THE PSYCHOSOCIAL DEVELOPMENT OF CHILDREN WITH HEARING IMPAIRMENTS : A COMPARATIVE STUDY

by

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Submitted as the dissertation component

in partial fulfilment of the requirements for the degree of

MASTER OF EDUCATION

in the Department of Educational Psychology

University of Natal

Pietermaritzburg

1995

DECLARATION

Unless specifically indicated to the contrary in the text, this thesis is the original work of the writer.

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ACKNOWLEDGEMENTS

I would like to thank the teachers of the deaf, Principals and Headteachers, both in South Africa and the United Kingdom, for their help in making this research possible. I would also like to express my gratitude to: Dr Bruce Gillmer for his thorough and thought-provoking supervision; Carol Mitchell and Craig Higson-Smith for assistance with data analysis; Julie Dyall and Sherrice Fford for typing; and Norma Riley for proof reading. I am grateful to Carol Jardine, Claire Penn and Susan Swart from the Department of Speech Pathology and Audiology, University of the Witwatersrand, for additional information on deafness in South Africa.

On a more personal note, I would like to thank my parents for their assistance in data collection in the United Kingdom, and finally, Rob, for the support, encouragement and tolerance he has shown throughout all my academic endeavours.

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ABSTRACT

Teachers in South Africa and the United Kingdom rated their hearing impaired pupils, using the Meadow/Kendall Social Emotional Assessment Inventory, an instrument specifically designed for use with this population. The ratings of teachers from both countries were compared for the complete group of subjects (N=92, SA=42, UK=50) and special school children (N=68, SA=38, UK=30). Children aged 10-12 years, with severe to profound hearing losses and no additional difficulties from South Africa and the United Kingdom, obtained similar scores on two subscales (social adjustment; self-image). On the third subscale (emotional adjustment) British children were rated more positively than South African children. The lower South African score was attributed to results from one South African special school which included children likely to have had more negative experiences than children from other schools. Additional item analysis revealed that children from both countries with hearing impairments do not show unusual or antisocial behaviours and have adapted well to communicative modes adopted in individual schools. Both groups of teachers rated the behaviour of their pupils as generally immature, especially with regard to motivation. It is suggested that such behavioural tendencies reflect appropriate adjustment to management by parents and teachers. Differences in levels of emotional adjustment noted between groups within the subject population are explained in terms of the life events framework. It is suggested that hearing impaired children who experience more negative life circumstances are at greater risk of developing emotional problems than others less affected.

CHAPTER 1

INTRODUCTION

1.1 Deafness and psychology: A brief history

Psychologists have long been interested in people with hearing impairments. The original impetus for the study of deaf people came from attempts to understand the language and cognitive functioning of hearing people. Researchers aimed to shed light upon the philosophical and scientific questions of whether there is a relation between language and thought by studying the cognitive functioning of people born with impaired hearing. Deaf individuals were thought to be a natural experimental group because of their supposed linguistic deficiencies. Other psychologists addressed theoretical questions with practical significance. The nature of the thinking of deaf people was compared with that of hearing people. The existence of quantitative and qualitative differences between hearing and hearing impaired people on cognitive tasks was taken to indicate either that the deaf have limited capacity to acquire cognitive skills, or that alternative teaching approaches needed to be derived in order for the deaf to acquire these skills (Quigley & Paul, 1984).

Historically, research with deaf people has resulted in several conclusions. Pintner, Eisenson and Stanton (1941), in their review and summary of deafness research, concluded that the deaf were intellectually inferior to the hearing. They became convinced that the deaf were retarded because of 'brain damage' associated with the cause of deafness. Pintner and his co-workers suggested that the deaf receive industrial training and a restricted curriculum as it was assumed that they were best suited to manual labour.

The formulations of Pintner *et al.* were examined and re-interpreted by Myklebust in the 1960s. He suggested that when verbal factors in cognitive and intellectual tasks were controlled there were little quantitative differences between the performances of hearing and hearing impaired children. Myklebust (1964) identified

qualitative differences between the two groups and hypothesized that deafness shifted the personality and behaviour of the individual rendering them qualitatively different from a person of normal hearing. Myklebust is especially known for assigning a special psychology to deaf people with his 'organismic shift hypothesis'.

Later theorists moved away from Pintner *et al.*'s and Myklebust's conclusions based essentially upon deficits or deficiencies of deaf people. Hans Furth, a Piagetian, made the point that the deaf were relatively uneducated because they had been deprived of experiences. Donald Moores, working within a Vygotskian paradigm, emphasized the importance of teaching and the role of language in cognition. The currently dominant viewpoint is that the thinking of the deaf is essentially similar to, but comparatively delayed from, the thinking of hearing people. The presence of a hearing impairment is likely to affect all areas of functioning. The degree to which this effect is felt is a reflection of social, emotional, educational and cultural factors (Wood, Wood, Griffiths & Howarth, 1986).

1.2 Generalizations made about the deaf

One of the main features of deafness research is the explicit or implicit negative image it provides of deaf people. As measures of cognitive functioning have been made more appropriate to the deaf population, Pintner *et al.*'s 'inferiority' hypothesis is now considered mainly of historical interest. However, descriptions of deaf people, especially in intrapersonal and interpersonal spheres, often have negative connotations. The deaf population is one about which many less appealing generalizations have been made.

Harlan Lane, a major figure in the field of psychology and deaf people, has reviewed the literature on the 'psychology of the deaf'. He presents lists of social, cognitive, behavioural and emotional traits attributed to deaf people (Lane, 1988). Social traits include: 'dependent'; 'immature'; 'morally undeveloped'; 'suggestible'; and 'weak conscience'. Cognitive traits ascribed to deaf people include: 'concrete'; 'egocentric'; 'poor insight'; 'poor language'; 'poor self-awareness'; and

'stubbornness'. Emotional traits include: 'emotionally disturbed/immature'; 'moody'; 'lacking in empathy'; 'neurotic'; 'temperamental'; and 'unfeeling'. Although some traits are at times contradictory, for example, deaf people are described as both 'aggressive' and 'submissive', trait attribution is consistent in that it presents a picture of deaf people which is negative and unfavourable. Lane proposes that these traits do not represent objective descriptions or characteristics of deaf people but are stereotypes imposed upon a cultural minority (the deaf) by a cultural majority (the hearing). He writes that such stereotypes are born from a lack of knowledge of the people concerned, and serve to perpetuate the dominance of one group over another. According to Lane, the so-called 'psychology of the deaf' pathologizes cultural differences and interprets difference as deviance.

Deaf children, like deaf adults, are also ascribed particular characteristics in the psychological literature. Myklebust's theory of 'organismic shift' is the most explicit account of a special psychology of deafness. According to this theory, deaf children, lacking the parallel worlds afforded by sight and sound, limit their attention to immediate and personal concerns and so show features of egocentricity. They lack flexibility as they are less likely to have to adapt to changes in their environment signalled by sound. Deficits or delays in language influence their capacity for abstract and reflective thinking and so they are more likely to think in a concrete manner and to be impulsive.

1.3 Empirical investigation of the social and emotional development of children with hearing impairments

A number of past studies have highlighted the specific behavioural constellations described by Myklebust. Common characteristics such as egocentricity, self-centredness, hyperactivity, immaturity, rigidity, and lacking in empathy, are typically reported as features of the functioning of deaf children. Chess and Fernandez (1980) reviewed the literature in their paper entitled 'Do deaf children have a typical personality?' They write that the evidence for the existence of a specific personality which included tendencies towards impulsivity, hyperactivity, rigidity and

suspiciousness was inconclusive, largely due to the methodological weaknesses of the studies surveyed. The theoretical underpinning of such research and more recent studies, are reviewed in Chapters 6 and 7. This field of study is particularly characterized by empirical contradictions.

In the design of an inventory (Meadow/Kendall Social Emotional Assessment Inventory [SEAI]), to assess the psychosocial developmental levels of children with hearing impairments, Kathryn Meadow and the research team at Gallaudet University identified certain behavioural traits commonly used to describe deaf children and translated these into inventory items (Meadow, Karchmer, Petersen & Rudner, 1980; Meadow-Orlans, 1983). Items include:

"34. Lethargic, lacks energy. Always tired.

40. Seems to understand the feelings of others; demonstrates empathy.

55. Acts without thinking. Impulsive. Doesn't consider or doesn't care about consequences."

Each of the 59 items was rated by teachers as very true, true, false, or very false, for each child. Inventory items also reflected positive classroom behaviours such as: "2. Kind and considerate".

The result of teachers' ratings formed a profile of a child's social and emotional development. The inventory was designed as an instrument to form part of a battery of tests used for the development of individualized educational plans mandated in the United States (US) for all children with disabilities.

The SEAI has also been used successfully in a number of empirical studies. Barrett (1986) found it a useful pre-test post-test measure of behavioural change as a result of a social living class. Kluwin, Blennerhassett and Sweet (1990) demonstrated concurrent validity of a new measure for evaluations of deaf pupils' capacity to

respond to potentially stressful situations through correlation with SEAI subscales. SEAI has also been used to compare the adjustment of deaf children in different educational placements (Farrugia & Austin, 1980), and to assess the effects on deaf adolescents of transfer from one educational setting to another (Lytle, Feinstein & Jonas, 1987). SEAI has not been found to be a useful screening instrument for the assessment of psychiatric disorder in deaf children (Hindley, 1993).

An interesting use of SEAI has been in its cross-national application. Children from several countries have been rated by their teachers using this inventory. It has been hypothesized that similarities in ratings for children living in countries very different in history, political philosophy, social and educational resources (especially for children with disabilities) may support the generalizations made about deaf children in the past.

Meadow and Dyssegaard (1983a, 1983b) compared SEAI scores obtained from Danish and American teachers. The analysis of data revealed that the overall assessments of children's adjustment levels in both countries were almost identical. They concluded that SEAI could be used in other countries without major changes. Particular similarities between Danish and American children were noted in the areas of lacking in motivation, independence and initiative. This was attributed to an external locus of control and over-control by parents and teachers. Cross-cultural differences were noted between the two groups. Danish teachers evaluated children as more reserved and introspective, American teachers evaluated their pupils as more assertive and extroverted. It was suggested that such differences provide information on cross-national differences in appraisals of children's behaviour, and on what teachers in different countries value in social behaviour.

Zwiebel, Meadow-Orlans and Dyssegaard (1986) compared teachers' evaluations on the SEAI for children in Israel, US and Denmark. They found that there was a high degree of similarity on the three scales between the children in each country. The researchers concluded that most deaf children tested in Israel, US and Denmark 'do *not* exhibit symptoms of extreme emotional disturbances' (emphasis

in the original) (p.117) . However, they were rated as showing behaviours that may lead to a general description of immaturity, dependence on peers and teachers, difficulties in social participation and cooperative activity. Some interesting differences emerged from this study between the Israeli children and the two other groups. Although they were not viewed more positively on general characteristics, the Israeli children were rated higher on items which suggested that they may be given more responsibility earlier and hence be more mature than American or Danish children. They were also less impulsive than the other groups. The Israeli children were viewed as more fearful, anxious, less happy and having a lesser sense of humour than Danish and American children. The authors suggested that this may be indicative of living in a more dangerous environment than children from either Denmark or US. Children in Israel may be expected to grow up more quickly and be more serious than the other two groups. Zwiebel *et al.* concluded that although some cultural differences between the groups emerged, there was a surprisingly large number of similarities between Israeli, Danish and American children on teachers' ratings of social and emotional adjustment. The areas of similarity, including immaturity, dependence and difficulties in social situations, support some of the generalizations made about deaf children in psychological literature.

1.4 Cross-national comparisons

In the introduction to their research, Zwiebel *et al.* (1986) comment that "[c]ross-national comparisons are difficult and problematic at best" (p.10). The study of children from different countries involves the examination of a number of important influences on the developing child in context.

Most of the research with subjects from different countries falls under the umbrella of 'cross-cultural psychology' which focuses on cultural factors in behaviour. People of different nationalities may often be distinguished not only in terms of geographical location and language but also by patterns of behaviour. The term 'culture' is used to mean those recurring patterns of behaviour which are specific to certain groups

of people. Brislin (1990) explains that "culture refers to widely shared ideals, values, formation of and uses of categories, assumptions about life, and goal-directed activities that become unconsciously or subconsciously accepted as 'right' and 'correct' by people who identify themselves as members of a society" (p.11). Beliefs and practices evolve within societies according to physical ecology (climate, water supply, temperature), socio-cultural characteristics of the population (political systems, kinship system), organismic variables (genetic predispositions, health and nutritional status), and individual variables (cognitive style, attitudes) (Segall, 1979). Therefore, the practices of cultural traditions have their roots in the processes of adaption to ecological, political and economic forces. People of different nationalities, especially those separated geographically, may show differing behavioural patterns because of cultural differences. These differences provide information on important influential factors on the lives of individuals within particular societies.

The term 'society', according to Brislin, may refer to a country (such as South Africa), but can also be used to designate any other group with which an individual identifies, or within which others categorize that person. Examples of societies include class groups, ethnic groups, religious groups, even professional groups and groups of people with a particular characteristic (for example, members of the Deaf cultural community), could be described as societies. Each of these groups could be said to have common goals, ideals, values, activities and, to varying extents, shared 'language'. Investigation of subjective culture in specific societies has begun to replace research of broadly defined social categories such as nationality or race.

Lonner (1979) asserts that much research that is termed 'cross-cultural' would be more aptly described as 'sub-cultural' or 'cross-ethnic'. Examples of this class of research include contrasts of sub-groups within the population, such as ethnic groups in the United Kingdom (UK). Research with particular sub-groups, although difficult because of confounding variables due to common characteristics between groups, are of value especially in future interventions (psychological and educational) for the groups concerned. Conversely, cross-national research with

widely contrasting cultural groups contributes more to a general understanding of a specific theory.

The purpose of the present study is to examine the psychological process of psychosocial development within sub-groups of the international deaf community. As such it could be described as 'cross-national', 'cross-cultural', 'sub-cultural' and 'cross-ethnic'. Placed within the paradigm of cross-cultural psychology, the focus of this research is on universal patterns of behaviour by comparing children from different countries and cultures. It also seeks to address behavioural differences between sub-cultures by identifying differences between groups within the population.

Producing meaningful, generalizable findings in psychological research is difficult at best, when the subjects concerned are from differing cultures (and in the case of certain South African (SA) groups, undergoing actual transformation), additional problems arise (Liddell, Kvalsvig, Shabalala & Qotyana, 1994). If, as in this case, comparisons involve children with a sensory impairment, the difficulties are compounded. In addition to existing national, cultural, socio-economic and political differences, it is likely that there will be differences in attitudes about disability that will be reflected in the work with children with hearing impairments.

Children from different societies may experience differing levels of resources, educational opportunities and medical services, due to general prevailing attitudes about disability, and hearing loss in particular. A flavour of the different experiences of deaf children in first world countries (such as UK and US) is provided in Chapter 2 and can be compared with the current SA situation which is discussed in Chapter 3.

Despite the inherent difficulties of research with a population about which there are a number of unresolved controversies (which are introduced below) within a research paradigm that holds formidable obstacles, the value of such cross-national comparisons is to enable an increase in understanding of the behaviour of children

with hearing impairments in the UK and SA. Importantly, these comparisons may illuminate beliefs and assumptions educators make about deaf children in different countries. "These beliefs and expectations about behaviours, as well as the behaviours themselves, influence educational environments and opportunities of hearing impaired children" (Meadow & Dyssegaard, 1983a, p.346). Cross-cultural investigations hopefully will lead to a better understanding of the behaviour of the developing deaf child in context.

1.5 Controversy, debate and research

The study of deafness, perhaps more than the study of any other 'disability', is characterized by controversy and debate. This has been the case in the past and will undoubtedly continue in the future as the central issue is one of perspective. The work of professionals and researchers is informed by the individual person's view of what deafness is: their psychological perspective of deafness. Two models of deafness have been proposed. The medical model views deafness as a deficiency and labels it as such by audiological definition. This view has been described as the 'deficit' model of deafness (Moores, 1987). From this perspective, deafness represents a disability to be remediated in order to allow the individual to participate in the larger hearing society. The aims of remediation and rehabilitation are the normalization of hearing impaired people through the acquisition of spoken language. The opposing, and increasingly popular, viewpoint is that deaf people constitute a social and cultural minority group largely defined by their own language: that of sign language. This perspective towards deafness is most commonly referred to as the 'cultural' model of deafness. These two seemingly disparate views give rise to several long-standing debates, particularly over mode of communication and educational provision. The manual-oral debate between manualists, advocating sign language, and oralists, advocating the use of spoken language, is a recurrent theme in this world of deafness. It provides a backdrop for educational debate, an example of which is the ongoing controversy over type of provision (special or mainstream) for children with hearing impairments. These views are introduced in Chapter 2.

Much of current research with the deaf follows the tenets of pluralistic psychology, which investigates individual differences in a non-evaluative way. Difference need not imply deficiency *per se*, but represents an alternative way of constructing the world. The investigation of individual differences within such a paradigm makes possible the exploration of systems and the unravelling of processes. A currently important area of research is in social and cultural aspects of deafness, especially childhood deafness. The aims of studies of psychosocial development are to better understand the social and cognitive mosaics that constitute the world of deaf children, and to use such insights to encourage the achievement of optimal levels of development.

An aim of this research is to measure the current level of psychosocial functioning of groups of children with hearing impairments in different situations. Results from previous studies (Meadow & Dyssegaard, 1983a, 1983b; Zwiebel *et al.*, 1986) using SEAI have shown that children from three different countries show similar overall levels of social and emotional adjustment. This study further aims to discover whether the findings of these previous studies may be replicated by investigating the psychosocial adjustment of hearing impaired pupils in two additional countries, SA and UK. If this is found to be the case then further weight may be added to the evidence that children with hearing impairments show similar levels of social and emotional adjustment, despite national differences.

The background to this study is provided in Chapters 2 to 6 inclusive. Chapter 2 provides an introduction to the deaf population by detailing the major influences on the lives of deaf children. These, and additional factors are related to the SA situation in Chapter 3. In Chapter 4 the field of psychosocial development is introduced, and is followed by a discussion of the impact of deafness on the social and emotional development of children in Chapters 5 and 6. Chapter 7 provides a detailed review of the literature on the social adjustment, emotional adjustment and self-image of children with hearing impairments. Chapters 8 and 9 provide information on the present study and detail results. In Chapter 10 these results are discussed in the light of previous findings and contextualized in terms of national,

political and cultural influences. The study is concluded with recommendations for further research.

1.6 Terminology

As in Meadow-Orlans (1983), the terms 'deaf' and 'hearing impaired' are used interchangeably throughout this study. The convention of using the term 'Deaf' (upper-case 'D') to identify those people who are members of Deaf culture, is also followed (Gregory & Hartley, 1991). In general, the children with hearing impairments discussed in this study are those with hearing parents, unless otherwise stated.

CHAPTER 2

RESEARCH WITH THE DEAF

An outstanding feature of the deaf population is its lack of homogeneity. Despite the fact that the population is numerically small, the diversity between groups and individuals diagnosed as deaf is great. Deaf children vary from each other in terms of degree and type of impairment; age of onset and diagnosis; aetiology; presence of additional difficulties; mode of communication; educational placement; cultural affiliation; level of involvement and communicative ability of caregiver. Children with a hearing loss have a range of complex and unpredictable needs as the physical facts of deafness interact with the intricate web of psychological, social and familial variables (Wood, Wood, Griffiths & Howarth, 1986).

Much previous research with deaf children is contradictory as researchers often neglected to consider the range of variables which influenced the lives of their subjects. An experimental group selected on, for example, the basis of degree of deafness alone will inevitably include children from various sub-groups of the population who, by their nature, may show even more differences from each other than from the control group. Therefore, any research with the deaf is inevitably a compromise between the need to select appropriate subjects and the small number of subjects available (Meadow, 1980).

Variables which influence the lives of the deaf include:

- Type and degree of impairment
- Age of onset
- Age of diagnosis
- Aetiology
- Cultural affiliation
- Educational placement
- Mode of communication
- Family climate.

2.1 Type and degree of impairment

2.1.1 Type of hearing loss

The type of hearing loss is established by reference to the site of an abnormality within the hearing mechanism. A conductive hearing loss is the result of an obstruction or other form of inhibition of vibration occurring in the outer or middle ear. A common cause of conductive losses is otitis media, an infection of the middle ear cleft which results in a general dampening of sound vibration transmitted to the brain. Such losses are usually transient, less severe and are amenable to medical and surgical intervention. However, it has been shown that conductive losses are educationally important and can affect language acquisition and school progress if they are present for long periods of time (Webster, 1986).

A sensori-neural loss is the result of a malfunction in the inner ear involving damage to part of the neural pathway. Losses are often more severe and are not treatable other than by the use of amplification. Sensori-neural losses are either congenital or acquired. Congenital sensori-neural deafness is the result of genetic factors and prenatal and perinatal damage. Acquired deafness is used to describe causes of deafness due to postnatal factors or later infection or trauma.

The term 'mixed' hearing loss is used to describe the combination of a sensori-neural loss with an additional conductive element, usually referred to as a conductive overlay. Children with mixed losses intermittently experience a more severe hearing loss than their norm.

Knowledge of the type of hearing loss is vital in determining an appropriate therapeutic intervention. In addition, type of hearing loss differentiates to some extent between degree of hearing loss. Conductive losses usually result in mild to moderate hearing losses, whilst sensori-neural hearing losses may be mild, moderate, severe or profound.

2.1.2 Degree of hearing loss

The extent or severity of a hearing loss is described as the degree of hearing loss. The degree of any given loss is determined by calculating the average loss for the better ear across the pure tone frequencies of 125 Hz, 250 Hz, 500 Hz, 1 K, 2 K, 4 K and 8 K. The audiometric descriptors, as defined by the Royal National Institute for Deaf People (RNID) (1993) are shown in Table 1.

Table 1: Audiometric descriptors

Description of hearing loss	dBHL better ear average
Mild hearing loss	25 - 40
Moderate hearing loss	41 - 70
Severe hearing loss	71 - 95
Profound hearing loss	96 +

(RNID, 1993, p.3)

Degree of hearing loss relates to the range of functional hearing possessed by the child and is often important in influencing the child's ability to produce intelligible speech and to benefit from amplification.

Knowledge of the severity of a hearing loss alone is insufficient to ascertain a child's auditory potential. An individual configuration of hearing loss as shown on the child's audiogram (chart detailing threshold levels in decibels (dB) in relation to pure tone frequencies), provides more useful information on everyday functioning. For example, a child with a marked high tone loss may have greater difficulties with speech intelligibility than a child with a similar degree of loss, but with more functional hearing in the high frequencies.

Although it is important to know both the severity of a loss and the individual configuration of loss, the performances of individuals with similar losses may still

vary, not only on speech discrimination measures but also in everyday life. Two children with similar losses may differ greatly in their communicative abilities, educational attainment and speech intelligibility, depending upon their use of residual hearing and external circumstances. Therefore, in considering a child's potential it is more relevant to evaluate the severity of loss in conjunction with how the child functions academically, socially, emotionally and linguistically, both at home and at school.

2.2 Age of onset

It is important to identify the age of onset of deafness as the later the onset the more likely that the child will have acquired facets of spoken language. Those deafened before the age of two years are termed prelingually deafened. The establishment of the onset of a child's deafness is undoubtedly related to the aetiology of deafness. A child born deaf as a result of genetic inheritance will present differently in terms of spoken language from a child who became deaf at the age of three to four years due to viral infection.

The perception of sound, and particularly speech, before the age of two years influences subsequent language development. Studies of brain activity in response to sine-wave and click stimuli support the view that auditory function begins several weeks prior to birth (Campos, Barrett, Lamb, Goldsmith & Stenberg, 1983). Newborn infants are capable of not only localizing sound (Muir & Field, 1979), but show a preference for the mother's voice as opposed to a stranger's voice at the age of three days (DeCasper & Fifer, 1980). There is strong support for the assumption that infants possess specialized speech processing skills. Such skills are the foundation upon which spoken language acquisition is built.

The means through which language is acquired is in interaction between child and caregiver. Almost from the beginning parents treat their infants as if they were social partners by attributing intent to vocalizations and providing a model of two-sided communication. The experience of early language acquisition is such that

meaning is emphasized, the adult is contingent upon the child's interests, the child is ascribed an active role. As a result, usually by the age of three years, a child with an intact auditory mechanism possesses an extensive receptive and expressive vocabulary and is capable of both comprehending and producing sentence length utterances, even though not usually syntactically correct. A child who acquires a hearing loss during, or subsequent to, early speech development will have some linguistic knowledge which will form the basis for later learning. This would place such a child at a greater advantage in learning spoken communication than a child who has never perceived sound at usual levels.

2.3 Age of diagnosis

A further critical factor influencing the development of hearing impaired children, and one which is linked to the onset of deafness is the age of the child on diagnosis. What constitutes 'early detection' varies according to testing procedures established. Up to a number of years ago diagnosis before the age of one year would have been considered as early. It is now possible to identify congenital deafness within the first three months of life and targeted neonatal screening is likely to become a medico-legal obligation within United Kingdom (UK) hospitals in the near future. Feasibility studies are currently being carried out in the UK to evaluate all neonates for hearing impairment prior to hospital discharge (Robinshaw, 1994). Sadly, the age of the clinical diagnosis of deafness in other countries where universal screening has not been established (such as South Africa) can be much later.

Early detection of deafness is vital so that a symbolic language system can be established. Numerous researchers have supported the view that much of the difficulties in speech and language shown by deaf children could be ameliorated with appropriate use of amplification initiated in the first 18 months of life (Tucker & Nolan, 1984). Recent research has indicated that hearing aid prescription is an important *component* to the acquisition of spoken language. Other components include auditory and visual perception, vocal production, intentional communication,

gesture, and the role of the caretaker. Robinshaw (1994) writes that the aims of intervention are to assist in the development of *each* component, and to provide the support system in order for components to integrate and allow the development of language.

