion to be drawn that WH subjects would generally tend to give the man the more direct orientation in a quarrel.

20.9.6 Orientation and distance schemata in the XR group

The XR group used larger distances than the WH group as predicted, but the difference between the two groups was not as large as might have been expected on the basis of the results of Experiments 2B (item 2A) and 4. The present distances in both groups were similar to those employed to represent the passive accusation items of Experiment 5.

The schemata elicited by the different pairings were very similar, and only one effect of pairing was significant in the statistical analysis. This was that the mean AD with CMYQ was larger than that for CMMQ. As in the other groups, the mean AD for CMWQ was also rather larger, but this effect did not attain significance when tested in this group alone. There was a significant tendency for the man to have the more direct orientation both with CMWQ and CMYQ, as expected, and this clearly stems from the greater power of the man in traditional Xhosa society. Although the SAD for CMWQ was smaller than that for CMWQ, the difference was too small to be significant.

Although it had been expected that distances would have been greater in the two differentiated items, because of fear on the part of woman or youth that the man would strike them, the effect was too weak to be significant.

Possibly, however, a stronger effect would have occurred had kinetic schemata not been excluded since there are often subjects who automatically represent man or woman running away from the man in a conflict situation.

The relatively small distances suggest that most subjects were representing quarrels in which emotional arousal was not as high as that represented in, for example, Experiment 2B (item 2A). However, there were a few cases where one figure had an angle of over 100° (3 each for CMMQ and CWWQ, 5 for CMWQ and 6 for CMYQ), and some of these probably represented the situation where arousal was sufficiently high to cause one figure to turn away to prevent either himself or the other from coming to blows.

XR subjects in Experiment 2B used large LA's when representing the quarrel item 2A, and it was suggested in section 13.5 that this was because for the Xhosa a quarrel is often a public semi-judicial affair, so that each participant is as concerned to make his case to those around him as to convince the individual with whom he is in conflict. In the present experiment, however, there were no XR schemata with large distances and angles for both figures, so this argument clearly does not apply. The only cases of such large LA's in the present experiment involved two XU subjects, and it is unlikely that this explanation would have applied to them, when it was so clearly not supported in the XR group (see section 20.9.8).

20.9.7 Orientation and distance schemata in the XN group

It was in the XN group that schemata seemed to be most sensitive to the independent variables of the experiment, and, while in the cases of CMMQ and CWWQ they were remarkably similar to those of the WH group (see Figure 20.2), in the case of items CMWQ and CMYQ, they bore the closest similarity to those of the XR group; the similarity between the profiles of the XN and XR groups for item CMWQ is particularly marked (see Figure 20.3).

In the absence of any status difference between the interactors, the XN schemata were characterised by the smaller distances and rather smaller angles found in the WH group as compared to the other two groups. But in the presence

of a status difference, they revealed an awareness of the dominance of the man that was, if anything, rather stronger than that found in the XR group itself. Distances and AD's were larger, and there was a clear tendency for the man to face more directly than either the woman or youth. This tendency to give the junior interactor the larger angle was significantly stronger in the case of CMYQ where the status difference is larger than in the case of CMWQ, as evidenced by the larger SAD's of the former.

Another striking finding was that the degree to which the status difference was expressed by giving the junior interactor as indirect angle was influenced by the language of instruction, being stronger when the language was Xhosa. This demonstrates how the findings with the AD and SAD scores represent a sensitivity to traditional values which emphasise the dominance of the male.

Thus the XN schemata seem to suggest that respect for and fear of the man on the part of woman and youth are expected to be present and to be expressed by an increase in distance and an avoidance of direct body orientation that is as great, if not greater, than that found among the Reds themselves. The findings of schemata that were apparently as traditionalist or even more so than those of the XR group is not confined to the present items. It has already been discussed in connection with the B items in section 19.10.6, where explanations as to how this could be, in the face of the loss of impact of traditional customs among urbanised and educated people were suggested.

20.9.8 Orientation and distance schemata in the XU group

The schemata of the XU group had a number of distinctive features whereby they differed from those of both the WH and XR groups, but they cannot be said to represent any obvious transitional stage between the two.

Firstly, the XU group used distances which were larger than those of any other group; although they were not significantly larger than those of the XR group the mean was some 15mm larger in every pairing. This suggests that this group was expressing a higher level of arousal than the others, and possibly

that fear of coming to blows was an important contributing factor.

Secondly, there was a significant tendency to use larger distances for the two differentiated items, and the effect was rather stronger than that found in the XR group. This probably reflects a perception by some subjects that the youth or woman was afraid of the greater physical strength of the man.

Thirdly, it has already been noted above that this group had rather larger LA's (section 20.9.3). These larger values are, in fact, entirely due to the responses of two subjects who gave both figures angles above 100° for every one of the C items. If these two subjects are excluded the mean LA is comparable to that of other groups. These schemata, in which each individual has a very indirect orientation, were found more frequently in Experiment 2B (item 2A) in both XU and XR groups. They seem to represent a case where arousal is so high that neither interactor dare face the other in case he provokes either himself or the other to violence.

Another feature of the XU data is that the AD's of the two differentiated items were relatively low, and although the man tended to have the more direct orientation when paired with the woman, this was not the case when he was paired with the youth, in marked contrast to the other groups.

All three Xhosa groups showed a clear tendency to give the woman the less direct orientation. There are two factors which can give rise to this effect, however, and the relative importance of each could well differ from group to group. Firstly, the threat of social sanction, which is likely to make the woman feel that she is powerless to maintain the initiative in a quarrel, would be expected to be stronger in the XR group, where the traditional dominance of the male is maintained. One might have expected it to have been considerably weakened in the XU and XN groups.

On the other hand, the danger that the man will assault and injure the woman might be expected to be greatest in the XU group. This is because in the XR group there is the tradition that violence is undignified, while in the urban environment impulsive assault, often using knives, is all too frequent.

This suggestion still leaves the large SAD's of the XN group unaccounted

for, however, since it might have been expected that both these factors would be reduced in a group that was both urban and well educated.

The absence of any tendency for the youth to have the less direct orientation in the XU group is a powerful indicator, perhaps, of the fact that traditional respect patterns no longer have force in the urban milieu, especially among the youth. However, if this were the only explanation, it would have been expected that there would also have been no tendency for the man to face the woman more directly. In addition, therefore, it seems likely that there was also a reduction in the tendency for the youth to be seen as afraid of the man.

On the other hand, mean distance for CMYQ was greater than that for CMMQ, which shows that the quarrel between youth and man was perceived as different from that between two men. The explanation for this may lie in the indiscipline of Black urban youth, particularly those who lack education, who often become tsotsis, and move about in gangs, committing acts of threat and violence. Such indiscipline is combined with the recklessness of individuals who have little to lose in the way of money, security or reputation.

Secondly there is the factor that a youth is not necessarily physically weaker than a man. Indeed a youth who is used to reckless behaviour may pose a serious physical threat to a man. Thirdly, in a quarrel between a man and a youth of this sort, the youth is less likely to turn his back on the man, because of his recklessness and lack of respect than would be the case if the youth was less practised in violence, while the man would perhaps also be less likely to turn his back on the youth as a means of controlling his own anger because of fear that the youth might strike him while he was not looking.

It need not be supposed that every subject perceived the CMYQ situation in this way. Indeed, several subjects used indirect orientations for one or both figures. However the existence of the tsotsi element among the uneducated group could well account for the use by the XU subjects of orientation patterns that were more symmetrical than those of the other Xhosa groups, if it is supposed that several XU subjects did make representations of the situation along

the lines of the framework suggested above.

If this was the case, the fact that mean distance was found to be larger between man and youth than between two men could have resulted in three ways. Firstly some subjects may have perceived the youth as more afraid of the man than another man would have been, and used a larger distance to express this. Secondly, those who perceived the youth as a serious threat to the man may have felt that the risk of physical violence was even greater than when the opponents were both men, because of the recklessness of the youth. Finally, because of the generation gap, youth and man may have been perceived as more suspicious of each other than two men because of the lower degree of familiarity of each to the other.

20.9.9 Schemata with item CWWQ

By the inclusion of item CWWQ as well as CMMQ in the experiment, it had been hoped that some light might be thrown on the factors underlying the large distance used to represent quarrels by some Xhosa subjects. In section 20.2.1 it was suggested that there might be less of a risk of physical violence when both participants in the quarrel were women, so that, if fear of violence was a major determinant of large quarrel distances, distances with CWWQ might be smaller than those with items which included a man.

In all groups, however, schemata elicited by CWWQ were the same as those elicited by CMMQ and the profiles of the two items were very similar. It can be concluded, therefore, that the factors affecting the schemata for a quarrel are much the same whether two men or two women are involved.

The rationale for including the woman-woman quarrel was that the Xhosa might perceive the women as less likely to come to blows than two men. In retrospect, however, this rationale is itself probably unjustified. Among the poorer urban Xhosa at least, violence by women towards women is by no means unheard of, and cases of women stabbing each other certainly occur.

20.10 CONCLUSIONS

The results of this experiment confirm many of the findings of previous ones in which quarrel items were employed. Firstly, all groups used larger distances for the quarrel than for item AMWF representing friends, while in the three Xhosa groups distances were even larger than those used to represent strangers (AMWS).

Secondly, there was replication of the use of larger distances by the less literate XU and XR groups than by the better educated WH and XN groups, although the XN group were only similar to the WH group in this respect in the case of the undifferentiated items.

Thirdly, the role of status differences in determining quarrel schemata was again shown to be important, with schemata for items CMWQ and CMYQ having larger distances and AD's than those for the differentiated items, although there were some differences between the groups in the extent to which this was the case.

Fourthly, the fact that the lower status interactor (youth or woman) tends to be given the less direct orientation when paired with a man in a quarrel, was again shown clearly, although here again, there were differences between the groups as to the extent to which this was the case (e.g. the effect was largely absent in the WH group with CMWQ and in the XU group with CMYQ).

The experiment makes it clear that the way in which a quarrel is perceived does depend on the cultural milieu of the subject, as well as on the participants in the quarrel, but there does not seem to be any smooth transition from the type of quarrel expected by a traditionalist Xhosa, to that expected by White subjects since XU subjects used distances rather larger than those of the XR group (although not significantly so), and showed a stronger effect of pairing, both of which effects should have been reduced in the case of a transition towards the schemata of western White subjects. The XN group too, did not have schemata that could be clearly termed transitional, when representing the differentiated items. However, the pattern of responses might be seen as

transitional when it is recalled that their schemata with the differentiated items showed all the characteristics of those obtained from the XR group, while in the case of CMMQ and CWWQ they were similar to those of the WH group.

It seems clear, therefore, that the nature of the schemata obtained from any group must be understood to reflect the strength of emotions usually generated in quarrels, the extent to which there is a danger of serious physical violence, and the importance of role or status differences, and that these factors do not necessarily change smoothly from one pattern in the society of the Red Xhosa to another in a western milieu. Indeed the larger distances and the absence of any tendency for the man to have the more direct orientation when paired with the youth may reflect the instability of a transitional culture as opposed to the greater stability of culture in the western and traditionalist Xhosa environments.

CHAPTER TWENTY-ONE

EXPERIMENT 6D: ACCUSATION ITEMS

21.1 INTRODUCTION

21.1.1 Accusation items in Experiment 5

In Experiment 5, the responses of Red Xhosa and White women to two types of item involving an accusation were explored. The first type, in which the accused angrily denied the accusation, elicited fairly symmetrical face to face schemata from the Whites when both interactors were men, but Xhosa schemata for this item were more asymmetrical, and, unlike those of the Whites, showed a significant tendency for the accuser to be in the more direct orientation.

Some Whites did use indirect orientations for the accused for the items in which man accused woman or youth and in which woman accused man, but although in each case it was the accuser who tended to be the more directly facing, in no case was this tendency significant. The Xhosas used indirect orientations for these three cases, but also for the remaining case in which youth accused man, and there was a significant tendency for the accuser to face more directly except for the two cases where the man was accused by the lower status woman or youth.

The findings suggested that for the Whites, in differentiated encounters, there may be a weak effect for the accuser to have the more direct orientation, possibly because of his having taken the original initiative. For the Xhosas, on the other hand, the tendency for the accuser to have the smaller angle (which was found with the man-man item) seemed to be counteracted, at least in part, by a tendency for the higher status man to have the more direct orientation. As a result, mean SAD's were larger where these two factors worked together (i.e. where man accused woman or youth), a little smaller where only the first factor applied (where man accused man), and smallest where the two factors worked against each other (where woman or youth accused the man).

In the second type of item, the accused was passive, and here, as expected, White subjects very consistently put him or her in an indirect orientation. In the Xhosa group, there was also considerable asymmetry with the passive items, but, as with the denial items, the tendency for the accuser to have the smaller angle was to some extent counteracted by the tendency for the woman or youth to have the less direct orientation when paired with the man, so that SAD's were rather lower when the man was accused by one of these.

While this summary of the findings was suggested by the data, many of the differences between pairings on AD and SAD scores were not large enough to be significant. This was because of the large variances in the scores, so that it was suggested that the experiment required larger numbers of subjects if any clear result was to be obtained.

21.1.2 Interaction descriptions

For Set D of the present experiment, some of the original ten items from Experiment 5 were used. Since not all items could be included, four were selected which it was felt would provide data bearing on the issues discussed above and provide the greatest differentiation between groups in terms of the schemata they elicited.

Three of the chosen items were 'denial' items in which man accused youth (DMYD), man accused woman (DMWD) and woman accused man (DWMD). The fourth was a 'passive item' in which woman accused man (DWMP). To reduce ambiguity of interpretation man and woman were referred to as husband and wife in the present case.

The English interaction descriptions were:

DMYD: A man accuses a youth of lying to him.
The youth denies the accusation and is very angry.

DMWD: A man accuses his wife of lying to him.
The wife denies the accusation and is very angry.

DWMD: A woman accuses her husband of lying to her.
The husband denies the accusation and is very angry.

DWMP: A woman accuses her husband of lying to her.
The husband feels hurt and does not know what to do.

The Xhosa descriptions were:

DMYD: Indoda ityhola inkwenkwe ngokuyixokisa.
Inkwenkwe iyasikhanyela esi sityholo kwaye ishushu ngumsindo.

DMWD: Indoda ityhola umfazi wayo ngokuyixokisa.
Umfazi uyasikhanyela esi sityholo kwaye ushushu ngumsindo.

DWMD: Umfazi utyhola indoda yakhe ngokumxokisa.
Indoda iyasikhanyela esi sityholo kwaye ishushu ngumsindo.

DWMP: Umfazi utyhola indoda yakhe ngokumxokisa.
Indoda iziva idanile kwaye ingazi ukuba mayithini.

21.2 A PRIORI HYPOTHESES

While the distances were not the scores of major interest with these items, two hypotheses concerning them were advanced, on the basis of the results of Experiment 5. First of all, White subjects had used larger distances for the passive items than for the denial items, while the Xhosas had not. This gave rise to the following:

Hypothesis D/D.1: In the WH group mean distances will be greater with DWMP than with DWMD. The comparison between these two items was also specified for the other three groups.

Secondly, Xhosa subjects had used larger distances than Whites. Comparisons were therefore specified between the mean distance of the WH group and that of each Xhosa group, and it was specifically predicted that the XR mean would be larger than that of the WH group (hypothesis D/D.2).

In Experiment 5, the only clear finding with regard to the LA scores was that these were larger with passive items than with denial items in the White group. The following was therefore advanced:

Hypothesis D/LA.1: In the WH group mean LA will be greater with DWMP than with DWMD.

Several hypotheses concerned the AD scores. For the purpose of specifying comparisons a priori it was assumed that the XN and XU groups would respond in a manner similar to that of the XR group, so that comparisons specified within the XR group were also specified with the XN and XU groups, while comparisons specified between the WH and XR groups were also specified between

the WH and XN or XU groups. All these hypotheses arose from observations made above in section 21.1.1 about the general pattern of results in Experiment 5, although in many cases effects were predicted which were not strong enough to be significant in that experiment.

Hypothesis D/AD.1: In all groups, mean AD will be larger with DWMP than with CWMD.

Hypothesis D/AD.2: In the Xhosa groups, but not in the WH group, mean AD for DMWD will be larger than that for DWMD.

Hypothesis D/AD.3: In the case of DMYD and DMWD mean AD will be smaller in the WH group than in the Xhosa groups.

Hypotheses concerning the SAD scores were set out along the same lines as those concerning the AD scores:

Hypothesis D/SAD.1: In the Xhosa groups mean SAD will be larger with DMYD and DMWD than with DWMD and DWMP.

Hypothesis D/SAD.2: In the WH group mean SAD will be greater with DWMP than with DWMD.

Hypothesis D/SAD.3: In the Xhosa groups, mean SAD will be greater than zero with items DMYD and DMWD.

Hypothesis D/SAD.4: In the Xhosa groups, mean SAD will not differ significantly from zero with items DWMD and DWMP.

Hypothesis D/SAD.5: In the WH group, mean SAD will be greater than zero in all cases.

Hypothesis D/SAD.6: In the case of items DMYD and DMWD, mean SAD will be greater in the Xhosa groups than in the WH group.

Hypothesis D/SAD.7: In the case of items DWMD and DWMP, mean SAD will be larger in the WH group than in the Xhosa groups.

21.3 RESULTS: DISTANCE SCORES

Means and standard deviations of the D scores are presented in Table 21.1 and the analysis of variance is summarised in Table 21.2. There was only one significant effect, that of Pairing. From the means combined over all groups,

shown in Table 21.1, it can be seen that the mean distance with the passive item DWMP was smaller than those for the other items.

TABLE 21.2

MEANS AND STANDARD DEVIATIONS OF THE DISTANCE SCORES IN EXPERIMENT 6D

		DMYD	DMWD	DWMD	DWMP	ALL
WH	MEAN	106.0	102.9	104.6	100.5	103.5
	SD	40.3	32.7	40.4	40.8	38.3
XN	MEAN	119.4	107.3	109.4	89.8	106.5
	SD	68.2	60.8	67.3	44.0	61.0
XU	MEAN	117.8	127.3	122.2	98.1	116.3
	SD	56.1	62.9	76.2	43.3	61.0
XR	MEAN	111.2	114.2	117.4	112.8	113.9
	SD	45.8	46.3	54.0	36.2	45.5
ALL	MEAN	113.6	112.9	113.4	100.3	110.1
	SD	53.3	52.3	60.6	41.5	52.5

TABLE 21.2

SUMMARY OF ANALYSIS OF VARIANCE OF DISTANCE SCORES IN EXPERIMENT 6D

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	879407.5	119		
GROUPS (A)	13182.4	3	4394.14	0.588
SUBJ.W.GROUPS	866225.1	116	7467.46	
WITHIN SUBJECTS	441185.8	360		
ITEM (B)	15192.8	3	5064.27	4.280**
A X B	14178.9	9	1575.44	1.331
B X SUBJ.W.GROUPS	411814.0	348	1183.37	
TOTAL	1320593.2	479		

** $p < .01$

This effect was the opposite to what had been predicted for the WH group in hypothesis D/D.1 where it was predicted that mean distance would be greater for DWMP than for DWMD. This hypothesis received no support as the means for these two items in the WH group were very close together and that of DWMP was a little smaller. From the means in Table 21.1, it is clear that the overall effect of Pairing found in the split plot analysis does not reflect the results

of the WH group, since the means for all four items were similar.

The use of a smaller distance with DWMP was clearest in the XN and XU groups, and in these cases the comparison between DWMP and the larger DWMD mean was significant (t = 2,042 and 2,331; df = 87; p<,05). The effect was much weaker in the XR group and failed to reach significance (t = 0,541; df = 87).

It was predicted in hypothesis D/D.2 that mean distance in the WH group would be smaller than that in the XR group. The means were in the predicted direction, being a little smaller in the WH group than in all Xhosa groups. However, there was no significant effect of Groups in the analysis of variance, and in no case did t-tests, performed to compare each Xhosa mean with that of the WH group, yield a result that approached significance even by a one-tailed criterion. Thus the finding of Experiment 5 that the XR group used larger distances than the Whites was not replicated here. The present XR subjects used distances some 10mm closer than their counterparts in Experiment 5, while WH mean distance was some 20mm larger.

21.4 RESULTS: LEAST ANGLE SCORES

Means and standard deviations of the LA scores are presented in Table 21.3 and the analysis of variance is summarised in Table 21.4. There

TABLE 21.3

MEANS AND STANDARD DEVIATIONS OF THE LEAST ANGLE SCORES IN EXPERIMENT 6D

		DMYD	DMWD	DWMD	DWMP	ALL
WH	MEAN	12.8	11.7	15.4	17.7	14.4
	SD	12.5	13.1	20.5	16.8	16.0
XN	MEAN	10.8	13.2	14.8	17.5	14.1
	SD	13.3	11.3	13.3	20.5	15.0
XU	MEAN	15.0	11.8	12.0	8.1	11.7
	SD	14.9	14.4	15.3	10.4	13.9
XR	MEAN	9.6	8.6	11.3	17.8	11.8
	SD	14.9	15.7	15.5	27.3	19.1
ALL	MEAN	12.0	11.3	13.4	15.3	13.0
	SD	13.9	13.6	16.2	19.9	16.1

TABLE 21.4

SUMMARY OF ANALYSIS OF VARIANCE OF LEAST ANGLE SCORES IN EXPERIMENT 6D

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	72168.5	119		
GROUPS (A)	737.9	3	245.97	0.399
SUBJ.W.GROUPS	71430.6	116	615.78	
WITHIN SUBJECTS	52715.5	360		
ITEM (B)	1082.6	3	360.86	2.557
A X B	2520.8	9	280.09	1.985 *
B X SUBJ.W.GROUPS	49112.1	348	141.13	
TOTAL	124884.0	479		

* $p < .05$

was no significant main effect of either of the independent variables, but the interaction F ratio was just significant. When this was investigated, it was found that in the XU and XR groups there was an effect of Situation significant at the 5% level (F = 2,906 and 2,837; df = 3/87).

In the XR group the F-test may be positively biased as the variance-covariance matrix was asymmetrical. Mean LA was rather larger with the passive item DWMP than with the others, although only the comparison between DWMP and the smallest mean, that of DWMD was significant by Tukey's test ($p < .05$).

In the XU group the pattern of means was quite different, with that of the passive item DWMP being the smallest. Only the comparison between this mean and the largest mean, that of DMYD, was significant by Tukey's test ($p < .05$).

In hypothesis D/LA.1 it was predicted that the mean LA of the passive item DWMP in the WH group would be larger than that of the denial item DWMD. This hypothesis was not supported as the means differed by only 2° (t = 0,618; df = 87).

21.5 RESULTS: ANGLE DIFFERENCE SCORES

Means and standard deviations of the AD scores are presented in Table 21.5 and the analysis of variance is summarised in Table 21.6. This analysis failed to indicate the presence of any significant effects at all.

Comparisons made using a priori tests in terms of the three hypotheses set out in section 21.2 also failed to indicate any significant effects, except

TABLE 21.5

MEANS AND STANDARD DEVIATIONS OF THE AD SCORES IN EXPERIMENT 6D

		DMYD	DMWD	DWMD	DWMP	ALL
WH	MEAN	25.2	34.0	35.9	44.5	34.9
	SD	33.8	37.9	50.0	34.7	39.7
XN	MEAN	42.5	37.6	41.3	44.5	41.5
	SD	43.8	45.1	45.0	36.3	42.2
XU	MEAN	24.6	37.4	32.0	29.4	30.8
	SD	38.4	49.1	45.6	30.8	41.3
XR	MEAN	27.4	37.5	35.8	43.0	35.9
	SD	43.6	57.7	47.8	53.4	50.6
ALL	MEAN	29.9	36.6	36.2	40.3	35.8
	SD	40.3	47.4	46.7	39.7	43.7

TABLE 21.6

SUMMARY OF ANALYSIS OF VARIANCE OF AD SCORES IN EXPERIMENT 6D

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	454682.1	119		
GROUPS (A)	6946.5	3	2315.51	0.600.
SUBJ.W.GROUPS	447735.6	116	3859.79	
WITHIN SUBJECTS	459250.5	360		
ITEM (B)	6698.6	3	2232.87	1.740
A X B	5992.6	9	665.85	0.519
B X SUBJ.W.GROUPS	446559.2	348	1283.22	
TOTAL	913932.6	479		

in one case. It was predicted in hypothesis D/AD.1 that mean AD would be larger with the passive item DWMP than with the denial item DWMD. The means were in the predicted direction in all but the XU group, but differences were small and did not approach significance in any group ($t<1,0$ in each case). Hypothesis D/AD.2 had predicted that mean AD would be greater for DMWD than for DWMD in the Xhosa groups. However, in all groups these two means were very close and did not differ significantly ($t<1,0$ in each case).

Hypothesis D/AD.3 had predicted that the mean AD of the WH group for items DMYD and DMWD would be smaller than those of the Xhosa groups. In most cases, however, the Xhosa means were practically identical to those of the WH group. However, in the XN group, the mean AD of DMYD was some 17° larger than that of

the WH group, an effect that was significant beyond the 5% level by one-tailed t-test ($t = 1,674$; $df = 116$). Since this was the only one of thirteen comparisons to attain significance, the result could well be due to chance.

21.6 RESULTS: SIGNED ANGLE DIFFERENCE SCORES

Means and standard deviations of the SAD scores, together with the t values associated with them, are shown in Table 21.7. The t values allow the null hypothesis that the mean is zero to be rejected, if significant.

TABLE 21.7

MEANS, STANDARD DEVIATIONS AND VALUES OF t (OR z) FOR THE SIGNED ANGLE DIFFERENCE SCORES OF EXPERIMENT 6D

	WH GROUP			XN GROUP		
Situation	Mean	SD	t+	Mean	SD	t+
DMYD	14,5	39,8	2,002"	36,1	49,4	4,005***
DMWD	24,4	44,9	2,978**	29,3	51,0	3,150**
DWMD	31,3	53,1	3,234**	26,4	55,4	2,607*
DWMP	30,4	47,9	3,471**	34,8	46,0	4,141***
	XU GROUP			XR GROUP		
Situation	Mean	SD	t+	Mean	SD	t+
DMYD	17,1	42,4	1,409(z)	21,9	46,7	2,714(z)**
DMWD	31,2	53,3	3,207**	32,1	61,0	2,882**
DWMD	7,6	55,4	0,754	22,1	55,7	2,175*
DWMP	23,6	35,5	3,644**	36,9	57,9	3,493**

+ Df for t = 29. A (z) indicates that the statistic is z obtained from the Wilcoxon matched-pairs signed-ranks test which was applied where distributions were abnormal.

* $p < ,05$ two-tailed ** $p < ,01$ two-tailed *** $p < ,001$ two-tailed

" $p < ,05$ one-tailed

The analysis of variance is summarised in Table 21.8. As was the case with the AD scores there were no significant effects of the independent variables. Thus the pattern in the means that was suggested in Experiment 5 was not found in the present experiment.

TABLE 21.8

SUMMARY OF ANALYSIS OF VARIANCE OF SAD SCORES IN EXPERIMENT 6D

SOURCE	SS	DF	MS	F
BETWEEN SUBJECTS	481350.5	119		
GROUPS (A)	8981.6	3	2993.87	0.735
SUBJ.W.GROUPS	472368.8	116	4072.15	
WITHIN SUBJECTS	716513.5	360		
ITEM (B)	8364.3	3	2788.10	1.396
A X B	12925.4	9	1436.15	0.719
B X SUBJ.W.GROUPS	695223.8	348	1997.77	
TOTAL	1197864.0	479		

Because, in the Xhosa groups, it was thought that the lower status of the accuser in items DWMD and DWMP would partly counteract the tendency for the accuser to have the more direct angle, it was predicted in hypothesis D/SAD.1 that mean SAD would be larger for items DMYD and DMWD than for DWMD and DWMP. Inspection of the means in Table 21.7, taken in conjunction with the results of the analysis of variance in Table 21.8 show that this hypothesis was almost completely unsupported. There was, however, one mean that fitted into the predicted pattern, that for DWMD in the XU group, which was very low, only 7,6°. Using a t-test as a criterion, this was significantly smaller than that for DWMD at the ,025 level (one-tailed; $t = 2{,}007$). In this group the DMYD mean was also rather low, however, so that the difference between the means of DMYD and DWMD was not significant ($t = 0{,}802$; $df = 87$).

In the WH group, it had been expected that mean SAD would be larger for the passive item DWMP than for the corresponding denial item DWMD (hypothesis D/SAD.2). The means were practically identical, however, and the hypothesis was not supported.

In the Xhosa groups it had been expected that with items in which the man accused woman or youth, the man would tend to have the smaller angle, so that mean SAD would be greater than zero (hypothesis D/SAD.3). This hypothesis

was well supported in the XN and XR groups for both items DMYD and DMWD. In the XU group it was supported only for DMWD. The mean for item DMYD was greater than zero, but the z value (see Table 21.7) is associated only with a probability (one-tailed) of ,08 that the population mean is greater than zero. This means that while the odds against the null hypothesis being true are about 11:1, the effect cannot be regarded as significant.

In the Xhosa groups it had also been expected that mean SAD would not be significantly different from zero with those items, DWMD and DWMP, in which the man was the accused (hypothesis D/SAD.4). This hypothesis was not supported at all in the XN and XR groups where both means were significantly greater than zero. In the XU group, the DWMP mean was also significantly greater than zero, but the low mean of 7,6 for DWMD did accord with the hypothesis and was not significantly different from zero.

The prediction of hypothesis D/SAD.5 that the WH group would have a mean SAD greater than zero for all items was well supported, although rather less strongly in the case of DMYD than with the other items.

In hypothesis D/SAD.6, it was predicted that mean SAD would be greater in the Xhosa groups than in the WH group for the two items in which man was accuser, DMYD and DMWD. In the case of DMYD, the WH mean was lower than those of the Xhosa groups (although the difference between the WH and XU means was particularly small). Only in the case of the XN group, was the mean significantly larger than that of the WH group ($t = 1,871$; $df = 116$; $p < ,05$ one-tailed). In the case of DMWD, the Xhosa means were all a little larger than that of the WH group, but in no case did the difference from the WH mean approach significance ($t < 1,0$ in each case).

Finally, hypothesis D/SAD.7 predicted that mean SAD would be greater in the WH group than in the Xhosa groups for the items DWMD and DWMP in which woman accused man. In the case of DMWD, all Xhosa means were smaller than that of the WH group, as predicted. Only that of the XU group was markedly so, however, with the difference between WH and XU means being just significant by one-tailed test ($t = 1,671$; $df = 116$; $p < ,05$). In the case of DWMP, all

mean SAD's were similar, and only that of the XU group was smaller than that of the WH group; however, the difference was not large enough even to approach significance (all three t values $< 1,0$).

21.7 RESULTS: IPOS PROFILES

21.7.1 Item DMYD

Profiles for item DMYD, in which man accused youth, are presented in Figure 21.1.

The profile of the WH group was very similar to that of the White subjects of Experiment 5 for this item. Although the distance was a little larger in the present case, this is a feature of all the Set D WH profiles when compared to those of the previous study. The tendency to give the man the more direct orientation, which did not quite attain significance in Experiment 5 was just significant here. Four WH subjects used very asymmetrical schemata in which the youth had an angle of over 100°.

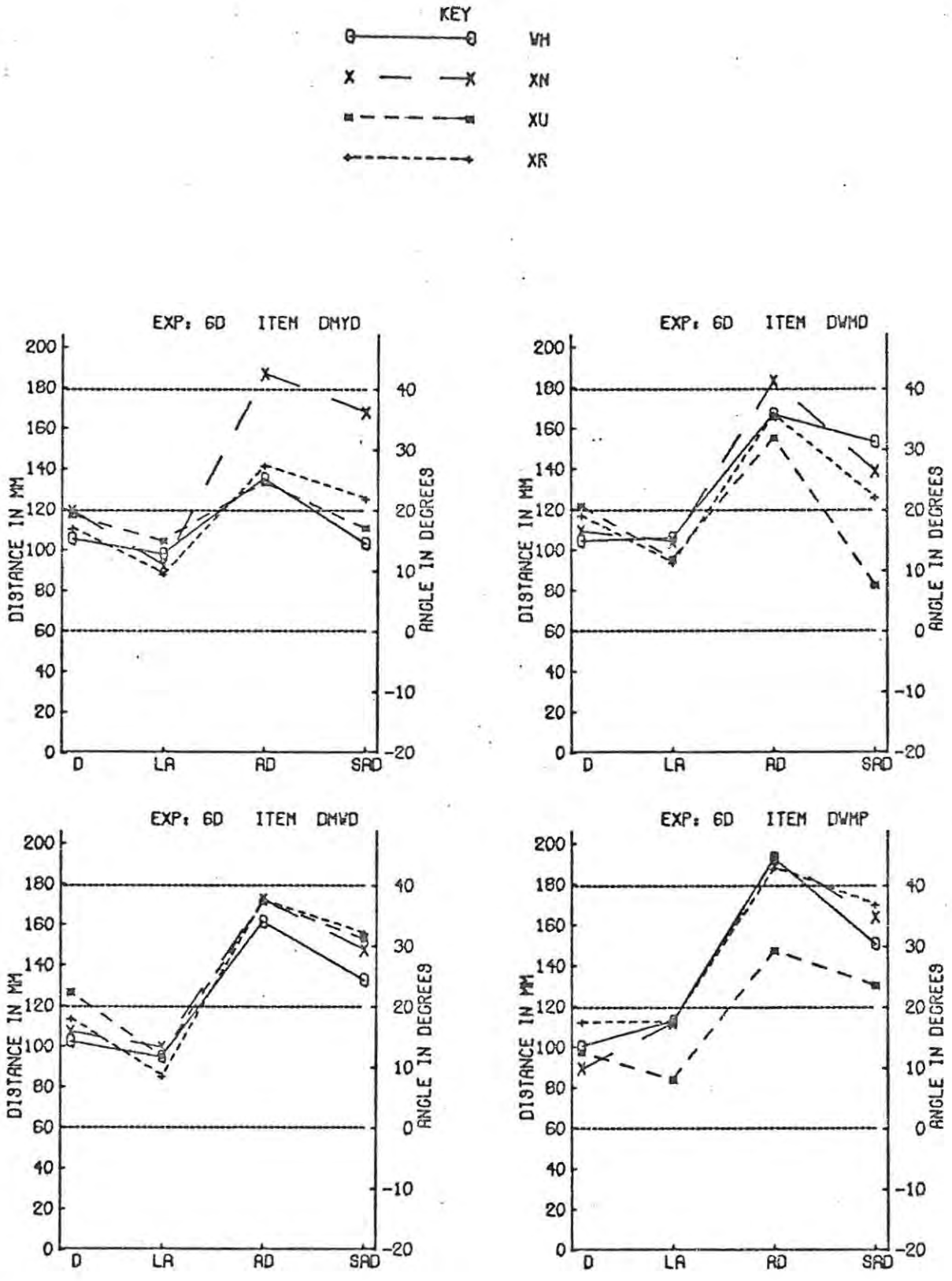
The profile of the XR group was rather different from that of the Xhosa subjects of Experiment 5. The distance was smaller, as were all distances in the present experiment, and the mean AD and SAD were also rather smaller. The XN profile was closer to the Xhosa profile of Experiment 5, but it will be recalled from the preceding sections that no significant differences between the Xhosa groups were found.

Asymmetrical schemata in which the youth had an angle of 90° or more occurred seven times in the XN group, five times in the XU group and four times in the XR group. Angles of this size were never used for the man in any group, although one WH subject gave him an angle of 78° (61° larger than that for the youth), one XR subject gave him an angle of 83°, but the youth had a large angle too (73°), and one XR subject gave him an angle of 82°, 35° larger than that of the youth.

One of the reasons given in Experiment 5 for the youth's having a large angle was that he was afraid of the man, and did not want to provoke him to

FIGURE 21.1

IPOS PROFILES IN EXPERIMENT 6D



violence by looking at him. A second was that the youth was so angry that he was ready to strike the man and turned his back to control his own emotions and to prevent himself from doing so. This latter explanation was implied in the comments of subjects from all Xhosa groups who talked of the youth's anger, and the fact that he might strike the man if he looked.

When this item was originally used in Experiment 2B, none of the White male students used the schema of the boy with his back turned, while it did occur in the Xhosa groups. It was assumed, therefore, that the schema was peculiar to the Xhosas. However, two of the White women in Experiment 5 gave the youth an angle of over 100°, as well as two in the present case, so it is clear that the absence of this schema in Experiment 2B was rather a peculiarity of the White students. This group also used particularly symmetrical schemata for the quarrel item (2A of that experiment, in which both figures had very direct angles, so this group of subjects seemed to expect quarrels to involve face to face confrontations more than other groups.

While the schema in which the youth had his back to the man may also have represented extreme anger or fear on the part of the youth in the placements of the WH group, the comments of several subjects suggested that the accused was seen as opting out of the encounter rather than letting it develop into an open quarrel. One subject described the youth as ready to walk off in disgust. The similarity between the profiles of White and Xhosa groups does not necessarily indicate a similarity between them in the manner in which they expected the participants to be reacting, emotionally.

21.7.2 Item DMWD

The profiles for this item were remarkably similar in each group. This item, in which the man accused his wife, was one which elicited four schemata in the White group in Experiment 5 with angles above 90° for the woman. Five such schemata were obtained in the present case from the WH group, and there were several others in which the woman had an angle of around 50°.

As with the previous item the large angle of the woman did not necessarily

mean that she was angry. One WH subject suggested that she would be in tears, another that she was unsure of herself because she was actually guilty, another that she was expressing disgust.

In the Xhosa groups there were also several cases of schemata in which the woman had an angle of 90° or over (five in the XN, six in the XU, and seven in the XR group). In general subjects' comments suggested that the woman was more consistently seen as openly angry by the Xhosas as compared to the Whites, and the large angle was a means of preventing the anger from getting out of control. Some implied an attitude of angry disgust.

The finding with this item that all groups showed a significant tendency to give the woman the larger angle was in accord with previous experiments, although it had been incorrectly expected that the effect might be less strong in the WH group.

21.7.3 Item DWMD

This is the denial item in which the woman accused the man. The WH group, in accordance with what was found in Experiment 5, tended to give the accusing woman the more direct orientation, and there were eight cases in which the accused man had an angle of 90° or more. Once again, this did not seem to represent the extreme anger often perceived by Xhosa subjects. The following conversation with a subject who used one of these schemata illustrates the difficulty of obtaining a clear picture from the subject of the emotions being represented. This conversation occurred after all placements had been made, and her placement for this item was reconstructed for her:

E: Why did you place him like that?
S: It makes her look more accusing.
E: Does it represent his reaction to being accused?
S: If it was my husband, yes.
E: What sort of reaction would that be?
S: He probably doesn't understand it and feels it's not worth taking in.

It seems that what is being represented here is a response involving the defense mechanism of denial on the part of the husband. The husband does not so much

deny the accusation, but rather tries to deny to himself that the accusation has been made, and the turning away expresses this. A similar response on the part of the accused was sometimes expressed in Xhosa by saying 'He doesn't care what she is saying' ('Akayikhathalele into ayithethayo'), and was also associated with a large angle on the part of the accused man.

It had been expected that, because of the lower status of the accusing woman, the tendency for her to be in the more direct orientation due to her role as accuser would be counteracted. To some extent this was the case. The slope of the AD - SAD part of the profile is greater in these groups than in the WH group, and greater than with the previous items. Only in the XU group, however, was there no significant tendency for the woman to have the smaller angle. In the XN group, eight subjects used angles of 90° or more for the accused man and only one for the accusing woman, while in the XR group, five used such a large angle for the man and none for the woman. The XU group had only four cases for the man and two for the woman.

It seems likely that when the woman had a large angle this represented the case where she was either wishing to avoid provoking the husband further or was prepared for flight. Indeed, this latter explanation was given by an XN subject for a schema in which the woman's angle was only 32°.

The more frequent cases of the man having a large angle usually represented the case of the man trying to control his anger. As one XR subject commented, 'If he faces her, he might even kill her.'

21.7.4 Item DWMP

In the WH group the profile for this item, in which the woman accused the man and the man felt hurt and responded passively, was fairly close to what had been expected. There was a large degree of asymmetry, and a consistent tendency for the woman to have the more direct angle. Nevertheless, the mean SAD was rather lower than the AD, and this was because three subjects gave the passive man a much more direct orientation than the woman (SAD's were -62°, -46° and -98°). It is possible that in these cases the woman was perceived as

having turned away because she did not want to put further pressure on the man in his embarrassment, although the possibility that she was herself embarrassed by his reaction, or even that she did not wish to provoke him, cannot be ruled out.

In the WH group large angles for the man were not uncommon, and there were five cases over 90°. A similar finding occurred with the XR and XN groups, although in each of these groups there were as many as 9 such large angles over 90° for the man.

Although it had been expected that several Xhosa subjects would make placements in which the woman had a very indirect angle, so that the SAD would be low, this did not prove to be the case. In the XN and XR groups, as in the WH group, there was only one case of the woman's being given an angle over 90°, and the profiles of these groups are almost identical to that of the WH group.