Ross (1990) outlines the negative consequences of delayed auditory management as structural, physiological and psychosocial. Early sound deprivation leads to defects in the auditory pathways and neurons which may cause neural dystrophy (Webster, 1986). Physiological effects of sound deprivation studies with animals reveal that early deprivation increases the latency of auditory neural responses resulting in a delay on reaching the brain. Ross argues for the necessity of early detection and prescription of binaural amplification to facilitate the development of localization skills and auditory self-monitoring. Children who have received appropriate early management are exposed to linguistic input at their developmentally most sensitive period, thereby enabling learning to occur in a natural fashion and minimising the later appearance of language deficiencies.

The psychosocial implications of late detection contribute to a larger picture of complex influences on a deaf child's adjustment. Despite the unarguable difficulties which hearing parents have to face on the diagnosis of their child's deafness, early detection at least reduces ambiguity regarding the child's status. A child who is diagnosed later may have had his or her behaviour ascribed to developmental delay, mental retardation or stubbornness (Vernon & Andrews, 1990). The impact of parental uncertainty and confusion during the pre-diagnosis period is impossible to measure, but may contribute detrimentally to the development of later familial relationships.

2.4 Aetiology

The cause of deafness in individuals is an important determinate of differences within the deaf population (Wood, Wood, Griffiths & Howarth, 1986). Causes of childhood deafness are detailed in Table 2.

The relative contribution to the total number of deaf children in the UK has changed over time. As the severity of middle ear deafness and complications of illnesses such as measles and infantile meningitis have been more effectively managed, the incidence of post lingual deafness has diminished. Similarly, the UK figures on numbers of children deafened as a result of congenital rubella have been reduced as a result of the introduction of extensive immunization of teenage girls. The incidence of kernicterus has also been markedly reduced by the use of Anti-D and better management of rhesus disease and hyperbilirubinaemia. However, over the same period, advances in medicine (particularly in relation to enabling the survival of low birth weight children), have resulted in increasing the relative numbers of children with multiple handicaps, including deafness. The pattern of aetiologies described by Freeman, Malkin and Hastings (1975, cited in Hindley, 1993) for a population of 117 deaf children aged 5 - 15 years in the Greater Vancouver area is similar to that found in other studies and is shown in Table 3.

Table 2: Causes of childhood deafness

Antenatal:	genetic infections	congenital rubella syndrome (CRS) cytomegalovirus (CMV)
	toxic	thalidomide
Intrapartum:	metabolic	anoxia/hypoxia
Postnatal:	infections	meningitis
	metabolic	anoxia/hypoxia
	kernicterus/ hyperbilirubinaemia	
	toxic/iatrogenic	ototoxic drugs such as gentamicin
Infancy and childhood:	genetic	late onset, progressive deafness
	infections	meningitis, encephalitis, mumps, measles, acute otitis media, delayed manifestations of CRS
	traumatic	head injury
	toxic	gentamicin
	iatrogenic	middle ear operations

Adapted from Hindley (1993, p.6)

Table 3: Pattern of aetiologies of deafness

Cause	Percentage
Genetic	22,2
Rubella	15,4
Meningitis	6,8
Kernicterus	3,4
Anoxia	3,4
Prematurity	1,7
Drugs	1,7
Trauma	1,7
Aetiology unknown	43,6

Adapted from Hindley (1993, p.9)

Knowledge of aetiology of deafness is important as it relates to age of onset and age of diagnosis. Cause of deafness often has ramifications for parental attitudes towards their child. Aetiological factors are also important determinants of the presence of additional handicap.

Certain aetiological factors are associated with Central Nervous System (CNS) damage. Kernicterus is associated with athetoid cerebral palsy. Congenital rubella is also linked to cerebral palsy and can cause immediate and delayed encephalitis. Meningitis and encephalitis are associated with CNS damage.

An aetiology worthy of particular attention because of its association with additional impairments, is congenital rubella. The rubella virus is a cyclic viral disease which crosses the placenta and attacks rapidly growing cells. Possible effects of rubella infection of the developing foetus include neurological damage, hearing impairment, visual impairment, spasticity, heart impairment, bronchial problems, renal difficulties, low birth weight, retarded growth, and learning difficulties. Vernon (1967), in his study of the results of the 1963-1965 rubella epidemic in the United States (US) concluded that just over a half of rubella affected children had multiple handicaps and were identified as showing specific and general learning difficulties.

Children with hearing impairments due to traumatic aetiologies or rubella have been found to have a higher incidence of behavioural and emotional disturbance than children whose losses are described as genetic or unknown (Vernon, 1967). Children affected by the rubella virus show more characteristics of poor impulse control, excitability, distractibility and emotional instability than other deaf sub-groups. Williams (1970) went so far as to suggest that there may be an association between congenital rubella syndrome and anti-social behaviour.

In conclusion, the literature supports the view that aetiology is an important distinguishing feature between deaf sub-groups. Some conditions which cause deafness give rise to additional disabilities. Others are relatively unlikely to result in further damage. Apart from a few syndromes (such as Usher's Syndrome), genetic causes of deafness are not associated with brain damage. However, the differences between children with different aetiologies amounts to more than the association between deafness and organicity. Children with multiple handicaps are further at risk for developing difficult behaviours because of additional restrictions on opportunities to participate in interactional experiences. Multi-sensory impaired children may have extreme difficulties in interpersonal relationships due to an inadequate perception of the world, experiential and emotional deprivation which are compounded by medical problems. Disturbance of learning may result and individuals may develop idiosyncratic learning styles and behavioural disorders. Chess and Fernandez (1980) write that primary (organic) and secondary (environmental) effects of disability are interdependent. Individuals who show both visible signs of disability and communication difficulties may produce social behaviour which appears inappropriate or unusual and, as such, tends to be viewed negatively.

In conducting research with deaf children a number of researchers have excluded particular groups on the basis of aetiology, depending upon the number of subjects available and the nature of the research. Others have attempted to control for differences in aetiology by restricting the age of onset of subjects included, and excluding children with additional diagnosed handicaps (Meadow, 1978). An

essential difficulty in studying the deaf is that often (up to 50% of individuals involved), the cause of deafness is unknown.

2.5 Cultural affiliation

The conceptual issues discussed above imply a particular philosophical perspective towards deafness. Terms such as impairment, disability, severity, treatment, diagnosis, and aetiology are derived from a medical model of deafness which focuses on preventing, curing or overcoming deafness. Also referred to as the pathological or clinical model, this perspective regards the deaf as deviant (and by implication, inferior) from the hearing norm (Moores, 1987). The pathological model of deafness has, until relatively recently, dominated the thinking of professionals and influenced both research and practice. An often cited goal of education is to help individuals to overcome the condition of deafness to enable them to be integrated into mainstream society. Prior to further discussion of issues surrounding the education and mode of communication of the hearing impaired, it is necessary to outline the growing trend towards viewing deafness from a cultural perspective.

Cultural models of human behaviour centre around the common language and shared experiences of particular groups of people. The cultural perspective of deafness focuses on the "language, experience and values of a particular group of people who happen to be deaf" (Baker & Cokely, 1980, p.54). Culturally Deaf individuals do not consider themselves as in possession of a pathological impairment or deficiency, but as culturally different from the hearing norm by virtue of a different language and different experiences. Deafness is, in a sense, unique within the realm of disabilities in that Deaf persons reject comparisons in terms of deficiency and condemn remediation with its aim of ensuring greater fit into the wider community. They would advocate that it is more appropriate to create a healthy integrated Deaf individual who identifies with, and is involved in, social and political activities, events, values and customs of Deaf culture, as opposed to a deaf person who associates with the mainstream hearing culture.

Culturally Deaf people have their own view of 'integration'. Assimilation and integration is only acceptable in a context in which Deaf people retain their language and community. They see the value of effective functioning in mainstream society, but advocate that this may come about only through a grounding in the culture and language of the Deaf. Bi-culturalism is viewed as useful but is only possible if Deaf people learn to function in the Deaf community first, and then learn to function in the world of others (Humfries, 1993).

Difficulties arise in the attempt to describe what constitutes Deaf culture, partly because of confusion regarding the terms 'Deaf culture' and the more traditional term 'deaf community'. Although the terms have been used interchangeably, important distinctions have been drawn between Deaf culture and deaf community. A 'community' is often understood to refer to a group of people who share and work towards common goals within a particular geographical location. 'Deaf community' is often used to describe the communicative abilities, education, achievement, psychosocial development, marriage patterns and employment characteristics of deaf individuals with pre-linguistic severe to profound hearing impairments (Schein, 1978). Vernon and Andrews (1990) contend that the deaf community includes members of the Deaf culture, but not all members of the deaf community are members of Deaf culture.

Deaf culture is characterized by its own organizations, social structures and personal attitudes. The single most important feature of Deaf culture is the use of sign language, American Sign Language (ASL) in the US, British Sign Language (BSL) in the UK. There are also a number of versions of sign language in South Africa (SA). The use of sign language is actively promoted in Deaf culture; speech and mouth movements are considered as inappropriate or unacceptable (Padden, 1980). Exponents of Deaf culture advocate the involvement of the adult Deaf in the education of deaf children in order to enable them to learn the language, customs and values of Deaf culture.

This model which views deafness as a cultural difference is controversial. There continues to be debate as to the existence of a Deaf culture or sub-cultures. Argument is largely informed by the philosophical perspective of deafness. Proponents of the pathological model may deny the importance of Deaf culture in the education of children with hearing losses. Although the two models are essentially contradictory, Hindley (1993) views the cultural and pathological models as also complementary. The cultural model shifts the focus away from deafness as a handicap, but as a statement of pride, whilst the pathological model explains the medical consequences of deafness.

2.6 Education

Much of the debates and controversies regarding deafness are about education. Moores (1991) identifies three complexly interrelated underlying sources of tension which he calls the 'Great Debates'. He frames them as the following questions:

1. *Where* should deaf students be taught?
2. *How* should deaf students be taught?
3. *What* should deaf students be taught?

The first issue of appropriate placement of education is discussed below. The closely related issue of how children should be taught is introduced in the next section. *What* deaf children should be taught, although an important issue, is beyond the scope of this introduction. Briefly, this third question refers to curriculum. This debate is between those who advocate the provision of a similar curricula content for deaf children as for hearing children, and others who would wish to incorporate special programmes such as auditory training, sign language, and Deaf culture into the school day.

There is much variation in the nature of educational services experienced by different members of the deaf population, especially in US and UK. Tucker and Powell (1991) write that such a range in educational provision is desirable because of the heterogeneous nature of the deaf population.

The traditional place of education for the deaf child is the special school. During the first half of the twentieth century a period of expansion in special education resulted in the opening of a number of schools for the deaf. By the 1960s and 1970s political and economic optimism was reflected in changes in the educational climate on both sides of the Atlantic. Education was seen as a way of reducing social inequality. The concept of child-centred education aimed at accommodating children with a range of abilities became popularized as the principle of comprehensive education became established.

An examination of education as a whole brought with it an increasing dissatisfaction with the methods of evaluating children for special education. Categories such as 'deaf' and 'maladjusted' were used to label children and determine their educational provision. Such labels were viewed as self-fulfilling prophecies which influenced expectations of and attitudes to the disabled child. For example, a child labelled as 'deaf' would be considered as unable to acquire speech. This deficit model of disability places the problem as inherent in the child, hence implying little need to examine teaching styles, curricula and related issues. It also resulted in special education becoming synonymous with special schools. It was such growing discontent with a system whereby special education was defined in relation to disability, in addition to changes in philosophy and practice in education, which provided impetus for educational reform. In the 1970s and 1980s legislation was enacted on both sides of the Atlantic which changed the way in which children with disabilities were viewed in relation to the educational system as a whole.

Public Law (PL) 94-142 (1975, implemented in US in 1978) and the 1981 Education Act (implemented in UK in 1983) affirmed the right to an education for every child with a disability with the emphasis being on the individual needs of the child as opposed to a classification of 'handicap'. Hence, the focus of intervention shifted to the conditions necessary for the child to benefit from education. The aim of assessment was not so much a diagnosis of disability, but establishing a child's 'special educational needs'. A 'need' was defined in relation to the goals of education. For example, in order to benefit from education, a child may require a

hearing aid, specialist lessons and transport to a specialist unit. All these would be translated into 'special educational needs' for the specific child. Each individual child's needs would form the basis of a legally binding document, drawn up by a multi-disciplinary team, and referred to as a Statement of Educational Need (UK) and an Individual Educational Program (US). The challenge to educationalists was to create a framework of resources flexible enough to meet individual needs and circumstances, with the aim of making special education more sensitive, adaptable and differentiated.

In addition to the replacement of categories of handicap with individual needs, a key requirement of legislation was a change in educational provision and the adoption of the 'integration principle'. Apart from certain specified exceptions, the place of education for *all* pupils was to be the ordinary school. In the UK local education authorities were charged with making arrangements for pupils with special educational needs to attend ordinary schools, and for the schools themselves to ensure that these pupils engage in the activities of the school alongside other pupils.

A similar principle was enshrined in PL 94-142 which conceptualized educational placement as comprising of a continuum of provision ranging from the least restrictive (regular classroom setting with considerable opportunities to interact with non-disabled children), to most restrictive (special school which would provide little, if any, contact with non-disabled individuals). It was intended that individual children, possessing individual needs, would be placed on the basis of those needs in the least restrictive setting. Educational changes made in US and UK have been and continue to be debated; detailed analysis of arguments are provided by Booth and Swann (1987), Hegarty (1987), Solity (1991) and Swann (1981).

Tucker and Powell (1991) discuss the impact of educational reform on the placement of hearing impaired children in the UK. Although it is difficult to give precise numbers of children in particular educational environments because of differences in methods of classification and data gathering, Tucker and Powell cite

the survey carried out for the British Association of Teachers of the Deaf in 1989, detailing the educational whereabouts of British deaf children in England and Wales (Table 4).

Table 4: The educational placement of pre-school and school-aged children in England and Wales

Placement	Number of children
Schools for the Deaf/Partially Hearing	2 354
Units	2 263
Pre-school	1 721
Mainstream schools	6 689
Other special schools	1 625
Notified to service	
(a) Variable conductive loss	28 486
(b) Severe monaural loss	2 815
Mainstream without hearing aids	9 895
TOTAL	55 848

Adapted from Tucker and Powell (1991, p.126)

From the above figures it appears that the majority of hearing impaired children in the UK are educated in the mainstream. A further illustration of the placement of deaf children is provided by the figures on the places where teachers of the deaf were employed. In 1978, 41% were working in special schools, by 1988 this had fallen to 30.6%. Tucker and Powell write that the practice of educating hearing impaired children alongside their hearing peers is now well established in UK and US. Britain mainstreams more children (51.2%) with hearing losses greater than 40 dB than any other European country.

The educational, social and emotional impact of deafness ranges from very slight at one end of the spectrum, to very severe at the other. Hence, "a cascade

approach ranging from total integration into mainstream with and without support, through units and resource bases to day and residential special schools would seem to be ideal" (Tucker & Powell, 1991, p.134). In the UK and the US children with hearing impairments are educated in a variety of settings. The debate over the benefits of particular placements, especially special school versus mainstream placement continues. Hegarty (1987) concludes that research evidence related to most appropriate placement is not definitive or specific, and a clear cut picture favouring one type of provision does not emerge.

2.7 Mode of communication

Mode of communication has been a long standing issue and a source of much debate between people who are involved with the deaf and the deaf themselves. What has been termed the 'communication debate' has continued for over a hundred years and has been influenced by philosophy, personalities and legislation. The so-called manual-oral debate between those who advocate the use of sign languages versus those who believe that deaf people should learn spoken language is based upon the individual's philosophical perspective towards deafness.

Con Powell advocates the acquisition of spoken language by deaf children. He proposes that deaf children follow similar processes of language acquisition observed in hearing children, by interacting in a normal conversational manner with significant others. He views the use of residual hearing through good audiological management as an essential component to the linguistic development of deaf children, but does not neglect gestural, visual and contextual cues that are part of normal communication. Children who use spoken language are, therefore, equipped to take a place within their natural cultural group, that of their parents. They will be able to live independent lives within the hearing community and take advantage of educational and employment opportunities available to those who use the language of the majority culture (Powell, 1990).

The opposing view is that sign language, with its use of the visual channel, is the natural form of communication for the deaf. To be 'deaf' is intrinsic to the individual's perception of self and is a vital feature of shared identity with other deaf people. Pickergill (1990) insists that the use of sign language is central to this identity. Sign language therefore, is defined as the first language of the deaf child. This is not because it is the child's mother tongue, or the language of the home, but because it is the language which is easiest acquired and is the basis for cognitive growth. The use of sign language provides access to the culture of Deaf people.

These two standpoints are seemingly irreconcilable. Yet it is important to recognize that philosophical standpoints inevitably alter from situation to situation as ideas and ideals meet reality and practicality. In the real world the education of the deaf is influenced by individual circumstances, educational situations and personal and financial constraints. The key issues in relation to mode of communication include:

- how a hearing impaired child acquires language
- how a hearing impaired child can access education
- what should comprise 'education' for a hearing impaired child
- who should make assessment and placement decisions.

It is important that such issues be considered in relation to the individual rights and needs of each child. The emphasis for the deaf child should be placed on choice and the aim must be to equip deaf young people so that they have a genuine choice and not to attempt to exercise that choice for them.

2.7.1 Sign language

Sign language is the visual-gestural language used by many deaf people. It has come a long way from a loose collection of pantomimes or gestures to a language with a considerable degree of systematicity and hierarchical organization typical of spoken languages. In fact, it is inaccurate to use the term sign language in the singular as there are many sign languages used by the international deaf community, most of which are distinct languages which share some syntactic

features but have different lexicons. The majority of research has been carried out with American Sign Language (ASL) and British Sign Language (BSL), which are not only completely different from English (for instance, in grammatical structure and in the indications of passage of time), but are also unrelated to each other (Bellugi & Klima, 1978).*

The relationship between spoken language and sign language is akin to the relationship between majority and minority cultures. Sign language, the language of the minority culture, is modified by spoken English according to the formality of the occasion. English structures, for example, would predominate over BSL structures in lectures.

Signing in English word order is used within educational settings. The motivation behind this is that the goal of education is the development of English language. What have been termed 'supportive systems' have been developed for educational use. They represent combinations of signed and spoken languages, but are not actual languages *per se*.

Most commonly used in schools are:

- Signed Supported English (SSE) / Pidgin Signed English (PSE): a combination of spoken English and signs in English word order, but omitting verb tense modifications, articles and conjunctions. SSE/PSE functions as a bridge between the deaf and hearing individuals who know some signs but are unable to communicate in sign language proper.

- Manual English Systems / Signed English: spoken language and signs used together, including all the grammatical forms of English. Such systems tend to be slower in conveying information than sign language or SSE/PSE.

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* Gregory and Hartley (1991) provide a collection of edited papers by foremost UK and US writers on aspects of sign language. Reagan (1986) discusses the implications of sign language and manually encoded systems found in American deaf community for sign language use in SA.

A fervent critic of the undermining of sign languages by the hearing community, Harlan Lane, compared the forced labour of Africans in colonial Burundi to the expectation that deaf children must sign in English word order at the Tenessee School for the Deaf (Arnold, 1993). Therefore, the debate about mode of communication is not only concerned with whether sign languages should be used, but how and where supportive systems incorporating signs should be employed. Moores (1991) comments that the traditional manual-oral controversy has evolved into what he terms the 'manual-manual' controversy. Current debate is concerned with the relative merits of instruction using manual systems based upon spoken language (such as PSE) as opposed to the use of sign languages (ASL, BSL) which have different structures and vocabularies from spoken languages.

2.7.2 Oralism

Oralism, the use of spoken language as a method of educating the deaf, was officially ratified at the International Congress of teachers of the Deaf in Milan in 1880 (McLoughlin, 1987). Oral approaches, particularly in the UK, predominated for the ensuing century. Although the aim of oral approaches is essentially the acquisition of spoken language, the methodologies used to support the learning process differ. There remains an ongoing debate regarding the use of 'structured' or 'natural' approaches. Structured approaches impose structure on the spontaneous utterances of children and emphasize speech teaching. Conversely, natural methods (such as natural auralism and maternal reflective methods), focus on the emergent language of the child stimulated by individual interests and activities. The dictate of natural auralism and the maternal reflective methods is that a first language is not a thing to be taught but a tool to be used. Natural approaches have much in common with each other, but remain distinct methods of promoting the development of the deaf child. Arnold (1989) provides a more detailed discussion of oral approaches in teaching hearing impaired pupils.

2.7.3 Total Communication

Total Communication (TC) was originally introduced in the US in 1968. Roy Holcomb, the father of TC, coined this term which advocates the use of all forms of communication to teach deaf children (Paul & Quigley, 1990). During the 1970s TC came to dominate most special programmes in the US and gained popularity in the UK, mainly in schools for children with severe to profound losses.

TC has a number of definitions which are largely similar. The Conference of Executives of American Schools for the Deaf adopted the following:

> "TC is a philosophy incorporating appropriate aural, manual, and oral modes of communication in order to ensure effective communication with and among hearing impaired persons" (Sutcliffe, 1983, p.134).

The British Association of Teachers of the Deaf (BATOD) 1982 definition followed the same lines: "TC is an approach to language acquisition which uses combinations of oral, aural, written and manual components" (Lewis, 1990, p.10).

TC has been described as a philosophy and a method. The basic tenet of the philosophy of TC is that adequate communication with deaf pupils should be in any way possible. As the word 'total' was supposed to imply, signing and speech would be used together. The methods used by teachers in schools which adopted TC tended to become the manually encoded English supportive systems previously described. Tucker and Powell (1991) refer to the 'amorphous nature' of TC approaches in schools. There appears to be great variability in emphasis between oral and signed components of communication between schools, individual teachers and in communication to individual pupils.

A certain amount of confusion and controversy seems to be evident in both the understanding and use of TC as an approach. This appears to be due to the narrow interpretation of TC when viewed as a method alone. TC, restricted to methodology, is equated with manually encoded English and in some quarters has become

another term for signing (Lewis, 1990). Part of the confusion arises from the philosophy of TC which includes child-derived gestures, speech, finger-spelling, reading, writing and formal sign languages. Sutcliffe (1983) questions the word 'total' in TC and writes that it is not possible to use two languages, English and signed supportive systems, simultaneously. She suggests that TC as presently used may be renamed 'selective communication' or 'flexible communication'.

2.8 Family climate

The presence of a deaf child in a family can have far-reaching implications, not only for the child, but also for the parents, siblings, relationships and the family system as a whole. Vision and hearing play an important role in the evolution and establishment of the first interpersonal relationships. A child without hearing who relies heavily on visual and tactile input is likely to respond differently from a normally hearing child. This may result in various responses from caregivers as the primary effects of deafness are accentuated by the parental response to, and ongoing management of, the deaf child.

There is a growing body of research to support the view that deaf parents of deaf children experience less stress and need for coping skills than hearing parents of deaf children:

> "... deafness itself is not necessarily a handicap in a family context that already includes sign communication, participation in and support by Deaf community, and familiarity with the educational choices and resources available to the child" (Koester & Meadow-Orlans, 1990, p.299-300).

Although some deaf parents may find it difficult to accept their child's deafness (Thompson, Thompson & Murphy, 1979), the majority are likely to welcome it (Erting, 1987).

Studies which have compared the social and emotional adjustment and academic achievement of deaf children on the basis of parental hearing status have found that children from deaf families show greater social maturity, more appropriate self-concept, and are more academically capable than children from hearing families (Harris, 1978; Meadow, 1968; Stokoe & Battison, 1981). This has been attributed variably to enhanced communication, greater empathy, greater contingency on the child's needs and the active promotion of independence and self-reliance by deaf parents (Greenberg & Kushé, 1989). However, this group remains a minority within the deaf population. Much of the research has addressed the parental, familial and ecological factors that influence the development of deaf children from hearing families, a group which represents 90% of those children born deaf (Meadow, 1980; Vernon & Andrews, 1990).

A stress-pathology deficit model has been applied to the role of the hearing impaired child within a hearing family. Within such a paradigm deafness presents a significant stressor from which pathology results, and as such is detrimental to individual and family adjustment. Harris (1982) provides a theoretical model of family life cycle in families with a deaf child. He identifies six normative family crises: prediagnostic crisis; diagnostic crisis; postdiagnostic crisis; communication crisis; education crisis; crisis of family stability. During the diagnostic period it is usual for parents to experience anger, guilt, confusion, helplessness and grief (Mindel & Feldman, 1987). Such reactions may persist for years and continue to affect family relations by exacerbating the 'inevitable' disruptions in the parent-child relationship (Meadow-Orlans, 1987). It has been well documented that the response of hearing parents to the problem of achieving mutual understanding with their deaf child is to become more controlling, didactic, rigid, intrusive and less responsive to the child's needs (Henggeler & Cooper, 1983; Schlesinger & Meadow, 1972; Wedell-Monnig & Lumley, 1980; Wood *et al.*, 1986). Such non-contingent responses of caregivers may be related to difficulties in the deaf child's subsequent development of intersubjectivity, reciprocity and communication (Wood *et al.*, 1986).

Additional stressors felt by families with a deaf child are directly and indirectly related to deafness. Parents of children with disabilities tend to have a higher level of involvement with professionals from a number of disciplines, which may prove difficult for parents unused to professional contact (Meadow, 1980). The purchase of audiological support and other numerous costs due to special arrangements can be an ongoing burden to the family. Other stresses, perhaps not as obvious but significant in their effect, include changing roles of family members, impact on siblings and the effects of additional time spent involved with the concern of parenting a deaf child, for example, explaining the child's deafness to others and coping with the reaction of others. Such problems are in addition to normative life-cycle events such as the encouragement of adolescent autonomy and post high school training. When more general stressors such as poverty, inadequate housing and family instability are added to the picture, then the risk for poor adjustment in family and child increases (Calderon & Greenberg, 1993).

The basic premise of the stress-pathology model, that deafness causes disturbance and leads to maladaptive outcomes, has been questioned. Recent research findings have led to the conclusion that deafness *per se* does not necessarily lead to poor adjustment (Watson, Henggeler & Whelan, 1990). It appears that the presence of a deaf child is rather a source of *potential* stress as the parents must continually draw upon their coping and problem-solving abilities. Deafness within a family places that family at risk. Whether the family responds negatively will depend upon the moderating or 'buffering' effects (like maternal adjustment, social support) which may exist between the perceived stress and the outcome.