Orientation schemata in the XU group were more immediate than those of the others, and the profile is lower at all three angle points. There was only a single case of an angle over 90° in this group (for the man). From the gentle slope of the AD - SAD part of the profile it can also be seen that there was considerable consistency in giving the woman the more direct angle, and only a few negative SAD's (of which the largest was -28°) were encountered.

While the greater immediacy of the XU schemata apparent in the profile suggests that the item was perceived rather differently in this group, it will be recalled from the previous sections that the difference between this profile and that of the others was not statistically significant at any point.

21.8 EFFECTS OF AGE AND LANGUAGE OF INSTRUCTION

21.8.1 Effect of age

When each of the scores in each group was examined for an effect of age by comparing the younger half with the older half of each sample, no significant results were obtained.

Two effects should be mentioned, however, which approached significance.

In the XR group mean AD of the younger subjects was 48.0 as opposed to 23,8 for the older subjects ($F = 2,843$; $df = 1/29$; $p<,2$), and the mean SAD of the younger subjects was 42,3 as opposed to 14,2 for the older subjects ($F = 3,522$; $df = 1/29$; $p<,1$). Since sixteen analyses were performed, these results are consistent with what would be expected by chance alone, but they are mentioned because these same effects did reach significance with Set B. Taken together the results suggest that a study designed to measure the effects of age on orientation schemata in the XR group might be of value in the future.

21.8.2 Effect of language of instruction in the XN group

When comparisons were made between the Xhosa instruction and English instruction subjects in the XN group on each of the four scores, no significant results were obtained. All values of F for the main effect of language were less than 1,0, as were the interaction F ratios for the LA and AD scores. The interaction F's for the D and SAD scores were only significant at the ,1 and ,25 levels.

21.9 DISCUSSION

21.9.1 Orientation schemata in the WH group

The responses of the WH group to the denial items showed that the use of schemata in which the accused had the more direct angle was common, and that cases in which accused had a large angle (over 90°) occurred regularly. Thus the expectation entertained at the beginning of Experiment 5 that the face to face arrangement would be the normative schema for this type of item was shown to be unsound. The tendency for accused to be the less direct figure, which was not quite significant in Experiment 5, was clearly significant here, with the larger number of subjects.

It is perhaps unfortunate that an item in which accuser and accused were both men was not included. Such an item yielded very symmetrical schemata in Experiment 5 from the Whites, and it seems possible that it would have done so

in the present case too. However, in the absence of this situation here, it cannot be concluded with certainty that the use of schemata in which the accused has the less direct angle is largely confined to cases where accuser and accused differ in role or status.

The emotion seen to underlie the indirect angle of the accused seemed to differ from subject to subject, and included disgust, tearfulness and uncertainty because she was guilty. It did not typically mean that the accused was too angry to speak as it often did in the Xhosa groups. In general the WH subjects seemed to see interactors as avoiding open quarrels in which they expressed their anger in immediate confrontations.

It is perhaps worth considering, for the future, whether the response is greatly affected by whether the subject perceives the accused as guilty or not. It is possible that the tendency to perceive the accused as upset or embarrassed by the accusation would be higher where he or she was perceived as guilty than where this was not so. (Cp. Mehrabian 1972 p.13 who found that interactors being deceitful reduced immediacy).

21.9.2 Orientation schemata in the Xhosa groups

The experiment confirmed the finding of Experiment 5 that Xhosa subjects tend to give the accused the more direct angle with the denial situation, and often give the accused a very indirect angle indeed. However, the expectation that this effect would be counteracted by the tendency to give woman or youth the lower angle when paired with a man, which had been suggested by the data of Experiment 5, was not confirmed to any marked degree. With item DWMD, there were more negative SAD's than in the WH group, so that mean SAD was lower than mean AD in all Xhosa groups, in accordance with this expectation, but the effect was only strong in the XU group, the only group in which mean SAD did not differ significantly from zero. Thus, the data furnished some support for the prediction, but was not sufficient to yield significant differences between mean SAD's in the Xhosa groups and that of the WH group, except in the XU group.

In the case of DWMP there was even less support for the expectation that some subjects would give the accused man a less direct orientation than the

woman, because of his higher status, in no group was this tendency any stronger than in the WH group.

21.9.3 Possible effect of Experimental procedure

In both this experiment and Experiment 5, the variances of the AD and SAD scores were fairly large. This meant that the prediction that Xhosa subjects would tend to give the man the more direct angle whether he was accuser or accused, on account of his higher status, was based on effects which were only suggested in Experiment 5, and which were not statistically significant even though the means seemed to form quite a strong pattern. Therefore the fact that the predictions were not clearly confirmed in the present data may perhaps indicate that they were based on insufficient evidence.

However, there is the possibility that differences in experimental procedure in the two experiments are at least in part responsible for the lack of support for the predictions.

It was suggested in section 7.3.6 that subjects who were representing several items in succession might tend to use schemata which heightened the contrast between items. This would mean that the set of schemata elicited by an item would partly depend upon which items had preceded it. In Experiment 5, the accusation items were ten in number and formed a pattern in which pairing and version (denial or passive) were varied at random. Possibly once the subject had placed a few of these, and began to notice the variables being manipulated, a contrast effect might have occurred in which schemata were selected to emphasise the difference between denial and passive items, or between the various pairings. Since there were only four items in the present case, of which only one was in the passive version, the subject would have had less chance to become familiar with the variables that were being manipulated, and therefore less opportunity to select schemata which heightened the contrast.

Another factor in Experiment 5 which might have helped to produce greater differentiation between the schemata elicited by different items was the greater use of questions to the subject about the nature of the encounter and the meaning

of the orientation patterns used. This may have had a stimulating effect upon the subject's imagination and so brought a wider range of experience into the position of being able to exercise control over the selection of doll position. Secondly, the questions may have drawn the subject's attention to the details of each item so that she differentiated between them more effectively.

In the present experiment, on the other hand, where few questions, if any, were asked after each item, responses may have been under the control of the general expectations aroused by the accusation situation itself, and less of the more detailed expectations that might have been available had the subject's imagination been stimulated by questioning.

21.9.4 Effects on the distance scores

The only dependent variable upon which either of the independent variables exercised a sufficient effect for a significant F to occur in the analysis of variance was that of distance. In the XU and XN groups, distances were smaller with the passive item DWMP than with the denial items. This may reflect the fact that the emotions of fear and anger, which were often perceived as strong in the denial situation, would have been less in evidence in the passive version. Thus a closer distance would have been possible in the latter because of the lower arousal level.

This argument could apply equally well to the XR group, however, where no such difference was found. While the data do not provide a firm explanation for this, the possibility might be considered that the XR subjects showed poorer differentiation between the types of item because of their limited educational experience.

In the WH group the opposite effect to that found in the XU and XN groups had been predicted, namely larger distance with the passive item. While the use of larger distances with passive than with denial items emerged as a clear effect in Experiment 5 when all five pairings were taken together, if the means from that experiment are examined (Table 15.1) it will be noted that the distance used with WMP in that experiment did not in fact differ greatly from that used with the other items used here. The greatest contrast occurred between MMD

and MMP, items not used here. Thus the present negative finding is not altogether at variance with the results of the earlier experiment.

21.9.5 Comparison between distances of Experiment 5 and the present data

If the mean distances of the present experiment are compared with those obtained in Experiment 5 (Table 15.1) two differences are quite striking. Firstly, the distances of the Whites were some 20mm smaller in Experiment 5 than they were in the present experiment. Secondly, the present Xhosa subjects used distances that were some 10mm smaller than those of the Xhosa subjects in Experiment 5. These effects, which were different in each case, had the effect of nullifying in the present data the large difference between distances of White and Xhosa that was a feature of the data of Experiment 5.

Since the difference in the distances obtained in the two experiments was evident in each of the items used here, it seems unlikely that this is a mere chance effect. The only possible explanation seems to lie in the differences in procedure in the two experiments.

It is, however, only possible to offer speculation about why the WH group used smaller distances in the present case. Perhaps it was a case of assimilation, the distance schemata elicited by the C items being carried over to the D items. Such assimilation might have been facilitated by the fact that the D items followed the C items without any comment or discussion from the experimenter. If this is so, however, a different explanation must be sought for the size of the distances used in the XR group. Here the distances used for CMYQ and CMWQ were similar to those used for the man-woman and man-youth denial items of Experiment 5. It is strange, then, that the distances obtained for these latter items in the present experiment were some 10mm smaller.

To seek for explanation is perhaps premature since the difference is rather small. However, it casts doubt on the assimilation explanation invoked above in accounting for the WH distances, since an assimilation effect would perhaps have been thought even more likely in the XR group in view of their poorer psychological differentiation, according to the argument offered in section 21.9.4.

21.9.6 Least Angle scores

Finally, a few remarks should perhaps be made about the LA scores. These were fairly similar in all conditions, the means ranging from 8,1 (XU DWMP) to 17,8 (XR DWMP), and there was only a very weak interaction effect indicated by the analysis of variance. When this was investigated, effects of situation were found only in the XU and XR groups. The latter effect is questionable because of the asymmetrical variance-covariance matrix, and is even more in doubt when it is seen that the only two items in the XR group between which a significant difference was indicated (DMWD and DWMP) had very similar LA's in Experiment 5.

The only a priori hypothesis advanced regarding the LA scores, namely that the WH group would have a larger mean for DWMP than for DWMD was not confirmed. It should be noted, however, that the hypothesis was based on the general finding of Experiment 5 that White subjects used larger LA's with the passive items, but that even in Experiment 5 this effect was not strong for the case in which woman accused man (less than 4°). Thus the present finding was fairly close to what was found previously.

Taken in conjunction with the data of Experiment 5, it seems best to conclude that no clear effects of accusation item type (denial versus passive) or pairing have been demonstrated upon the LA's of the Xhosa groups, while among Whites there may be a tendency for LA's to be larger with passive items, but not in the case where woman accuses man.

CHAPTER TWENTY-TWO

EXPERIMENT 6E: TWO MISCELLANEOUS ITEMS

22.1 INTRODUCTION

Set E of Experiment 6 consisted of two items which did not fit easily into any of the previous sets, but which were included because of points of interest raised by them in connection with earlier experiments. Because the two items are quite independent of each other, the first will be introduced, and have its results presented and discussed before the second.

22.2 QUARREL ITEM EMMQ

22.2.1 Interaction description

Item EMMQ described a quarrel between two men, but it differed from the man-man quarrel in Set C. In item CMMQ the two men were simply described as quarreling (see section 20.1), but EMMQ employed the description of a quarrel originally used as item 2A in Experiment 2B. In English this read:

> These two men are in disagreement about something.
> They are both very angry and are arguing.
> Each is determined to bring the other round to his point of view.

The Xhosa translation appears in Appendix B.

This item was originally designed to elicit face to face orientation schemata, and it did so from White and Xhosa male students in Experiment 2B. However, the less literate urban and Red Xhosa males used very large distances and rather indirect orientation patterns with a large mean LA in each group (see the original profiles in Figure 13.1). Since large LA's did not feature in the responses of urban Xhosa subjects to the quarrel items of Experiment 1, the result suggested that the type of quarrel described in this item, in which each participant was angry and intransigent, was responsible for the large LA scores.

It was expected, therefore, that the schemata elicited by EMMQ in the present experiment would differ from those elicited by CMMQ. The White subjects would, it was predicted, use schemata that were more immediate (smaller distances and angles) than those used for CMMQ, while XU and XR subjects would use schemata that were less immediate (larger distances and LA's). These expectations were based on the findings of Experiments 1 and 2B. Because of the similarity between the profiles of Xhosa and White students for EMMQ when it was employed in Experiment 2B, hypotheses were generally framed on the assumption that the XN group would respond similarly to the WH group.

22.2.2 A priori hypotheses

On the basis of the above, the following hypotheses were advanced a priori:

Hypothesis EMMQ/D.1: With item EMMQ, mean distance will be larger in the XU and XR groups than in the WH and XN groups.

Hypothesis EMMQ/D.2: In the WH and XN groups mean distance with item CMMQ will be larger than that with item EMMQ.

Hypothesis EMMQ/D.3: In the XU and XR groups, mean distance with item CMMQ will be smaller than that for item EMMQ.

Hypothesis EMMQ/LA.1: With item EMMQ, mean LA will be greater in the XU and XR groups than in the WH and XN groups.

Hypothesis EMMQ/LA.2: In the WH group, mean LA will be smaller with item EMMQ than with item CMMQ. (This was not expected to apply to the XN group, since the Xhosa students of Experiment 2B used rather larger LA's than the Whites for EMMQ).

Hypothesis EMMQ/LA.3: In the XU and XR groups, mean LA will be larger with item EMMQ than with item CMMQ.

Hypothesis EMMQ/AD.1: In the WH group mean AD will be smaller than that of the Xhosa groups.

Hypothesis EMMQ/AD.2: In the WH group, mean AD will be smaller with item EMMQ than with item CMMQ.

22.2.3 Means standard deviations and IPOS profiles

Means and standard deviations of the three dependent measures obtained from item EMMQ are presented in Table 22.1. The means are presented in the form of IPOS profiles in Figure 22.1. The IPOS profiles for item CMMQ, which have already been presented in Figure 20.2 are also shown in Figure 22.1 to facilitate comparison.

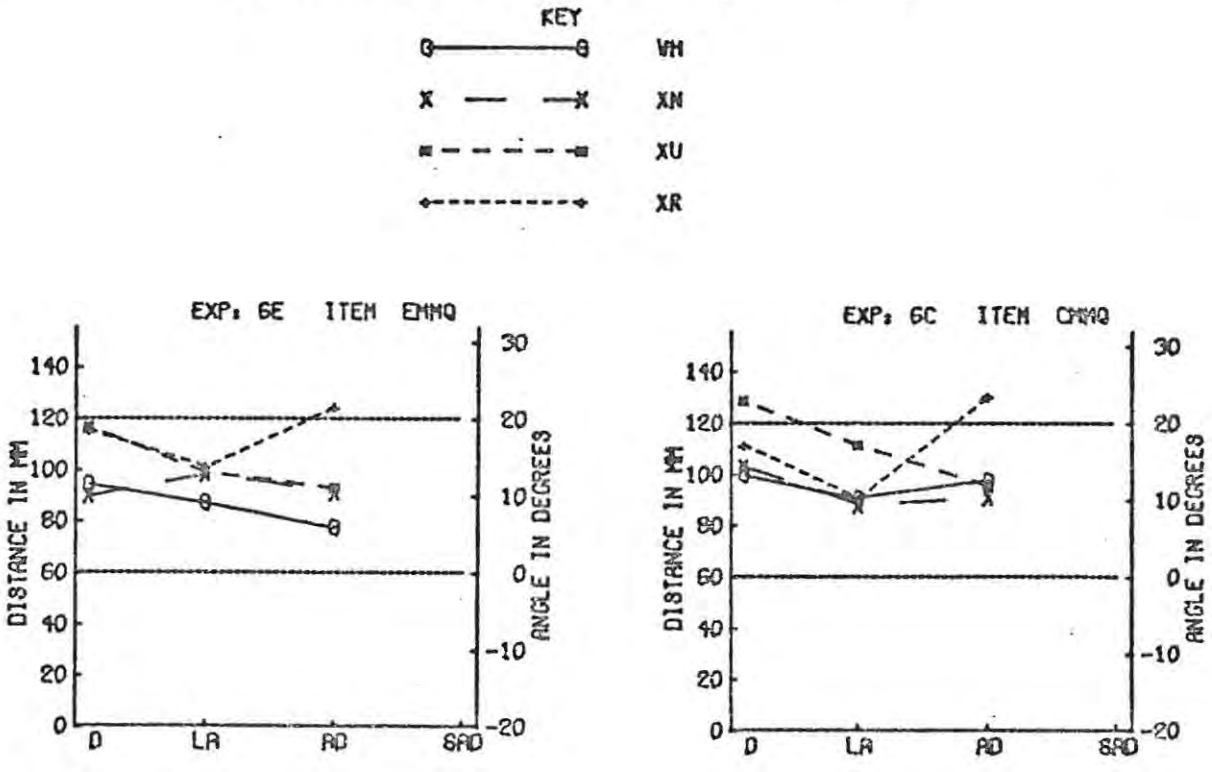
TABLE 22.1

MEANS AND STANDARD DEVIATIONS OF D, LA AND AD SCORES FOR ITEM EMMQ

	DIST		LA		AD	
	Mean	SD	Mean	SD	Mean	SD
WH	94,5	36,2	9,1	13,2	5,9	6,3
XN	89,6	46,5	12,8	17,9	10,3	15,1
XU	116,9	64,4	13,1	17,6	11,0	11,4
XR	115,1	42,7	13,7	30,6	21,5	36,2

FIGURE 22.1

IPOS PROFILES FOR ITEMS EMMQ AND CMMQ



It can be seen that the profiles obtained with EMMQ were very similar to those obtained with CMMQ. The expectation that EMMQ would elicit a different type of schema to that typical of CMMQ was quite clearly not confirmed. The similarity between the two sets of profiles that is apparent to the eye was confirmed when each of the twelve means represented in the EMMQ profiles was compared with the corresponding mean from the CMMQ profiles by means of t-tests. None of these twelve t-values even approached significance at the 5% level.

22.2.4 Overview of hypotheses

Because of the similarity between the profiles of item EMMQ and those of CMMQ, the hypotheses advanced in section 22.2.2 are of rather limited interest.

Several of these hypotheses were based on the assumption that schemata for the two items would differ. These were hypotheses EMMQ/D.2, D.3, LA.2, LA.3, and AD.2. None of these were supported, therefore.

Hypothesis EMMQ/D.1 predicted that mean distance for the XU and XR groups would be greater than that for the WH and XN groups. An equivalent hypothesis (C/D.3) was advanced in section 20.2 with respect to the C items. In the present case, the combined mean of the XR and XU groups was found to be significantly larger than that of the WH and XN groups ($t = 2{,}700$; $df = 116$; $p < {,}01$) and the hypothesis was well supported (just as hypothesis C/D.3 had been with respect to CMMQ.)

Hypothesis EMMQ/LA.1 predicted that mean LA would be greater in the XU and XR than in the WH and XN groups, and was based on the expectation that the XR and XU groups would use the large LA's that had characterised the responses of males in these groups in Experiment 2B. However, these large LA's did not occur in the present case, and the difference between the combined mean of WH and XN on the one hand, and the combined mean of XR and XU on the other was a mere $2{,}5^{\circ}$ which did not approach significance.

Hypothesis EMMQ/AD.1 predicted that mean AD would be smaller in the WH group

than in the Xhosa groups. This did receive support, since all three Xhosa means were larger than that of the WH group, and taken together were significantly larger than it (t = 1,922; df = 116; p<,05 one-tailed). It can be seen from the profile, however, that the effect was largely due to the large AD in the XR group, an effect also found with item CMMQ.

22.2.5 Effect of age and language of instruction

In each group, for each of the three scores, means of the older subjects were compared with those of the younger ones by means of t-tests. There was only one significant effect: in the XN group mean LA was greater in the older (19,5) than in the younger (6,1) age group (t = 2,180; df = 28; p<,05). The same effect, that of the larger LA's occurring in the older subjects, was suggested with item CMMQ, where the XN mean LA's were 5,9 (younger) and 12,7 (older). However, the effect of age group over all C items was not strong enough to be significant (means were: younger 9,38 and older 14,28; F = 3,045; df = 1/28).

These results could indicate that older subjects in the XN group tended to see participants as less willing to engage in open hostility than the younger subjects. Alternatively, they may have perceived arousal levels as higher, and therefore that there was a greater need to avoid direct gaze.

In the XN group, when the scores of the English instruction subjects were compared with those of the Xhosa instruction group, no significant effect was found upon any of the three scores.

22.2.6 Discussion

The WH and XN subjects represented EMMQ with fairly immediate orientation schemata, and the profiles obtained from these groups were very similar to those obtained from the White and Xhosa student groups when the item was used in Experiment 2B (see Figure 15.1 item 2A). In the case of the Whites, the earlier profile of the male students represents rather more immediate schemata than in the present case (smaller distances and angles), but the difference is only slight.

It had been expected that WH and XN groups might use rather more immediate schemata for EMMQ, than for CMMQ, and this was embodied in hypotheses EMMQ/D.2, LA.2, and AD.2. However, differences between the two items were not expected to be great, so that the lack of support for these hypotheses is not altogether surprising. However the results suggest that the White women of the present experiment tended to see conflict as giving rise to less immediacy than did the male students.

In the XU and XR groups, the profiles of EMMQ were expected to be notable for large distances and LA scores, as had been found with subjects from equivalent groups in Experiment 2B. However, these effects were completely absent here. While a few subjects in these groups had LA's over 30°, and one XR subject had an LA of 163°, most schemata had low LA's, and the scores did not differ from those obtained with CMMQ.

Two explanations of the large LA's in Experiment 2B were offered (section 13.5). One was that the public nature of disputes meant that these Xhosa subjects saw the interactors as addressing bystanders as well as the other participant in the quarrel. However, none of the interviews in Experiments 4 and 5 yielded any comments supporting this possibility, so it is doubtful whether this was the important factor.

The second was that the interactors were in such a high state of emotional arousal that immediacy had to be drastically reduced to prevent physical violence breaking out. If this explanation was correct, then possibly non-immediate schemata were less in evidence in the present case because the quarrels were not seen to involve such high levels of arousal as those envisaged by the subjects of Experiment 2B. This may be an effect of sex, with male subjects tending to expect greater arousal levels. Possibly it is an effect of context, and depends upon the items with which the quarrel item itself is presented. Whatever the explanation, it is clear that the present experiment failed to show that schemata elicited by the two different ways of describing a quarrel, that of CMMQ and that of EMMQ, differ from each other in any way.

22.3 CONFESSION ITEM EYHP

22.3.1 Interaction description

The second item in Set E, like the first, was one that had been employed as part of Experiment 2. However, it was not one of those of which the data were presented in Chapter 13. The interaction description was rather long, and read in English as follows:

> There has been a serious theft at a school. The headmaster has threatened serious punishments for the thief when he is caught; but he has said that he will be lenient if the thief gives himself up.
> The situation to be represented is this:
> A boy has come to the headmaster to admit that he is the thief. He is a quiet boy and very nervous and shy about telling the headmaster. The headmaster is surprised that it is this particular boy, because it is a boy who has always done well at his lessons and behaved well. He does not know how to deal with the matter and is wondering what to do.

Because the Red Xhosa are usually unfamiliar with the school setting, two Xhosa versions were prepared. The first was a direct translation of the above and was used with the non-Red Xhosa groups. The second was modified so that the headmaster became a headman, and was used with Red subjects. The two versions appear in Appendix 3.

The item was designed to present a situation in which each participant had reason to avoid direct gaze and therefore assume an indirect body orientation. For the boy, several factors would be expected to give rise to an indirect orientation: his shyness, his uncertainty about how the headmaster will react, his fear of punishment. The headmaster might also be expected to face indirectly because of his uncertainty how to act and his need to keep arousal low while trying to reach a decision.

22.3.2 Responses to the item in Experiment 2B

The responses to this item in Experiment 2B are presented in the form of IPOS profiles in Figure 22.2. It had been expected that both figures would be in indirect orientations so that LA's would be high, but, in fact, subjects tended to put one or other of the figures at a large angle, but usually not both. Thus LA's were not particularly high, but AD's were, and this applied

to all groups.

AD's in the WS group were highest of all, and there was a significant tendency to give the headmaster the less direct orientation ($p < ,01$). Since SAD's were calculated by subtracting the headmaster's angle from the boys's this meant that the mean was negative (-34,0). On the other hand in the Xhosa groups mean AD's were nearly 30^{o} lower and mean SAD's were positive. Thus they tended to give the headmaster the more direct angle, although in no case was the effect strong enough to be significant.

The AD and SAD means were not the only interesting features. Usually, in Experiment 2, if any group had a larger distance than another, it was the Xhosa groups that used larger distances than the Whites. With this item, however, the effect was reversed. The mean distance used by the White students was 168,0, over 30mm larger than the largest Xhosa mean.

The responses of the White students showed that they saw the headmaster as reducing immediacy in this situation by avoiding proximity and by taking up an indirect orientation. Some subjects suggested that he would move over to a window and look out. Several subjects saw him reducing the arousing aspects of the encounter, in order to enable him to think more clearly.

The tendency to show the headmaster in an indirect orientation was not so strong in the Xhosa groups. First of all angles were not as large, and secondly, when a figure was in an indirect orientation it was the boy as often as it was the headmaster. It was thought that this might reflect a clearer definition of the authority role among the Xhosa, and perhaps also a greater respect for authority. Thus there was a lower tendency for the headmaster to exhibit gaze avoidance, with its connotations of submissiveness and failure to control the situation, and a greater tendency for the boy to do so.

22.3.3 A priori hypotheses

In the present experiment the item was given the code EYHP ('youth + headmaster passive'), and the following hypotheses were advanced concerning the differences between the schemata of the four groups. These were based on the

results of Experiment 2B, and it was assumed that the WH group would respond like the WS group of the earlier experiment, the XN like the XS group, and the XU and XR groups like the earlier groups of the same name.

Hypothesis EYHP/D.1: Mean distance in the WH group will be larger than that of each of the Xhosa groups.

Hypothesis EYHP/AD.1: Mean AD will be larger in the WH group than in each of the Xhosa groups.

Hypothesis EYHP/SAD.1: In the WH group mean SAD will be less than zero (i.e. there will be a tendency for the headmaster to face less directly than the boy).

Hypothesis EYHP/SAD.2: In the Xhosa groups mean SAD will be greater than zero.

Hypothesis EYHP/SAD.3: Mean SAD in the WH group will be greater than that in the Xhosa groups.

22.3.4 Means, standard deviations and IPOS profiles

Means and standard deviations of the D, LA, AD and SAD scores for item EYHP are presented in Table 22.2. The IPOS profiles are shown in Figure 22.2 (on the right of those obtained with the same item in Experiment 2).

TABLE 22.2

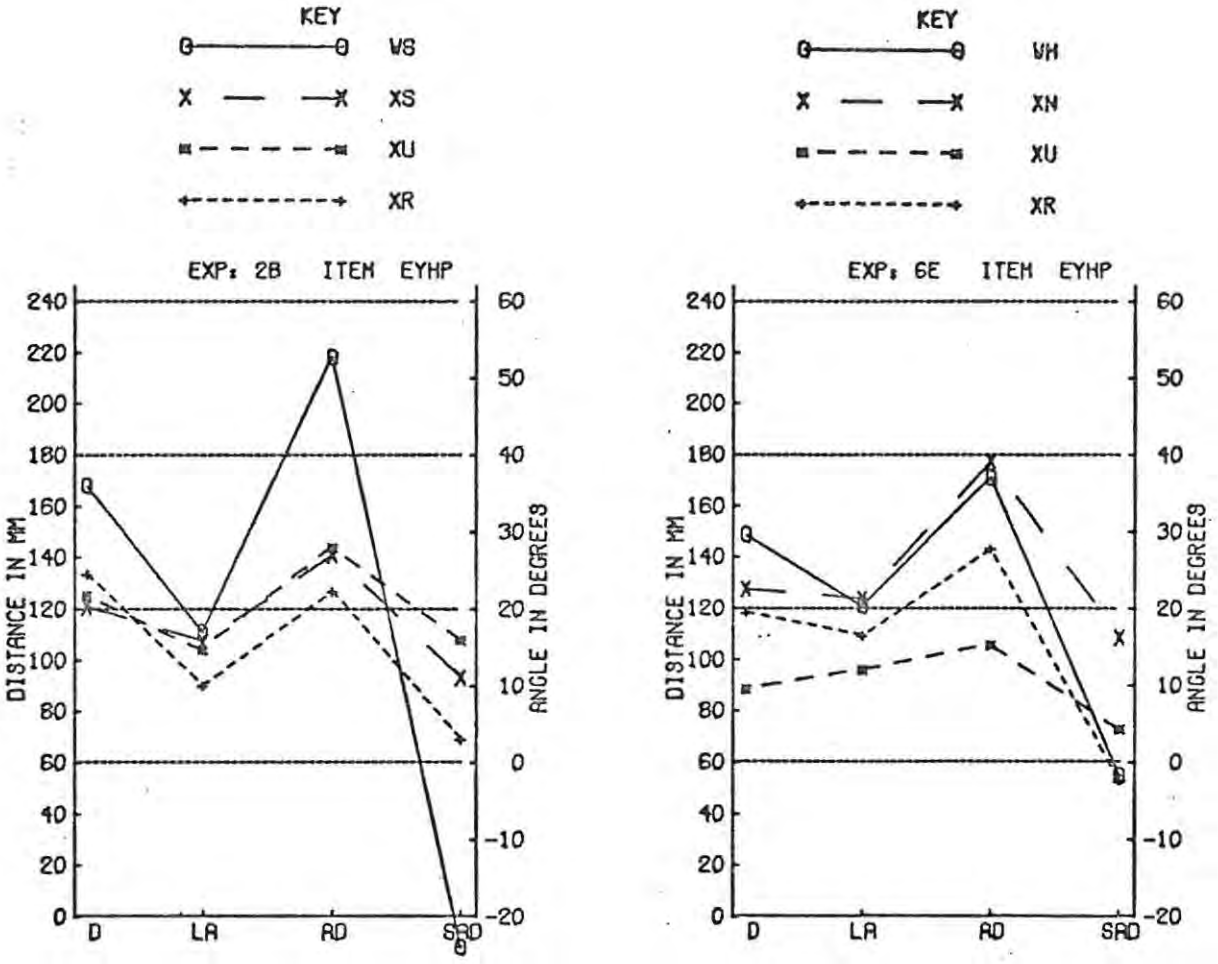
MEANS AND STANDARD DEVIATIONS OF D, LA, AD AND SAD SCORES FOR ITEM EYHP

	DIST		LA		AD		SAD	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
WH	148,5	61,9	20,2	17,4	36,9	35,4	-1,8	51,5
XN	127,3	58,5	21,1	18,8	39,0	29,4	16,1	46,6
XU	88,3	29,6	11,9	16,6	15,2	18,8	4,2	24,0
XR	118,3	40,7	16,4	21,7	27,7	43,0	-2,4	51,3

It was predicted in hypothesis EYHP/D.1 that mean distance would be larger in the WH group than in each of the Xhosa groups. This hypothesis was well supported, the Xhosa mean being significantly smaller in each case.

FIGURE 22.2

IPOS PROFILES FOR ITEM EYHP IN EXPERIMENTS 2 AND 6



The t-values (df = 116) were: WH with XN 1,665 ($p < ,05$ one-tailed), WH with XU 4,714 ($p < ,001$), WH with XR 2,364 ($p < ,01$ one-tailed).

There was an additional effect on the D scores revealed by a posteriori procedures. Analysis of variance indicated that the effect of Groups was significant beyond the ,1% level and application of Scheffé's test showed that the XU mean was significantly smaller than the combined mean of the XN and XR groups ($p < ,025$).

Although the mean LA of the XU group was rather lower than that of other groups, it was not significantly so, and there was no difference between the LA's of the four groups ($F = 1,501$; df = 3/116).

It was predicted in hypothesis EYHP/AD.1 that mean AD would be greater in the WH group than in the Xhosa groups. For the comparison with the XU group, the hypothesis was confirmed ($t = 2,558$; df = 116; $p < ,01$ one-tailed).

The mean of the XR group was also smaller than that of the WH group, but not significantly so (t = 1,081; df = 116), while that of the XN group was very slightly larger. The hypothesis was not, therefore, uniformly supported in all Xhosa groups.

There was an additional, unanticipated, effect on the AD scores. Following a significant F ratio in the analysis of variance for the effect of Groups ($p<,05$) application of Tukey's test showed that the XU mean was also significantly smaller than that of the XN group ($p<,05$).

The prediction of hypothesis EYHP/SAD.1 that the WH group would have a mean SAD less than zero was not supported. The mean was very close to and did not differ significantly from zero (t = 0,191; df = 29).

The prediction of Hypothesis EYHP/SAD.2 that in the Xhosa groups mean SAD would be greater than zero received support only in the XN group where the mean was fairly large. But even in this group there was only limited consistency in giving the headmaster the smaller angle (t = 1,893; df = 29; $p<,05$ one-tailed). The XU mean was a little above zero, but not significantly so (t = 0,967; df = 29), while that of the XR group was very close to zero and actually negative.

The SAD means did not fall into the expected pattern, therefore, and so hypothesis EYHP/SAD.3, which predicted that the mean would be lower in the WH than in the Xhosa groups was also not supported, and even the mean of the XN group, which was some 18° larger than that of the WH group, did not differ significantly from it (t = 1,547; df = 116).

22.3.5 Effects of age and language of instruction

When the older subjects were compared with the younger in each group, significant effects were found in the XU group on the AD and SAD scores. In each case the scores of the younger group were larger. The AD means were 23,0 (younger) and 7,3 (older) and the difference was significant beyond the ,02 level (t = 2,495; df = 28). The SAD means were 12,9 (younger) and -4,5 (older) and the difference was significant beyond the ,05 level (t = 2,102;

df = 28). Thus the younger subjects used schemata which were more asymmetrical, and which tended to give the headmaster, rather than the boy, the more direct angle.

In the XN group, differences were found between the scores of the two language instruction groups, although only in one case was the difference statistically significant. The mean distances were 146,2 (Xhosa) and 108,3 (English) but this fairly large difference was not quite significant (t = 1,843; df = 28). Mean AD's were 48,3 (Xhosa) and 29,7 (English), a difference that was also not quite significant (t = 1,795; df = 28). Finally mean SAD's were 32,8 (Xhosa) and -0,6 (English), a difference that was significant at the 5% level (t = 2,072; df = 28). Thus subjects instructed in Xhosa tended to use larger distances, to use more asymmetrical schemata, and exhibited a clearer tendency for the headmaster to face more directly than did those instructed in English.

22.3.6 Discussion: WH group

The profile of the WH women in this experiment had some features in common with that of the White male students of Experiment 2B. Both groups used a relatively large distance, which reflects the avoidance of proximity which either participant might be expected to wish for in this situation. Mean LA was fairly high, but no larger than in other situations (e.g. AMWF), although, when taken in conjunction with the large distance, it clearly represents an avoidance tendency even on the part of the more directly facing interactor.

On the other hand, the present WH group did not use quite such asymmetrical schemata as did the students, nor, more importantly, did they show a clear tendency for the headmaster to be in the less direct orientation as had the students. Although indirect orientations were frequent, they were given equally to either figure.

A possible explanation of the discrepancy is that the present WH subjects perceived the headmaster as having more authority than did the students. Many of the WH women had children at school, and may have perceived the role of headmaster through their children's eyes, since much of their recent experience of

the role would have been mediated by their children. The students, on the other hand, may have been influenced by the style of university life where relations between students and staff are often less formal than at school. On the other hand, they may have based their expectations on their most recent contact with headmasters, which would have been when they themselves were senior boys at school. At this time they would perceive a lesser status difference between themselves and headmaster than would junior pupils.

Since the interaction description provided good reasons for both headmaster and boy to assume an indirect orientation, it might be expected that the tendency for the headmaster to be indirect would be greater, the less his authority was perceived to be. If the students did perceive him as having less authority than did the present subjects (for the reasons discussed above) this could account for the fact that they tended to give him the less direct orientation while the present subjects did not.

22.3.7 Discussion: XN group

The XN group showed less tendency to perceive avoidance between the interactors than did the WH subjects, and distances were smaller. Orientations were similar to those of the WH group, except that there was a significant tendency for the headmaster to face more directly than the boy. However, interpretation of the profile of this group is complicated by the fact that means of the Xhosa instruction subjects were larger than those of the English instruction subjects on the D, AD and SAD scores (see section 22.3.5).

In the case of the D scores, the mean of the Xhosa instruction group was practically the same as that of the WH group, while that of the English instruction group was lower than that of the XR group. Although the difference between the two language of instruction groups was not significant, the results are surprising since it might have been expected that those instructed in English would have responded in a manner more similar to the WH group, while those instructed in Xhosa would have responded more like the XR group. In fact the opposite is suggested by the means.

The same occurred with the mean AD's, that of the English instruction group being closer to the XR mean, and that of the Xhosa instruction group being closer to the WH mean. Only in respect of the SAD scores did the English instruction group respond like the WH group. Here English instruction XN subjects, like the WH group, had a mean very close to zero, while the Xhosa instruction group had a very large SAD.

It would be tempting to conclude that the SAD results reflect an effect of set produced by the language of instruction, those instructed in Xhosa tending to see greater authority in the headmaster, and therefore giving him a more direct angle, and those instructed in English perceiving his authority as less, and so not tending to give him the more direct angle. The argument fits in with the results of the English instruction group whose mean SAD was so close to zero, like that of the WH group. The Xhosa instruction group had a positive SAD, an effect that might have been expected in the XR group, but was not in fact found there (since the XR mean SAD was also close to zero).

It will be recalled that with item CMYQ the XN subjects also showed a stronger tendency than the XR subjects to give the youth the less direct angle (see Figure 20.3) and this effect was very strong among Xhosa instruction subjects, where mean SAD was 66,4 as opposed to 24,2 in the English instruction group. The present finding repeats this finding in many ways. In both cases the use of Xhosa as the instruction medium seems to have had the effect of sensitising the subjects to the status difference between man and boy (or in the present case headmaster and boy), and led them to represent this by giving the boy a much larger angle than the man.

In section 20.8.2, where the use of large SAD's for item CMYQ by the Xhosa instruction XN group was discussed, it was suggested that in the XN group a large angle tends to be given to the junior interactor to express submission and respect, while in the XR group the large angle can also be given to higher status figure when he is seen as reducing his own arousal level so as not to do something he might later regret. This argument cannot apply here. While the large angles of the Xhosa instruction group used for the boy probably do express a

submissive and respectful attitude, it seems unlikely that when the XR group used large angles for the headmaster he was seen as angry, since no such emotion is described in the interaction description.

This leaves open the possibility that the XN subjects, particularly those instructed in Xhosa, were responding to the demand characteristics of the experimental situation, and were trying to show how a good Xhosa boy ought to behave in this situation. The possibility that XN responses might have been affected by demand characteristics was also considered in section 19.10.6 in respect of some of the B items. However, in that case, if this was so in the XN group, it was also so in the XU group, while in the present case the argument is being applied only to those XN subjects instructed in Xhosa. If demand characteristics were responsible for the very 'traditionalist' responses encountered in the XN group in this experiment, it might have been expected that they would have had a similar effect on the XU group.

If the responses of the XN group are taken as a whole, it seems that the use of a smaller distance than the WH group, which had been predicted, together with the rather larger SAD, may arise from a greater perception of authority in the headmaster role. It was suggested in the previous section that the greater his perceived authority, the less the tendency to place him in an indirect orientation. The same argument could apply to the distance also: the greater his authority, the less the tendency that he will avoid proximity, and thus distance will be smaller. This is because it can give an impression of weakness if one does not stand one's ground in the face of an awkward situation.

However, if this were so, one might have expected <u>closer</u> distances from the Xhosa instruction group, if, as suggested above, they were responding in a more traditional manner, while the <u>larger</u> distance mean was in fact obtained from this group. It is possible, of course, that whereas the large WH distances seemed to represent avoidance on the part of the headmaster, the large distances of the Xhosa instruction XN subjects might rather have arisen from avoidance on the part of the boy as a means of expressing fear or respect.

If the XN subjects did perceive the authority of the headmaster as greater

than that perceived by the WH group, two factors may have been involved. Firstly, these subjects might still be under the influence of their home culture with its emphasis on respect for authority, even though they have undergone considerable acculturation to western norms. (A similar conclusion arose from the discussion of the Set B items in section 19.10.6). Secondly, XN subjects may value education more, because they do not take it as much for granted as the White subjects. If this is so, a clash with educational authorities would be a more serious matter because of its implications for the child's educational future.

22.3.8 Discussion: XU group

The form of the XU profile for item EYHP was unexpected, indicating, as it did, schemata representing greater immediacy than those of other groups in all respects. The profile was quite unlike that obtained from the XU males of Experiment 2B and was similar to that obtained in the present experiment with the friendly item AMWF.

This unexpected finding is further complicated by the effect of age found in this group. Although mean D and LA of the two age groups were the same, in the case of both AD and SAD scores the mean was significantly higher in the younger age group. This means that the profile that would be obtained from the older subjects alone would exhibit even more immediacy than that obtained from the group as a whole.

The profile of the whole group must mean that no open conflict was perceived, since it is so unlike that obtained with item CMYQ. An item which elicited a profile similar to the present one was DWMP. This is also an item in which a passive response by a man to an awkward situation was described. In the case of DWMP, however, mean AD was larger than that found here, as was the mean SAD (see Figure 21.1).

The profile suggests that the situation was not perceived as threatening for the participants, since the distance was so small. The larger AD's of the younger subjects show that they perceived the participants as less able to

tolerate immediacy than did the older group, and the fact that the SAD of the younger group was larger shows that they tended to see the boy, rather than the headmaster, as being the one who reduced immediacy by avoiding direct gaze. This might possibly arise if the younger subjects tended to identify more with the difficult position of the boy (and thus see the headmaster as in the firmer position) while the older subjects tended to identify with the dilemma of the headmaster (and thus see the boy as more likely to hold his ground). If this were the case, the use of the smaller AD by the older subjects could be accounted for if it was supposed that they saw the headmaster as avoiding any exaggerated turning away in response to his difficulty so as not to give an impression of weakness.