2.9 Conclusion

Meadow (1978) writes, "[a] basic requirement in establishing guidelines for selecting deaf research subjects is broad familiarity with the world of the deaf child" (p.38). It is important for researchers to have a basic understanding of the audiological definition of hearing loss and use of amplification; medical and psychological implications of aetiology and age of onset of deafness; and social and educational

dimensions of the world of deaf children. The importance of Deaf culture can also be added to this list. The previous section provided an introduction to each of these complex and interrelated issues, and a flavour of the debates which, according to Moores (1991), are currently argued with great intensity. Although largely based on UK and US research, much of what was presented is relevant to the experiences of children in other countries. Particular variables which influence the lives of deaf children in SA are briefly introduced in the following section.

CHAPTER 3

DEAFNESS IN SOUTH AFRICA

Deaf people in South Africa (SA) represent a relatively small, but extremely diverse group in comparison to deaf communities in other countries (Reagan, 1986). An examination of issues which influence the lives of people with hearing impairments in the context of SA reveals a limited knowledge base about this population group. Reliable figures for the number of people with hearing losses has yet to be established in this country. Estimates of incidence are incomplete, conservative and dated. Donald (1994) cites an incidence rate of 3,5% deaf and hard-of-hearing children with reference to school enrolment figures for 1985. More up-to-date data on hearing losses and speech/language difficulties were collected by Jardine, De Wet and Anderson (1994) as part of the Birth-to-Ten project. Birth-to-Ten is a long-term prospective study of 376 children born in Soweto in 1990. Only one child in the cohort has been diagnosed as having a severe to profound sensori-neural hearing loss. To exacerbate the incomplete knowledge of the numbers of children involved, very little history of the SA deaf has been formally documented and, up to the mid-1980s, research was sparse. This situation has begun to be remedied by a number of researchers among whom Professor Claire Penn at the University of Witwatersrand and Professor Timothy Reagan from the United States are prominent. Their work will be largely drawn upon for the following brief overview of issues pertaining to deaf people in this country.

Controversies and debates in the world of deafness in other countries have also influenced the lives of deaf people and deaf education in SA. Issues pertinent to the international community such as diagnosis, intervention (audiological and educational), attitudes towards the deaf, and cultural affiliation are of relevance in this country. A particular problem, and one which has far-reaching effects on child development, is that universal screening of hearing impairment (and of any other disability) is not legislated for and is virtually non-existent in SA. The possible implications of late diagnosis were introduced in the previous chapter. Children in

SA are likely to receive a diagnosis of deafness much later than would normally be considered acceptable in first-world countries. Jardine (1994) writes that this is due to a lack of refinement in testing techniques, unavailability of trained personnel, poor organization and insufficient child health care services. The underprivileged section of the population is especially affected by underservicing. S.M. Swart reports that the average age of diagnosis of deafness in a rural area in the Northern Transvaal is two-and-a-half years of age (personal communication, 7 February 1995).* This situation is exacerbated by a generally poor recognition of the problem and unawareness of the importance of screening.

Services for those who have received a diagnosis of deafness are not as well developed in SA as in the United Kingdom (UK) and United States (US). The infrastructure necessary to provide, service, and use hearing aid technology is not currently in place. As a result access to amplification is limited and costly (Penn, 1993). A number of children at one of the SA schools surveyed in this study did not have usable hearing aids. Schools are not united by cohesive policies, particularly language policies. Underpinning all of the above problems is a general attitude to deafness and handicap that is grounded in the pathology infirmity model. This is exemplified by the practise of classifying children according to strict categories of 'special educational need'. 'Hearing impairment' is one of the categories of disability currently used for placement purposes in South Africa. The definition of children according to category makes several important assumptions. Firstly, it makes the tacit assumption that all children within one category have similar needs, and so provides no indication as to the relativity of disability or individual needs of the child. This is particularly problematic as the deaf population is so heterogeneous (as outlined in Chapter 2). Secondly, the use of a categorical definition assumes that diagnostic facilities exist. This has been shown not to be the case for large sections of the SA population (Jardine, 1994). Lastly, and most importantly, classification by

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* S.M. Swart is currently involved in the development and use of a questionnaire to be used with parents for identification of hearing loss in rural areas where audiological services are lacking. Initial results have shown that children as young as six months of age can be identified by this method (personal communication, 7 February 1995).

disability serves to focus attention on deficits inherent or 'within' the child, and as such, does not allow for examination of educational practices or other 'outside' influences (for example, parental acceptance, poverty) which may contribute to the child's presentation (Donald, 1994).

Debate within deaf education does not reflect only international interests but is influenced by issues directly related to SA. SA has a history of linguistic, cultural and educational schisms which have impacted on deaf education no less than other sections of SA society. The implementation of a series of social, economic and educational policies designed to divide the population on the basis of race and ethnocentric background, resulted in differential and unequal access to social resources. The policy of apartheid was instrumental in promulgating divisions within the deaf population on racial and ethnic lines, divisions which were emphasized and entrenched by separate education systems. Educational inequalities were especially apparent in the availability of special educational resources for children served by different education departments. 'African' education departments,* traditionally operating with the least resources, were compelled to attempt to meet basic needs for classrooms, teachers and books before allocating resources to special education (Donald, 1994). Donald illustrates this point by citing 1985 statistics in which 1 262 hearing impaired 'African' children were reported as in special educational placements out of a conservatively estimated total of 210 457 children within this category of special educational need.

The vast majority of children diagnosed as 'deaf' who do receive special education are educated in special schools. Traditionally, differences existed between special schools intended for use by different racial groups. The major distinctions between

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* Education departments which catered for black pupils.

the experience of education of white and black* pupils were in terms of language policy and vocational expectations. Schools for white pupils formally adopted oralism in 1920 in accordance with the recommendations made at the 1880 Milan Conference. Schools for black pupils, probably because of a lack of access to audiological technology, were not required to accept oralism as a method of instruction. Instead, a form of manual communication, the Paget-Gorman Coding System was introduced. In 1980 the first dictionary of signs for use by the SA deaf was compiled by Nieder Heitmann and adopted as a teaching manual in schools for black children in 1984 (Penn, 1993). Reagan (1986) discusses the influence of the Nieder Heitmann dictionary in some detail. According to Penn, the use of manual communication helped in the establishment of black Deaf culture among children who attended such schools.

A further difference between schools for black and white pupils was curriculum policy. Penn (1993) writes, "[i]t is no longer possible for black deaf children to move beyond Standard 6 in academic subjects and the focus of their education has been limited to highly technical subjects" (p. 19). Such a vocationally based curriculum, and the attitudes about deaf capabilities that is implied, was not legislated in schools for white pupils, some of which offer an academic matriculation (Standard 10). However, Penn argues that lower expectations of deaf pupils are entrenched, even in these schools.

Penn and Reagan (1990) conclude their analysis of the current situation in SA by suggesting that the SA deaf community are more 'oppressed' than other deaf communities. Not least is this due to the oppression of specific groups of deaf people due to racial classification, but also the whole community is repressed by the lack of status of sign languages and the control of hearing people over services for deaf people. Since 1990 changes have occurred in deaf education and education

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* Children are designated by race as national data is recorded in this manner. In addition, racial classification emphasizes the disparity between population groups. "In South Africa, there is a close relationship between 'race' and several social, economic and health-service factors owing to past apartheid policies" (Yach, Cameron, Padayachee, Wagstaff, Richter and Fonn, 1991, p.212).

generally is in a state of transition. General socio-political and educational changes in SA, in addition to the work of the Sign Language Research Program (which has produced a dictionary of SA sign languages now in several volumes (Penn, 1992)) have influenced policies in schools. Current changes are reflected in the SA special schools from which data was collected for this study. Each school incorporated the use of a manual system in teaching: all three schools had on roll some children of races other than the group for whom they were originally intended. Important issues for the deaf, such as language policy, preparation of teachers, curriculum, and research, are beginning to be discussed at national level in order to develop policies appropriate to the SA context. An important step forward is the rise of the previously weak Deaf cultural community to a position of influence on decision-making bodies concerned with the future education of deaf children (Penn & Reagan, 1991). Changes that are being made suggest that a more united, cohesive and progressive national policy for the education of children with hearing impairments may become a reality in the near future.

CHAPTER 4

THE PSYCHOSOCIAL DEVELOPMENT OF CHILDREN

4.1 Socio-emotional development and temperament

Infants are social and emotional beings. Like many young of the animal kingdom they desire relations with others and have the capacity for mental and instinctual feeling. From birth onwards the infant shows a germinal capacity to engage pleasurably in social intention (Stern, 1985). Descriptions of abandoned, lost or abused children who have been deprived of human company from an early age (Lennenberg, 1967), confirm the results of deprivation studies carried out with primates (Harlow & Harlow, 1969). They conclusively reveal that social interaction is a necessary condition for subsequent appropriate social, emotional, intellectual, linguistic and sexual development. Healthy development of rudimentary socio-emotional functioning occurs initially within a relationship between the infant and a caregiver, and subsequently within other relationships with additional caregivers and peers.

For practical purposes both practitioners and researchers often consider various aspects of a child's development separately. Yet, cognitive, social and emotional development interact in ways which help children to adapt their goals to the environment and modify the environment to fit these goals (Eisenberg & Fabes, 1992).

Although some emotions have biological roots (Campos *et al.*, 1983), others depend upon socialization. Emotions are frequently embedded in social interactions, especially amongst children. Children laugh and smile during play, as well as express anger, distress or sadness (Fabes, Eisenberg, McCormick & Wilson, 1988). The expression of emotion and the behaviour which accompanies emotional reactions influences the quality of ongoing relationships. The management of emotion has been correlated with social competence and popularity (Eisenberg &

Fabes, 1992). As the child matures, perceptual and cognitive capacities develop and the nature of social interactions and emotional expression changes. Campos, Kermoian and Zumbahlen (1992) discuss the changes in the affective climate of the family subsequent to the onset of infant crawling. Kopp (1992) suggests that the development of language skills may enable a child to deal more effectively with frustrating situations. Hence, sociability is not only affected by emotional development, but social relations also influence emotionality. Socialization does not only affect the expression of emotion, but also the very nature of the emotional experience.

An important influence on the way in which a child views the world and behaves is individual temperament. Although difficult to pinpoint (Plomin, 1982), temperament is understood to represent stable individual differences believed to be at the root of personality. Many individual differences between infants are apparent even during the first few days of life. Infants differ, for example, in the frequency and intensity of crying and in the manner in which they respond to stimulation. Differences in disposition are relevant to understanding emotional arousal, socially competent behaviour and have important intra and interpersonal ramifications (Campos *et al.*, 1983).

Temperament and emotions are closely tied but not synonymous. Temperament refers to individual differences in emotionality which are largely stable, whilst emotions serve to organize aspects of behaviour. Some children may reveal a low threshold for fearfulness or anger, whilst others may remain calm longer before they become fearful or angry. Therefore, emotion does not merely refer to an affective state (such as fear or anger), but organizes behaviour in social settings. For Hoffman (1976, cited in Mussen, 1983) the most important way in which emotion regulates human behaviour is by making possible the process of empathy. Several studies carried out by Hoffman show that even the newborn can respond in kind to the cry sounds of another human; a rudimentary kind of empathic response. Dimensions of temperament and emotion are observed in the context of social interaction. Together they act to regulate interactions and predict variations in

behaviour. Campos *et al.* (1983) concludes that there are broad ties between the concept of temperament and socio-emotional development and that the connection is complicated as the determinants of development continually interact.

4.2 Attachment

The quality of a child's early emotional climate influences later psychosocial development and personality. The role of the primary caregiver is that of organizer of the child's perceptual, cognitive, social and emotional development by creating a stable emotional climate. Since early this century several theoretical approaches have guided research in assessing the influence of caretaking on the child's intellectual and personality development (Schaffer, 1977). The currently most popular perspective for researchers of mother-child interaction is the ethological - evolutionary perspective offered by Bowlby (1969, 1973, 1980, 1988), Ainsworth (1969, 1985, 1989) and Ainsworth, Blehar, Waters and Wall (1978).

The guiding principle of the ethological approach is that social behaviour is adaptive because it increases the evolutionary fitness of the individual (Campos *et al.*, 1983). Human infants are incapable of caring for themselves and so (as a result of the selection process over the course of human evolution), are born with a repertoire of behavioural tendencies employed to improve their chances of survival. It is highly adaptive for infants to seek protection, nourishment and care from adults. Unlike ungulates, that use their own locomotive skills to attain proximity to mother,* human infants can attain proximity only by signalling for mother to come to them, usually by crying or smiling. For this to be successful it is necessary for mother to respond appropriately to the child's signals. According to ethological theory, infants form attachments to those people who consistently respond in an appropriate manner to their proximity-promoting signals. Such individuals, and usually one individual,

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* In most human societies the role of primary caregiver is carried out by the child's mother and so will be referred as 'mother'. This does not, however, imply that adults other than the biological mother are incapable of being a primary caregiver.

provide protection and care when the infant requires it and as such engender feelings of trust, confidence and security in the infant.

Bowlby (1969) further postulates that the infant's desire for proximity is not constant and depends upon other internal and external factors. He suggests that attachment behaviour is organized by a control system analogous to physiological homeostasis. Thus, the infant continually evaluates a situation in order to determine how much proximity is needed in order to feel secure. If more proximity becomes necessary, the infant initiates proximity-promoting behaviour. Certain internal and external factors influence the infant's desire for proximity such as fear, sickness and novelty. The mother who is sensitive, responsive and emotionally available to her infant provides a secure base from which the child can explore the wider environment and so facilitate cognitive growth.

Exploratory behaviour has been linked to later competence (Messer, McCarthy, McQuiston, MacTurk, Yarrow & Vietze, 1986). In addition, the mother's response to her infant's signals greatly determines the attachment relationship and has a major influence on the child's development of subsequent relations (Bowlby, 1988).

Ainsworth (1969, 1985) studied mother-child interaction and provided a measurement of individual differences in security of attachment. She developed a method of assessing the quality of attachment between mothers and their children called the "Strange Situation". This involves a series of separation and reunion episodes involving the mother, her child, and a stranger, carried out in the laboratory setting. Responses of the child are evaluated by use of the Ainsworth Interaction Scales (Ainsworth *et al.*, 1978). Ainsworth suggested that there were three principal patterns of attachment, together with the family conditions which promote them:

- *Insecurely attached, anxious and avoidant*

  These infants appeared uninterested in exploring when alone with their mothers, showed little distress when separated and tended to avoid contact

with mother on her return. Referred to as 'A Group', Ainsworth suggested that such infants had mothers who were fairly consistent, but whose responses were inappropriate or rejecting.

- *Securely attached*

  These infants explored when mother was present, showed distress on separation and greeted mother, seeking interaction on reunion. Mothers of these children responded predictably and appropriately to their infants. Ainsworth called this group 'B Group'.

- *Insecurely attached, anxious and resistant*

  These infants explored little in the presence of their mothers and were not overly distressed on separation. When their mothers returned, children from this group ('C Group') showed ambivalence, seeking proximity but avoiding actual contact.

These three groups reflect general types of attachment and are further delineated into sub-groups. Main and Weston (1981) described children who showed deviant patterns of interaction and concluded that such behaviour was a disorganized version of one of the three typical patterns, usually anxious resistant (Group C). Main and Solomon (1990) describe procedures for identifying this fourth 'disorganized' pattern of attachment which may have implications for future psychopathology (cited in Goldberg, 1993).

Measurement of attachment using the 'Strange Situation' has most often been assessed with children up to the age of 18 months. Prospective studies have shown that each pattern of attachment, once developed, tends to persist. Sroufe (1983) demonstrated that patterns of attachment as assessed by the Strange Situation method at the age of 12 months are highly predictive of how a child will behave in a nursery group at the age of three and a half years. Similarly, Main and Cassidy (1988) showed that early patterns of attachment predict the nature of a child's

interaction with mother at the age of six years. This is partly due to the fact that the way in which parents treat their children tends to remain largely unchanged. Also, patterns of attachment often become self-perpetuating. A secure child is a happier, more co-operative and hence a more rewarding child to care for, whilst an anxious child may be clinging or bad tempered. Behaviour which may be seen as negative by parents will often produce an unfavourable response from parents and vicious circles may ensue. Thus, Bowlby (1988) concluded that the kind of attachment pattern established in infancy will have a long term effect on attachment behaviour into adulthood and the personality of the individual.

4.3 Personality development

There is now considerable empirical evidence to support the view that "experiences with a primary caregiver influence important aspects of personality" (Goldberg, 1993, p.101). Although there remains a paucity of studies relating patterns of attachment to personality characteristics *per se*, several researchers have shown that characteristics associated with particular patterns of attachment as shown by young children can be observed in the same individuals as young adults (Kobak & Screery, 1988).

Theorists from the psychoanalytical school, in attempting to explain personality, placed great importance on the role of early relationships on a child's development. Klein, Fairbairn and Winnicott have emphasized the relational dimension of psychodynamic theory. Object relations theory provides a psychoanalytical framework for the understanding of external environmental influences on the course of the infant's psychological development and, as such, provides a basis from which attachment theory developed.

Freud provided the theoretical framework for the theory of object relations by describing the concept of psychic structures operating in an 'internal world' which are developed in the context of early relations with external objects (people), (Ogden, 1983). For Freud, objects served merely as a means to satisfying drives.

Object relations theorists such as Winnicott, recognized that drives do not develop in a vacuum but contribute to establishing and maintaining a relationship. The need for interpersonal relationships is central to object relations theory.

The most important and influential relationship for the individual is the first relationship with the mother. Through interpersonal interactions with the mother the child evolves internal concepts of the self and others and the relationship between them, which ultimately influences personality development and the formation of relationships through the life cycle.

The development of an individual personality begins very early in life. According to Winnicott (1964, 1986) the infant develops from a position of complete mergence with the external world when there is no differentiation between the 'me' and 'not me', to one of objectively relating to the 'not me'. Therefore, the earliest representation of the self and others is vague and variable with all experience undifferentiated, affective and sensorimotor (Mahler, Pine & Bergman, 1975). As the infant begins to perceive need satisfaction as coming from a caregiver, there is a shift from the internal experience of pleasure to an awareness of a need satisfying object (person). The infant slowly begins to differentiate between the self and others. This process is facilitated by emerging intellectual capacity. At around the age of six months onwards the child begins to appreciate the permanence of objects: the understanding that objects and people continue to exist even when they cannot be seen. In acquiring the concept of object permanence, the child now retains a mental representation of the object when it is out of sight. It is at this stage, when the child is able to recognize mother when she is present and remember her when she is absent, that separation anxiety (shown by crying when mother leaves or prepares to leave), begins to occur. An understanding of object permanence is a prerequisite for object relating.

The basic process through which all psychological development takes place is 'internalization' (Maher, 1989). Internalization refers to the formation of a representation of the self, others and relationships in the internal world. Inner

representations become transformed into inner regulators and are assimilated as characteristics of the self. Referred to variously as internal objects, introjects and working models, these representational models are based upon the child's experiences of interactions with caregivers. The model a child builds of the self reflects parents' images of the child and serves to govern how that individual feels about him or herself and relates to others. Main, Kaplan and Cassidy (1985), argue that representational models become established as influential cognitive structures which tend to persist and are so taken for granted that they come to operate at an unconscious level. In a sense they become intrinsic to the individual's way of relating, perhaps explained as a blueprint for relating to others. Healthy personalities, or securely attached individuals, update representational models during maturation and as they are treated differently by parents. Models continue to be reasonably good simulations of the self and parents in interaction. Conversely, such updating for the anxiously attached child is obstructed through defensive exclusion of discrepant experience and information. Bowlby (1988) writes:

> "This means that the patterns of interaction to which the models lead, having become habitual, generalised, and largely unconscious, persist in a more or less uncorrected and unchanged state even when the individual in later life is dealing with persons who treat him in ways entirely unlike those that his parents adopted when he was a child" (p.130).

The development of disorders in personality can be partly attributed to the quality of social relationships, both current and past. Millon (1973) writes that psychopathology is shaped according to the same principles as those involved in normal development. Maladaptive habits and attitudes arise because of differences in the characteristics, timing, intensity or persistence of certain influences. Millon emphasizes inconsistent parental attitudes and contradictory training methods as influences on the development of psychopathology. Parental inconsistency results in approach-avoidance conflicts whereby the infant is caught in a 'double-bind' situation. The young child, who is unsure of what the parent wants, cannot seem

to do right. This is compounded by subtle contradictions in the parents' messages. A child in such a situation internalizes conflicting attitudes, becomes anxious and may learn to show ambivalence and erratic behaviour. Personality characteristics become self-perpetuating as particular responses will precipitate reactions in others which confirm and reinforce an individual's approach and attitude to life.

There is limited empirical evidence to substantiate the theoretical notions of personality development with particular reference to the effects of early patterns of attachment. Methods of assessing the sequelae of early attachment beyond six years are in the very early stages of development. George, Kaplan and Main (1985) developed a method of representing an adult's working model of important relationships in childhood called the Adult Attachment Interview (AAI). Goldberg (1993) writes that indications from early studies using the AAI reveal that children who had secure attachments in childhood were more likely to become secure adults than those whose early experiences were harsh or rejecting. Yet, this is by no means conclusive, as significant numbers of adults with unhappy childhoods were shown to be secure adults. Conversely, some adults, whose initial experiences were probably good, become insecure adults. Intervening experiences can change an individual's models and lead to behaviour consistent with new models.

Further evidence for the impact of early experience on subsequent psychological development is derived from the study of adults suffering from a wide range of psychiatric disorders. Brown and Harris (1978) carried out an epidemiological study of women suffering from depression. A significant factor related to incapacitating depression was the loss of the mother due to death or prolonged separation prior to the patient's eleventh birthday. The women's vulnerability to depression was greatly influenced by both current negative experiences and past experiences which led up to the loss, and the adequacy of care received afterwards. Brown and Harris concluded that the continuing interactions of personality and social factors resulted in a high risk of depression for women of low socio-economic status who had lost their mothers. The likelihood of depression appeared to be lessened by more secure attachment in the women's early years.

Individual personality is the result of the complex interaction between genetic, constitutional, cultural, maturational and environmental factors. The emphasis in the ethological theory of development is on the importance of the social milieu in which the child grows. Baumrind (1993) writes that parents do influence a child's development and that caretaking practices can be related to psychosocial development of the child. A wealth of data indicates that infants' experiences with their environments provide the foundation for later competence (MacTurk, Meadow-Orlans, Koester & Spencer, 1993). According to Baumrind, parents who are consistent, responsive, firm, warm and receptive caregivers tend to have children who are well-adjusted, competent, and do better in school than peers who experience less responsive social environments. The temperament of the child is also important. The disposition of individual infants influences the way their parents respond to them and hence the quality of the attachment relationship. Hence, a child's genetic or constitutional make-up shapes and interacts with social experiences to form personality characteristics. The debate between those who advocate that genotypes drive experience (Scarr, 1993) and those who argue that socialization patterns crucially affect development continues. Psychological development is a product of the dynamic interplays of biology, culture and society evolving together and across evolutionary time within the life span of an individual.

CHAPTER 5

EFFECT OF DEAFNESS ON A YOUNG CHILD'S PSYCHOSOCIAL DEVELOPMENT

There is a large body of research spanning 30 years, documenting the developmental impact of early deafness on psychosocial development (MacTurk, Meadow-Orlans, Koester & Spencer, 1993). Researchers and practitioners suggest that deaf children's social relationships differ from hearing children's. Such differences are attributed to the primary consequences of deafness which will include the inevitable consequences of being unable to hear, restriction in communication and reduced capacity for intelligible speech. More recently, the impact of the by-products or secondary consequences of deafness, such as problems associated with language delay and experiential deficits, are considered as major influences on the social and emotional development of the deaf child.

5.1 Primary effects of deafness

5.1.1 Hearing

The most obvious effect of deafness is that the individual does not hear, or rather does not hear in the same way as a normally hearing person. Despite wearing hearing aids, some children will still hear very little, others may perceive some sound frequencies, most gain a distorted picture of sound. Early researchers suggested that a lack of hearing *per se* can cause atypical behavioural symptoms and problems in the establishment of social relationships. Altshuler (1974) characterized the behaviour of the deaf as egocentric, lacking in empathy, dependent, impulsive and deficient in thoughtful introspection. Such early studies have been criticized and conclusions questioned because of the use of inappropriate tests administered under unsatisfactory conditions with comparisons to unrealistic norms (Moores, 1987).

More recently, researchers have proposed that an inability to hear sound may lead to a decrease in exploration of objects in the environment which primarily provide auditory feedback:

> "With the absence or severe attenuation of sound, the deaf child is deprived of knowledge about the sound-making qualities of objects and actions. Furthermore, in so far as noises by objects and by actions upon objects excite the child toward exploration, the absence of an auditory channel might be expected to limit the motivation for exploration and, hence, retard cognitive growth" (Liben, 1978, p.200).

This may have serious repercussions within the social realm. From the age of six months infants are interested in visually exploring objects in their immediate environment. If mothers do not provide communication which is visually reinforcing and stimulating then there is the risk that the child will be more interested in attending to the physical environment than social interaction. Parents whose communicative attempts are visually stimulating due to the use of facial expressions, movements, signs, provide reinforcement for their infant's socially directed visual attention (Spencer & Deyo, 1993). Tamis-LeMonda and Bornstein (1986) reported that mothers of two to five month-olds can influence whether their infants pay attention to the environment or to their mothers by calling attention to the environment or to themselves.

5.1.2 Communication

Alec Webster in his book entitled *Deafness, Development and Literacy* writes, "[s]ocial relationships and emotional well-being depend upon communication" (Webster, 1986, p.51). According to Vernon and Andrews (1990, p.223), "hearing impairment presents its major handicap in the realm of communication". The presence of deafness in one communicative partner results in changes in the nature of communication.

During play, a normally hearing child is able to pay attention to his or her toys whilst simultaneously hearing mother's comments. A deaf child in a similar situation is only able to attend *either* to the play materials *or* to mother. In order for the child to receive the mother's communication in either oral or manual mode, the child will have to focus his or her gaze and attention away from the toys to mother's face. Hence, for interaction to occur the deaf child is impelled to attend to the environment and communicative acts of others sequentially.

Wood, Wood, Griffiths and Howarth (1986) call this 'divided attention' as the deaf child has to shift visual attention in order to receive what the hearing child does simultaneously. The necessity of dividing attention makes communication during play a difficult task for deaf children and their hearing parents. Webster and Wood (1989) write that an effect of divided attention is that interaction and communication between deaf children and their parents differs from that of hearing children, both in terms of quantity and quality of communicative acts. According to Webster and Wood, communication on the whole is said to be generally decreased as early encounters may be unrewarding and frustrating for adult and child. Communication which does occur differs from interaction with hearing children in that it is more often the result of the mother or father requiring the child to pay attention to them by turning the child's head or removing a toy. In effect, the more usual child-rearing practices are reversed as the child is compelled to be contingent on the parents' needs rather than vice versa. Such parental responses result in a more directive, intrusive style of parenting as the adult exercises much higher levels of control over the young child's experience than would typify interactions between hearing parent-child dyads.

As the parents of hearing impaired children must learn appropriate methods of gaining their child's attention, so must the child learn how to ensure the parents attention prior to communication. The vocalizations of hearing children inherently elicit attention from their parents. However, visual communication or visual communication with some vocalization, may be missed by the parents whose attention had not been effectively established. Interaction is thus disrupted as the

mother will not realise that she had missed the child's communication and the child will not appreciate that mother did not receive the communication. Lederberg (1993) considers that the presence of deafness in a child has the potential to disrupt normal social-interactive processes and turn-taking, important foundations for communication, both with parents and teachers. Wood *et al.* (1986) found that oral deaf children do not co-ordinate their attention with their teachers' communications until the end of the preschool years. Hence, appropriate and meaningful interactions vital to the social, emotional, cognitive and linguistic development of the deaf child are constrained by the difficulties in communication.

5.1.3 Speech

A fundamental problem of being cut off from the auditory speech environment is an enormous difficulty in acquiring basic spoken language skills because of the limited and distorted nature of auditory experience. An inability to hear the sounds of speech, especially for those who have never heard speech (congenital rather than acquired deafness), inevitably leads to either a lack of speech, delayed speech or at best, speech which differs from the norm in terms of clarity, intonation and syntax. Examinations of the speech quality of hearing impaired people usually highlight slow, laboured and breathy speech; distorted vowel sounds; omitted consonants and incorrect speech rhythms (Ingram, 1976). Markides (1970) and Conrad (1979) reported that to the untrained listener, the speech of deaf children was largely unintelligible. Geers and Moog (1978), in their study of the spontaneous language of 4 to 15-year-old deaf children, found that most of the children with profound hearing losses were using language with a syntactic complexity less than the average three-year-old hearing child. Deafness renders the normal mode of communication (spoken language), challenging, difficult and even unobtainable for some deaf people. The psychosocial effects of limitations in normal communication can be problematic. Higginbotham and Baker (1981) proposed that because of a history of failed social attempts, deaf children actively avoid interacting with hearing peers.

5.2 Secondary effects of deafness

Deafness undoubtedly involves a deprivation of sound and a deprivation of spoken language. However, the view that deafness is simply a problem of auditory experience as stated by Wolff (1973) is too narrow. Wolff writes:

> "The problem of deafness is simply stated: if a child cannot hear the difference between phonemes, morphemes, words and larger syntactic patterns, he cannot learn to recognise these patterns and to associate them with meanings" (Wolff, 1973, p.154).

Such a deficit model of deafness ascribes the problems of the child with a hearing impairment to factors inherent in the child, and neglects other equally important secondary consequences of deafness. Secondary effects, such as constraints upon forming relationships, frequently accompany deafness and increasingly are thought to have a major influence upon social relationships as a whole (Lederberg, 1993). Current thinking suggests that deafness itself does not pervasively affect psychosocial development (Paul & Quigley, 1990), but that socio-emotional development, in addition to other aspects of development are influenced by the by-products or secondary consequences of the language and communication difficulties associated with deafness. A restriction in communication skills is linked to language delay and experiential deficits which impact variably on the cognitive, linguistic and psychosocial development of hearing impaired children.

5.2.1 Language delay

The language development of the deaf is most often considered within the context of normal language development of the hearing child. The current view is that deaf children progress through similar stages in the development of language to hearing children, but at later chronological ages than hearing norms. "The appearance of spoken language is (also) felt to reflect the early stages of normal development, although much delayed" (Webster, 1986, p.90). Schlesinger and Meadow (1972) suggested that at best by the age of four years the majority of deaf children studied

would only be using the language structures of normally hearing two-year-olds. Gregory (1983) reported that in her study of spoken interactions of hearing mothers with deaf children and hearing mothers with hearing children, the more profoundly deaf children had a vocabulary of less than ten words by the age of four years. Hearing children would normally have an extensive vocabulary at a similar age. Deaf children using spoken language, therefore, show similar linguistic competence to that of younger hearing children.

There is an argument which claims that the language of hearing impaired children is deviant. Deviance implies that a child is using language in a way which has no parallel even in the immature patterns of younger hearing children. However, although some deviance has been noted, the weight of evidence indicates that deaf children do develop a system of grammatical rules, albeit delayed, but nevertheless parallel in many respects the normal developmental process (Webster, 1986).

For the majority of parents, concerns over their child's delay in language acquisition provides the impetus for audiological examinations leading to the diagnosis of deafness. Both the parental response to deafness and management of their deaf child have important implications for the extent of their child's delay in developing language. Some parents may feel that there is nothing to gain in talking to a child who cannot hear. Others may flood the child with talk. It is not unusual for both parents and teachers to develop more didactic methods of interaction involving efforts to teach language directly. Strategies such as imitation and repetition relegate the child to a passive assimilator of language, and reduce the intuitive skills possessed by parents (such as paraphrasing and expanding the child's utterances) to a minimum. This serves to compound a language delay (Wood *et al.*, 1986). Therefore, the presence of deafness, for a variety of reasons, often changes the way parents act towards their child. Some researchers have questioned the usefulness of an early diagnosis of deafness given its potential disruptive influence on the attachment process. Kuyper (1981) suggests that any gains in terms of linguistic development should be countered by a potentially less stable relationship and ultimately less contingent interaction. This is not the commonly accepted view.

By the time the child is two years old parents become concerned that their child is not responding appropriately, or not beginning to develop speech. On diagnosis early invention programmes (oral or manual) can be initiated to encourage linguistic communication necessary for the normal development of the attachment relationship in the pre-school years (Greenberg & Marvin, 1979). A shared linguistic system is vital for the establishment and maintenance of all relationships.

A delay in language may affect a child's self-control. Self-regulation of social and emotional behaviour impacts upon social relationships. Children with limited self control may be perceived as impulsive and disruptive in social situations. Harris (1978) suggests that inner speech is necessary for the control of behaviour and that deaf children who are delayed in language show behaviour problems.

In summary, there appears to be a complex relationship between inner speech, speech production and behaviour. Children with a language delay may be unable to communicate their needs in a similar (language based) manner to their peers and so resort to perhaps more physical behaviours which would appear as lacking in self control.

Piagetians such as Hans Furth would claim that one of the major problems for hearing impaired children, their parents and teachers, is the disharmony that may result when language level is out of step with overall development. Wood *et al.* present the argument that as deaf children mature they experience an increasing gap between what they know, think and feel, on the one hand, and what they can express, negotiate and communicate on the other. Teachers, therefore, face the problem of whether to address the 'intellectual' child or the 'linguistic' child. Wood *et al.* (1986) writes that the "growing gap between knowledge and communication often dislocates processes of social interaction, teaching and learning" (p.7). However, Wood and his co-workers comment that the issue may be more complicated than this, and discuss the role of language in determining the structure of thinking. It is not possible to do justice to the wealth of literature on the relationship between language and thought, except to comment that language and

cognition are inextricably linked in the developing mind of the child. "In one direction, language influences cognitive processes .... in the other direction, many kinds of knowledge are necessary for efficient use of language" (Greene, 1987, p.83). The secondary effects of language delay are bi-directionally related to cognitive deficits due to insufficient experiences to learn.

5.2.2 Experiential deficits

Fraser (1989, p.24) describes experience as, "... a product of the entire negotiation between the individual and his physical and social world". The extent of a child's experiences will determine personal, social and physical environments. Any reduction in the ability to exchange information, to explore and to experience will result in a limited capacity to integrate both socially and physically into society. The presence of a disability has the potential to hinder development by reducing experiences. Children with hearing impairments are likely to have fewer experiences than hearing children because of restricted access to auditory stimulation. This will result in less opportunity for learning.

Experiential deficits can be the result of direct factors linked to limited auditory perception. Deaf children lack the preconscious sense which serves to keep individuals in touch with their environment. The sense of hearing (like vision), is described as a 'distance sense' in that it allows the organism to monitor, examine and assess the world at a distance. Hearing provides information from the direct environment of the child, for example, sound from the television and mother's voice during interaction. It also serves to monitor changes occurring at a distance and out of sight, for example by alerting the child to father's imminent arrival by the sound of a car approaching. The sense of hearing is, therefore, important as a means to leading the child to new experiences. An unusual sound, for example a helicopter overhead, will arouse the curiosity of a child who will go outside to see it and hence learn and expand experience. The hearing impaired child who does not hear the helicopter will be denied this learning opportunity. For such a child, exposure to

change will depend upon the event coming accidentally into view, or upon somebody drawing the child's attention to it.

The effect of a hearing loss is a reduction of the possibilities for incidental learning. Much of what deaf children learn is that which is directly related to them, whilst hearing children also learn from what they overhear. Hearing impaired children are firstly, most unlikely to have access to overheard information. If they do have access to the conversation of others, they may be unable to learn from it as their language delay renders it incomprehensible or it may be in a different mode of communication, for example spoken conversation between parents who sign to the child. Deaf children are, therefore, cut off from some of the ordinary learning experiences available to hearing children, (Wood *et al.*, 1986).

An important role of parents and teachers of deaf children is one of experiential expansion. The provision of an enrichment of learning opportunities is essential to compensate for earlier limited experiences. However, Webster (1986) writes that deaf children face additional hurdles as adults may, unwittingly, provide a less facilitating interactive environment, hence indirectly reducing opportunities to widen a deaf child's experiences.

Parents of hearing impaired children may restrict opportunities for independent learning by overprotecting them. Overprotection is a relatively common response of parents towards their disabled child (Fraser, 1989). It involves concentration on the child's disability rather than on the child as a person, and results in the child receiving more attention than would be required by the disability *per se*. The consequence of parental overprotection will be reduced adaptional flexibility and protection from the experience of failure, which is often necessary for learning to take place. Overprotected children become dependent, lack confidence and feelings of self-competence and show reduced motivation (Greenberg & Kushé, 1989). High adult control leads to few opportunities for the child to develop an internal locus of control and skills of social independence. There is some evidence to suggest that mothers of deaf children allow them less independence than mothers of hearing

children. Schlesinger and Meadow (1972) found that deaf preschoolers were allowed less freedom near roads than hearing preschoolers. Freeman, Malkin and Hastings (1975) reported that deaf children were not allowed to engage in unsupervised activities as much as hearing peers. However, Gregory (1976) found that in comparison with hearing children, deaf children were restricted only in areas where there was more danger for them, for example, a road where they would not hear a car. Parents of deaf children were as likely to allow their children to play in the neighbourhood, or leave them with other adults as parents of hearing children. From this evidence Lederberg (1993, p.107) concludes that, "parents of deaf children should not be described as 'overprotective' based on available research". More research is necessary on possible parental overprotection of hearing impaired children and the effect it may have on psychosocial development.

The restriction of experiences is not limited to the home environment, but is also a feature of the educational milieu. Similar obstacles to normal development are also part of the school experiences of many deaf children. Huntingdon and Watton (1982, 1984) examined teacher and deaf pupil talk. They compared the effect of different ways of interacting with deaf children. Huntingdon and Watton reported that a high degree of teacher control leads to a lack of questioning and spontaneity on behalf of the pupils. Similarly, Lyon (1985) concluded that measures associated with adult control were negatively associated with language improvement. The adoption of certain teaching strategies greatly reduces the child's opportunities to learn through experience, and to develop structures in order to assimilate and accommodate new information.

Criticisms have also been levelled at the content of the curriculum received by children with disabilities. The very children who require more and varied opportunities actually receive less, due to the restricted curriculum offered in certain specialist institutions (Booth & Swann, 1987). Curricula which limit the child to the acquisition of basic skills serve to neglect a wide range of experiences from which the child could benefit. Furth (1966) considered that deaf people are relatively uneducated because they had been deprived of experiences. A particular criticism

levelled against deaf education is that experiences are denied children as the transmission of knowledge is more problematic for teachers. Hearing impaired children find learning more difficult as the process of communication with their teachers is more difficult. Donaldson (1978) has said that the pursuit of education is towards 'disembedded thinking', the ability to reason about events which have no immediate context. This type of reasoning includes an ability to make inferences from hypothetical statements. For example, on being told, "The coat is brown. The coat is under the chair. The dog is on the coat. The dog is dirty", the child would be asked "Where is the dirty dog?" In order to answer this question correctly the child must be able to shift thinking from the 'here and now' to the manipulation of ideas and inference of the relationship between events in the abstract. For the deaf child, limitations in linguistic knowledge may result in diminished cognitive demands from teachers and fewer opportunities to develop reflective awareness (Webster, 1986). Abstract concepts (particularly in mathematics) may be considered too difficult to communicate to children with lower levels of expressive and receptive vocabulary. It is hardly surprising, therefore, that a characteristic often used to describe the thinking of the deaf is that of 'concreteness', (Myklebust, 1964). That the thinking of many deaf people remains concrete has probably more to do with the possibility that hypothetical, abstract reasoning is simply not fostered in some deaf individuals (Wood *et al.*, 1986). Barham (1990) attempts to remedy this situation by providing practical suggestions for parents to encourage mathematical thinking in their deaf child.

The effects of experiential deprivation impact upon cognitive and socio-emotional development. Social behaviour is dependent upon social interactions. A reduction of social experiences will have consequences for language development and especially for psychosocial development. Lederberg (1993, p.98) writes, "experiential deficits give deaf children a less extensive knowledge base than that of hearing children". This may become evident by an inadequacy in representation of events, less knowledge of social conventions and different or fewer expectations about relationships. Deficiencies in social experiences, for whatever reason, will

render the deaf child as less skilled than the hearing child, as they are more likely to generate immature social and emotional behaviour patterns.

There is general agreement in the literature that whatever the relationship between language and thought, the secondary consequences of deafness associated with language delay and experiential deficits can have an insidious effect on the developing deaf child. General experiential deficit is a product of the interaction between auditory deprivation, limited linguistic resources, and parental and educational management of hearing loss. That deaf children may appear 'different' due to such effects is not surprising, whether these influences actually contribute towards a 'special psychology' or 'personality' of the deaf is a matter of debate and is discussed in the next chapter.

CHAPTER 6

PERSONALITY DEVELOPMENT OF THE DEAF

The question arises, "do the effects of deafness, either direct or indirect, have an impact on the personality of the deaf person?" Both psychological theory and increasingly psychological empirical research, have attempted to throw light upon what (if anything) are the implications of deafness on the developing personality.

6.1 Psychological theory

The emotional availability of the mother during a child's infancy is the most important growth promoting feature of early child rearing experience. The presence of deafness in the child has the potential to interfere with the reciprocity essential to the development and maintenance of a positive relationship with the mother. Maher (1989, p.16) writes:

> "The various problematic characteristics found in the adult deaf are secondary to earlier disturbances in the mother-infant relationship rather than simply attributable to the absence of language. It thus seems likely that the lack of emotional and empathic dialogue between infant and mother interferes with the development of emotional maturity."

Galenson, Miller, Kaplan and Rothstein (1979) claim that some mothers of deaf children fail to provide the emotional dependability critical for their child's optimal development. They cite excessive oral fixation and heightened and prolonged separation anxiety of the deaf as indicative of instability with the sense of self. Galenson *et al.* conclude that a disturbance in object relations with an unstable self and object representation are features of the early experience of young deaf children. When the process of attachment is disrupted there is a high risk that the individual may suffer a number of possible problems ranging from slight to severe psychological and emotional disorders (Maher, 1989). Individuals whose collective involvement with others is reduced or eliminated are high risk candidates for

suffering cognitive and psychosocial impairments (Meadow-Orlans, 1987). Maher goes on to describe therapeutic intervention models for mothers and their deaf children. Therefore, it has been hypothesized that deafness has implications for personality development by its effect on the establishment and maintenance of attachment relationships due to limitations it places upon communication. Age inadequate social and emotional development has been linked to unsatisfactory relationships, reduced communication skills and, ultimately, psychological difficulties.

There has been a growing discontent with such a 'deterministic' view of deafness. The link between deafness and psychological disturbance and the notion of a 'deaf personality' has been challenged from a pragmatic and a moral point of view. Studies which gave rise to trait attributions have been criticized for the use of inappropriate instruments designed for and by the hearing population. Scores from such measures are more likely to reflect problems with test administration, language, and inappropriate norms. The ever present issue of subject population may also contribute to invalidate such studies. Because of these drawbacks several professionals serving deaf people have concluded that "[v]alid procedures for personality assessment of deaf children and adults are lacking ... All research studies are suspect" (Bolton, 1976, p.8). Holm (1987, p.15) writes that professionals who work closely with the deaf have responded to methodological difficulties in assessing 'deaf personality' by "writing off the whole field of testing". Lane (1988) concludes that literature from the so-called 'psychology of the deaf' represents 'paternalistic ethnocentrism' in that benefactors (from the hearing majority) can be likened to colonizers of Africa in that they impose their language, culture and institutions on people whom they perceive as needing their help. Lane suggests that traits attributed to Africans and the deaf such as 'childlike', 'submissive', 'unintelligent' are necessary in order for benefactors to justify their role. Similarly, paternalists characterize their charges as 'difficult to manage' with traits of impulsivity and disobedience, not because they are difficult to manage as such, but because benefactors have insufficient knowledge of the language, culture and values of the people concerned. Hence, they are guided by self-serving stereotypes.

Lane's views are extreme but pertinent. The premise of his argument is that before researchers attempt to explain the circumstances which give rise to the 'characteristics of the deaf' it must first be established that there is in fact something to explain. He writes, "[i]f there are characteristic psychological consequences of deafness, however, they have yet to be established" (Lane, 1988, p.6).

6.2 Empirical research

There is limited empirical research into the effect of a hearing impairment on the relationship between infants and their mothers. Of the few studies available, practically all have investigated the mother-child relationship when the child is a toddler (± two years), as prior to this, insufficient numbers of children available for study are diagnosed as deaf.

It has been hypothesized that deaf children are at risk for developing insecure attachments as a restriction in communication may result in the mother being more controlling (Wedell-Monnig & Lumley, 1980), less responsive (Blacher & Meyer, 1983) and more stressed than mothers of hearing children. Vaughn, Lefever, Seifer and Barglow (1989) associate maternal stress with attachment security of children. The child may perceive the mother's reaction as insensitivity and may develop insecure attachments.

Lederberg and Mobley (1990) compared the security of attachment and the quality of mother-toddler interaction of 41 hearing impaired toddlers (mean age of 22 months) and their hearing mothers with a matched group of hearing toddler-mother dyads. Consistent with past research, hearing status affected the quality of mother-child interaction. Hearing mothers with deaf children spent less time communicating with each other during free play and were judged to miscommunicate more frequently than mothers with hearing toddlers. The difficulties of dividing attention between communication and play objects was thought to be a major contributor to reduced communications. Despite the effects on communication and quantity of interaction, the presence of a hearing impairment did not affect the quality of the

relationship between mother and toddler. There were no differences in ratings of mother on affect, sensitivity, control or teaching behaviour. Neither was there differences between deaf and hearing toddlers on security of attachment. Securely attached toddlers (regardless of hearing status) were happier, had longer attention spans, showed more pride in mastery and social initiative and compliance than insecurely attached toddlers. Lederberg (1993) concludes:

> "These results suggest that despite communication difficulties, language delay, and maternal stress, hearing impaired toddlers and their mothers are as likely to establish a positive, secure relationship as hearing toddlers and their mothers" (p.101).

The effect of limitations in spoken communications is thought not to be of major consequence in infancy as spoken responses are frequently redundant because of their association with non-verbal communication. Brazelton (1982) suggested that verbal responses may be 'replaced' by smiles, postures and tactile cues, as long as they are rhythmically patterned. Urban (1989) described the development of one deaf infant called Amy. She wrote that Amy's aural deprivation was not emotional deprivation. Amy showed an adequate ability to communicate through non-aural compensatory perception sufficient in order to meet her needs. Research suggests that the early attachment relationship is not as problematic for young deaf children as previously thought, and that the relationship may be affected only by extreme risk factors (Lederberg and Mobley, 1990). Therefore, given the apparent role of speech and hearing in the development of mother-child relationships and despite the primarily anecdotal history of describing deaf children as less likely to be securely attached, "the empirical case has not yet been made" (Marschark, 1993, p.14).

However, studies such as that by Lederberg and Mobley which describe the relationship between deaf children and their mothers as essentially normal, base their conclusions on dyads in which the mothers are aware of their child's deafness. Parents who are aware of their child's limited hearing capacities are more likely to

use non-verbal methods of interaction. It would be expected that the impact on social development would be lessened when the parents are aware of the child's hearing loss. The nature and quality of mother-child interaction prior to diagnosis of deafness is , sadly, unavailable for examination (Marschark, 1993).

One recent research study has been conducted with deaf children under the age of two years. Due to advances in diagnostic techniques and an awareness of the importance of early intervention, it is beginning to be possible to study younger deaf children than was previously the case. MacTurk *et al.*, (1993) examined the effect of early cognitive, social and communicative experiences on later social and linguistic development of deaf children with hearing mothers by observing mothers' and infants' behaviour when the infants were 9, 12, 15, and 18 months of age. They concluded that, "deafness *per se* has little explanatory value for the developmental trajectory of deaf infants" (MacTurk *et al.*, 1993, p.24). They found that family support and emotional resources available to the participants were important influences on the mother-child relationship and the development of the infants. This research is currently being expanded to include deaf infants with deaf parents.

Deafness appears to have a greater impact on the mother-preschooler relationship than on the mother-infant/toddler relationship. The children in the Lederberg and Mobley study were reassessed at the age of three years by Lederberg, Willis and Frankel (1991). During interaction with hearing mothers, the hearing impaired children showed less social initiative, compliance, enjoyment, creativity, on-task behaviour, and more misbehaviour than hearing preschoolers. The reduction in the quality of the mother-preschooler relationship is thought to be related to the ability of both the child and mother to communicate competently with each other. As a child matures, the use of language becomes more important for age appropriate activities and normal adult-child interaction. Deaf children with delayed language, appear less 'normal' as they grow older. Meadow, Greenberg, Erting and Carmichael (1981) compared interactions between hearing-deaf children with their hearing-deaf mothers. Interactions between deaf-deaf dyads were similar to interactions between hearing-hearing dyads. They concluded that deafness itself

does not cause problems in the mother-preschooler relationship, but that ease of communication is a significant factor in the development of satisfying relationships at the pre-school age. Bowlby (1969) writes that communicative competence in the preschool years is related to the development of mature attachment relationships. Communication is essential if mother and child are to negotiate leave-taking, requisite to the development of a goal-directed partnership (Lederberg, 1993). By the age of three years, deaf children were shown to be less social and less happy in their interactions with their mothers. Schlesinger and Meadow (1976) write that deaf children's social and affective behaviours seem related to their communicative competence.

Current research suggests that the impact of deafness cannot be explained by a single hypothesis. Lederberg (1993) writes that transactional theories are most likely to throw light upon the numerous domains of child and family functioning. In their review of research on family adjustment and its effects on deaf children, Calderon and Greenberg (1993) point to the importance of the examination of multiple variables as part of longitudinal studies. Greenberg and Kushé (1989) suggest that there is a need for new integrated research programmes which examine inter-relationships between various aspects of the deaf child's functioning. They criticize the nature and quality of many studies within the "voluminous research literature" for being "univariate" and "one-shot" (p.119). This is an important consideration to be taken into account in a review of the literature on psychosocial development. The next chapter attempts to bring together a number of variant studies, the findings of which provide insights into the social adjustment, emotional adjustment and self-image of deaf children.

CHAPTER 7

PSYCHOSOCIAL DEVELOPMENT AND DEAFNESS

Much of current research appears to tacitly accept the assumption that the nature of the development of the deaf child is essentially the same as that of hearing children. Myklebust's (1964) suggestion that experiential deprivation will inevitably render the development of the deaf child as different from the hearing child, is now considered as representative of an outmoded and prejudicial view of deafness. Myklebust's views are criticized for their focus on the rehabilitation rather than on the resilience of deaf people. The so-called 'psychology of deafness' is rejected. Deaf children are thought to follow the same developmental course as hearing children, albeit with some development delay, largely due to secondary factors including disruptions in the learning process. If this is true, Marschark (1993) writes that there would be no need for theorizing about deafness and development.

Marschark (1993) cautions against viewing the course of development of hearing and hearing impaired children as essentially similar. He comments that conclusions from past research on deafness which emphasized cognitive and behavioural deficiencies were too hastily accepted, but warns that "[d]eaf children *will* experience a somewhat different world than hearing children and these differences undoubtedly *will* have implications for their psychological development." (emphasis in the original) (p.9). He argues that there are well documented differences between deaf and hearing children, including within the social domain. An understanding of the nature of social, cognitive and language development will provide a much clearer understanding of deaf children and of development in general.

A review of extensive and often contradictory research into the social and emotional development of deaf children follows. For heuristic reasons the literature will be presented in terms of three interrelated areas of development: social adjustment; emotional adjustment; and self-image. These three areas represent the three

categories of behaviour from which Meadow, Karchmer, Petersen and Rudner (1980) developed the subscales* for SEAI the inventory used in the present study.