A possible explanation of the XU profile is that the subjects were impressed by the boy's good record and his honesty in owning up. Might they perhaps have seen the headmaster as being supportive and even friendly towards the boy? Unfortunately the present data do not provide a firm answer, and none of the comments of the subjects throw any light on the issue.

22.3.9 Discussion: XR group

The XR profile was similar to that of the XN group except that there was no tendency for the headman (who was used here instead of the headmaster) to have the more direct orientation, and placements were a little less asymmetrical, though not significantly so. The present XR profile is also very similar to that obtained from the XR males of Experiment 2B except that the present distance was some 15mm smaller.

As with the XN group, the fact that mean distance was smaller than in the WH group may reflect a greater tendency for the authority to stand his ground than is found among the Whites. Despite this, however, there were two subjects who placed the headman with his back to the boy (angles above 170°), while no subjects gave the boy such a large angle (largest was 112°). The argument presented above in connection with the XN results, that traditionally the authority figure would not turn his back as this would be seen as submissive,

is, therefore, not supported by the XR data.

While there was no significant tendency for the headman to face more directly, this need not reflect a perception that each participant had an equal tolerance for direct gaze. In view of the respect required towards elders in Red society, it seems probable that the boy would have often been perceived as looking down even though he was placed in a direct orientation.

22.3.10 Conclusion

While the original finding in Experiment 2B that Whites used larger distances for this item than the Xhosas was replicated, the use of smaller AD's by the Xhosas and of predominantly negative SAD's by the Whites was not. The most striking feature of the orientation schemata was the immediacy of those of the XU group, which, taken in conjunction with the small distances used by them, suggest that this item was perceived rather differently by these subjects to what it was by other groups. It was not, however, possible to interpret this finding, although it is clear that the way in which the XU subjects perceived the item does not represent a transitional stage between traditional Xhosa and White patterns.

CHAPTER TWENTY-THREE

MEASUREMENTS OF RELIABILITY

23.1 INTRODUCTION

Evidence for the reliability of figure placement measurements was presented in section 5.5. This bore out the conclusion of Little (personal communication) that 'in social schemata we appear to have a stable phenomenon of good reliability and marked individual differences'.

However, all the data reviewed in section 5.5 was from western subjects, mostly Americans, and in Experiment 6 two of the items, AMWF and CMMQ, were represented to subjects after the Set E items to provide an opportunity for reliabilities to be measured in the present samples.

Before presenting the results of these analyses, however, some reliability data collected from earlier experiments in the series will be presented.

23.2 EVIDENCE FOR RELIABILITY IN EXPERIMENT 2

One of the items of Experiment 2B (item 2A) was similar, though not identical to, an item in Experiment 2A (MMF). In both cases two men were described as talking together in a friendly manner. Since the subjects in both experiments were the same, it was possible to calculate correlations between the scores of these two items. These values are presented in Table 23.1.

The only cases in which a fairly acceptable level of reliability was found was in the distance scores of the XU and XR groups, and reliabilities obtained from the angle measures were all rather low. Nevertheless, all values were positive, and several were high enough to be statistically significant.

The size of the correlations obtained with the distance scores seemed to reflect the variances in the scores of each group. Within both student groups standard deviations ranged from 12,3 to 17,7, while in the XU and XR groups they

TABLE 23.1

CORRELATIONS BETWEEN D, LA, AND AD SCORES OF ITEM MMF OF EXPERIMENT 2A AND ITEM 1A OF EXPERIMENT 2B

	WS	XS	XU	XR	Combined
Distance	0,32	0,43*	0,70***	0,62***	0,67***
Least Angle	0,23	0,17	0,28	0,15	0,27**
Angle Difference	0,31	0,37*	0,43*	0,12	0,31**

* $p<,05$ ** $p<,01$ *** $p<,001$

ranged from 25,7 to 42,8. The low correlations in the student groups, therefore, may reflect the more limited range of distances used in those groups. This is supported by the value of the correlation between distances for all groups combined (,67) which is comparable to that obtained in the XU and XR groups alone.

The correlations presented here are rather imperfect measures of reliability since the two interaction descriptions were not the same. Nevertheless the data suggested that reasonable reliabilities might be expected with distance measures provided a range of scores was obtained, while, in the case of the angle measures, there was at least a measure of reliability, even if it was not very high.

23.3 EVIDENCE FOR RELIABILITY IN EXPERIMENTS 4 AND 5

23.3.1 Test-retest measures

Reliability measures were also obtained from the White subjects of Experiments 4 and 5. Two items were presented to these 46 subjects both before and after the items of the experiments themselves and correlations between the two sets of responses computed.

The first item, which will be referred to as RTT1 was first employed with White students by Edwards (1975), and was chosen because it elicited a

relatively large range of distance scores. It read:

> A quite likes B. He wants to act in such a way that B will be agreeable to him and like him. But he is unsure of himself, anxious and uncertain how to achieve this.

SAD's for this item were calculated by subtracting B's angle from A's.

The second item was the quarrel item from Experiment 2B (item 2A) that was also used in Experiment 6 as item EMMQ, and which described two men in angry disagreement.

Correlations between scores for these items on first and second presentation are presented in Table 23.2. Reliabilities for the distances were rather higher than those obtained from the White students in the data discussed above. However, given that standard deviations ranged between 31,8 and 38,4, which are values comparable to those obtained with the XU and XR subjects in the data of Experiment 2 discussed above, rather larger correlations might have been expected.

TABLE 23.2

TEST-RETEST RELIABILITIES FOR ITEMS RTT1 AND RTT2

	D	LA	AD	SAD
RTT1	0,46*	0,74**	0,52**	0,63**
RTT2	0,44*	0,57**	0,52**	-

* $p < ,01$ ** $p < ,001$

Reliabilities obtained from the angle measures were higher than those obtained in Experiment 2 and suggested a moderate degree of consistency between first and second responses.

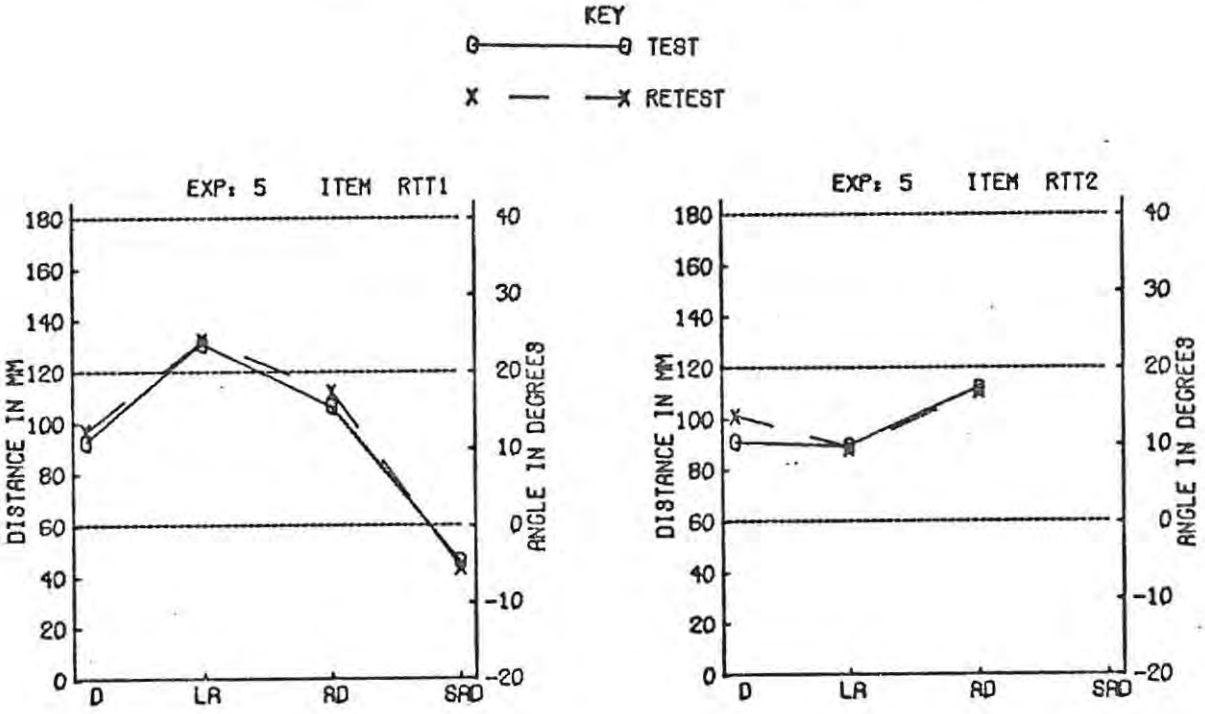
23.3.2 Comparison between test and retest profiles

A second question that was examined was the extent to which IPOS profiles obtained with an item were replicated on retest. Test and retest profiles from the same item were plotted together for each item and these are shown in

Figure 23.1.

FIGURE 23.1

IPOS PROFILES OF ITEMS RTT1 AND RTT2 IN EXPERIMENTS 4 AND 5 UNDER TEST AND RETEST CONDITIONS



It can be seen that despite the only moderate consistency of responses within individuals (as indicated by the reliabilities), the profile obtained from the group as a whole was closely replicated at the second presentation. The largest difference between test and retest profiles, that between the distance means of RTT2, was not significant statistically ($\underline{t}$ = 1,671; $\underline{df}$ = 45).

23.4 MEASUREMENT OF RELIABILITY IN EXPERIMENT 6

23.4.1 Test-retest reliabilities

Pearson product-moment correlation coefficients were calculated between the scores of items AMWF and CMMQ in Experiment 6 and the scores obtained when these items were presented again as the last two items of the experiment. They are shown in Table 23.3. They are based on the responses of 30 subjects, except in the XN group, where the decision to introduce the retest items was

made too late for ten of the subjects. The XN coefficients are based on only 20 subjects, therefore.

TABLE 23.3

TEST-RETEST RELIABILITIES FOR ITEMS AMWF AND CMMQ IN EXPERIMENT 6

	ITEM AMWF				ITEM CMMQ		
	D	LA	AD	SAD	D	LA	AD
WH	0,60***	0,62***	0,36*	0,33	0,47**	0,23	-0,14
XN	0,88***	0,76***	0,00	0,23	0,82***	0,27	0,28
XU	0,55**	0,11	0,05	0,45*	0,85***	0,80***	0,30
XR	0,82***	-0,03	0,52**	0,38*	0,73***	0,33	0,88***

* $p < ,05$ ** $p < ,01$ *** $p < ,001$

Reliabilities for the distance scores were very satisfactory, but those for the angle measures varied considerably, there being a few very high values, as well as a few very close to zero.

23.4.2 Comparison between test and retest profiles

IPOS profiles obtained at retest were plotted on the same co-ordinates as the original profiles, and these are presented separately for each group in Figure 23.2.

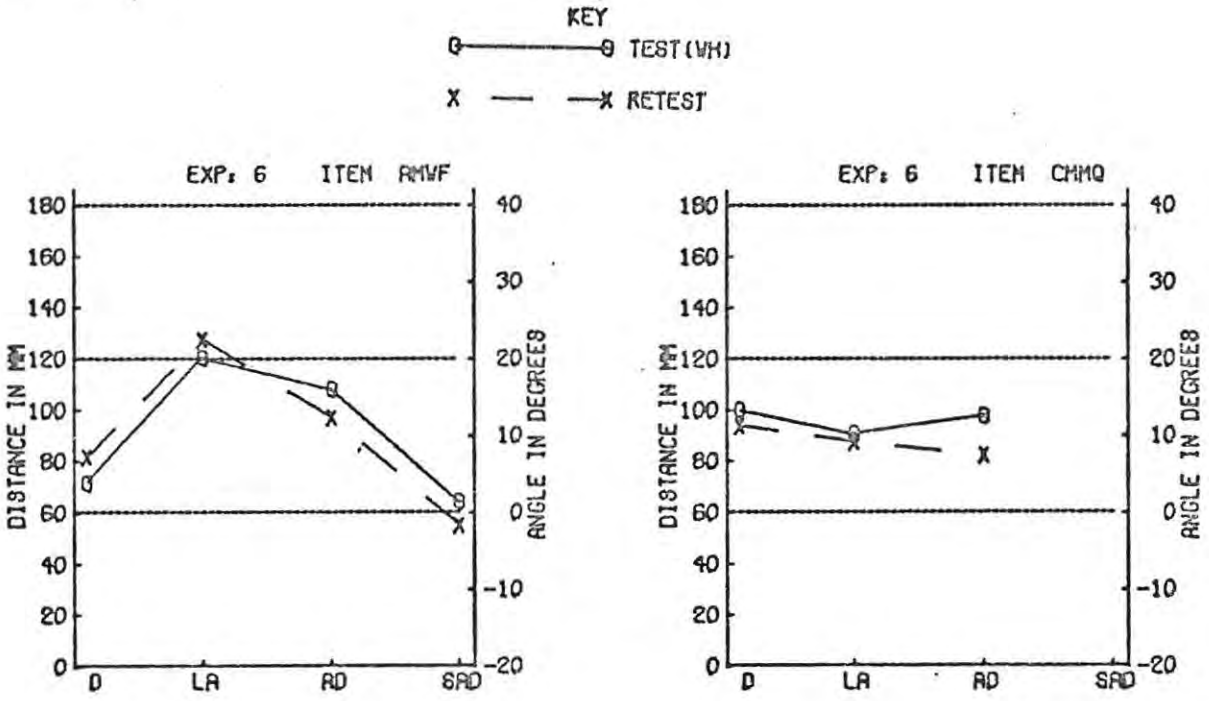
In the WH group the retest profiles were similar to the originals, and the difference of 5° between the AD means of item CMMQ did not approach significance ($t = 0,916$; $df = 29$). Unexpectedly, however, the difference between the distance means of item AMWF, which was only 10mm was significant beyond the ,02 level ($t = 2,498$; $df = 29$).

In the XN group, the AMWF profiles differed by 6° at the AD means and this was not consistent with chance ($t = 2,920$; $df = 29$; $p < ,01$). In the case of CMMQ there was a difference of 8° in the LA means, but this did not approach significance ($t = 1,165$; $df = 29$).

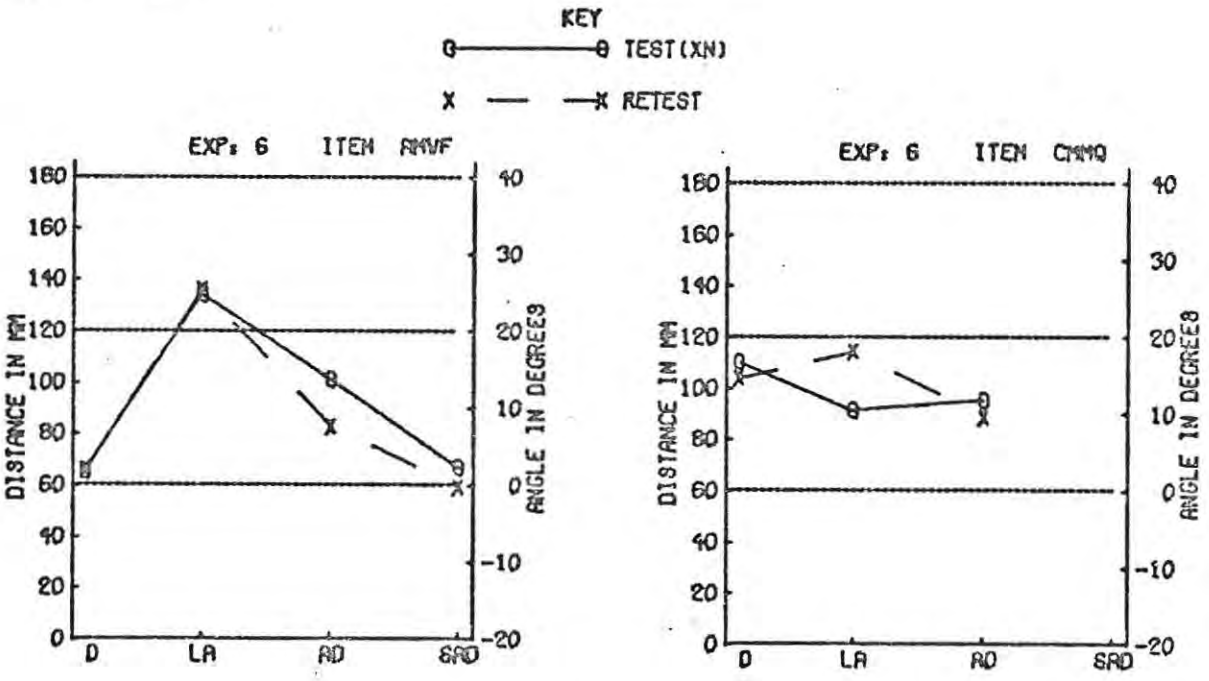
FIGURE 23.2

IPOS PROFILES OF ITEMS AMWF AND CMMQ AT TEST AND RETEST IN EXPERIMENT 6

(a) WH group



(b) XN group

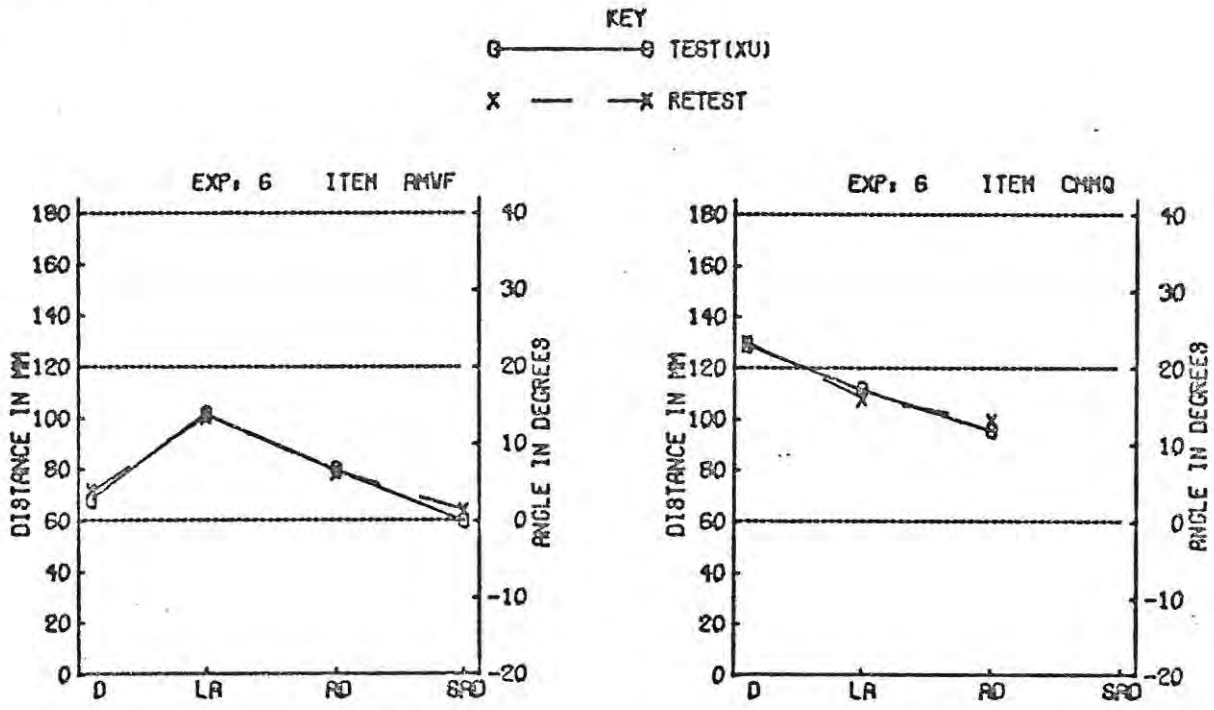


..... continued overleaf

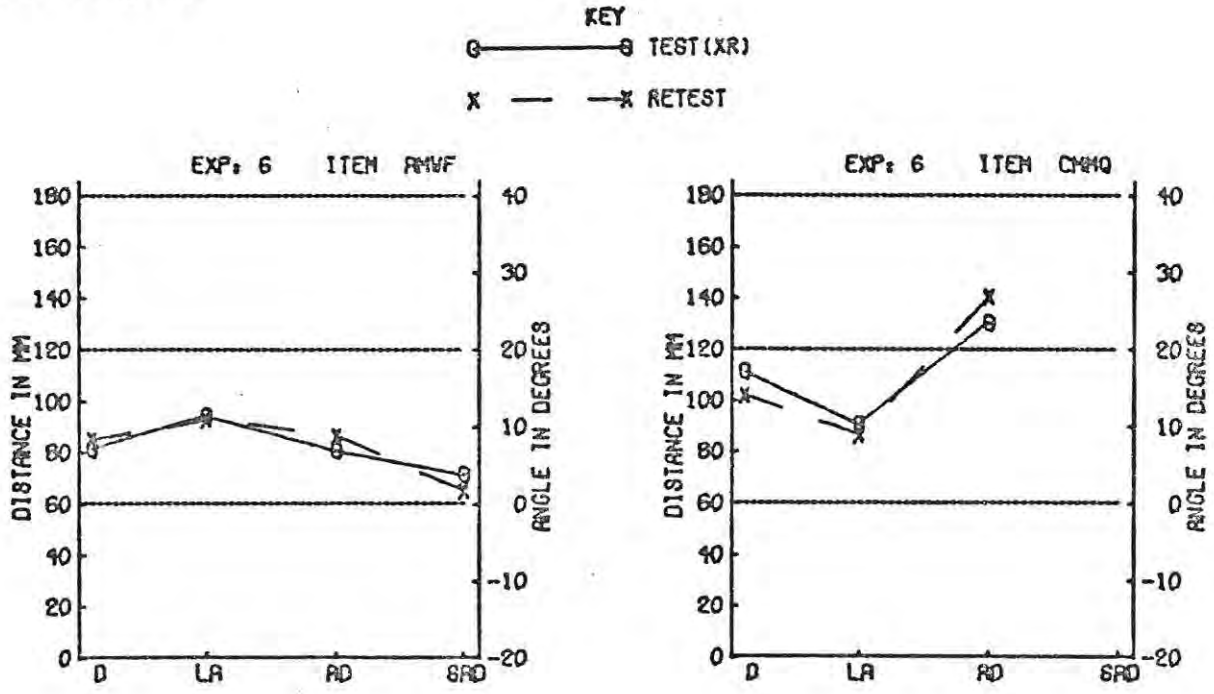
FIGURE 23.2

IPOS PROFILES OF ITEMS AMWF AND CMMQ AT TEST AND RETEST IN EXPERIMENT 6

(c) XU group



(d) XR group



In both XU and XR groups the test and retest profiles were very close indeed and no differences were significant, although the difference between mean distances in the XR group for item CMMQ (which was only 9,6) yielded a relatively high value of t (1,786; $df = 29$; $p < ,1$).