In the following section research on the social adjustment of deaf children is discussed first. The section is divided into 'social maturity' (including the influence of familial and school factors on the development of maturity) and 'social-cognitive skills' (role-taking, emotional understanding, attributional processes and problem-solving).

The emotional adjustment of people with hearing impairments is an area of research which has received much attention. Studies reviewed include those addressing emotional regulation and particularly impulse control. 'Impulsivity' is an often cited psychosocial problem shown by deaf children. This section concludes with details of research on possible incidence and aetiology of emotional disturbance within deaf populations.

The final section, self-image, opens with a discussion of what is meant by the terms 'self-image', 'self-concept' and 'self-esteem'. A variety of studies which have attempted to measure self-image of deaf subjects are presented and reviewed.

Although the domains of social adjustment, emotional adjustment and self-image are examined separately, it is critical to note the importance of viewing the child holistically (Greenberg & Kushé, 1989). For all children, not least the deaf child, there are a variety of direct and indirect influences and feedback loops between the growth processes in cognition, communication, social competence and the developing sense of self.

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* Scale 1, social adjustment; scale 2, self-image; scale 3, emotional adjustment.

7.1 Social adjustment

7.1.1 Social maturity and competence

Social maturity is a complex psychological construct. It is influenced by the interaction of skills such as self-help, self-direction, communication, emotion, social adjustment and social relations. Chaplin (1975, cited in Paul & Quigley, 1990), defines social maturity as "an individual's development of the skills and customs characteristic of the group" (p.87). Social skills are an important medium through which an individual can initiate and maintain interpersonal relationships. Knowledge, or lack of knowledge, of appropriate social norms of behaviour will influence the way in which other people treat an individual. This will impact on that individual's self-concept and ultimately influence the amount of opportunities available for the individual to learn from social encounters. Raymond and Matson (1989) suggest that the behavioural problems reported in the deaf population may be related to the development of poor social skills due to communication difficulties. On the basis of results using the Vineland Social Maturity Scale (Doll, 1965), a number of investigations has concluded that the social maturity of deaf children is lower than hearing population norms (Greenberg & Kushé, 1989; Meadow, 1980; Paul & Quigley, 1990). Myklebust (1964) asserted that such a discrepancy increased with maturity. Results from studies using the Vineland Social Maturity Scale have been questioned as items measuring social maturity also require oral English for successful completion, which would be prejudicial against those with a hearing impairment. Meadow (1980) observed that certain studies did not include control groups or examine variables relevant to research with deaf children.

More recent studies indicate few differences between deaf and hearing subjects. Greenberg (1983) found no differences between the social age of hearing impaired preschoolers and hearing norms using the Alpern-Doll Developmental Profile (Alpern-Doll, 1972). Raymond and Matson (1989) compared an assessment of social skills of deaf children with a hearing group. They concluded that, although significant differences were observed between the two groups on measures of social withdrawal and aggression, both groups were within the normal range.

Raymond and Matson concluded that the acquisition and development of social skills may not be influenced by characteristics associated with hearing impairment. Problems in social competence were indicative of people who were deficient in monitoring the impact of their behaviour on others, regardless of hearing status.

The social adjustment of hearing impaired children has long been related to communicative and linguistic competence. Schlesinger and Meadow (1972) found that social competence in a group of proficient deaf preschoolers was related to their ability to communicate with others. Schum (1991) proposes that, due to limitations in communicative ability, deaf children receive insufficient environmental experience to enable them to construct higher levels of interpersonal understanding. As a result, they remain fixated at lower stages of development and show behaviour typical of younger children. Their behaviour is immature and reflects developmental delay rather than deviance. Schum provides a developmental model of social behaviour based upon developmental stages of interpersonal interaction, which he applies to deaf children. As this model is predicated on the belief that language ability and communicative experience are the keys to social and behavioural development, Schum concludes that the absence of age-appropriate development is the direct result of language deficit.

There is a growing trend to relate the social adjustment of the deaf to causes other than hearing impairment. Social competence is not solely due to language competence. Recent research has shown the potential influence of other factors such as acceptance and attitude of parents towards deafness, type of educational provision, and other familial variables, interacting in complex and possibly bi-directional ways to predict the social nature of deaf children (Greenberg & Kushé, 1989).

7.1.1.1 Influence of family on the social maturity of deaf children

Research spanning 30 years has linked parental and peer acceptance of deafness and psychosocial development of the deaf individual. Newhouse (1969) found that

mothers' non-acceptance of hearing loss correlated with psychological problems in their school-age deaf children. Furth (1966) wrote that the acceptance of hearing impairment is an important factor contributing to the mental health of deaf people. More recently, Manfredi (1993) associated non-acceptance or denial of deafness by the child's mother with rigidity in the use of the oral method, a lower degree of verbal language communication, and problems in the socialization process. A flexible use of the oral methods aimed at reciprocal communication, was linked to maternal acceptance. Children of flexible mothers showed a higher degree of verbal language knowledge and more appropriate psychosocial development.

An acceptance of deafness is considered an important contributory factor to explain the influence of parental hearing status on their child's social maturity. Deaf children of deaf parents are seen as being more mature, having higher self-esteem and having higher academic achievement than do deaf children of hearing parents. The greater deficits shown by hearing impaired children with hearing parents may be linked to difficulties that hearing parents have in adjusting to the child's deafness. Unlike hearing parents, deaf parents do not appear to show the same deep concern and sadness about their infant's deafness, hence the development of normal social relationships is less likely to be affected.

7.1.1.2 Influence of educational provision on the social maturity of deaf children

School experiences, particularly relationships with peers, make significant contributions to the social and emotional development of all children. There is a large body of literature, based in part on the theories of Harry Stack Sullivan, to demonstrate that peer relations during early adolescence play an essential role in the development of social competence and emotional well-being. Friendship relations with peers, based upon closeness, security and trust, are critically important to feelings of well-being and adjustment in early adolescence (Bukowski, Hoza and Boivin, 1993). Peer relationships in particular contribute to the

development of social skills which reduce the likelihood of social isolation and promote future psychological health (Johnson, 1980).

Positive peer relations are as essential for the development of children with disabilities as they are for the non-disabled. For many hearing impaired children, peer groups include both hearing and deaf children. Opportunities to develop friendship with hearing and deaf peers is often influenced by the type of educational provision attended by the child. Children who are mainstreamed are surrounded by hearing children and have several peers of similar hearing status. Alternatively, deaf children in special schools have many other hearing impaired children to relate to, but no hearing peers in school. Researchers have investigated the link between social adjustment and type of education provision, focusing particularly on peer relations. Such studies are especially relevant considering the increase in the number of deaf children educated in mainstream settings due to legislation in US and UK.

Studies of hearing impaired pupils in mainstream classes, both in US and UK, have shown that deaf pupils show poorer adjustment than their hearing peers (Stinson & Chase, 1990). Deaf pupils' descriptions of their social experiences included much loneliness, rejection and social isolation (Foster, 1988). Hearing impaired pupils were found to interact more with deaf peers and teachers than with hearing pupils (Antia, 1982). Certain deaf pupils are unable to interact normally with hearing peers and so need to use teachers as mediators (Lederberg, 1993). Pupils who attend residential schools report more social experiences than those who have been mainstreamed (Mertens, 1989).

Other studies have shown that hearing and deaf pupils can develop positive relationships when a special effort is made to establish a climate of positive interaction and friendship (Kluwin, Blennerhassett & Sweet, 1990). Interactions between deaf children who are mainstreamed and hearing peers, were found to be improved when the deaf children had good oral skills, and when deaf and hearing

children had experience of playing with each other in their home environment (Lederberg, 1993).

It has been claimed that children who use a TC approach receive higher ratings in social adjustment than those in oral programs (Farrugia & Austin, 1980). This appears to be related to the supposed enhancement of quality of communication between child and caregiver, due to the use of TC. The experience of quality communication has been linked to social maturity in deaf children. However, Cartledge, Paul, Jackson and Drumm (1988, cited in Paul & Quigley, 1990) found no significant differences between TC and oral deaf children, or between residential and public school pupils.

Thus, it appears that there is much variation in the social experiences and opportunities to acquire social skills of hearing impaired children. Lynas (1985), on the basis of interviews with British deaf students, reported that they felt their social experiences had been varied, the quality of which was very largely dependent upon the individual. The issue of social maturity and positive and negative influences on the social maturity of deaf children is complex. As an example, Quarrington and Solomon (1975, cited in Paul & Quigley, 1990)) found that social maturity of residential deaf pupils was positively related to the number of visits home made by the pupils.

7.1.2 Social-cognitive skills

Problems in the social behaviour and emotional adjustment of children with hearing impairments may be partly due to delays in the development of social-cognitive processes. Social cognition refers to a person's conceptualizations of others and the processes by which a person comes to understand other's experiences (Cates & Shontz, 1990). 'Social cognition' encompasses a number of abilities, including role-taking, emotional understanding (non-verbal sensitivity), attributional processes, and social problem solving. All of these are part of an individual's thinking when confronted with personal and general social adjustment problems. Clinical data on

the social-cognitive skills of deaf children is limited and, on the whole, reveals that hearing impaired children show deficits in social-cognitive skills compared with hearing children. Recent research has shown that individual differences appear to be related to language competence and academic achievement and attitudes. It is hypothesized that social-cognitive skills are bi-directionally related to skills in other domains (Greenberg & Kushé, 1989).

7.1.2.1 Role-taking

Role-taking ability (RTA) is a central social-cognitive process (Weisel & Bar-Lev, 1992). It refers to the ability to adopt the perspective of another and hence involves the appreciation of another person's thoughts and feelings. RTA is contrasted with egocentricity and is believed to develop through social interaction when children learn to examine their own thoughts and actions in the light of dissonant information from others. It has been hypothesized that RTA in the deaf is delayed because of a reduction in social experiences due to restricted communication (Liben, 1978; Meadow, 1980). Bachara, Raphael and Phelan (1980) found that severely deaf 9 to 14-year-olds showed greater egocentricity, with a four to five year delay in RTA from hearing children.

More recent studies by Cates and Shontz (1990) and Weisel and Bar-lev (1992) conclude that RTA is not directly related to social adjustment in the deaf. This is consistent with research on hearing children which has not shown a stable relationship between RTA and pro-social behaviour (Underwood & Moore, 1982). Weisel and Bar-Lev found that deaf subjects showed lower levels of RTA than hearing subjects, confirming previous findings. This was associated primarily with limited language competence, a major factor associated with social adjustment. Better role-takers were more effective communicators. Cates and Shontz hypothesized that the ability to understand another's point of view may facilitate communication by allowing the speaker to construct an appropriate utterance to meet the individual needs of the listener.

Greenberg and Kushé (1989) found only a slight delay in RTA of deaf subjects compared with that of the hearing. They concluded that deaf children are able to perceive the feelings of others, but are unable to evaluate or interpret such information. Weisel and Bar-Lev write that the process of social understanding includes two distinct abilities of perception and interpretation which may be differentially related to language, with language ability more important for interpretation.

7.1.2.2 Emotional understanding: Non-verbal sensitivity

Non-verbal sensitivity (NVS) is the ability to perceive the emotional state of another person according to non-verbal behaviour, such as facial expression. A claim that the hearing impaired would develop an improved sensitivity to non-verbal cues has not been substantiated. Weisel (1985) found that the deaf were less accurate at interpreting emotional states and situations than hearing people, hence, failing to demonstrate the use of a compensatory mechanism by which the deaf may improve their visual non-verbal perceptions. Weisel and Bar-Lev (1992) identified NVS as a unique independent and important ability for social adjustment. Unlike RTA, NVS relies more upon perception rather than interpretation in social understanding.

Future research to develop a wider database on NVS in deaf subjects is required in order to enable more exact and objective evaluations of performance.

7.1.2.3 Attributional processes

Attributions can be described as the perceptions of causality which individuals have for events. People make judgements (causal cognitions) about why events happen which are important in determining subsequent behavioural and emotional responses. Judgement plays a mediating role between an event and consequent behaviour. Through socialization a child learns to associate specific causal attributions with particular emotional reactions in success and failure situations. For example, the causal cognition of success due to assistance from another is associated with the affect of 'thankfulness'.

Kushé, Garfield and Greenberg (1983) examined the social attributions of deaf adolescents in a residential school and compared them with hearing controls. They investigated the deaf children's understanding of causes (effort, change, ability), emotions (pride, shame, confidence) and the link between cause and affect. Deaf subjects performed poorly compared with hearing children, and in particular made errors which may be linked to low academic achievement and low self-esteem. As previously noted, language ability was positively related to a greater understanding in all areas. What appears to be more important for social competence is not so much the knowledge of emotional vocabulary words but the understanding of such words.

Kushé and Garfield (1983) found that four to ten-year-old deaf children using TC showed a less mature understanding of the pro-social 'good' (voluntary behaviour intended to benefit another), than matched hearing children. Moral development is based upon such distinctions. DeCaro and Emerton (1978) reported that the majority of students entering a higher education institution scored at Stages 1 and 2 of Kohlberg's model of moral development. This would place them as functioning at the preconventional level of moral reasoning. Moral judgements of individuals at these stages would be made in terms of the individual's own interests or the interests of people close to him or her. For moral reasoning to advance to higher levels of conventional moral reasoning (Stages 3 and 4, when the individual uses the rules and standards of society as the basis of moral judgements) and postconventional moral reasoning (Stages 5 and 6, when general moral principles become the basis for making moral judgements), both general cognitive development and social experiences are necessary (Steuer, 1994). Through experiences which allow the individual to take the perspective of others, and the opportunity to discuss moral issues, the child is able to advance to higher levels of moral reasoning. If such experiences and opportunities are limited, the individual is less likely to be able to take another's perspective. Weisel & Bar Lev (1992) showed this in deaf subjects who remained at the earlier stages of Kohlberg's model. Although a seemingly convincing argument, the results in the study by DeCaro and Emerton to illustrate their point may have been compromised by

methodological issues (Greenberg & Kushé, 1989). More studies on the moral development of the deaf are required.

7.1.2.4 Problem-solving

Effective interpersonal problem-solving is related to social and emotional adjustment. Psychological health is associated with adaptive thinking processes. Adaptive thinking is characterized by the tendency to recognize a problem without distortion by strong emotional needs, an ability to reflect on possible solutions to the problem and, finally, by the making of a decision and acting upon this decision. There has been little empirical research on the social problem-solving of deaf children. Coady (1984, cited in Greenberg & Kushé, 1989) presented a series of pictorial stories of social dilemmas to deaf children aged six to twelve. Although these children showed rudimentary social understanding in that they demonstrated sensitivity to the thoughts and feelings of others, they revealed deficits in psychological insight and little personal initiative. Teachers' ratings of deaf children showed a significant relationship between problem-solving skills and social competence.

7.1.3 Conclusion

It has been hypothesized that, due to limitations in communication between a deaf child and hearing parents, the child receives insufficient social experiences and appropriate models for behaviour, and so has problems in social adjustment and shows a higher rate of behavioural problems than would be typical for a hearing child. At present, cause and effect are unclear. Empirical research has resulted in the identification of certain differences between the deaf and the hearing, especially in the acquisition of social skills. However, Marschark (1993) emphasizes that such differences need not indicate deficiencies.

Finally, it may not be relevant to base conclusions on the performances of the deaf within the social realm compared with hearing populations. Viewed from a cultural perspective, deafness represents a minority sub-culture with its own rules and

norms. Low expectations by the majority hearing culture may be instrumental in encouraging the deaf to internalize negative attributions such as inferiority and hence influence social relations. It is important that studies which seek to understand and explain the social adjustment of deaf people do not limit research to family and school contexts, but view the person in the wider context of societal influences and expectations.

7.2 Emotional adjustment

7.2.1 Emotional regulation

Kopp (1992) defines emotional regulation as the modulation of emotions, especially negative emotions, according to situational demands:

> "The term modulation covers a diversity of control strategies such as reduction of a strong negative state in order to achieve functional responsiveness to an ongoing event, maintenance of a reasonable balance among negative, neutral, and positive emotions during everyday activities, and the inhibition of an outburst when requested to comply with demands that are not to one's liking" (p.41).

The ability to regulate emotion and the production of socially competent behaviour are intimately linked (Eisenberg & Fabes, 1992). Children who are unable to maintain emotional reactions within a tolerable range (those who become over aroused relatively easily), behave in ways that may not facilitate positive social interactions, especially in situations where negative emotions are salient. The tendency for over-arousability may be determined by both the individual's temperament and the environment. Kopp argues that socialization influences undoubtedly affect the child's self-regulation skills as well as the ways in which children cope with events which elicit emotion.

Socialization to standards begins in earnest in the child's second year, compliance to adults requests increases as the child matures. Eisenberg and Fabes (1992)

identify several ways in which socialization agents, often the child's parents, may influence the child's learning of emotional regulation. Parental response to the child's expression of emotion and parental expression of emotion, appear to be important for the child learning to decode and model emotional displays. Yet, importantly for the deaf child, what the parents *say* about emotion also affects the child's learning. Parental use of reasoning helps children to understand the consequences of their own behaviour and appears to promote pro-social behaviour. Parental use of emotion related language also helps the child to develop emotional schemata crucial in the structuring of emotional experience. Therefore, through language parents aid the socialization of their child's emotional responsibility to others and the development of ways of dealing with emotion in social contexts.

Regarding the deaf child, linguistic and experiential deprivation have been shown to have serious effects on the socialization of the child. Harris (1978) writes that a major effect of language deprivation is a reduced capacity for self-regulation. Certain deaf children may receive limited explanations for feelings, roles, reasons for actions and consequences of behaviour. The result of reduced opportunities to make sense of life experiences will be a limited understanding of the causes and meanings of events. The interpretation of events will be influenced by limited socialization due to language delay in addition to other factors associated with experiential deprivation, such as the discouragement of independence and restrictions in incidental learning.

Impulsivity has been described as one of the most significant psychosocial problems within the deaf population (Paul & Quigley, 1990). Poor impulse control and the engagement in activities without reflection are stereotypical characteristics ascribed to the deaf. Other characteristics associated with impulsivity and presumed to be common amongst the severely and profoundly deaf are egocentricity and self-centredness, immaturity, rigidity and inflexibility and a lack of empathy (Levine, 1960; Myklebust, 1964). Altshuler, Deming, Vollenweider, Rainer & Tendler (1976) compared hearing and deaf children from Yugoslavia and US. Results from a battery of tests indicated that the deaf children were more impulsive on all

measures. Older studies using projective tests have shown deaf children to be egocentric, impulsive, rigid and immature.

More recent researchers have suggested that earlier studies underestimated the abilities of the hearing impaired, especially in egocentricity and empathy. Such characteristics are better associated with poor language skills than pathological behaviour (Greenberg and Kushé, 1989).

Several studies have shown differences between sub-groups in the deaf population on levels of impulsivity. Chess and Fernandez (1980), for example, examined impulsivity in deaf and hearing children. Higher rates of impulsivity were found in deaf children. Much higher rates of impulsivity were noted in deaf children with additional disabilities.

It has been claimed that deaf children of deaf parents show more mature emotional development than children with hearing parents. Harris (1978) found that children with deaf parents showed greater impulse control and were more reflective than those from hearing families. Harris hypothesized that signed early communication, more likely in deaf homes, enabled the child to gain greater cognitive self-control. Others investigating the relationship between early gestural communication and impulse control have found a positive correlation between type of communication and level of control (Manfredi, 1993). However, type of communication may not influence levels of impulsivity *per se*. O'Brien (1987) found the deaf more impulsive than the hearing, but noted no differences between children in TC and children in oral only programs. He states, "[t]his appears to support the view that the type of language, manual or verbal, is not important for the regulation of impulsive behaviour" (p.216).

Other researchers account for differences within the deaf population as associated with the type of educational program attended. Children who attend residential schools have been described as less mature than those who attend day schools, especially if they have hearing parents. Manfredi (1993) compared children from

residential, day, and mainstream settings. She reported that children who most reproduced the so-called characteristics of the deaf attended residential schools. Yet, it has also been observed that day scholars at residential schools had more intelligible speech and generally superior language ability than residents. Comparisons between students in different educational settings are difficult to interpret. There are obvious methodological problems in comparing deaf children in different settings. Very few studies have compared groups of similar students in both integrated and non-integrated placements, or have satisfactorily controlled dissimilar factors such as additional disabling conditions and degree of hearing loss (Kluwin & Moores, 1985).

In summary, earlier studies of the deaf made a causal connection between hearing loss and low impulse control. Later studies took into account the wider influences on emotional development, including communication factors, the impact of additional disabilities, family environment and educational setting.

Emotional immaturity and impulsivity more have recently been thought to be indicative of an external locus of control or learned helplessness. Individuals who feel they have little control over their lives may react passively and take little responsibility for their actions. A lack of motivation to participate seems to be related to impulsivity (Paul & Quigley, 1990). Such an attitude is likely to lead to underachievement. Several studies have confirmed that deaf adolescents have a higher external locus of control which was associated with poor study habits and a lack of acceptance of self-responsibility. McCrone (1979) demonstrated a high degree of learned helplessness in deaf adolescents.

7.2.2 Emotional disturbance

Maher (1989) estimated that 15-20% of the then 20 million Americans with a serious hearing loss had emotional disorders: "[a] high percentage of the deaf who have psychological disturbances are psychiatrically ill to a clinically significant degree" (p.217). The deaf, according to Maher, have diminished senses of selves than do

comparable groups of hearing peers, and their self-systems reflect defensiveness and emotional impairments.

Empirical research reveals a higher level of emotional disturbance within the deaf population (Hindley, 1993). Yet, Hindley and others warn about the methodological problems in assessing psychiatric disorders in hearing impaired groups. Lane (1988) provides a detailed and convincing argument addressing the questionable validity of test instruments for use with the deaf. Hindley illustrates the linguistic problems in assessing deaf adolescents. Despite considerable psychiatric experience and a knowledge of BSL, Hindley did not identify signs of distress in one subject. It was only the inclusion of an experienced interpreter who was able to detect subtle cues in sign inflexion and non-verbal communication, that it was possible to make a diagnosis of separation anxiety and depression. These findings are supported by results from a study of a videotaped ASL version of the Minnesota Multiphasic Personality Inventory (MMPI). Deaf adults were observed to be more likely to respond to distressing personal questions by denial if the signed question was presented in a dramatic fashion (Hindley, 1993).

Research findings on the mental health of deaf people can be described as fragmentary and contradictory. Although the estimated rate of emotional and behavioural disorders appears to be quite high, due to the absence of clear diagnostic criteria, longitudinal investigation, and paucity of information from mental health bodies (as deaf people under-utilize and are under-served by such bodies), it is difficult to make definitive statements on the level of emotional disturbance in the deaf population. Several researchers, however, have attempted to investigate the more common types of disorder observed in the deaf, and hypothesize about aetiology.

The psychiatric disorder most often associated with deafness is depression. Higher rates of emotional disturbance have been reported in groups of people with acquired and progressive deafness. Darbyshire (1984) tentatively suggests that about 30% of people over the age of 75 have hearing losses. In his review of the

management of the hearing impaired elderly, Darbyshire concludes that interpersonal anxiety, social isolation, and possibly a predisposition to depression are common in this group. Vernon and LaFalce-Landers (1993, p.430) write that "people who have progressive and/or late onset hearing losses tend to face significant emotional problems". This appears especially so for gifted people who find that their deafness limits career possibilities, isolates them from friends and family, and detrimentally affects relationships. It is not unusual for such people to receive treatment for depression.

Depressive symptoms have also been noted in people who have been deaf since birth. Leigh, Robins, Welkowitz and Bond (1989) found that mild levels of depressive symptomatology were more prevalent in a group of deaf undergraduates than in matched hearing controls. They concluded that depression is not necessarily concomitant with deafness, but that deafness seems to increase vulnerability to mild depressive states. There did not seem to be an association between deafness and more serious depressions. Watt and Davis (1991) also found that deaf students showed a significantly higher frequency of depression than hearing students. They investigated the prevalence of boredom proneness (an affect closely related to depression, anxiety and loneliness), among deaf residential school adolescents. Deaf students were found to have a significantly greater tendency towards experiencing boredom than hearing students. Vernon and LaFalce-Landers (1993), in their longitudinal study of the intellectually gifted hearing impaired, reported that 40% of subjects received treatment for mental illnesses. Depression and substance abuse were the most common problems. Hindley (1993) also noted symptoms of depression in a group of deaf adolescents, but found that anxiety disorders and social phobias were more prevalent in this group.

Limitations in communication with others due to acquired or congenital deafness appears to predispose the individual to depression and associated difficulties, including anxiety and social withdrawal. Charlson, Strong and Gold (1992) found communication difficulties to be the direct cause of social isolation in successful deaf adolescents. Loneliness and isolation were related to boredom and depression.

Depressive symptoms have also been linked to aspects of the parent-child relationship, particularly low maternal care and high maternal control (Leigh *et al.*, 1989).

Deafness is a psychological stressor for the individual and significant others, and as such has been associated with emotional and social problems. How individuals cope and feel about their deafness, according to Vernon and LaFalce-Landers (1993), is the single most important factor determining their psychological adjustment. They recommend the provision of adequate support services for the deaf, and especially the gifted deaf, in order to minimise wasted potential and emotional disturbance.

7.3 Self-image

7.3.1 Definitions

There are a number of terms within the psychological literature used to indicate the way in which an individual describes, evaluates and feels about the self. Terms such as self-concept, self-esteem, self-image, self-efficacy, self-worth, self-understanding, self-perceptions and self-identity are most commonly used. Yet, despite the frequency with which particularly 'self-concept', 'self-esteem' and 'self-image' appear in the literature, there appears to be debate about what these terms actually refer to, and whether they can be considered synonymous.

Burns (1979) noted differences between self-image, self-esteem and self-concept. According to Burns, self-image refers to self descriptions, self-esteem to self evaluations, with self-concept as the sum of ideas a person has about the self which includes self-image, self-esteem and behavioural tendencies. Within much of the literature self-concept and self-esteem are considered as separate constructs, with self-concept commonly equated with self-descriptions and self-esteem with self evaluations (Burnett, 1994). Hence, descriptive and evaluative aspects of the self can be distinguished.

However, other theorists have maintained that a distinction between self-descriptive statements and self-evaluative statements has not been clarified either conceptually or empirically (Shavelson & Bolus, 1982). An alternative perspective is provided by Campbell (1990) and Searcy (1988) who suggest that self-concept refers to beliefs about specific characteristics (both descriptive and evaluative), whilst self-esteem is associated with global or general beliefs from an affective orientation which the individual has about the self as a person. For the purposes of the present discussion self-concept, self-esteem and self-image will be considered to be closely related, subjective, multi-dimensional phenomena which encompass global and component dimensions.

7.3.2 The self-image of deaf children

Deaf children, as all children, gain confidence in themselves through satisfactory interpersonal relationships (Manfredi, 1993). Meadow (1980) writes that "social development and self-concept go hand in hand" (p.86). In psychanalytic terms, as a child begins to develop self boundaries and to be an object to the self, so the child also sees himself or herself as reflected in the appraisals of others. If the response of others is facilitating and holding during childhood, then the child is able to develop a sense of personal identity. The development of identity is important for the development of positive self-image (Meadow, 1980).

Harter (1983) sees the development of self-concept in children as parallelling Piaget's stages of cognitive development. By the pre-operational stage (ages two to six years), children learn the concept of 'me' but tend to view themselves in terms of concrete attributes in an all-or-nothing fashion (if they are good at one activity they think that they are good at everything). When children reach the concrete operational stage (at seven to eight years) they begin to evaluate themselves in comparison with their peers. Group play with peers and siblings serves to aid in the development of social skills and is related to the development of self-image. During the period of adolescence developmental changes often bring about a disruption in the sense of self. Erikson (1968) believed that through the establishment of a

concept of identity the adolescent achieves a unified self with an awareness of different roles in life, including individual strengths and weaknesses. At this stage it is the society at large which becomes the major influence upon self-image (Barrett, 1986).

The development of self-concept has important ramifications for present and future individual adjustment (Merrell, Cedeno & Johnson, 1993). Self-esteem could be considered to be a critical index of mental health. Poor self-concept and low self-esteem has been linked to depression, anxiety, social withdrawal and poor academic performance, whilst a healthy and appropriate self-concept and high self-esteem has been linked to later life satisfaction and happiness.

Both the primary and secondary effects of deafness may contribute to increasing isolation and limited opportunities for social interaction for the deaf individual (Oblowitz, Green & Heynes, 1991). Coopersmith (1967) considered isolation as a potential basis for the development of low self-image. The developmental crisis of adolescence may be intensified for the deaf teenager who may have more difficulty in establishing new relationships and be more lacking in internal controls than hearing peers. Difficulties in adolescence may result in the deaf teenager becoming increasingly dependent upon, as opposed to independent from, immediate family, rendering him or her less likely to form a positive, yet realistic self-concept associated with optimal development (Barrett, 1986; Charlson, Strong & Gold, 1992).

7.3.3 Measurement of self-esteem in deaf populations

As there are differences in the definition of self-referents, so there continues to be debate on how to study and measure self-concept and self-esteem in children. There is no absolute value against which subjects' scores can be compared to determine if they have 'adequate self-esteem'. When the children concerned are deaf the problems of interpretation and research methodology are heightened.

However, the endeavour to understand the relationship between deafness and self-esteem or self-concept has been documented since the 1930s (Yachnik, 1986).

Early work suggested that deafness resulted in the absence of feedback relating to one's self. Brunschwig (1936, cited in Moores, 1987) and Craig (1965) found that deaf children showed an inflated sense of self-regard, producing more positive self-ratings than hearing children. These results are now considered questionable as the research tasks involved written sentence completion tests. For the subjects to provide adequate responses it is more likely that they were post lingually deafened or had less severe hearing losses.

Meadow (1980) suggests that the elevated scores of hearing impaired children in these earlier studies may also reflect limited cultural restraints. The children in Craig's study all attended residential schools and were younger than twelve years old so were less likely to have experienced many negative appraisals from the hearing world. Other researchers have reported deaf children as showing lower self-esteem than their hearing counterparts (Kelliher, 1976, cited in Greenberg & Kushé, 1989). Research on the self-concept of the deaf is confounded by the typical problems associated with research on people with hearing impairment, but is particularly compromised by linguistic methodological difficulties involved in the completion of self-concept scales. Oblowitz, Green and Heynes (1991) conclude that research findings on the self-concept of the hearing impaired tend to be inconclusive and difficult to interpret.

Several measures specifically designed for measuring the self-esteem and self-concept of deaf children have been found to be useful in comparing sub-groups within the deaf population. Certain groups appear to show lower self-esteem than other groups. Important variables for research are the hearing status of the parents and family climate, type of school and school achievement, quality of communication and group identity.

Stone, Harris and Sterling (1986, cited in Greenberg & Kushé, 1989) suggest that a deaf child's self-image may be partly dependent on parental hearing status. The hearing status of their parents has been shown to be a significant factor in self-image scores of deaf children in studies spanning 20 years. Meadow (1969) developed a 'cartoon test' with both written adjectives and signed illustrations to compare the self-concept of hearing impaired children with deaf versus hearing parents. The deaf children with deaf parents produced significantly higher positive scores than deaf children with hearing parents. This study was extended to compare children in residential programmes with children in day schools (Schlesinger & Meadow, 1972). Average scores for the day school group were similar to those of children with hearing parents in the residential group, both of which were lower than those of children with deaf parents. Meadow (1980) accounts for such differences by linking more positive self-image with proposed features of deaf families. Deaf parents provide positive role models, and are able to identify closely with their deaf child's experience; they tend to communicate more easily with their deaf children. Yachnik (1986) examined the self-esteem of deaf adolescents with deaf parents compared with the self-esteem of deaf adolescents with hearing parents. His results confirmed what earlier studies had shown; adolescents with deaf parents expressed feelings of higher self-esteem than adolescents with hearing parents in both global and select components of self-esteem. However, Yachnik warns against interpreting this finding to conclude that all deaf adolescents with hearing parents show low self-esteem as the measurement of self-esteem remains largely imprecise.

In one of the most recent studies on the influence of parental hearing status on the psychosocial development of the deaf child, Kolod (1994) links the language of parents and parental response to diagnosis of deafness to the developing sense of self in the child. Kolod compared two groups of deaf adolescents (one with hearing parents, the other with deaf parents), in terms of their interpersonal relations, self-concept and reality testing. She found that their child's deafness remained an unresolved issue for hearing parents, who experienced their child as 'defective'. Children of these parents had in turn internalized a damaged sense of self, a view

of the self as 'sick' or 'dislocated'. Interpersonal relations between hearing parents and deaf children were affected not only by the parents' negative perception of the child but increasingly by difficulties in communication. It is not unusual for deaf teenagers to express their individuation from their parents by rejecting spoken language and embracing Deaf culture and sign language. In most cases this movement by the child will leave parents and children without a common language. Hence, the young person will lack a vehicle for negotiation with other family members. On the other hand, deaf parents in Kolod's study were able to communicate fluently with their deaf offspring and had been able to do so since their child was an infant. In addition, they were more accepting of their child's deafness and had even expected the child to be born deaf. These parents did not experience their child as defective or damaged. Unlike children of hearing parents, children of deaf parents were more able to express subtle feelings and articulate issues in relation to self-delineation and identity.

Type of school has also been investigated as a factor in the development of positive self-esteem in deaf children. However, the direction of the effect on self-image of being educated in a special school environment as opposed to a mainstream environment is unclear as a number of studies have shown contradictory results (Hindley, 1993).

The availability of a reference group within which the deaf adolescent may form relationships and feel socially competent is central to the debate on the benefits of various types of educational provision. It has been shown that deaf children prefer the company of other deaf children, even in mainstream settings (Foster, 1989). This may be partly due to a greater ease in communication between hearing impaired children, and a feeling of a sense of belonging in a common world. It could be argued that feelings of rejection and isolation (and associated adjustment problems) would be more prevalent in mainstream settings where interaction was more problematic, and where the opportunities to interact with a number of other deaf individuals was limited. However, Stinson and Chase (1990), in their examination of deaf students' perceptions of their social relations, found that

students who showed higher levels of social participation and emotional security were more self-confident, whether their relations were with deaf *or* hearing peers. It appears that the quality of relationship is more important than the opportunities which are made available for the development of satisfactory relationships through participation with others.

A further factor which has been shown to distinguish between deaf sub-groups on measures of self-esteem is that of mode of communication. It is difficult to assess adequately the effect of oral or TC methods of communication on a deaf child's psychosocial development as other factors such as parental hearing status and educational placement complicate the issue. For example, many children of deaf parents have a signing history, also many oral only children are found in mainstream settings. Kelliher (1976, cited in Greenberg & Kushé, 1989)) found that children with profound hearing losses who used TC had higher self-esteem scores than oral children.

The self-concept, self-esteem, self-image of the deaf person is undoubtedly influenced by a number of interacting variables, which, combined with individual temperament, contribute to psychosocial adjustment. Bat-Chava (1993) provides a meta-analysis of 42 empirical studies which assessed the effects of hearing status, parental hearing status, type of school attended, communication mode, and group identity on constructs of self-esteem of deaf persons. Bat-Chava found that deaf children from deaf parents compared favourably with those from hearing parents. Children who signed at home also compared favourably with oral communicators. School setting and classroom communication did not appear to be related to self-esteem. Bat-Chava provides recommendations for guiding hearing parents in fostering self-esteem in their deaf child.

7.4 Conclusion

The psychosocial development of the deaf child has been discussed in relation to social adjustment, emotional adjustment and self-image. Empirical research has

been shown to be fraught with methodological problems. Differences noted between the hearing and the deaf may be explained to a certain extent by test biases, artifacts, or by interpretations which are more a reflection of the researcher's view of deafness *per se*. Some important differences, however, do seem to persist.

Children with deaf parents tend to show greater social and emotional maturity than children with hearing parents. Children with hearing impairments appear to be more impulsive and show poorer self-esteem then their hearing counterparts, which inevitably will have a negative influence on social behaviour, the forming of relationships and academic achievement. There is a need for more research, particularly aimed at examining the inter-relationships between different areas of functioning, if parents and professionals are to ensure that deaf children acquire the tools necessary for optimal social and emotional adjustment.

CHAPTER 8

METHOD

As a replication study, the research design of this investigation closely resembles that of the studies by Meadow and Dyssegaard (1983a, 1983b), and Zwiebel *et al.* (1986). As in these two studies, the instrument used was the SEAI and the research method involved the comparison of teachers' ratings according to the nationality of subjects. Modification to subject selection (detailed below) were made because of the small scale of this investigation and to allow more meaningful comparisons with data collected by Meadow and Dyssegaard (1983a, 1983b), and Zwiebel *et al.* (1986). Within this study, additional comparisons were made in order to illuminate possible differences between sub-groups within the deaf population as discussed in Chapter 7.

8.1 Subjects

During 1993-1994 data was collected on two groups of children with hearing impairments, one from United Kingdom (UK), one from South Africa (SA).

UK Group: Data on 50 UK children was collected from two special schools and twelve units in mainstream schools (five primary, seven high schools) within the Cheshire, Lancashire and Merseyside areas of northwest England. Of the two special schools, one UK special school (UKS[1], 25 subjects) used an oral mode of communication, whilst the other UK special school (UKS[2], 5 subjects) followed TC methodology. Teachers in units in mainstream schools (20 subjects) all taught through oral methods and integrated children, to varying degrees, with hearing children. Although the inventory utilized was specifically designed for use with special school children, data on unit children was collected for comparison purposes.

SA Group: The SA sample included 42 children from the Greater Durban area in KwaZulu-Natal. Data was collected from three special schools which all used TC as the mode of communication. Each school traditionally catered for a different racial group, according to the system of apartheid, and subjects were almost exclusively from the original groups for whom the schools were designed. Six subjects were from SA special school 1 (SAS[1], predominantly white children), 20 from SA special school 2 (SAS[2] predominantly Indian children), and 12 from SA special school 3 (SAS[3], predominantly black children). Four additional subjects from units in mainstream schools using oral methods were also included in the sample.

The UK and SA samples were compared with data collected on American (US), Danish and Israeli groups (Zwiebel *et al.*, 1986). As the present study involved smaller numbers of subjects than in the study by Zwiebel *et al.*, a criteria for inclusion was devised based upon the predominant characteristics of the US, Danish and Israeli groups. This study included only data on children aged ten to twelve years (69,6% of US sample, 48,9% of Danish sample, 58,2% of Israeli sample). All children had hearing losses in the severe-profound ranges (71+ dB) (55,4% of US sample, 82,4% of Danish sample, 91,4% Israeli sample). In addition, children with marked additional impairments were excluded and all children were English speaking or, in the case of SAS[3] the medium of instruction was English.

Eleven children from SAS[3] who met the above criteria were excluded from the sample on the basis of marked additional environmental problems. The types of difficulties experienced by these children included extreme poverty (parents unable to pay annual school fees of less than R300 [approximately £50]), possible neglect (children identified by the speech therapist as not well cared for or not collected regularly by parents at weekends), or institutional care (children were orphaned).

Extra information was collected on the hearing status of immediate family members for all subjects. Families were designated as either all hearing or including one or

more additional deaf members. It was decided to use this more inclusive criteria as opposed to identifying children with deaf parents only because of the relatively small numbers of subjects in this study. As approximately 10% of deaf children have deaf parents, such a group probably would be too small for meaningful statistical comparison. Tables 5 and 6 show characteristics of UK and SA children respectively, for gender, school placement, mode of communication and hearing status of family.

8.2 Instrument

The Meadow/Kendall Social-Emotional Assessment Inventory for Deaf and Hearing Impaired Students (SEAI) was collected for all subjects. (See Appendix 1, inventory; Appendix 2, scoring sheet; Appendix 3, score summary and profile). Published in 1983, the SEAI is the first measure of social and emotional development standardized and validated for use with hearing impaired children and adolescents from 7-21 years (Meadow *et al.*, 1980; Meadow-Orlans, 1983).

Table 5: Characteristics of UK sample (numbers and percentages)

	%	N
1. Gender		
Male	42	(21)
Female	58	(29)
2. School, special		
UKS[1]	50	(25)
UKS[2]	10	(5)
School, mainstream unit		
Primary	18	(9)
High	22	(11)
3. Mode of communication		
Oral	90	(45)
TC	10	(5)
4. Hearing status of immediate family		
Hearing	70	(35)
One or more additional deaf person/s	30	(15)

Table 6: Characteristics of SA sample (numbers and percentages)

	%	N
1. Gender		
Male	47,6	(20)
Female	52,4	(22)
2. School, special		
SAS[1]	14,3	(6)
SAS[2]	47,6	(20)
SAS[3]	28,6	(12)
School, mainstream unit	9,5	(4)
3. Mode of communication		
Oral	9,5	(4)
TC	90,5	(38)
4. Hearing status of immediate family		
Hearing	85,7	(36)
One or more additional deaf person/s	14,3	(6)

Adapted from the School Behaviour Checklist (Miller, 1972), the SEAI was developed in response to the regulations of US PL94-142 which required that Individual Educational Programs (IEPs) of individual children were based upon the assessment of a child's current status in every area of development.

The SEAI is designed for use by classroom teachers in a variety of special education settings. It consists of a 59 item behaviour checklist and includes observable behaviours that, at a theoretical level, are expected to reflect the social and emotional development of deaf children. Both positive and negative classroom and school behaviours are identified. Three interrelated competencies are assessed and are reflected on three scales: scale 1 - social adjustment; scale 2 - self-image; scale 3 - emotional adjustment.

The SEAI was normed upon 2,365 school-aged children in the US. There are separate norms for girls and boys aged 7-15 and 16-21 for scales 1 and 2; norms

are by age group only for scale 3. Final scores are reported in deciles. Construct validity is supported by factor analysis and inspection of items appropriate to hearing impaired students. SEAI has shown adequate test-retest and inter-rater reliability (Greenberg & Kushé, 1989), yet systematic, large-scale reliability and validity studies of the scale are needed (Demorest, 1989). Reviewed in the *Tenth Mental Measurement Yearbook*, Sheldon (1989) writes, "SEAI is a needed and useful addition to the small but growing list of assessment instruments for the evaluation of hearing impaired children" (p.495). Demorest comments: "SEAI fills an important assessment need for the hearing impaired population ... A judicious combination of theoretical premises, expert judgement, and data analysis has resulted in a set of scales where potential construct validity appears great" (p.494).

SEAI has been found to be useful in developing IEPs for deaf children and appears to measure the most important behaviours necessary for successful integration of a child into an educational setting. It is also used as an aid to teachers in identifying children who need additional help in areas of social and emotional adjustment (Meadow-Orlans, 1983). SEAI has been used as a research instrument in a variety of studies, notably in cross-national comparisons in which data collected on US children had been compared with results from Danish children (Meadow & Dyssegaard, 1983a; 1983b) and Israeli children (Zwiebel *et al.*, 1986). Results from such investigations contribute to a broader understanding of some of the major influences on the development of hearing impaired children within specific cultural contexts.

8.3 Statistical analysis

Scores from UK and SA groups were compared across the three SEAI scales (complete group and special school group children). Sub-groups within country populations were also compared: unit and special school children (UK); special schools UKS[1] and UKS[2]; primary unit and primary high schools (UK); special schools SAS[1], SAS[2] and SAS[3]. Hearing status of family members (hearing (H), one or more deaf persons (D)) were also compared for both national groups.

Descriptive statistics were established for all variables including means and standard deviations. Comparison of scales and items by various groups was conducted by means of one-way analyses of variance. Graphs demonstrating significant differences were constructed. Multiple range tests were conducted to explore significant results. Scores from UK and SA special schools were compared with similar scores from US, Danish and Israeli children (Zwiebel *et al.*, 1986), using the two-way Z test for large independent samples.

CHAPTER 9

RESULTS

9.1 Overall level of social-emotional adjustment

9.1.1 Children in two countries: UK and SA

The scores from the two complete groups were compared on each of the three inventory scales (N=92). Table 7 shows this analysis. Scores did not differ for scale 1 (social adjustment) or scale 2 (self-image). UK children scored significantly higher than SA children on scale 3 which represents items reflecting emotional adjustment (Appendix 4 shows range of responses). According to ratings by their teachers, UK children were shown to be better adjusted emotionally than SA children.

Table 7: Inventory scale scores for complete groups of UK and SA children (means and standard deviations)

Scale	UK		SA		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	3,05	(0,62)	3,09	(0,45)	0,12
(N)	(50)		(42)		
Scale 2 Self-image	3,03	(0,36)	3,10	(0,36)	0,88
(N)	(50)		(42)		
Scale 3 Emotional adjustment	3,42	(0,37)	3,18	(0,40)	9,13**
(N)	(50)		(42)		

** $p \leq 0,01$

Scores from children who attend special schools in the two countries were also compared on the three scales (N=68). Table 8 details this analysis (Appendix 5 shows range of responses). As shown in the complete group analysis, the scores of SA special (SAS) and UK special (UKS) children did not differ for scales 1 and 2. On scale 3, emotional adjustment, UK special school children received significantly more positive scores than SA special school children, but these scores were not as significantly different as scores for the complete sample ($p \leq 0,05$ as opposed to $p \leq 0,01$). The lesser difference between the scores of special school children may be explained by more similarities in behaviour (or teachers' ratings of behaviour) between children in the same type of school setting.

Table 8: Inventory scale scores for special school UK (UKS) and special school SA (SAS) children (means and standard deviations)

Scale	UKS		SAS		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	2,99	(0,62)	3,05	(0,44)	0,15
(N)	(30)		(38)		
Scale 2 Self-image	3,03	(0,31)	3,08	(0,37)	0,36
(N)	(30)		(38)		
Scale 3 Emotional adjustment	3,39	(0,38)	3,15	(0,41)	5,86*
(N)	(30)		(38)		

* $p \leq 0,05$

9.1.2 Children in five countries: Israel, Denmark, US, UK and SA

Results from the data collected from UK and SA special school groups were compared with inventory scale scores of Israeli, Danish and US students (Zwiebel

et al., 1986). Table 9 shows this analysis. There were no differences between children in the five countries on scales 1 and 2.

Table 9: Inventory scale scores for Israeli, Danish, US, UKS and SAS (means and standard deviations)

Scale	Israeli		Danish		US		UKS		SAS	
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.
Scale 1 Social adjustment	2,97	(0,49)	2,93	(0,60)	2,94	(0,47)	2,99	(0,62)	3,05	(0,44)
(N)	(220)		(167)		(169)		(30)		(38)	
Scale 2 Self-image	2,98	(0,43)	3,03	(0,45)	3,03	(0,44)	3,03	(0,31)	3,08	(0,37)
(N)	(220)		(165)		(140)		(30)		(38)	
Scale 3 Emotional adjustment	3,16	(0,43)	3,37	(0,44)	3,17	(0,43)	3,39	(0,38)	3,15	(0,41)
(N)	(224)		(171)		(169)		(30)		(38)	

Significant differences were noted between countries on scale 3, emotional adjustment. Zwiebel *et al.*, (1986) reported that Danish children scored significantly higher than Israeli children ($p \leq 0,01$) on scale 3. In this comparison Danish children also scored significantly higher than SA children ($p \leq 0,01$) on scale 3. Table 10 shows this analysis.

Table 10: Comparison between SAS inventory scale scores and scores from Israeli, Danish and US children

Scale	Israeli		Danish		US	
	Z	p	Z	p	Z	p
Scale 1 Social adjustment	0,95	0,34	1,35	0,18	1,31	0,19
Scale 2 Self-image	1,48	0,14	0,70	0,48	0,69	0,49
Scale 3 Emotional adjustment	-0,12	0,90	-2,90	0,004**	-0,25	0,80

** $p \leq 0,01$

A comparison of the UK group with Israeli, Danish and US groups revealed that UK children received more positive scores on scale 3 than the Israeli and US groups ($p \leq 0,01$), in addition to previously noted significantly higher scores than the SA group. Table 11 shows this analysis.

It is interesting to note that ratings of emotional adjustment from five countries fall into two similarly scored groups. Means of the two European groups (Denmark and UKS) were significantly higher than both SAS and Israeli groups. The Danish and UK means were also higher than the US mean, but only the UKS mean was significantly higher ($p \leq 0,01$). According to these results, deaf children from European countries are rated higher on levels of emotional adjustment than children from three countries in other parts of the world, America, Africa and the Middle East.

Table 11: Comparison between UKS inventory scale scores and scores from Israeli, Danish and US children

Scale	Israeli		Danish		US	
	Z	p	Z	p	Z	p
Scale 1 Social adjustment	0,21	0,83	0,53	0,6	0,46	0,65
Scale 2 Self-image	0,75	0,45	-0,02	1,00	-0,02	0,98
Scale 3 Emotional adjustment	3,02	0,003**	0,21	0,83	2,82	0,005**

** $p \leq 0,01$

9.2 Item analysis

Teachers' ratings of individual scale items for individual children were examined in order to ascertain possible similarities and differences between UK and SA children and children attending different forms of educational provision. Children were grouped according to nationality and type of school (mainstream unit or special school). The means of three groups, UK unit (UKU), UK special (UKS) and SA special (SAS) were compared for each of the 59 items. The fourth group, SA unit (SAU), was not included in this analysis because of an insufficient number of subjects (N=4) for generalization of findings.

9.2.1 Individual items with no group differences

Sixteen items were found to show no significant between-group differences (UKU, UKS, SAS). Nine of these 16 items were given consistently 'high' ratings (mean scores 3.2 or higher), six items were given consistently low ratings (mean scores of 3,00 or lower), one item was rated as in the intermediate range (mean scores of 3,01-3,19). These items are listed in Figure 1.

A. Consistently 'high' ratings: + 3,20

7. Takes pride in physical appearance / personal attractiveness: feels at least moderately pretty or handsome.

*8. Engages in behavior considered by most teachers and students to be bizarre or strange (talking or signing to self, rocking, staring at lights for long periods, twirling).**

*12. Isolated. Has few or no friends. May be considered 'withdrawn'**

16. Tries to communicate with others (both deaf and hearing) by any means necessary: signs, speech writing, pantomime.

*27. Engages in destructive behavior (breaking objects, defacing walls or furniture, scattering things in disarray).**

*31. Demonstrates negative attitudes towards sign language (refuses to sign, pretends not to understand other's signing).**

*34. Lethargic. Lack energy. Always tired.**

*39. Has many accidents or mishaps resulting in breakage of objects or injuries requiring first aid.**

*46. Has habits, mannerisms or traits considered to be rude or socially unacceptable (e.g. picks nose, makes obscene/sexual references).**

B. Intermediate ratings: 3,01 - 3,19

30. Anxious: nervous, worries about many commonplace events.

C. Consistently 'low' ratings: ≤ 3,00

*15. Shows initiative in completion of assignments; motivated to finish work.**

24. Gives up quickly. Expects to fail.

43. Responds poorly to losing in games or failing to achieve in class.

*48. Doesn't try to copy classmates' work nor take things belonging to others.**

52. Demands attention and help constantly. Takes disproportionate share of teacher's time.

59. Denies own misbehavior; may also blame others for own misdeeds.

* Due to intricacies of scoring (shown in Appendix 2), behaviour of individuals reflects opposite of statement of item.

Figure 1: Inventory items with no significant differences among UK unit, UK special school and SA special school children (n = 16)

Children from all three groups were rated as unlikely to show bizarre behaviour patterns, destructive tendencies, be accident-prone or rude. Children in UK and SA were willing to communicate with others and showed a positive attitude towards signing. All three groups were viewed as energetic, eager to engage in activities with others and also to take pride in their appearance. Items accorded consistently 'high' ratings were similar to items scored highly by Israeli, US and Danish groups (Zwiebel, Meadow-Orlans & Dyssegaard, 1986). All of the five highly rated items between children of the three other nationalities were represented in the nine rated consistently 'high' in UKS, UKU and SAS groups (Items 8, 16, 27, 39, 46). These results confirm the Zwiebel *et al.*'s findings that deaf children do not tend to show behaviours described as bizarre, destructive, rude or accident-prone. Children in each of the five countries included demonstrate a willingness to communicate with others.