23.5 DISCUSSION

23.5.1 Overview of findings

In the three analyses described above, reliabilities obtained with the distance scores were comparable with those obtained in the previous studies reviewed in section 5.5.1. Reliabilities in the Xhosa groups tended to be rather higher than those obtained with White subjects.

Reliabilities obtained from angle measures were very variable, ranging from zero in some cases to above ,8 in others. In Experiment 2 they were all fairly low, in Experiments 5 and 6 they were higher, but in Experiment 6 a full range of values was obtained that formed no clear pattern.

23.5.2 Reliability and social schema

In Chapter 7 a model was outlined of the cognitive mechanisms underlying the production of figure placement patterns. According to the model, each individual is exposed to a sample of social encounters and builds up a framework of expectations about social behaviour on the basis of them in schematic form. In asking the subject to represent a situation by placing a pair of dolls, the experimenter is requiring him to generate a specific expectation which will be based on expectations, either very general in character, or more specific and detailed, derived from past experience.

In section 7.3.6 it was suggested that there is not one single expectation that a subject has concerning a situation, but there may be several which could be arranged in a hierarchy according to the subjective probabilities attached to them. It was also suggested that factors were at work which altered the current values of these probabilities so that the item with the highest probability at one time would not necessarily be the most probable at another.

In section 7.4.2 it was pointed out that this model had implications for reliability, since it would predict that the subject's response to the same item on two occasions could be quite different.

Evidence that several schemata were often activated by an item was obtained with some subjects who responded to some items by placing the dolls in two or three distinctly different ways while trying to decide how to represent a situation.

For example, one XU subject, in response to item DWMP, tried a face to face orientation schema, then a side by side one, and finally placed both figures at about 45°. This subject behaved similarly with other items, especially those involving conflict, and commented that people move about when quarrelling.

In another example, an XN subject, in response to item CWWQ, started with a face to face arrangement, then tried both figures at 45°, then tried a Z-pattern with both at 45°, before finally placing the one woman in a direct and the other in an indirect orientation.

This type of behaviour was found in all groups with respect to both orientation and distance schemata. It supports the form of the model suggested as the cognitive basis of social schemata, and would suggest that test-retest reliabilities that are very high should not be expected. Indeed, given the obvious instability in the generation of schemata by some subjects, it is remarkable that reliabilities are as high as they are.

23.5.3 Ambiguity of the retest situation

Several factors which might determine which schema is elicited when an interaction description is presented were discussed in section 7.3.6. These were satiation, progress of memory search and the effects of context, assimilation and contrast on set.

In the retest situation, however, a new factor is involved, the subject's perception of the experimenter's expectations. Since S usually recognises the item on second presentation, he or she may entertain a number of interpretations

of what has happened, each of which may affect his response. Firstly he may think that E has presented the item again by mistake. Secondly he may think that his memory is being tested, and try to remember how he responded before. Thirdly, he may think that an opportunity for giving a new interpretation of the item is being provided.

23.5.4 Reliability in the present context

In psychological testing, it is important for a measure to be reliable if it is to be used as a predictor of performance or an index of the nature of an individual's personality or competence. Where this is not the concern of the investigator, it is less important that a measure be reliable; instead it is necessary that a result should be replicable.

In the present context, the doll placement technique is viewed as a means of sampling the expectations that arise within particular social milieus on the basis of the nature of social interaction within them. Several subjects are employed so that a range of expectations can be obtained. In this case what is important is not that results should be replicable within the individual (i.e. reliability), but that they should be replicable when the group is taken as a whole, or when different samples are taken from the same population.

The present reliability data provide evidence for a certain stability within the individual, but, also, especially with regard to the angle measures, a degree of instability. However, what is more important, is that the IPOS profiles obtained at retest were more than adequate replications of those obtained on initial presentation of the item. For example, although XU subjects in Experiment 6 furnished a zero correlation between test and retest AD's with item AMWF, the mean AD was the same on both occasions.

It can be concluded, therefore, that although the responses of individuals may be unstable from one presentation to the next, the pattern of responses within the group as a whole is highly stable, and reflects the shared experience of the members of the group that is the basis of their social schemata.

23.5.5 Reliability of angle measures

The fact that reliabilities were sometimes large and sometimes small when obtained from angle measures is the rather misleading result of the use of the correlation coefficient with relatively small numbers, since its value under these circumstances is very sensitive to scores at the extreme end of the range, so that the addition or removal of a single pair of scores can alter its value markedly. Thus, in the present data, large correlations were often due to the presence of a few large scores.

For example, the reliability of ,88 for the AD's of the XR group with item CMMQ reflects the responses of three subjects. While most subjects used AD's below 30°, these used AD's of over 100° both at test and retest. This case can be contrasted with that of AD's in the XU group with item AMWF, where all AD's were below 25°. The zero correlation between test and retest reflects the lack of consistency within this small range.

Therefore, while the data on the reliability of angle measures suggests that there is generally only poor consistency of orientation schemata from test to retest, it would be misleading to use the size of the coefficients obtained in the present series of experiments as an index of the degree of consistency prevailing for different items or for different groups.

23.5.6 Differences between test and retest IPOS profiles

While the IPOS profiles of items CMMQ and AMWF were very similar at retest to what they were on initial presentation, two cases of differences significant at the ,02 level were found. This is more than would be expected by chance when 28 comparisons are made.

Retest conditions were not of course identical to those of the initial presentation. Firstly, S usually recognised the item as an old one. Secondly, the retest was given at the end of the series, while fewer items had been presented when the initial test was made. These factors might have affected the pattern of retest responses.

The first finding, of a small but significant increase upon retest of the

distance used by the WH group for AMWF, might perhaps be an assimilation effect. The presentation of the C, D and E items before retest, all involving anxiety or conflict, might have resulted in the representation of a rather less warm encounter on the second presentation of AMWF because of the activation by the previous items of schemata for conflict and anxiety situations.

The second finding was that the XN group used more symmetrical schemata for the second presentation of AMWF. It is possible that while placing the C and D items subjects' attention was drawn to the frequency with which asymmetry arises when there is anxiety and conflict, so that when they placed the friendly item AMWF the second time, asymmetrical schemata may have seemed inappropriate. The effect would be one of contrast, therefore. A similar, though smaller, reduction in mean AD on retest for this item was also found in the WH group.

23.6 CONCLUSIONS

A moderate amount of reliability was discovered in the measures of doll position, the degree being higher for the distance than for the angle measures. However, poor reliability can be understood as a consequence of the model of the cognitive basis of social schemata proposed in Chapter 7, so that poor reliabilities need not prejudice the findings of the present study.

What did emerge, however, was the considerable replicability of the response of the group as a whole, as summarised in the IPOS profiles, and it is this replicability that is essential if the profiles are to have any value.

While small differences in two of the profiles in Experiment 6 at retest may have been due to assimilation and contrast effects, what was more remarkable than these differences was the similarity between test and retest profiles. These suggest that the present method of applying the doll placement task is of considerable value in sampling the expectations of the group as a whole.

CHAPTER TWENTY-FOUR

OVERVIEW AND CONCLUSIONS

24.1 EVALUATION OF THE DOLL PLACEMENT METHOD

24.1.1 Introduction: identifying instrument factors

It was pointed out in Chapter 1 that the present study not only provided an opportunity for the examination of effects concerning regulation of interpersonal distance and body orientation, and of the manner in which cultural factors affected these, but also constituted a test of the doll placement method itself. Because the data of the study were obtained using this method, it is appropriate to offer an evaluation of it before proceeding to a discussion of the conclusions that can be drawn about behaviour in the cultural milieus studied. This is because the data embody the effects of cultural and social factors only as they have been mediated by the technique employed, and in making a final evaluation of the data it is important to assess which features of the results reflect the nature of the measuring instrument and which can be regarded as indicative of genuine effects that obtain in real situations.

24.1.2 Doll orientation and gaze levels

In section 7.4.1 it was argued that the question of the validity of the doll placement method fell into two parts. The first was the question as to whether the figure placement made by a subject was a valid expression of his expectation about how people would stand in the situation in question. The second was whether the subjects' expectations corresponded with real behaviour.

In considering the first question, the general impression gained from watching a large number of subjects was that the dolls were easy to manipulate so that subjects usually had no difficulty in producing arrangements which satisfied them. On the other hand there were certain limitations inherent in the technique which did interfere with the ability of the subject to express him- or

herself accurately.

The first arose from the fixed posture of the dolls. Subjects in all groups said that they wished that the dolls were flexible, and that head and arms, in particular, could be moved. The rigidity of the figures meant that subjects could only use the dolls to express some of the expectations activated by the interaction description.

While this does not reduce the validity of the doll placement as a measure of expectations about interpersonal distance and body orientation, it does have consequences for the validity of the doll's orientation as a measure of the subject's expectation about the amount of direct gaze he is expected to engage in.

The results of Experiment 2B (see also section 6.3) did show that the greater the degree of eye-contact an interactor was expected to want to engage in, the more direct would be the orientation of the doll representing him. However, in later experiments it was found, especially among Red subjects, that an interactor who was expected to avoid direct gaze was sometimes placed in a very direct orientation. This is possible because a direct body orientation may facilitate direct gaze, but it does not necessitate it. While standing with a direct body orientation, an interactor can turn his head aside or bend his head down. Red subjects who placed low eye-contact interactors in direct orientations imagined the case where the individual was looking down to the ground, a gesture that cannot be represented with the dolls used here.

While no systematic data were collected regarding the frequency with which this occurred, informal observation suggested that it was most frequent among Red Xhosa subjects than in other groups. A possible reason for this was suggested in Chapter 19 (section 19.10.6). A feature of Red Xhosa culture is the formalisation of rules that express role distance (section 8.2). Two formalised behaviours which are taught as means of expressing respect are the bowing of the head and the turning of the neck, both of which prevent the individual from engaging the eyes of the other, but neither of which could be represented by means of the dolls. In western culture neither of these methods of showing respect is formally laid down as a requirement, so that even where it is

recognised that engagement of the eyes of another, especially for a long period, might be construed as impertinent or disrespectful, avoidance of prolonged direct gaze is achieved without recourse to stylised gestures that unambiguously express that eye-contact is being deliberately avoided, and this can be done through the taking up of a body orientation which is relatively, but not ostentatiously, indirect.

If this is the case, then doll orientation is likely to be a particularly poor reflection of the levels of direct gaze expected by the subject in cases where the subject is himself (or herself) a Red Xhosa, and where relationships are being represented in which the use of formalised non-verbal behaviours as means of expressing respect are mandatory. The validity of the orientation measures as indices of expectations about visual behaviour will be better both within the Red group, where relationships between peers are involved (in which formal respect need not be continually expressed), and also, for all relationships, in other Xhosa groups, in proportion as the requirements of traditional custom fall into disuse.

24.1.3 Scaling accuracy

A second limitation that might be set upon the individual's ability to express his or her expectation accurately arises from the requirement that the positions of real interactors be scaled down in the doll placement task. However, there are several reasons for supposing that this is not a serious limitation.

The first is that scaling mechanisms are basic to normal perception, being required for such basic achievements as size constancy, a phenomenon even measurable in infants of six weeks (Bower 1966).

The second is that even with a technique such as Duke's CID test, which provides only a limited basis for the subject to set the scale, data on interpersonal distance are obtained which are comparable with those obtained from real life observations or from tasks using placements of figures (see section 5.3.4).

The third is the concordance between the profiles obtained from different

groups of subjects with some items (for example the schemata of the WH, XU and XR groups with item DMYD in Figure 21.1). This could well indicate that in each group the range of expectations concerning this situation is much the same, and that any scaling inaccuracy that may beset the responses of some subjects does so in much the same manner in all of the groups.

The fourth is the data of Experiment 3. This showed that even in illiterate and highly unsophisticated Red Xhosa women acceptable scaling accuracy was evident, and that there was no persistent tendency over the whole group either to over- or underestimate distances.

Taken together these observations suggest the conclusion that scaling inaccuracy is not a major threat to the validity of the present technique. Inaccuracy would clearly prejudice the use of doll placements as a means of measuring some aspect of the individual (e.g. his proximity tolerance) since overestimations by some subjects and underestimations by others would constitute a source of variance unrelated to the criterion variable (the subject's proximity tolerance). In the present case, however, where many subjects are employed, it seems safe to assume that over- and underscaling tendencies affect each group in much the same way.

24.1.4 Effect of context on schema construction

A third limitation set by the doll placement technique upon the subjects' ability to express their expectations about social behaviour, is that, while they may be able to envisage several ways in which individuals might stand when engaged in the type of encounter described to them, they can only represent one of them when they make their doll placement (see section 23.5.2).

This limitation is overcome in the present studies because collection of responses from a group of subjects allows a range of expectations to be sampled. Thus although the full range of expectations that might be constructed by a single individual is never examined, the responses of the group provide a measure of the variety of schemata that are associated with a particular situation and of the relative strength of each, since some occur more frequently than others.

A more important aspect of this limitation, however, is that it cannot be assumed that subjects' expectations are fixed. As was made clear in section 7.3, where the cognitive basis of social schemata was first discussed, specific predictions about what would occur in a given situation are constructed by the individual on the basis of information derived from past experience, but stored largely in general, schematic form. The model does not imply that there is no memory for detail (a criticism often made of Bartlett's original theory of schema e.g. by Gomulicki 1956). However, a feature of human memory that could well be incorporated in the model is that access to more detailed memories is not as direct as access to what is more schematic. Evidence for this is the well established superiority of recognition over recall (e.g. Haber 1970), which shows that the extraction of detail from memory generally requires strong external cues to guide the search process.

This means that even if the subject does not immediately respond to an item with a number of possible schemata, the elicited schema is likely to be only one of several that might have been elicited had the circumstances in which the item was presented been different. This conclusion was suggested again and again by the present data, where some of the findings seemed to be accountable for only in terms of rather subtle effects of context.

For example, in several cases, educated Xhosa subjects responded differently depending upon whether the language of instruction was English or Xhosa (see sections 12.3.5, 18.5.2, 19.9.2, 20.8.2, and 22.3.6). In general it was concluded in these cases that the language of instruction had served to activate the subjects' schemata selectively, and so cause them to base their doll placements upon different areas of experience, areas suggested by the language used.

In other cases (e.g. sections 19.10.2, 19.10.3, 21.9.3 and 23.5.6), it was suggested that the schemata elicited could be affected by the nature of the items that preceded the item in question, as well as by the extent to which the experimenter questioned the subject after each placement.

One way in which context or procedure would be expected to affect the schema elicited from the subject would be by its effect on the process of recall.

Certain items would tend to activate certain areas of the subject's memory rather than others, so that items following them would be treated by a schema system that already had been selectively activated in certain areas. Similarly the nature of the experimenter's questions might have an effect of activating certain parts of the memory storage system rather than others.

If access to general, schematically stored, information is easier than access to more detailed information, differences in procedure could affect the type of stored information that eventually controls the subject's doll placement (section 21.9.3). Presentation of rather general descriptions of situations with very little comment or discussion in between as occurred in Experiment 6, would tend to limit control of responses to the more abstract, general level of information storage (that Bartlett called the schemata). On the other hand, asking for details about the conversation taking place, or presentation of items in which a situation is described in some detail, might have the effect of opening up access to more detailed information stored in memory.

If this is so it suggests that a valuable area for future research would be to compare experimental procedures in which the subject's imagination was stimulated in different ways, to examine the effect this had on the schemata elicited. It is not self-evident that the technique employed in Experiment 6, where interaction descriptions were made as simple as possible, and where questioning of the subject was limited to a minimum, is the most productive method for use in the cross-cultural context.

Where the effects of procedure and context serve selectively to activate the subject's schema system, and so determine the framework within which an item is interpreted, this can be termed assimilation, because a new item is assimilated to a frame of reference that has already been elaborated. Explanations of findings in terms of assimilation were tentatively offered in sections 19.10.2, 21.9.5 and 23.5.6. The suggestion made in section 19.10.2 that Red Xhosas might be more prone to the effects of assimilation because of poor psychological differentiation perhaps deserves to be followed up in the future. Certainly the Red Xhosas are a group who, in terms of Witkin and Berry's (1975) analysis

would be expected to be particularly low on psychological differentiation, since they are a sedentary, agricultural group with an authoritarian social structure.

On the other hand, where features of the subject's schema system are activated that are different from each other, the opposite effect, that of contrast, may occur. Here, it is suggested, in order to heighten the differentiation between one frame of reference and another, ambiguous responses (i.e. responses compatible with either frame of reference) are avoided and responses which are unique to the framework appropriate to the stimulus are preferred. The possibility that such contrast effects had operated was suggested in sections 19.10.3, 21.9.3 and 23.5.6.

A finding by Desor (1972), that subjects placed more pegs in a box when they represented people at a cocktail party rather than an airport lounge, may also have been an effect of contrast. Baum and Davis (1976) failed to replicate Desor's finding, and pointed out that Desor had used a repeated measures design while their own experiment employed independent samples in the two conditions. This suggests that Desor's subjects heightened the contrast between the two contexts. Baum and Davis' subjects, on the other hand, presented as they were with only a single context, responded similarly to both situations, their responses based perhaps on more general expectations about what constitutes a crowd, since, due to the absence of different items, access to more differentiated schemata was not stimulated.

Effects of context and practice present a problem whenever a within-subjects experimental design is used, and this is an issue which has recently been discussed by Greenwald (1976). Greenwald notes, however, that context effects are not absent even from the between-subjects design, since, there also, some context is set by the experimental situation and the subject's expectations about it. The above discussion illustrates Greenwald's point since it is clear that there is no such thing as the subject's schema for a particular interaction description, but rather a range of schemata some of which will tend to be elicited in one context, and others in another.

In the present research, examination of the effects of culture is perhaps rendered more fruitful by the use of mixed designs in which culture is a between-subjects factor, and different interaction descriptions are used to create within-subjects factors, since in this case the between-subjects factor is relatively free from the contamination of context, and yet the stimulation of the subject's imagination by the use of several different descriptions probably has the effect of bringing a wider range of schemata into a position to control the subject's response than would be the case if only a single schema was collected from each subject.