Part C of Figure 1 shows items on which UKS, UKU and SAS were viewed negatively by teachers. The six items rated consistently 'low' reflect the children's lack of motivation for school work. All three groups showed limited perseverance, expectation of failure, and a tendency to copy others' work. Other items scored low indicate a general level of immaturity, in particular, demanding attention, blaming others, and being a poor loser. Three of these six items were also rated consistently low by the three groups in Zwiebel *et al.*'s study (Items 24, 43 and 52). All five groups shared a propensity for being a poor loser, attention-seeking, and giving up early. Certain differences were noted between the SA/UK groups and the Israeli, US and Danish findings. Special school children in SA and UK, unlike the other three nationalities, do not show a lack of cooperation and participation with others. SA and UK groups are rated as being more able to accept criticism and less dependent than Zwiebel *et al.*'s groups.

Additional items receiving consistently 'high' and consistently 'low' scores by two of the three SA/UK groups (UKS and SAS, UKS and UKU, SAS and UKU) were also examined. Figure 2 shows seven items which were rated as showing no significant differences between the two special school groups (UKS/SAS). A further parallel can be drawn between these results and Zwiebel *et al.*'s findings. They reported

that 24 items showed no significant differences between Israeli, US and Danish children, all of whom were in special school programmes. A similar total of 23 items (16 with no significant differences between three groups, UKS, UKU, SAS) and seven with no significant differences between special school groups, was found in this study. Analysis of individual items revealed that children in UK and SA special school groups try to understand the communication of others by any means, are able to work with others, volunteer answers and offer opinions. A willingness to participate with others appears to differentiate between SAS/UKS children and children in Israel, US and Denmark. Item 47, 'participates in classroom or group activities; volunteers answers, offers opinions in discussions', was rated consistently 'high' by SAS and UKS groups, but consistently 'low' by teachers of Israeli, US and Danish children.

Items on which SA and UK special school children were rated negatively indicate their tendencies to tease others and demand attention. Israeli, US and Danish children were also rated consistently 'low' on Item 37 which reflects a need for attention. Special school children were also viewed in UK and SA as lacking in a sense of humour.

Both UK groups were rated more highly than SAS groups on items which reflect positive feelings about own physical attributes, lack of fears and lack of somatic complaints, all of which are related to appropriate emotional adjustment. Figure 3 details these items. Children in the UK were rated by teachers as able to respond to authority, but also dependent and impulsive. A further parallel may be drawn between children from other countries in terms of ratings of impulsivity. SAS and Israeli children, although scoring generally lower than the other countries on emotional adjustment were rated as *less* impulsive than European and US children.

A. Consistently 'high' ratings: + 3,20

41. Tries to understand the communication of others by any means offered: listening, lipreading, signing, writing, gestures.

47. Participates in classroom or group activities; volunteers answers, offers opinions in discussions.

B. Intermediate ratings: 3,01 - 3,19

40. Seems to understand the feelings of others; demonstrates empathy.

56. Demonstrates acceptance/pride in own social group membership (racial, ethnic, linguistic, religious identity).

C. Consistently 'low' ratings: ≤ 3,00

14. Teases or annoys or pesters other students.

37. Demands attention. Must be center of everything. May insist on being first in line, or leader, or captain.

*50. Demonstrates a sense of humor or wit (can appreciate funny situations or jokes at own expense).**

* Due to intricacies of scoring (shown in Appendix 2), behaviour of individuals reflects opposite of statement of item.

Figure 2: Inventory items with no significant differences among UK and SA special school children (n = 7)

A. Consistently 'high' ratings: + 3,20

*6. Demonstrates negative feelings about physical size and/or strength.**

*10. Has many fears. Overly and unrealistically concerned with danger, storms, injury, death.**

*25. Complains of physical ailments that have no apparent medical basis (headaches, stomach aches, etc.).**

*32. Misbehavior not deterred by restrictions or by threat of punishment.**

B. Intermediate ratings: 3,01 - 3,19

2. Kind and considerate.

11. Accepts some delay of gratification. Does not expect instant satisfaction of every need, whim or desire.

42. Curious. Eager to learn new things. Likes new experiences.

44. Daydreams. Tunes out events in immediate environment.

C. Consistently 'low' ratings: ≤ 3,00

*19. Self-reliant. Not overly dependent on others for help.**

55. Acts without thinking. Impulsive. Does not consider or does not care about consequences.

* Due to intricacies of scoring (shown in Appendix 2), behaviour of individuals reflects opposite of statement of item.

Figure 3: Inventory items with no significant differences among UK unit, and UK special school children (n = 10)

Figure 4 shows items on which there were no significant differences between UKU and SAS groups. Similarly rated positive attributes include the ability to obey rules and a lack of aggressive behaviour. Both groups were viewed negatively as having an inability to accept criticism, a lack of participation in organized games, negative responses to changes in routine, and limited acceptance of differences in others.

A.	**Consistently 'high' ratings: + 3,20**
1.	*Obeys the rules; follows instructions or requests from adults in authority.*
5.	*Aggressive. Behavior may include fighting, scratching, biting other students and/or kicking or hitting animals.**
B.	**Intermediate ratings: 3,01 - 3,19**
20.	*Performs cooperatively in groups of peers. Contributes to cohesion rather than to conflict.*
23.	*Happy, cheerful, pleasant, easy-going.*
29.	*Trustworthy, dependable, reliable.*
51.	*Generous. Shares with others.*
C.	**Consistently 'low' ratings: ≤ 3,00**
18.	*Insists on repetition of usual routines. Changes in schedules, habits, route arrangements elicit extreme negative responses.*
35.	*Fails to accept criticism, especially if it is expressed as discipline or restriction.*
45.	*Accepts differences in other people; doesn't tease or exclude peers on basis of racial difference or physical handicaps.**
53.	*Participates well in organized play or games (takes role of leader or follower; plays to completion; follows rules).**

* Due to intricacies of scoring (shown in Appendix 2), behaviour of individuals reflects opposite of statement of item.

Figure 4: Inventory items with no significant differences among UK unit, and SA special school children (n = 10)

9.2.2 Individual items reflecting group differences

Comparisons between ratings of three groups (UKU, UKS, SAS) revealed that 12 items reflected significant differences between SA and UK groups (items 4, 13, 21, 22, 26, 28, 33, 38, 49, 54, 57, 58). Appendices 6 to 17 show the range of responses for each item. The two UK groups showed a significant difference on one item only. (Item 36, Appendix 18, shows the range of responses for this item). Item comparison reflects possible cross-national differences (UK, SA), and possible differences between children involved in different educational programmes (special, mainstream unit).

9.2.2.1 Items on which one group received significantly higher ratings than the other two groups

Part A of Table 12 presents two items on which UKU children received higher ratings than UKS and SAS groups. Children from the UKU group are rated as more willing to interact with hearing people than both special school groups. This is not surprising as unit children spend much more time with hearing people than children from special schools. This group is also considered to be more competent with tools and utensils. UKU children are rated higher than UKS children alone in their feelings about the dexterity of their motor skills (Part B). Part C contains five items in which UKU children are rated higher than SAS children alone. UKU group is viewed by teachers as less likely to be over-concerned with cleanliness, show preoccupation with details or display bodily twitches or tics than SAS group. UKU children relate better to adults and are less likely than SAS children to be embarrassed about using voice. All UKU children were enrolled in oral programmes so would be expected to use voice more than SAS children whose schools adopted TC approaches.

Table 13 details items on which the UKS group were rated higher than the UKU or SAS groups. UKS children were not rated higher than both UKU and SAS together.

Table 12: Inventory items on which UK unit (UKU) children received higher ratings than UK special school (UKS) and SA special school (SAS) children

Item No.	Item	UKU ($\bar{x}$)	UKS ($\bar{x}$)	SAS ($\bar{x}$)	*F*
	***Part A**: UKU children rated higher than both UKS and SAS children*				
13	Lacks competence with tools, utensils or equipment even though there is no apparent physical basis for lack of skill.	3,74	3,34	3,25	3,97*
54	Is willing to interact with hearing people: does not refuse to interact with peers or adults who have normal hearing.	3,65	3,34	3,12	6,95**
	***Part B**: UKU children rated higher than UKS children only*				
36	Demonstrates negative feelings about own motor skills, dexterity, or visible handicaps.	3,53	3,0	3,2	4,04*
	***Part C**: UKU children rated higher than SAS children only*				
21	Overly concerned with cleanliness. May wash hands constantly or be unable to tolerate specks of dust or dirt.	3,5	3,48	2,72	9,06***
22	Shows great concern or preoccupation with minute details (may insist on perfection in writing or drawing).	3,5	3,47	2,74	11,07***
28	Relates well to adults (both men and women).	3,45	3,2	3,03	3,97*
57	Avoids communicating through speech. Seems embarrassed to use voice.	3,85	3,55	3,08	10,5***
58	Displays twitches, mannerisms, tics of face or body.	3,8	3,76	4,18	10,04***

* $p \leq 0,05$
** $p \leq 0,01$
*** $p \leq 0,001$

Table 13: Inventory items on which UK special school (UKS) children received higher ratings than the UK unit (UKU) children and SA special school (SAS) children

Item No.	Item	UKU ($\bar{x}$)	UKS ($\bar{x}$)	SAS ($\bar{x}$)	*F*
	Part A : *UKS children rated higher than both UKU and SAS children*	-	-	-	-
	Part B : *UKS children rated higher than UKU children only*				
33	Creative. Shows imagination in school work in leisure/play activities.	2,40	2,97	2,82	3,72*
49	Other students look to this student as a leader.	1,80	2,53	2,37	3,83*
	Part C : *UKS children rated higher than SAS children only*				
4	Distinguishes between fact and fiction, real and imaginary events and/or people (understands that 'Superman' does not really exist).	3,17	3,40	2,97	3,35*
21	Overly concerned with cleanliness. May wash hands constantly or be unable to tolerate specks of dust or dirt.	3,50	3,48	2,72	9,06***
22	Shows great concern or preoccupation with minute details (may insist on perfection in writing or drawing).	3,50	3,47	2,74	11,07***
57	Avoids communicating through speech. Seems embarrassed to use voice.	3,85	3,55	3,08	10,50***
58	Displays twitches, mannerisms, tics of face or body.	3,80	3,76	3,18	10,04***

* $p \leq 0,05$
** $p \leq 0,01$
*** $p \leq 0,001$

Children in UK special schools were rated higher than unit children on creativity and leadership qualities (Part B). Part C shows five items on which the UKS group were rated more positively than the SAS group. UK special school children were more able to distinguish between fact and fiction, not as overly concerned with cleanliness or preoccupied with perfection, and showed less strange mannerisms than SAS children. They were rated as less embarrassed to use voice than SAS children. This is to be expected as UKS children would be required to use their voices more as the majority of the group attended a school which used oral-aural methods (73%); none of the SAS group used oral methods only.

Table 14 shows items on which SAS group were rated higher than UK groups. SAS children were rated higher than both UKS and UKU on two items which relate to identification with other deaf people (Part A). SAS group were more likely to identify with a stranger wearing a hearing aid, and show positive responses to signing strangers. Similar to the UKS group, SAS were rated higher than UKU in items which indicated creativity and leadership qualities (Part B). The SAS children were not rated higher than the UKS group alone on any item.

Table 14: Inventory items on which SA special school (SAS) children received higher ratings than the UK unit (UKU) and UK special school (UKS) children

Item No.	Item	UKU ($\bar{x}$)	UKS ($\bar{x}$)	SAS ($\bar{x}$)	*F*
	Part A : *SAS children rated higher than both UKU and UKS children*				
26	Identifies with (shows excited recognition of) a stranger or visitor who wears a hearing aid.	2,41	2,28	3,18	8,98***
38	Shows excited, positive responses to stranger who is using signs.	1,57	1,85	3,26	31,9***
	Part B : *SAS children rated higher than UKU children only*				
33	Creative. Shows imagination in school work in leisure/play activities.	2,40	2,97	2,81	3,72*
49	Other students look to this student as a leader.	1,80	2,53	2,37	3,83*
	Part C : *SAS children rated higher than UKS children only*	-	-	-	-

* $p \leq 0,05$
** $p \leq 0,01$
*** $p \leq 0,001$

9.2.2.2 Items on which one group received significantly lower ratings than the other two groups

Part A of Table 15 presents items on which UKU children were rated more negatively than children in special schools (SAS and UKS). The children in this group were less likely to show creativity and imagination than children in the other two groups, neither were they viewed as a leader, by other students. UKU children were not rated lower than the UKS group alone but were significantly distinguished from the SAS group on three items which reflect a propensity to relate to deaf and hearing people. Part C shows that children from UK units were less likely to respond to a deaf stranger and a stranger using signs, but were more likely to be willing to

interact with a hearing person. This difference may largely be attributed to the varied experiences of UKU and SAS groups. Children in UK units would be less likely to encounter deaf strangers, especially those using signs, and spend a large percentage of their time at school with hearing peers.

Table 15: Inventory items on which UK unit (UKU) children received lower ratings than the UK special school (UKS) and SA special school (SAS) children

Item No.	Item	UKU ($\bar{x}$)	UKS ($\bar{x}$)	SAS ($\bar{x}$)	*F*
	Part A : *UKU children rated lower than both UKS and SAS children*				
33	Creative. Shows imagination in school work in leisure/play activities.	2,40	2,97	2,82	3,72*
49	Other students look to this student as a leader.	1,80	2,53	2,37	3,83*
	Part B : *UKU children rated lower than UKS children only*				
	Part C : *UKU children rated lower than SAS children only*	-	-	-	-
26	Identifies with (shows excited recognition of) a stranger or visitor who wears a hearing aid.	2,41	2,28	3,18	8,98***
38	Shows excited, positive responses to stranger who is using signs.	1,57	1,85	3,26	31,9***
54	Is willing to interact with hearing people: does not refuse to interact with peers or adults who have normal hearing.	3,65	3,34	3,12	6,95**

* $p \leq 0,05$
** $p \leq 0,01$
*** $p \leq 0,001$

UKS children were not rated lower than UKU and SAS groups combined. Part B of Table 16 shows items on which the UKS group were viewed more negatively by teachers than the UKU group. They were rated as less positive about their motor

skills and less likely than the UKU group to interact with hearing people. Although the majority of the UKS children were in oral programmes, their opportunities to interact with hearing people would be considerably less than children in units. Similar to the UKU group, UKS children were also less likely to identify with a stranger who was a hearing aid user or a person using signs than the SAS group (Part C).

Table 16: Inventory items on which UK special school (UKS) children received lower ratings than the UK unit (UKU) children and SA special school (SAS) children

Item No.	Item	UKU ($\bar{x}$)	UKS ($\bar{x}$)	SAS ($\bar{x}$)	*F*
	Part A : *UKS children rated lower than both UKU and SAS children*	-	-	-	-
	Part B : *UKS children rated lower than UKU children only*				
13	Lacks competence with tools, utensils or equipment even though there is no apparent physical basis for lack of skill.	3,74	3,34	3,25	3,97*
36	Demonstrates negative feelings about own motor skills, dexterity, or visible handicaps.	3,53	3,0	3,2	4,04*
54	Is willing to interact with hearing people: does not refuse to interact with peers or adults who have normal hearing.	3,65	3,34	3,12	6,95**
	Part C : *UKS children rated lower than SAS children only*	-	-	-	-
26	Identifies with (shows excited recognition of) a stranger or visitor who wears a hearing aid.	2,41	2,28	3,18	8,98***
38	Shows excited, positive responses to stranger who is using signs.	1,57	1,85	3,26	31,9***

* $p \leq 0,05$
** $p \leq 0,01$
*** $p \leq 0,001$

Part A of Table 17 shows that the SAS group were rated lower than the two UK groups on four items. They were more likely to be over-concerned with cleanliness, preoccupied with minute details and show strange mannerisms,such behaviours are

indicative of emotional problems. SAS children were rated as more likely to avoid communicating through speech than UK children. Children from SA special schools were thought to be less competent with tools and less able to relate well to adults than the UKU group (Part B). They were rated lower than the UKS group alone on their ability to distinguish between fact and fiction (Part C).

Table 17: Inventory items on which SA special school (SAS) children received lower ratings than the UK unit (UKU) and UK special school (UKS) children

Item No.	Item	UKU ($\bar{x}$)	UKS ($\bar{x}$)	SAS ($\bar{x}$)	*F*
	Part A : *SAS children rated lower than both UKU and UKS children*				
21	Overly concerned with cleanliness. May wash hands constantly or be unable to tolerate specks of dust or dirt.	3,5	3,48	3,72	9,06***
22	Shows great concern or preoccupation with minute details (may insist on perfection in writing or drawing).	3,50	3,47	2,74	11,07***
57	Avoids communicating through speech. Seems embarrassed to use voice.	3,85	3,55	3,08	10,50***
58	Displays twitches, mannerisms, tics of face or body.	3,8	3,76	3,18	10,04***
	Part B : *SAS children rated lower than UKU children only*				
13	Lacks competence with tools, utensils or equipment even though there is no apparent physical basis for lack of skill.	3,74	3,34	3,25	3,97*
28	Relates well to adults (both men and women).	3,45	3,20	3,03	3,97*
	Part C : *SAS children rated lower than UK children only*				
4	Distinguishes between fact and fiction, real and imaginary events and/or people (understands that 'Superman' does not really exist.	3,17	3,40	2,97	3,35*

* $p \leq 0,05$
** $p \leq 0,01$
*** $p \leq 0,001$

This analysis of items upon which one group obtained higher or lower mean scores than one or both of the other two groups, reveals interesting differences between UKU, UKS and SAS children. The two groups with the most differences on item analysis were, not surprisingly, UKU and SAS, the two groups most dissimilar in terms of nationality (UK, SA), educational placement (UKU mainstream unit, SAS special school) and mode of communication (UKU 100% oral, SAS 100% TC).

The main distinguishing characteristics of the UKU children were their willingness to interact with hearing people, competence with tools, limited creativity and not looked to as a leader by peers. Other than the item related to competence with tools (which is not easily explained), these behaviours may be associated with participation in a largely hearing society. In a mainstream school children with hearing impairments would be expected to interact with hearing people. In addition, they may not seem as creative or popular by teachers in comparison with hearing peers.

SAS children were differentiated from both UK groups by their easy identification with deaf strangers and strangers using signs. This would be appropriate behaviour in special schools which employed TC methodology. Further to this, it is not surprising that these children, who would not be required to speak as much as children taught through oral methods, were more embarrassed to use their voices than the UK groups. SAS were also characterized by more unusual behaviour patterns such as twitches, preoccupation with details and overconcern with cleanliness, a higher rate of positive responses to this type of item probably contributed to the lower SAS score on emotional adjustment.

Analysis of ratings of individual items for the UKS group reveal that these children did not obtain higher or lower mean scores on any item than UKU and SAS together. As there were a number of differences between UKU and SAS groups this was to be expected, yet SAS did not score higher than UKS on any item and UKU did not score lower than UKS on any item. The UKS group appeared to fall between the other two groups, especially in terms of items related to communication. The UKS group were rated as less willing to interact with hearing people than UKU, but

not as prepared to identify with deaf strangers or signing strangers as SAS. They were less embarrassed to use their voices than SAS children. The UKS group, therefore, showed similarities with both of the other two groups. This is probably because UKS was more of a mixed group in terms of mode of communication than UKU and SAS in that both oral and TC children were included in UKS whilst the other groups contained exclusively oral or TC children.

Several other differences between UKS and either UKU or SAS are not as easily explained. UKS were not as adept at motor skills than UKU, but were rated higher on creativity and leadership qualities (perhaps because they were not compared as much with hearing children). Neither is it immediately obvious as to why UKS children were rated higher than SAS children on being better able to distinguish between fact and fiction.

9.3 Levels of socio-emotional adjustment in sub-groups

Sub-groups of the subject population were compared in terms of their scores on the three inventory scales. Scores from children in different forms of educational provision (mainstream unit and special school) and at different stages of their educational career (primary units and high school units) were compared. Mean and standard deviations from individual special schools were compared for each of the inventory scales. A further comparison was made between scale scores of children from hearing families and children from families including one or more deaf member, both for the complete sample (N=92) and special school children (N=68).

9.3.1 UK sub-groups

Table 18 shows the inventory scale scores for the UK unit and special school children. Unit children achieved higher scores on scale 1 (social adjustment) and scale 3 (emotional adjustment) but these differences were not significant. Results would imply that although there may be some differences between children in different settings, actual type of placement is not a significantly influential factor on social and emotional development.

Table 18: Inventory scale scores for mainstream unit (UKU) and special school children (UKS) in UK

Scale	UKU		UKS		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	3,14	(0,62)	2,99	(0,62)	0,68
(N)	(20)		(30)		
Scale 2 Self-image	3,04	(0,42)	3,03	(0,31)	0,02
(N)	(20)		(30)		
Scale 3 Emotional adjustment	3,48	(0,35)	3,39	(0,38)	0,75
(N)	(22)		(30)		

Table 19 shows that there were no significant differences between UK mainstream unit children who attended primary schools, as opposed to those who attended high school units on scales 1 and 2. Children from high schools scored significantly higher ($p \leq 0,05$) than those at primary schools on scale 3, emotional adjustment. (Appendix 19 shows the range of responses). Although all the children were aged 10 - 12 years, the majority of high school pupils would be at the upper end of this age range (12 years). Meadow and Dyssegaard (1983a) noted that older US day-school pupils (aged 13+ years) scored higher than younger pupils (aged 6 - 12 years) on each of the scales. They attributed this to the possibility that older pupils overcome earlier deficiencies. This study confirms this finding.

Table 19: Inventory scale scores for primary and high school mainstream unit children in UK

Scale	Primary		High		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	2,95	(0,54)	3,30	(0,66)	1,64
(N)	(9)		(11)		
Scale 2 Self-image	2,94	(0,42)	3,13	(0,42)	0,98
(N)	(9)		(11)		
Scale 3 Emotional adjustment	3,27	(0,29)	3,65	(0,31)	8,06*
(N)	(9)		(11)		

* $p \leq 0,05$

In a comparison of children from the two UK special schools (UKS[1] and UKS[2]) no significant differences were found on each of the scales (Table 20), although the mean scores of UKS[2] for social adjustment, self-image and emotional adjustment were higher than for UKS[1]. These results are of interest as the two schools employ different communicative methodologies, UKS[1] uses an oral-aural approach, whilst UKS[2] follows TC approaches. The mean scores obtained from this study appear tentatively to suggest that children using TC methodology are adjusted better emotionally than those using oral approaches. However, this finding should be treated with caution as all oral pupils attended one school and all TC pupils attended the other school. Perhaps the differences in mean scores may be attributed to other features of the actual schools, as opposed to mode of communication *per se*. A further problematic feature of this finding is that the groups compared are unequal in terms of numbers of subjects, group UKS[2] contains only five subjects. Therefore, results from this group may not be representative of a larger group of TC subjects.

Table 20: Inventory scale scores for children from special schools UKS[1] and UKS[2] in UK

Scale	UKS[1]		UKS[2]		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	2,91	(0,65)	3,42	(0,09)	3,04
(N)	(25)		(5)		
Scale 2 Self-image	3,00	(0,33)	3,18	(0,12)	1,34
(N)	(25)		(5)		
Scale 3 Emotional adjustment	3,34	(0,39)	3,62	(0,24)	2,28
(N)	(25)		(5)		

9.3.2 SA sub-groups

Table 21 shows inventory scale scores for unit and special school children in SA. Unit children scored higher than special school children on social adjustment ($p \leq 0,05$) (Appendix 20 shows the range of responses). This finding must be treated with caution as the SA unit group represented only four children.

The three SA special schools (SAS[1], SAS[2] and SAS[3]) were found to show significant differences on scale 3, emotional adjustment, only (Table 22). A significant difference was noted between SAS[2] and SAS[3] ($p \leq 0,05$), but not between SAS[1] and SAS[3], although the mean for SAS[3] was lower than the SAS[1] mean, (Appendix 21 shows the range of responses). This result shows that children from school SAS[3] were rated as having more emotional problems than other SAS groups.

Table 21: Inventory scale scores for mainstream unit (SAU) and special school children (SAS) in SA

Scale	SAU		SAS		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	3,56	(0,20)	3,04	(0,44)	5,34*
(N)	(4)		(38)		
Scale 2 Self-image	3,34	(1,00)	3,08	(0,37)	1,94
(N)	(4)		(38)		
Scale 3 Emotional adjustment	3,45	(0,17)	3,15	(0,41)	2,06
(N)	(4)		(38)		

* $p \leq 0,05$

Table 22: Inventory scale scores for children from special schools SAS[1], SAS[2] and SAS[3] in SA

Scale	SAS[1]		SAS[2]		SAS[3]		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	3,13	(0,60)	3,06	(0,48)	2,98	(0,30)	0,23
(N)	(6)		(20)		(12)		
Scale 2 Self-image	3,26	(0,45)	3,00	(0,42)	3,10	(0,19)	1,12
(N)	(6)		(12)		(12)		
Scale 3 Emotional adjustment	3,19	(0,56)	3,28	(0,42)	2,91	(0,16)	3,44*
(N)	(6)		(20)		(12)		

* $p \leq 0,05$

9.3.3 UK and SA sub-groups

9.3.3.1 Hearing status of immediate family

There was no significant difference between children from hearing families (H) and children from families including one or more additional deaf member (D), either in the complete sample (Table 23) or the special school children (Table 24) on scales 1 and 2. In the complete sample the D group scored significantly higher than the H group ($p \leq 0,05$) on scale 3 (Appendix 22 shows the range of responses). This difference on scale 3 was significantly greater ($p \leq 0,01$) between H and D group children from special schools (Appendix 23 shows the range of responses). Children from families with other deaf members were rated as better adjusted emotionally than children from all hearing families. This confirms findings from previous studies.