24.1.5 Figure placement and real life data

The arguments of the foregoing sections support the validity of the doll placement method as a means of investigating the expectations subjects have about interpersonal distance and body orientation, even though they show that the relationship between schema as stored information and schema as response is not one of one to one correspondence.

For the doll placement technique to be valid, it is also required that the subjects' expectations should correspond to what actually takes place in real life. With respect to this, the method has considerable face validity. Subjects certainly responded as if their expectations were well grounded in the facts of normal social intercourse and it seems reasonable to assume that as (presumably) effective social beings, their ability to predict the course of social events in which they are involved and of which they have experience is well developed.

Evidence that the doll placement method does have this sort of validity was previously set forth in Chapters 5 and 6, where evidence of a considerable concordance between the results of figure placement tasks and the results of observations of real behaviour was presented. The present results also contribute to this evidence to some extent, even though detailed knowledge from observation of regulation of distance and body orientation in Xhosa groups is lacking.

Two effects, obtained with the older generation-younger generation items (Experiments 4 and 6B), which were predicted on the basis of the anthropological literature, and which were confirmed in the present results, provide an indication of correspondence between the present doll placement data and the facts of real social encounter, should the existence of such a correspondence yet be doubted.

The first was the use of very large distances by Red Xhosa subjects for the 'hlonipha' relationships between younger generation figures and their opposite sex parent-in-law (section 19.4.3). The second was the fact that Red Xhosas represented all these relationships with comparatively large distances, which clearly reflect the role distance between the generations in this culture (section 19.10.9).

24.1.6 Reliability and replicability

Finally, the reliability of the doll placement method also has a bearing upon its validity. In terms of the model of the cognitive basis of social schemata outlined in Chapter 7, a high level of reliability is not necessarily to be expected because each individual may entertain several expectations about the same type of situation, of which different ones may control the response on different occasions. What is required, however, is replicability, if the responses from a sample of subjects are to be taken as a valid indication of the shared social experience of the group from which they are drawn (section 23.5.4).

Data examined in Chapter 23 indicated a high degree of replicability of results in all groups, even in cases where reliability was very low. This showed that within a given group of subjects even though individuals did not necessarily respond in the same way to the same item on second presentation, the pattern of responses in the group as a whole was not affected.

Further evidence for replicability was obtained when the responses of different samples of subjects to the same or similar items were examined. For example, the pattern of distance means in the White and Red Xhosa groups that

were obtained in Experiment 4 were well replicated in Experiment 6B. Similarly the use of larger LA's by Whites when representing friendly situations as opposed to quarrels was found in Experiments 1, 2B, 4 and (less strongly) 6.

While these findings provide a firm basis for assuming replicability, and thus confirming the validity of the doll placement method as used here, several cases in which expected results were not found cannot be ignored. For example, the use of large distances to represent acquaintances was found under certain conditions in illiterate Xhosa groups, although it is still not possible to state with precision exactly what those conditions were (see section 18.6.1). As a second example, the pattern of orientation schemata that was found in Experiment 5 was not replicated in Experiment 6D.

Given the evidence for the replicability of results that the present series of experiments provide, however, it seems reasonable to look elsewhere for an explanation of why previous results are not replicated rather than questioning the validity of the technique itself. There are at least three ways in which such failures of replication can be explained.

Firstly, the samples employed in the two experiments may not in fact be from the same population. For example, the schemata of male subjects may differ from those of females within the same cultural milieu.

Secondly, the procedure may have been different in the two experiments. Either the items preceding the item of interest may have differed in the two cases, or the procedure may have differed in the extent to which questioning of the subject was engaged in (see section 21.9.3).

Thirdly, the wording of an item may not have been the same on the two occasions, and connotations carried by the one version may not have been carried by the other.

24.1.7 Conclusions

The above considerations make it reasonable to conclude that the doll placement method employed here has considerable validity as a means of studying regulation of interpersonal distance and body orientation cross-culturally.

Its use as a means of studying regulation of visual behaviour is less valid, even though body orientation and tolerance for or need of direct gaze are certainly not unrelated.

Therefore, it will be possible to proceed, in the remainder of this final chapter, with a survey of the more important conclusions that can be drawn from the present series of experiments about the regulation of distance and body orientation in the daily lives of individuals in the cultures from which subjects were drawn.

24.2 PREFERRED INTERPERSONAL DISTANCE IN FRIENDLY AND QUARRELSOME ENCOUNTERS

24.2.1 Friendly encounters

In section 8.2.6 the question was raised as to whether Xhosa and White differed in their preferred interaction distances. It was pointed out that Whites do not usually find that Blacks come uncomfortably close during interaction, and although in some cases this may be because the Black keeps his distance for fear of upsetting the White who may be in a position to exert sanctions against him, in other cases, where Black and White converse on apparently equal terms, informal observation suggests that the two groups are similar in their distance preferences.

This conclusion is supported by the results of Experiment 6A. In representing man and woman as friends, acquaintances and strangers, mean distances of the groups were very similar, and there was only one case of a significant difference between groups, and this was between the two urban Xhosa groups (XN and XU: see sections 18.3.1 and 18.4).

In Experiment 2A, where male subjects represented the same three levels of acquaintance, there was a suggestion that the less literate XU and XR subjects preferred rather larger distances than the Whites. However, the White students did not differ from the Xhosa students at all, and the fact that the two student groups used smaller distances for friends than the two illiterate groups was probably not an effect of culture (Xhosa versus western) but rather

an effect of sub-culture (student versus non-student).

If this is correct, then Roger and Mjoli's (1976) finding that unacculturated young Xhosa males used larger distances in a doll placement task than Xhosa students may not be an effect of general acculturation to western norms on the part of the students, but of acculturation to the specific student subculture. The finding of Experiment 6A that White and Xhosa did not differ from each other in their distance schemata supports this conclusion, since in that experiment no students were involved. The results suggest that students may prefer closer distances than the population at large, and that this effect applies to both Whites and Xhosas.

A finding of Experiments 2A and 2B was that the White and Xhosa student groups used a smaller range of distances than the XU and XR groups, so that standard deviations in the latter cases were larger (see sections 12.4 and 13.5). It was suggested that this might mean that while all groups were similar in their tolerance of proximity, the XU and XR groups were comfortable at larger distances than the student groups found comfortable. This would account for the greater range of distances, as well as the rather larger means found in these groups.

There is informal evidence for this theory. Whites often remark that Africans sometimes converse at distances which they themselves would find uncomfortable. Africans can be observed conversing from different sides of a street, or while walking away from each other in different directions along a rural path. A rarer, more specialised, example is the sing-song voice of Zulu women which enables them to converse over distances of a kilometre or more.

Some experimental evidence in support of this was recently obtained by the writer's students. Using doll pairs, Black and White high school children were asked to represent the largest distance that would be comfortable for conversation, and Blacks used distances nearly twice as large as those used by Whites.

The present series of experiments, however, does not provide clear evidence that the Xhosas are comfortable at a greater range of distances during friendly

encounters. While the Xhosa males of Experiment 2A did use a greater range of distances than the Whites, this was not replicated in Experiment 6A, where standard deviations of the distance scores were similar in all groups (see section 18.6.4). In the case of representations of strangers, however, standard deviations were rather larger in the XU and XR groups than in the WH and XN groups and this might perhaps reflect a greater tolerance for interpersonal separation in the two less literate groups.

24.2.2 Quarrelsome encounters

An effect that is well established by the present series of experiments is that of increased distance in quarrels when compared to friendly encounters.

The effect was not found in the White male students of Experiment 1, although it appeared rather weakly in this group in Experiment 2B. It appeared very clearly with the White women of Experiment 4, and, in Experiment 6, White women represented quarrels with distances similar to those used to represent a conversation between strangers.

Use of large distances to represent quarrels was an even stronger feature of the results of the Xhosa groups. It was first found in the urban labourers of Experiment 1, and was very strong in Experiment 2B with both urban and Red males, though less so with the students. There was a strong effect in the Red subjects of Experiment 4, and in Experiment 6 all three Xhosa groups represented the man-woman quarrel with a distance some 20mm larger than that used for man and woman as strangers.

Since distances representing friendly situations did not differ greatly between Xhosa and Whites, and since the increase in distance from friendly to quarrelsome situation was greater in Xhosa than White, quarrel distances were regularly found to be greater in the Xhosa than in the White groups. This was the finding of Experiments 1, 2B, 4 and 6C.

Originally, the suggestion was made (Edwards 1972a) that the large distances on the part of the Xhosas in Experiment 1 were the result of the fear of physical violence erupting. However, the results of the subsequent experiments,

especially Experiments 4 and 5, where detailed comments by the subjects on their schemata were collected, show that such an interpretation is too simplistic. Rather, there are a variety of causes of the increased quarrel distances, some of which will have been operative in the schemata of some subjects, and others in those of others.

The first point which suggests that the interpretation of schemata representing quarrels is a complex matter is the nature of the approach-avoidance model of the determination of interpersonal distance. In Chapter 4 (especially section 4.4), it was argued that the distance between two people engaged in social interaction represents an equilibrium position arising out of the operation of various approach and avoidance factors. What the present results show is that when people quarrel the balance of these conflicting forces is changed, and that there is an increase in the strength of avoidance tendencies relative to approach tendencies. The findings also show that this effect is stronger among the Xhosa, especially the less literate ones, than among Whites.

A feature of Miller's original approach avoidance model, as well as of the more recent version of Gray and Smith (see section 4.4.1) is that the same equilibrium distance may arise as the balance of either weak approach and weak avoidance forces, or of stronger approach and stronger avoidance forces. Although the distance in each case might be the same, the level of arousal would be greater the greater the strength of the approach and avoidance factors involved. In the present context, this means that the same distance could represent very different forms of emotional response on the part of the interactors represented.

A second factor that complicates the interpretation of quarrel schemata is that there are several avoidance factors, any or all of which may be increased in strength in the presence of interpersonal conflict. The desire to keep out of range of a physical attack is certainly one of them, while another is the need to prevent one's own arousal from becoming aversive or from causing one to do or say something that one might later regret, since high arousal is incompatible with inactivity (section 4.4.4). Yet another is the desire to

avoid provoking the other further.

On the other hand there are also approach factors that may be increased in strength during a quarrel. Instead of trying to reduce arousal, an interactor may channel it into threatening, aggressive behaviour and move forward either to increase the impact of a stare or in readiness to strike.

In addition approach tendencies present in a friendly situation may be reduced in strength when there is conflict. The presence of an individual may be attractive when he is genial, but lose its attractiveness when he is angry.

A third factor that complicates the interpretation of quarrel schemata is that avoidance tendencies may give rise either to an increase in distance or to a reduction in direct gaze (with or without an accompanying increase of body angle).

As a result of this complexity of factors, a wide and varied range of schemata was obtained in the present series of experiments in representations of quarrels. This included face to face arrangements over distances ranging from very close to very far, symmetrical arrangements in which both interactors had angles ranging from 20° to 120°, and at varying distances, and asymmetrical schemata, again over a range of distances, in which the less direct interactor could have an angle approaching the maximum possible of 180°.

Nevertheless, the schemata that were elicited from different groups of subjects did show detectable differences. The White students of Experiment 2B, for example, showed a predominance of close face to face schemata, while the White women of Experiment 6C used less immediate schemata for the same item, with larger distances and angles (compare the White profiles of Figure 13.1, item 2A, and Figure 22.1, item EMMQ). This suggested that the students saw the quarrels as more open, aggressive affairs, while the women tended to see the participants as less willing to confront one another frankly. In Experiment 4, too, the schemata of the White women for quarrels did not represent such a high level of immediacy as that found in the White students of Experiment 2B.

While Xhosa quarrel schemata differed from those of the Whites in having

larger distances, they also differed among themselves. The Xhosa students did not use such large distances as the XU and XR groups in Experiment 2B, and in Experiment 6C the nurses used closer distances than XU subjects. In addition, some Xhosa subjects placed both figures at very large angles when representing a quarrel, and this meant that the mean LA was augmented. This occurred most strongly with the XU and XR subjects of Experiment 2B, and with a few subjects in the XU group in Experiment 6C.

The results permit the general conclusion that in quarrels it is the strength of avoidance tendencies that is increased relative to approach tendencies. It seems likely, however, that the nature of the tendencies envisaged varies from subject to subject, so that no firm conclusion can be drawn as to what factors were most important in each group.

One piece of evidence that does bear on the issue, however, is that quarrel schemata are to some extent affected by figure pairing. In Experiment 6C, no group showed any difference between representations of man-man and woman-woman quarrels, but in all groups there were significant differences between representations of man-man quarrels on the one hand, and man-youth and man-woman quarrels on the other. In the Xhosa groups, the mean distance was smaller in the former case (though this was not significant in the XR group), and over all groups, more asymmetrical schemata were used for differentiated pairings. With two exceptions, also, in the differentiated pairings the man had the more direct angle.

These findings show how important is the relative power of the interactors involved for the schemata used to represent them. In cases where one interactor is socially or physically weaker than the other, avoidance factors are stronger relative to approach factors than where there is equality. One reason for this is probably that where the second interactor is of lower status than the first, he or she is less able to use aggressive, threatening tactics than when power is equal. Another is that he or she is more afraid of the sanctions, either physical or social, that can be brought to bear against them as a consequence of the conflict.

Further research could profitably concentrate on asking subjects more questions about each schema as a means of identifying the factors that are modified most strongly in each group. However, subjects are not always insightful about the determinants of their schemata which are, after all, not verbal responses themselves, and this method has its limitations.

Another approach to identifying the particular approach and avoidance factors involved in each group is to compare the schemata elicited by different types of quarrel. In Experiment 6, two different ways of describing a quarrel between two men were used (items CMMQ and EMMQ, see section 22.2), but no difference was found between the two sets of schemata. A second use of this approach occurred in Experiment 3, where Red Xhosa women represented woman-woman quarrels at three degrees of anger as part of the scaling experiment (section 14.3, items 4-6). It might have been expected that the greater the anger the greater the need to avoid proximity in order to keep arousal from becoming out of control. However, no difference between the mean distances of the three items was obtained. This finding is quite compatible with the approach-avoidance model, since arousal can increase both approach and avoidance tendencies and anger in particular may lead to aggressive approach or to avoidance as a means of controlling it.

A third comparison between different quarrel items was made by Edwards, Strimling and Flanagan in an unpublished study in which twenty male students represented four quarrels between pairs of males who were described in different ways. Dolls rather smaller than those employed in the present study were employed, and an item in which the participants were described as violent characters ready to come to blows elicited a mean distance of 47mm, which was some 30mm closer than the means for the other three. The other three items described violent characters quarreling but afraid to come to blows, violent characters quarreling in a restrained manner and non-violent characters quarreling angrily. Thus only the quarrel in which the interactors were moving in to engage in physical violence was characterised by close distances, while for the other three, in which quite different patterns of approach and avoidance tendencies

were involved, larger distances, which did not differ significantly from each other, were found. The range of distances for the item involving the non-violent characters was rather larger than that for the other two items, however, the standard deviations being 69,8 in the former case, and 31,0 and 41,9 in the latter. The standard deviation for the item which yielded the close distance was smaller still (20,2). The study showed that clear differences between schemata elicited by situations in which quite different patterns of emotional response are involved are not necessarily easy to establish.

In conclusion, therefore, while the present experiments show that interpersonal distance in quarrels is to some extent a function of the cultures of the subjects, there is room for further research to establish the patterns of emotional response which underlie these differences in schemata.

24.3 SOCIAL SCHEMATA AND CULTURAL TRANSITION

24.3.1 Degree of acquaintance items

One of the aims of the study was to identify items which elicited different social schemata from Red Xhosas and from Whites, and then to discover whether Xhosas in the two intermediate groups gave schemata which could be considered transitional between those of the other two groups. In this and the following sections, the extent to which the schemata of the XU and XN groups can be considered transitional will be discussed.

In the case of the degree of acquaintance items of Experiment 6A, no differences between the distance schemata of Whites and those of the Red Xhosas were found (see Chapter 18), except that the XR group represented acquaintances by distances which were not much larger than those used for friends, while in the WH group the distances used for friends were significantly closer than those used for acquaintances. This might perhaps be taken as indicating a greater degree of differentiation between friends and acquaintances in the western cultural milieu than among the traditionalist Reds.

If this is the case, then a transition from the Red pattern to the Western pattern might be expected to manifest itself in the XU and XN groups as a

widening of the difference between the means used to represent friends and acquaintances. To some extent this is the case. In both these groups, the difference between the two means was larger than that found in the XR group. However, if this effect was genuinely a reflection of cultural transition towards a western pattern of social relationships, it would be expected that the difference between the two means would be greater in the more westernised XN group than in the XU group, whereas, in fact, quite the opposite to this was found. In the XN group mean distance used for acquaintances was only slightly larger than that used for friends (and, as in the XR group, the difference was not significant), while in the XU group there was a significant difference between the two means, and the difference was actually considerably larger than that found in the White group.

The results suggest, therefore, that the difference between the distances used to represent friends and acquaintances by the XU group is not simply the result of acculturation to the western pattern of social relations in which many people are related to on a relatively superficial basis as acquaintances. If this were so, the same effect would have been expected even more strongly among the nurses. Rather, the large difference in the XU group may reflect the lack of interpersonal trust that often characterises social relations among the poor (see p.230).

In the case of the orientation schemata elicited by the acquaintanceship items, there was evidence of cultural transition. The Reds used rather more direct orientation patterns than the Whites, a result reflected in the larger LA's of the latter. While the LA's of the XU group were similar to those of the XR group, those of the XN group were larger, like those of the WH group. The same pattern of LA scores was also found in Experiment 6B (see section 19.5).

The smaller LA's of the XR group seem to reflect the greater formality of social encounter among the traditionalist Xhosa whether in relations between generations or within the same generation. A similar effect of formality of interaction style was reported by Ingham (1974) who found that Swedes preferred more direct orientations than the English. He explained this as a result of

the greater formality of the Swedes and their greater need to have the situation clearly defined. Like the Swedes, the Red Xhosa have a strong need for formality and a clear definition of the situation (see p.87), and in such a case, encounters are less relaxed and casual and interactors require a higher level of feedback about the behaviour of the person with whom they are interacting.

The fact that the XN group used the rather less direct orientation schemata of the WH group suggests that for this group one effect of westernisation has been to enable them to shift into a more casual style of interaction. This same effect does not appear to have occurred among the XU group, who used the smaller LA's of the XR group. This may mean that in this group there is still a residue of the formality of the Reds. It seems more likely, however, that it is a response to the insecurity that characterises the environment of the urban poor. Because of the threatening nature of the environment and the lower level of interpersonal trust, the milieu does not furnish the conditions in which casual informality can easily occur, even despite the absence of the traditional norms of formality.

24.3.2 Relations between the generations

In Experiment 6B, a very clear example of a shift in distance schemata from the Red Xhosa pattern to that of the Whites was found in the XU and XN groups. In representing these items which involved relations between younger and older generations, the XR group used large distances which reflected the role distance between the generations in the traditionalist culture (see section 8.2.5), and were similar to those used to represent strangers in Experiment 6A. On the other hand the Whites used distances that were considerably closer, similar to those they used to represent friends and acquaintances, which reflect the absence of formal role distinctions in their culture.

In both the XU and XN groups, mean distances were considerably closer than that used by the Reds, and very comparable to those used by the Whites, in a clear reflection of the erosion of the traditionalists' high level of formality between the generations. Apart from the reduction in distance in

the XN and XU groups, there was also a shift in the pattern of means of the eight relationships. In the XR and WH groups these fell into two distinctive patterns, while a third pattern was obtained in the XN and XU groups which showed some features of both of the others.

One feature of XN and XU patterns was a reduction in the distances used to represent the two hlonipha relationships when compared to the XR group, even though distances for these relationships were still not as small as those used by the White subjects. A second feature was the placing of the husband closer than the wife to the husband's mother which was a characteristic of responses of the White group, while in the XR group it was the wife who was placed closer (see section 19.10.8 for a fuller discussion).

No such clear transitional pattern emerged in the orientation schemata. All three Xhosa groups tended to give the younger generation figure the less direct angle, while this effect was absent in the White group. However, the effect was no stronger in the XR group than in the other Xhosa groups, as might have been expected. In fact a tendency to give the young wife a larger angle when with her father-in-law than the younger generation figures in other pairings was not significant at all in the XR group, while it was in the XN and XU groups (section 19.7.2). Thus the orientation schemata did not show the expected effects of cultural transition (some possible reasons for this were put forward in section 19.10.6; see also section 24.1.2).

24.3.3 Representations of quarrels

In Experiment 6C, where quarrel situations were represented, there was some evidence of a transition in distance schemata from the XR, through the XN group towards the pattern of the White group, but the XU group used the largest distances of all groups, so that their schemata cannot be regarded as a transition towards the smaller distances of the Whites. However, the distance schemata of the XN group did not simply fall between those of the Whites and those of the Reds. Instead, for items CMMQ and CWWQ they used the closer distances of the White group, while for the differentiated items CMWQ

and CMYQ they used the larger distances of the Reds. As a consequence of this, there was a much clearer differentiation between the distance schemata used for CMMQ and CWWQ on the one hand and CMWQ and CMYQ on the other in the XN group than in the XR group. Although in all Xhosa groups distances were larger with the latter, the effect was not strong enough to be significant in the Red group, while it was in the XN and XU groups (see section 20.3).

In the case of the orientation schemata too, the XN group were similar to the WH group with items CMMQ and CWWQ, and did not exhibit the rather large AD's found in the XR group. With CMWQ and CMYQ, on the other hand, the XN profiles were closer to those of the XR group than to the WH group, having the larger AD's of the former.

Thus the schemata of the nurses did show evidence of transition, not by being midway between those of the Reds and those of the Whites, but by being like those of the Whites for the man-man and woman-woman quarrels, but like those of the Reds for the man-youth and man-woman quarrels.

The schemata of the XU subjects, on the other hand, cannot be seen as transitional. First of all mean distance was larger in this group than in the XR group (although not significantly so) rather than smaller. LA's also tended to be larger than those of either the XR or WH groups (although, again, this was not a significant effect). Finally, while they followed the XR group in giving the woman the less direct angle when quarreling with the man, they were the only group in which there was no tendency at all for the youth to have the less direct angle in the man-youth quarrel. Reasons for this are discussed in section 24.3.5.

24.3.4 Accusation items and item EYHP

The IPOS profiles of the four groups for the items of Experiment 6D were very similar and no clear differences were found even between the schemata of the WH and XR groups, so that no evidence of the effects of cultural transition was obtained with these items.

In the case of item EYHP, the Red Xhosas used larger distances than the

Whites, their orientation schemata were slightly, but not significantly, less asymmetrical, and both WH and XR groups had a mean SAD close to zero (see Figure 22.2 on the right). The profile of the XN group might be regarded as transitional in that their mean distance fell between those of the WH and XR groups, and their mean AD was similar to that of the WH group. However, unlike the XR and WH groups, where there was no clear tendency for either figure to be in the more direct orientation, in the XN group the headmaster tended to have the smaller angle. This finding had also been expected in the XR group, and it is possible that the XR subjects did perceive the headman as tending to engage in more eye-contact than the youth, but did not represent this by giving the boy a large angle (see section 24.1.2) because they imagined that he would avoid eye-contact by looking down or turning his neck. If this is so, then the XN profile can be regarded as transitional in that it showed a feature of the XR response (tendency to see the youth as avoiding gaze) a feature of the WH response (greater asymmetry than in the XR group), and a distance that fell between those of the other two. However, the present evidence does not allow this as a firm conclusion.

While the XN profile for item EYHP might be regarded as transitional, that of the XU group certainly cannot. The distance was significantly smaller than that used by either the XR or WH groups, and orientation schemata were also more immediate. While it was not possible to suggest any compelling interpretation of this XU profile (see section 22.3.8) it is quite clear that it has distinctive features that make it quite unlike those of the traditionalist XR and western WH groups.

24.3.5 Components of cultural transition

Taken together, the results show that the transition from the traditionalist Xhosa way of life to that of urban, western Whites is not necessarily a smooth one. This is because there are two factors which seem to determine the quality of social interaction within a Xhosa cultural milieu. The first is the extent to which the traditional requirements for the maintenance of role distance

are adhered to, the second is the stability of the social environment.

With regard to the traditional hlonipha requirements, the results confirm those of the writers cited in Chapter 8 (section 8.3.2) that within the urban environment, from which both XU and XN subjects were drawn, these are considerably eroded. This is most clearly shown in the distance schemata of Experiment 6B. It had been expected that this effect would be stronger in the more educated XN group than in the XU group, because prolonged education was expected to have a strong westernising influence. However, the present data did not bear out this expectation. Although the XU schemata did differ from those of the XN group in some respects, this was not generally because they were more like those of the XR group. Indeed, in Experiments 6A and 6B, it was the XN group who had the more traditional schemata, since they showed a stronger tendency than the XU subjects to give the social inferior the less direct angle.

While the strength of adherence to traditionalism is one factor that distinguishes one Xhosa sub-culture from another, another is the degree of social stability. Both the culture of the Red Xhosa and that of the Whites are relatively stable systems which provide the individual who operates within them a measure of security both physical and social. However, a feature of urban Xhosa society is the breakdown of family life and a loss of the stability of social relations found in the traditional culture (Pauw 1963). The present data suggest that this instability is considerably greater in the milieu of the XU subjects than in that of the XN group. Several of the findings reviewed in sections 24.3.1 to 24.3.4 above were interpreted as meaning that the XU group experience their environment as threatening, and that socially they are not so secure and trusting as the nurses. This could well be the result of the different standards of living enjoyed by the two groups by virtue of their incomes, the poorer XU subjects being forced to live in the more crowded, rougher areas, while the nurses can afford better accommodation in safer areas, and spend much of their time in the protected milieu of the hospital.

A major effect of the instability of the urban environment among the poor is upon the power relations between individuals. In an orderly and structured network of social relationships such as that of the traditional Xhosa, the power

of one individual over another is to a large extent determined by age, sex and status. In a society where there is a breakdown of these values, the physical strength of an individual becomes an important determinant of his social power. It is just this situation that prevails among the urban poor. As a result, in addition to the dangers afforded by the poor environment in general, there is the added danger of interpersonal violence, which results in a rather defensive, suspicious attitude (see Rainwater 1972). It is this interpersonal suspiciousness that may account for the smaller LA's of the XU group, since, when individuals are suspicious of each other, they cannot slip into relaxed informality of the sort that expresses itself in a side by side orientation pattern, but need to look at each other to keep informed of developments in the course of the encounter.

The shift in the source of social power from status to physical strength seems to be most clearly illustrated in the XU profile of the man-youth quarrel. In all other groups, there was a clear tendency for the youth to have the less direct orientation, showing that he was perceived as the less in control of the encounter. In the XU group, on the other hand, orientation schemata were more symmetrical than in the other groups, and there was no tendency whatever for either man or youth to have the more direct angle. This suggests that there is just as much tendency for the man to fear the youth as for the youth to fear the man, and that neither is prepared to turn his back on the other (because he does not trust him). This would be the consequence of the recklessness of youth when not controlled by the weight of social sanction.

This shift in the source of social power does not affect the schemata of the man-woman quarrel in the XU group. Whereas for the traditional Xhosa the woman is weaker by virtue of her status, in the urban environment she is weaker physically, and as a result is still represented at an indirect angle. Only in the WH group, where there is considerable equality between the sexes, and where physical violence is not often resorted to, was there no clear tendency for the woman to have the less direct orientation (although a few subjects did provide an exception: see section 20.9.5).

As pointed out in section 15.7.3, physical violence is regarded as a shameful means of settling an argument among the traditional Xhosa (although the striking of an inferior may be a punishment for disrespect), and a similar social constraint on violence is a feature of the culture of the Whites in this experiment. It is the absence of this social constraint that renders violence more likely among the urban poor, and that seems to account for several of the features of the XU schemata that are not clearly transitional between those of the Reds and those of the Whites. The large distances of the XU group with all the quarrel items also seem to reflect the weaker effect of social constraint on quarrels and may be a response to fear of violence or at least to the need to keep arousal within bounds which is greater in the absence of such constraint.

The present results suggest that the XN group share the stability of the two modal groups (XR and WH) and, while exhibiting some of the characteristics of each of them, do not suffer from the lack of cultural support for orderly social relations which seems to be found among the less literate urban dwellers. While formal education may play a part in imparting cultural values which enhance social stability, it is likely that it is the improved living conditions that are afforded by the salary attached to a relatively well paid occupation, as well as the nature of the occupation of nursing itself, that furnishes the environment for the development of a higher level of responsibility in the social world of the nurses than is found among the poorer XU group.

24.4 CONCLUSIONS

In conclusion the present study provides strong evidence that in respect of the regulation of interpersonal distance the balance of approach and avoidance forces is the same in all the groups studied, both Xhosa and White, when the situation is a neutral one. Even in a neutral situation, however, both Red Xhosa and the less literate urban Xhosa used more direct orientations than the Xhosa nurses and the Whites, suggesting that factors leading to direct gaze are stronger in the former groups.

In the presence of the role distinction between younger and older age

groups, however, powerful avoidance forces are present in the traditionalist Red group, which are absent from the Whites. As a result the Reds used much larger distances in Experiments 4 and 6B, and showed a tendency for the younger generation figure to face less directly. These forces can be seen as an effect of impression management (section 4.5) since the maintenance of a large distance and the practice of gaze avoidance are means of communicating the respect required towards the older by the younger generation. This effect, being a product of the socialisation process, is mediated by the reward-punishment-arousal system (section 4.4), since the young Xhosa in the Red community is rewarded for behaving respectfully, and punished for being disrespectful. In the urban Xhosa groups (XU and XN) there is clearly a marked reduction in this emphasis on the distinction between the generations, with a corresponding reduction in the strength of this avoidance factor, although both groups continued to show a tendency to give the younger generation figure the less direct angle.

In a situation involving interpersonal conflict, the balance of approach and avoidance factors is modified in all groups when compared to what obtains in the friendly or neutral situation. The main effect is an increase in the strength of avoidance factors relative to approach factors, which is stronger in the Xhosa groups than in the White.

This effect is largely due to a modification of forces controlled by the reward-punishment-arousal system. On the one hand there is the need to avoid excessive arousal levels and the fear of physical violence. On the other, where participants are of unequal status, there are additional forces contributed by the fact that one character is weaker physically or socially than the other. It was suggested that power backed up by social sanction was a strong feature of the Red culture, while physical strength was perhaps more important among the XU subjects.

The present experiments showed quite clearly that the balance of emotional factors affecting the regulation of interpersonal distance and body orientation differs, sometimes more strongly, sometimes more subtly, from group to group,

in a manner that reflects the values of the culture or sub-culture. Future research might profitably employ interaction situations which permit a more detailed analysis of how different approach-avoidance forces differ in strength from group to group, especially in conflict situations. This could be done by describing situations in more detail and by taking more time over each item in order to ensure that the subject was representing the exact situation required. While this procedure would leave the response less under the control of the subject, it would render interpretation of differences between groups amenable to more exact analysis than was possible in the present experiments.

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APPENDIX A

XHOSA TRANSLATION OF INSTRUCTIONS TO SUBJECTS IN SECTION 9.3.3

Imiyalelo kulowo ubuzwayo

Uthabatha inxaxheba kwisifundo esisingise kwindlela abantu abema ngayo xa bethetha omnye nomnye.

Uza kuchazelwa iimeko ezahlukeneyo abancokola phantsi kwazo abantu ababini. Imeko nganye ke kuza kuthiwa yibonise ngonoodoli ababini. Thatha aba nodoli ke ubabeke kweli phepha liphambi kwakho ngendlela eza kungqinelana nendlela abema ngayo abantu abathetha bekule meko uyichazelweyo.

Icacile ke phofu yona into yokuba akukho ndlela ithile emiselweyo ukuba umntu eme ngayo xa ethetha ekwimeko ethile. Bamise nje wena ngale ndlela ucinga ukuba ifanelekile.

Akukho mfuneko yokuba ude uziqhekeze intloko ucinga indlela omawubabeke ngayo oonodoli aba. Babeke nje ngolo hlobo ufuna lona, ubumelekile kule meko uxelelwe ukuba uyibonise. Ukuba ngaba uthe sele ubabekile wabona ukuba hayi noko akwaneliseki yile ndlela bemi ngayo, bajikajike de beme ngendlela ekwanelisayo.

Phambi kokuba ubabeke oonodoli usenokuthi ubuzwe imibuzwana ethile ngale nyewe bancokola ngayo.

Jonga ke ngoku kwaba noodoli.

Uya kuqaphela ukuba abacaci ncam imo yabo. Loo nto kunjalo ke kungokuba akufuneki uthi xa ubajonga bakucingise umntu othile okanye udidi oluthile apha ebantwini. Loo nto ke ithetha ukuba ungacingela nawuphi na umntu okuyo nayiphi na imeko. Ukuba uyathanda ungabathatha ngokuba bamele umntu othile omaziyo okanye abamelanga mntu uthile konke, kodwa "ngabantu nje".

Uyabona ukuba bemi nkqo, ingalo zisemacaleni. Phofu ke wena akunyanzelekanga ukuba ubenze babonise abantu abemi ngolu hlobo. Nangona ungenako ukuyijika-jika imizimba le yabo, usenako ukucingela nje ukuba ngoku iingalo zabo zikwindawo ethile nethile. Kambe ke nazi iindawana nje zimbini ezisisinyanzelo.

Okokuqala: Akufuneki ubonise abantu abahleli phantsi, bonisa abemiyo.

Okwesibini: Kufuneka ubonise abantu abemi ndawonye, ungabonisi abahambayo.

APPENDIX B

XHOSA VERSIONS OF INTERACTION DESCRIPTIONS IN EXPERIMENTS 1, 2, 3 AND 6E

1. EXPERIMENT 1

MM-F: Ngamadoda mabini la ahlobene. Ahlala kwilali enye aphangela ndawo nye. Namhlanje ngoMgqibelo akaphangeli. Le ndoda iya emalikeni idabane nomhlobo wayo lo. Emalikeni afika ancokole.

MC-F: Jonga la madoda mabini. Le ibalulekileyo iyinkosi, inobulumko, ilungile. Enye yeentombi zayo yendele kulo mfo. Ngenye imini inkosi idlula emalikeni ibone le ndoda. Bayadibana babulisane babenencoko emnandi bobabini.

MY-F: Khangela le ndoda nale nkwenkwe bahlala lalini nye, baphangela ndaweni nye. NgoMgqibelo abaphangeli. Le ndoda ibona le nkwenkwe emalikeni iye kuyo ibulise. Emva koko bayathetha bencokola bobabini bezele bububele.

MW-F: Jonga le ndoda nalo mfazi. Bahlala kwilali enye. Ngokucacileyo bayazana nqo. Ngenye imini le ndoda idibene nalo mfazi emalikeni. Iyile kuye yabulisa nje ngezihlobo ezazanayo bancokola bobabini.

MM-Q: La madoda mabini ahlala lalini nye kwisitrato esinye. Le iyiqumbele enye le. Asemalikeni, enye iyahamba iye kwenye le ithethe nayo, lonke eli xesha ithetha ngomsindo le, aqale axabane ngoku.

MC-Q: Ngawo la amadoda, mabini. Le ibalulekileyo iyinkosi, inobulumko, yomelele. Enye yentombi zayo yendele kule ndoda. Inkosi ayiyithandi le ndoda. Inkosi iye imalikeni ngenye imini yadibana nayo le ndoda yaya kuyo ithetha inomsindo.

MY-Q: Jonga le ndoda nale nkwenkwe bahlala kwilali enye basebenza kunye. Le ndoda iyiqumbele le nkwenkwe, iyakuyo, besemalikeni, ithethe nayo inomsindo baqale ke baxabane.

MW-Q: Jonga le ndoda nalo mfazi. Bahlala kwilali enye. Le ndoda imqumbele lo mfazi. Ngenye imini imbona emalikeni imbize ngomsindo. Emva koko bayaxabana.

2. EXPERIMENT 2A

MMF: La madoda mabini angabahlobo abavanayo. Ayancokola onwabile.

MMA: La madoda mabini aqhelene nje. Akazani ncam ncam. Ayancokola onwabile.

MMS: La madoda mabini ngabahambi. Ayaqala ukubonana. Ayancokola onwabile.

MWF: Le ndoda nalo mfazi ngabahlobo abavanayo. Bayancokola bonwabile.

MWA: Le ndoda nalo mfazi baqhelene nje. Abazani ncam ncam. Bayancokola bonwabile.

MWS: Le ndoda nalo mfazi ngabahambi. Bayaqala ukubonana. Bayancokola bonwabile.

3. EXPERIMENT 2B

1A: La madoda mabini zizihlobo ezingathethekiyo. Ancokola ngabafazi nabantwana bawo kwakunye nezinto zomzi. Ayavisisana.

1B: Indoda enye inobuhlobo kakhulu. Iyanqwena ukunga ingaxelela umhlobo wayo ngosapho kwa kunye nezinye izinto zekhaya nje ngoko ithanda ukuncokola. Enye indoda ingumntu othuleyo noneentloni ongathandiyo ukuthetha. Uyacinga ngengqondo efuna nokuba abe yedwa. Kodwa ubonisa imbeko umphulaphule umhlobo wakhe.

2A: La madoda mabini akangqinelani ngomcimbi othile. Azele ngumsindo ayaxoxisana. Iyileyo ifuna kuviwe elayo ilizwi.

2B: La madoda mabini akangqinelani ngomcimbi othile. Omnye ufuna ukuguqula uluvo lomnye lufane nolwakhe. Omnye akazi kwamkela izimvo zomnye kodwa akazazi ukuba makathini na ukuphendula uneentloni uxakiwe. Uziva enzakalisiwe yile ndoda kodwa akathethi kakhulu.

3A: Indoda enye icela uncedo kwenye. Enye iyavuya ukumnceda umhlobo wayo.

3B: Enye indoda inesicelo kwenye. Kuyo ibalulekile into yokuba isenzelwe esi sicelo. Enye ibumangala ukusenza, kuba ingumntu onenceba akafuni ukwala kuphele uxakiwe ukuba angathini na.

4. EXPERIMENT 3

1. Abafazi ababini bazizihlobo bathetha kunye ecaleni kwendlela.
2. Abafazi ababini bazana kancinci bathetha kunye ecaleni kwendlela.
3. Abafazi ababini abangazaniyo tu bathetha kunye ecaleni kwendlela.
4. Aba bafazi babini abavisisani ncam kwintetho yabo. Kodwa ke abanamsindo.
5. Aba bafazi babini abavisisani ncam kwintetho yabo. Bayaxoxa kwaye bakhangeleka benomsindo.
6. Aba bafazi babini abavisisani ncam kwintetho yabo. Bayaxoxa kwaye bashushu ngumsindo.
7. Abafazi ababini bancokola ngembalela.
8. Abafazi ababini bathetha ngendlela bebonisa ubuhlobo ngamadoda kwakunye nabantwana babo.
9. Umfazi utyhola inkwenkwe ngobuxoki. Inkwenkwe iyasikhanyela esi sityholo kwaye ishushu ngumsindo.
10. Umfazi utyhola inkwenkwe ngobuxoki. Inkwenkwe iziva idanile kwaye ayazi ukuba mayithini.
11. Umfazi wokuqala utyhola owesibini ngobuxoki. Umfazi wesibini uziva edanile kwaye engazi ukuba makathini.
12. Omnye umfazi wenza isicelo komnye wesibini. Lo wesibini akafuni kusimamela esi sicelo. Kodwa ke ungumfazi olungileyo kwaye engafuni nokwala kwaphela. Uxakiwe yinto ema kayenza.

5. EXPERIMENT 6E

EMMQ: See Experiment 2B, item 2A above.

EYHP: Urban

Kubiwe esikolweni. Intloko yesikolo yazise ukuba isohlwayo siya kuba sikhulu kwisela elinokuthi lifumaneke, kodwa ithe ukuba isela linokuziveza ingaluncedo olo kulo.

Imeko ekufuneka ibonisiwe yile:

Inkwenkwe izivezile kwinqununu yalivuma ityala lobusela. Yinkwenkwe ethuleyo kwaye inexhala kakhulu neentloni ukuthetha nenqununu ngale nto.

Inqununu imangalisiwe ukuba ibe kanti yile nkwenkwe umenzi wesi senzo njengoko ingumntu oqhuba kakuhle ezifundweni zakhe nonembeko kakhulu. Inqununu ixakiwe ayazi ukuba mayiwumise njani na lo mcimbi.

Rural

Kubiwe kwesi sithili. Ibodi yazise ukuba isohlwayo siya kuba sikhulu kwisela elinokuthi lifumaneke, kodwa ithe ukuba isela linokuziveza ingaluncedo olo kulo.

Imeko ekufuneka ibonisiwe yile:

Inkwenkwe izivezile kwibodi yalivuma ityala lobusela. Yinkwenkwe ethuleyo kwaye inexhala kakhulu neentloni ukuthetha nebhodi ngale nto.

Ibhodi imangalisiwe ukuba ibe kanti yile nkwenkwe umenzi wesi senzo njengoko ingumntu othandwayo kwesi sithili nonembeko kakhulu. Ibhodi ixakiwe ayazi ukuba mayiwumise njani na lo mcimbi.