Table 23: Inventory scale scores for children from hearing families (H) and children from families with one or more deaf member (D), complete sample

Scale	Hearing (H)		Deaf (D)		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	3,03	(0,57)	3,23	(0,46)	2,30
(N)	(71)		(21)		
Scale 2 Self-image	3,03	(0,37)	3,19	(0,28)	3,16
(N)	(71)		(21)		
Scale 3 Emotional adjustment	3,26	(0,40)	3,50	(0,35)	6,62*
(N)	(71)		(21)		

* $p \leq 0,05$

Table 24: Inventory scale scores for special school children from hearing families (H) and children from families with one or more deaf member (D)

Scale	Hearing (H)		Deaf (D)		*F*
	$\bar{x}$	s.d.	$\bar{x}$	s.d.	
Scale 1 Social adjustment	2,98	(0,54)	3,18	(0,45)	1,77
(N)	(53)		(15)		
Scale 2 Self-image	3,02	(0,35)	3,19	(0,28)	2,78
(N)	(53)		(15)		
Scale 3 Emotional adjustment	3,18	(0,39)	3,52	(0,39)	8,57**
(N)	(53)		(15)		

** $p \leq 0,01$

9.3.3.3 Comparison of all sub-groups

A comparison was made of the overall of levels of socio-emotional adjustment between all of the sub-groups delineated by educational institutions and educational programme. Means and standard deviations of the following seven groups were compared.

1. UKU
2. SAU
3. UKS[1]
4. UKS[2]
5. SAS[1]
6. SAS[2]
7. SAS[3]

No significant differences were noted between sub-groups on inventory scales 1 and 2. On scale 3 there were significant differences between SAS[3] and five other

sub-groups. Children from SAS[3] were rated lower on emotional adjustment than all of the other sub-groups, and significantly lower than SAS[2], both SA and UK unit groups (SAU, UKU) and both UK special schools UKS[1] and UKS[2]. Figure 5 shows this analysis. This particularly low mean score of SAS[3] on emotional adjustment, compared with the other groups, may be due to particular characteristics of this group. These children may have been affected more adversely by the type of problems discussed in Chapter 3 and so show lower levels of emotional adjustment than other, possibly less affected groups. This issue is discussed in more detail in Chapter 10.

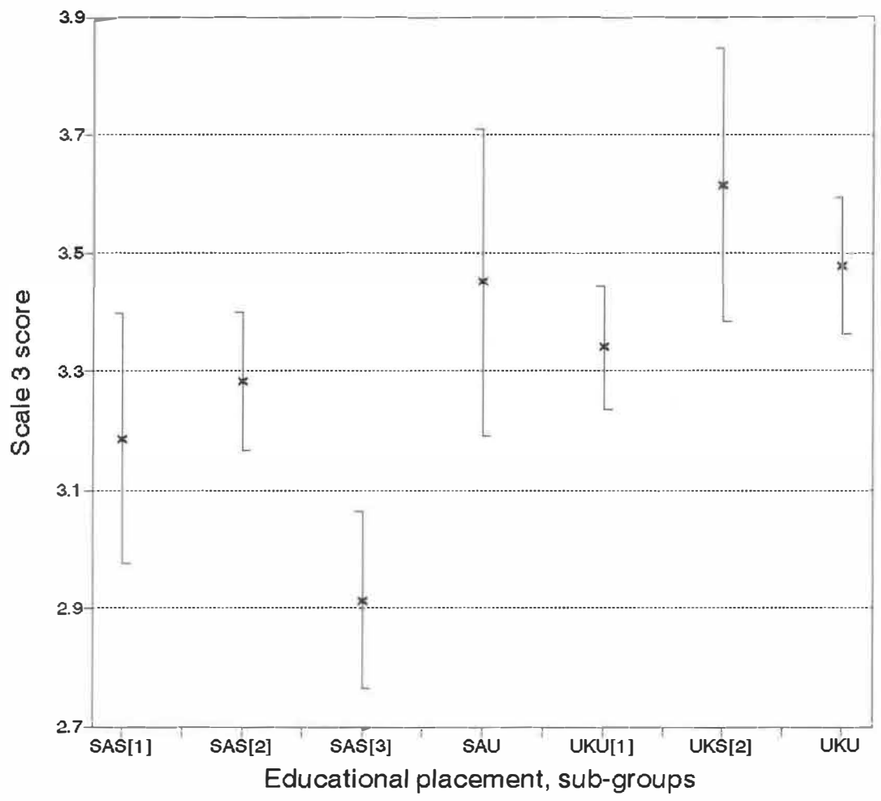

Figure 5: Scale 3 (emotional adjustment) scores for sub-groups according to educational placement (means and ranges)

CHAPTER 10

DISCUSSION

The Meadow/Kendall Social Emotional Assessment Inventory (SEAI) was used to collect data from children with hearing impairments in two countries, South Africa (SA) and the United Kingdom (UK). SEAI consists of a 59 item inventory completed by teachers for individual children. Mean and standard deviations were obtained for both groups on three subscales measuring social adjustment (scale 1), self-image (scale 2) and emotional adjustment (scale 3). Scores were compared on the basis of nationality. As SEAI was specifically designed for use with special school children, scores from children attending special schools in UK and SA were compared separately. Analysis of the scores from special school children allowed comparisons with previously collected data from special school children in Israel, Denmark and United States (US) (Zwiebel *et al.*, 1986).

Means for each of the 59 items in the inventory were compared for both special school groups (UKS, SAS). For interest, individual item analysis was also carried out for the group of children attending UK units in mainstream schools (UKU). SA unit children (SAU) were not included in this analysis as this group comprised only four subjects. Similarities between the three groups (UKS, SAS, UKU), in terms of consistently 'high', 'intermediate' or 'low' ratings were noted. Significant differences in teachers' ratings of individual items between groups were identified.

Additional overall levels of adjustment on the three subscales were compared for sub-groups of the subject population. Sub-groups were defined according to mode of communication (oral or TC), educational provision (mainstream unit or special school), educational level (primary or high school unit), individual special school (UKS[1], UKS[2], SAS[1], SAS[2], SAS[3]), hearing status of family (all hearing (H) or including one or more additional deaf members (D)).

Results are discussed in terms of similarities and differences between nationalities and sub-groups on scale scores and responses to individual items. Possible

explanations for findings are suggested in the light of familial, social, educational, political and national influences on the psychosocial development of children with hearing impairments. This chapter concludes with limitations and constraints on this study and recommendations for future research.

10.1 Similarities between national groups

10.1.1 Overall levels of adjustment

Results show a high degree of similarity between teachers' ratings of the social and emotional adjustment of deaf children in SA and UK. Although SA groups received slightly higher scores on social adjustment and self-image (scales 1 and 2), scores were generally very similar, both for the complete group of subjects and for the special school children (Tables 7 and 8).

Differences between the two national groups were noted on pupils' levels of emotional adjustment (scale 3). The mean of the complete UK group (special and mainstream unit children) was significantly higher than the corresponding SA mean, at the 1% level of significance. This difference was also shown in the comparison of means of special school children from both countries, in this case at the 5% level of significance. These figures would appear to suggest that children in the UK show significantly higher levels of emotional adjustment than SA children. However, further analysis reveals that the significantly lower SA mean score can be attributed largely to one particular SA sub-group, school SAS[3]. Children from this school obtained significantly lower scores on scale 3 than all but one of the other school and mainstream unit groups from both countries (Figure 5). SA mean scores, calculated without SAS[3] scores were still found to be lower than UK scores (complete sample mean = 3,29; special school mean = 3,26), but not significantly so. The particularly low mean of school SAS[3] for emotional adjustment is discussed later in this chapter.

Similarities between the two national groups were also apparent in an analysis of individual inventory items. Seventy-eight percent of items (46) were not found to

show any significant differences between UK and SA groups UKS, SAS and UKU. Furthermore, 88% of items (52) were not found to significantly distinguish between special school groups UKS and SAS.

It is noteworthy that children from two different countries are rated so similarly on levels of psychosocial functioning by their teachers. This is especially so considering the marked disparities between the two national groups. Characteristics of both UK and SA groups, to a large extent, reflect national differences particularly in educational policy. The UK group comprised mainly children taught through oral methods (90%), 40% of UK children attended mainstream units. Conversely, 90% of the SA group attended special schools and were taught via TC. The SA children represented a much more diverse group, including children from three racial (and, to some extent, cultural) groups, traditionally important defining characteristics in SA in terms of access to economic, social and educational resources. Despite such differing group demographics, children from the two countries obtained mean scores on scales 1 and 2 of less than 0,7 difference.

This finding confirms the results of the study by Zwiebel *et al.* (1986) in which they reported a marked similarity between teachers' ratings and children in Israel, Denmark and US using SEAI. A comparison of data obtained from this study with their results reveal that there is little difference between scores of special school children from Israel, Denmark, US, UK and SA on scales 1 and 2 (Table 9). In fact, Danish, US and UKS groups receive identical mean scores on self-image (3,03).

Some differentiation of teachers' ratings was noted on scale 3, emotional adjustment. Mean scores from all five countries on this scale appear to fall into two groups. Children from Israel, US and SA are rated similarly (Israel 3,16; US 3,17; SAS 3,15) as are Danish and UK groups, although these means are higher (Denmark 3,37; UKS 3,39). Possible explanations for these differences are discussed later.

In addition to quantitative analysis of the data, qualitative analysis of the content of individual items, which showed no differences between national groups, was carried

out. Results revealed that deaf children in UK and SA on whom data was collected show behaviours from which generally appropriate levels of psychosocial adjustment can be inferred. Children from both countries do *not* show socially aberrant behaviour. Teachers rated their pupils as unlikely to be rude, destructive, have frequent unexplained accidents, or behave in a strange or bizarre manner. The same finding was reported by Zwiebel *et al.* (1986) in their analysis of the behaviour of Israeli, Danish and US children. Teachers from five countries rate deaf children as unlikely to produce antisocial behaviours. These results concur with the findings of Greenberg (1983), Kluwin, Blennerhassett and Sweet (1990) and Raymond and Matson (1989), and lend weight to Arnold's (1993) statement that "there is no *scientific evidence* that deaf people are any different in terms of prosocial and socio-moral behaviour than the hearing" (emphasis in the original). Interestingly, Arnold adds, "this, of course, does not stop people from saying that there is!" (p.68). As discussed in Chapter 5, findings on the social adjustment of deaf children are contradictory.

As the social adjustment of most deaf children in the countries surveyed is likely to be largely appropriate, teachers' responses to items which involve appraisal of an individual's emotional adjustment, did not indicate excessive levels of disturbance. UK and SA groups were rated as *not* showing symptoms of emotional problems such as lethargy, social withdrawal, lack of interest in others and lack of feelings of self-worth. This is an important finding as higher levels of emotional disturbance have been reported in deaf groups (Chapter 7). That some deaf people show increased rates of disturbance compared to others with similar levels of impairment necessitates additional research with sub-groups of the population, and individuals, in order to provide insights into the factors associated with poor adjustment.

Individuals and groups of deaf people reported in the literature as showing symptoms of emotional disturbance and psychiatric disorder often appear to be affected by detrimental secondary consequences of deafness which have interacted with the obvious difficulties of not being able to hear (discussed in Chapter 5). Social isolation and relationship difficulties have been noted in adolescent and adult groups. Communication problems because of deafness appears to exacerbate usual

life stresses and developmental issues increasing the likelihood of emotional problems such as depression and anxiety disorders (Charlson, Strong & Gold, 1992; Hindley, 1993; Leigh, Robins, Welkowitz & Bond, 1989; Vernon & LaFalce-Landers, 1993; Watts & Davis, 1981).

Medical, social and educational problems, additional to deafness, may have a negative impact on the emotional adjustment of children. Bond (1993) writes a chapter on the mental health of deaf children in a book entitled *Coping with Unhappy Children*. He provides five case studies of emotionally disturbed children with hearing impairments. In each case high levels of emotional and social problems were associated with additional factors to deafness. Examples of poorly adjusted children included two children with additional disabilities (one of whom was deafened as a result of a traumatic aetiology which is often linked to increased behavioural problems, discussed in Chapter 2). Another child had experienced rejection from his mother, another had a previously undetected medical condition. The last child had very limited communicative ability because of the imposition of an inappropriate mode of communication for that particular individual. In at least one of these cases professionals had attributed problematic behaviour to deafness *per se*. However, as each of these children suffered from additional stressors to deafness alone, it would be inappropriate to assume that all deaf children are emotionally disturbed or 'unhappy'.

What the present study shows is that emotional disturbance in deaf subjects is not inevitable. Most of the children studied did not show typical features of disturbance (other than the SAS[3] group whose results are discussed later). The stress-pathology model (deafness is detrimental to individual adjustment) is not supported by these findings which confirm the conclusions of Calderon and Greenberg's (1993) review of research on individual and family adjustment. When emotional problems in deaf populations do occur, these are likely to be due to a combination of external and internal variables overriding the individual's ability to cope. Bond (1993) comments that many of the problems faced by children who are hearing impaired arise through inappropriate management. "When we provide positive, enabling, responsive learning and interactive contexts and environments for children

who are hearing impaired, then we may see a reduction in unhappy, disturbed and disturbing behaviours" (Bond, 1993, p.50).

10.1.2 Immaturity

It has been established that children in this study did not show particularly deviant or disturbed behaviour patterns. However, the three groups investigated in detail (SAS, UKS, UKU) all showed facets of behaviour which, considered together, could be indicative of delayed or immature psychosocial development. For example, the types of behaviours noted by teachers in both countries reflect a generally poor attitude to school work and lack of responsibility. Children were rated as unmotivated, lacking in perseverance, and likely to copy the work of other children. They seek constant attention and respond poorly to failure. UK and SA teachers considered their pupils as unwilling to accept responsibility for their actions (especially misbehaviour) and would tend to blame others for their own mistakes. Similar responses were made by Israeli, Danish and US teachers. However, their ratings revealed additional characteristics of immaturity (such as dependency, inability to accept criticism, lack of cooperation and participation with others) than UK and SA groups. The reasons for these additional immature features are unclear, but the generally lower levels of maturity found in both studies appear to confirm the findings of a number of previous studies (for example, Lederberg, 1993; Schum, 1991).

Several researchers have argued that many of the 'immature' types of behaviours shown by deaf children are learned behaviours and, as such, reflect appropriate adjustment to the reality of their worlds (Dowaliby, Burke & McKee, 1983). The typical sort of behaviours observed by parents and teachers may be explained in terms of social learning theory. The theory of social learning proposes that behaviour is regulated by anticipated consequences. In other words, an individual's *expectations* of the outcome of his or her actions will influence that person's behaviour. For example, a child who expects to fail a test is less likely to learn for it. The behaviour of learning is, therefore, controlled by the expectation of the outcome of failure. Closely related to social learning theory is the psychological

phenomena of 'learned helplessness' (Seligman, 1975). Learned helplessness is a psychological state of relative inertia that frequently results when an individual perceives a lack of control over the environment. According to Seligman, through interaction with the environment, individuals learn the extent of control they have within that environment. A person's perception of the effect of his or her actions on the outer world will enable that individual to appreciate the level of control he/she has in that environment, and so allow the individual to gain a sense of mastery over external events. Conversely, if the individual perceives that his or her actions are not linked to external outcomes or environment changes, then that individual is likely to learn that responses are futile. In that case, the person develops a sense of helplessness which is learned through a perceived lack of control over external events. Learned helplessness has profound consequences for the entire repertoire of a person's behaviour. Seligman describes these effects as on three interrelated levels. Firstly, learned helplessness results in a decrease in motivation as nothing the individual does has a perceived effect and so responding is decreased. Secondly, the cognitive effects of learned helplessness are such that the process of learning itself is interfered with as individuals who view themselves as helpless take longer to learn, even when learning conditions are optimal. Linked to both the motivational and cognitive impact of helplessness is the disturbance of emotional balance. Individuals who perceive themselves as powerless become increasingly passive, anxious and depressed.

The phenomena of learned helplessness has been applied to the behaviour of people with disabilities, including the deaf. There is a body of research which supports the view that deaf children engage in *less* of the types of experiences which enable children without hearing impairments to learn appropriate adaption to the environment. Parents and teachers have been shown to exert more control over various aspects of the behaviour of deaf children compared with hearing children. (These issues are discussed in Chapter 5). Deaf children are often protected from the type of negative experiences that would enable them to learn how to cope with setbacks and frustration. Independence is less encouraged in deaf children than in their hearing peers, particularly in schools where small class sizes and higher teacher-child ratios have the unintended effect of making children more dependent

on adults and less self-reliant (Meadow & Dyssegaard, 1983a). The consequences of increased levels of adult intervention in the lives of deaf children is a perception of lack of control in the child. Feelings of helplessness can be identified in higher levels of passivity, dependence, lack of responsibility, poor study habits and impulsivity, all of which have been used to describe the behaviour of deaf children (Paul & Quigley, 1990).

Evidence to support the argument that the behaviour of deaf children may be linked to a limited sense of control can be derived from studies which have identified the 'locus of control' of deaf subjects.

Dowaliby *et al.* (1983) discuss two different types of individuals, 'internals' (those who assume responsibility for their actions) and 'externals' (those who ascribe the consequences of their actions to outside forces). In their research Dowaliby *et al.* found that children with hearing impairments were more likely to be identified as 'externals' than 'internals' and so attribute consequences to external events. This may be an appropriate reflection of their worlds as others may control their lives more than would be normal for hearing children.

McCrone (1979) suggested that learned helplessness is linked to underachievement in deaf adolescents. He writes that severely underachieving subjects exhibited a worsening of performance in the face of failure because of beliefs of their powerlessness to control the outcome of events in an achievement situation. In this study it is possible to see how locus of control is related to attributional processes in that underachieving adolescents attribute outcomes to external causes as opposed to internal causes. Kushé *et al.* (1985) discuss attributional errors made by deaf adolescents which they associate with underachievement and low self-esteem (discussed in Chapter 7). Finally, learned helplessness may be a contributory factor in the generally higher levels of depression noted within deaf populations (Leigh, Robins, Welkowitz & Bond, 1989; Watt & Davis, 1991).

To conclude, the type of behaviours deemed typical of deaf individuals, in this study and others, may be attributed to the normal reaction of a child to less than

facilitative management. Children who are less encouraged to be independent and responsible and who are externally controlled (and perceive this control) are likely to be immature and lacking in responsibility in response. Arnold (1993) argues that "[t]heir psychology, when it sometimes appears different to that of hearing people is the result of the human mind making the best of the situation imposed by the lack of hearing. In their situation we would do just the same" (p.68).

10.2 Differences between national groups and sub-groups

Children from each of the three groups investigated in detail (UKU, UKS, SAS) were perceived by their teachers as showing largely appropriate, albeit relatively immature, social and emotional functioning compared with hearing children of their age group. The main finding of this study is the similarities in teachers' responses about pupils from different nationalities with associated cultural, educational, socio-economic and political differences. However, interesting differences did emerge from the national groups. Examination of these differences may reflect differing experiences of children in two countries. These views are discussed below. Additional differences were noted between sub-groups in the subject population. Analysis of these differences may throw light upon the influences on psychosocial development of deaf children which may be useful in informing intervention programmes.

10.2.1 Communication

As presented in detail in Chapter 9, a main difference between the UK and SA groups was in their communicative mode and deaf identity. The item which most significantly differentiated between UKU, SAS and UKS groups was item 38 "[s]hows excited,positive responses to stranger who is using signs." The means from the two UK groups for this item were significantly lower than the SAS mean ($p \leq 0{,}001$ F ratio 31,9). Other items which were rated significantly differently showed that UK children were more willing to interact with hearing peers and use their voices, while SAS children more readily identified with strangers wearing hearing aids and signing strangers. These ratings indicate that deaf children from

both countries show appropriate adjustments to their school environments. It would be adaptive for SA school children who use manual systems to have a positive attitude towards signing. Similarly, it would be equally adaptive for UK children (especially those in mainstream units), the majority of whom used oral-aural methods, to be comfortable with hearing people and using speech. This argument is supported by an analysis of items not rated by teachers of the three groups. The rate of response to all items by SAS teachers was between 86% - 100%. The UK groups' general response rate was similar to this (UKS 83-100%; UKU 85-100%) with some notable exceptions. Sixty-three percent of UKS children were rated on the item which relates to pride in social group. Only 35% of UKU children were rated on response to signing strangers, whilst 40% were rated on attitude to sign language. Items related to signing and deaf identity were more difficult to rate for teachers who used oral-aural methods (especially for mainstream unit children) as signing would not be part of the educational programme. The reduced responding rate may have affected the reliability of means scores on these items for UK groups. However, the differences between the groups on items concerned with communication are probably less likely to mean that the groups show differing levels of psychosocial functioning, but rather that they show *appropriate adjustment to different environments*. This confirms the general finding that deaf children in this study, on the whole, show appropriate levels of psychosocial adjustment.

10.2.2 Emotional adjustment

The most striking difference between the two groups was on level of emotional adjustment. SA children obtained significantly lower scores on scale 3, emotional adjustment, than UK children from the complete sample and special school children sample (Table 7, and 8). Analysis of mean scores for each of the three groups (UKU, UKS, SAS) revealed that of the 13 emotional adjustment items SAS scored lower than the UK groups together on ten items (77%), lower than all of the UK groups on two items and higher than both groups on one item (item 31, attitude to sign language). SAS scores were significantly lower ($p \leq 0{,}001$) on three items related to over-concern with cleanliness, preoccupation with minute details, displays, twitches and tics. Although not significantly lower,SAS mean scores were

appreciably lower than UK groups on three items concerned with negative feelings about physique, overly fearful and somatic complaints (UK groups scored consistently 'high', SAS scored 'intermediate').

A comparison may be drawn between the scores of SAS children and Israeli children's scores reported by Zwiebel *et al.* (1986). Israeli children also scored significantly lower than their comparison groups (US, Danish), yet their scores were not dissimilar to SAS scores. Comparisons may be further extended to item analysis. Israeli children received higher ratings on lack of impulsivity and empathy than Danish and US children. Zwiebel and his co-workers concluded that lower levels of emotional adjustment in conjunction with greater maturity (shown by less impulsivity and more empathy) indicate that Israeli children live in a dangerous or stressful socio-political environment and so are given responsibility earlier and hence grow up quicker. In accordance with this formulation, SAS children who show symptoms of poorer adjustment, less impulsivity (they scored higher on lack of impulsivity of all five countries) and greater empathy (they were only less empathic than UKS out of all five countries) may also be affected by living in a dangerous or stressful socio-cultural environment. This issue warrants further investigation and is discussed below.

10.2.2.1 South Africa as a 'dangerous' environment

Compared with a number of other countries, particularly UK, SA could be described as a relatively dangerous environment. Violence, whether it be politically or criminally motivated, institutional, cultural and familial, is a feature of SA society. However, for certain sections of the community violence is endemic and part of daily life, for others the environment is perceived as less dangerous. The majority of research on the psychological effects of living in dangerous societies has been with black children who have borne the brunt of the violence. Many white children have also been exposed to violence but are less likely to have been victims (Dawes, 1994a). One should not, however, lose sight of the cognitive-social phenomenon of vicarious or observational learning (Bandura, 1977).

Detailed analysis of SA data showed that the sub-group which displayed the poorest adjustment levels was the group from school SAS[3], which consisted of 100% black children. If this group of students had not been included in the study the emotional adjustment means for the complete SA group and special school children would not have been significantly different from the UK groups, although they would have been lower. Hence, the inclusion of data from school SAS[3] reduced the SA mean significantly. In addition, the relatively high SAS mean on lack of impulsivity may be partly attributed to the high score of SAS[3] on this item (3,07). Therefore, it is suggested that of the SAS children, the group scores which most closely compare with the scores from Israeli children in terms of lower levels of emotional adjustment and less impulsivity, is the all-black group of children from SAS[3].

It would not be difficult to accept the argument by Zwiebel *et al.* (1986) that poorer emotional adjustment and lower impulsivity was indicative of living in dangerous environments when applied to the findings of this study. Dawes (1994a) writes that millions of children in South and Southern Africa live in high risk environments. During the 1980s political violence became a common feature of the lives of black children. Since 1990 it has become difficult to distinguish between the effects of political violence and the increasing criminal violence. The so-called culture of violence in this country takes on a number of forms. Institutional violence is rife, corporal punishment for school children is common, particularly in schools with black pupils; flogging is a common sentence for black juvenile offenders (Dawes, 1994a). Violence is also evident in family life. Dawes (1994b) cites a study which showed that young township* men in KwaZulu-Natal use violence as a way of asserting masculinity. Killian (1994) notes the high rates of physical and sexual abuse of township women and children. Apart from the direct effects of violence, indirect effects associated with loss of family members, loss of homes and closing of schools, also impact on the lives of children. To illustrate this point, Killian reports that of 298 black children from KwaZulu-Natal (aged 8-12 years), 57% reported that they perceived life as dangerous, 46% had seen a person attacked, and 27% had

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* Township - suburban area outside towns and cities set aside for habitation by black residents typically containing limited infrastructure and few resources.

seen a person killed. Of this group, 66% reported that they watched for danger always and around 50% said that they experienced sleep difficulties, frequent pain and illness, regrets, and were constantly tired. These findings are particularly alarming and would suggest that the lower levels of emotional adjustment found in black children were not surprising. Findings from this study may suggest that black children show similar emotional adjustment to Israeli children and this can be linked to living in a dangerous environment.

This hypothesis may be challenged on several levels. Dawes (1994a) warns against the making of probabilistic statements about one population of children based on findings generated in different circumstances. Sites of conflict, such as (previously) Northern Ireland, Israel and SA are different in terms of politics, ideological cohesion, demography, economic development and education. All of these factors affect the form that violence takes and the response of people affected. Comparisons between nationalities are also problematic as differences may also exist between societies which could be described as 'underdeveloped and transitional' (such as SA) and those more western or first world developed societies (Northern Ireland). Dawès concludes that a child's response to living in a violent society cannot be adequately explained by universal psychological mechanisms independent of socio-cultural context. Psychological functioning can be powerfully influenced by the context in which the child grows up and operates.

The development of children in SA, especially black children, is affected by a myriad of complex factors which interact to place children at risk for less than optimal psychological development. The legacies of apartheid with its structural barriers to social and economic advancement for a large section of the community are deprivation and disadvantage. Richter (1994) cites studies which reveal that over 60% of the black population live in conditions of poverty.* Poverty and low socio-economic status have been linked to perinatal complications, social stresses,

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* Routh (1994) provides a selection of papers considering the impact of poverty (in US), examining interrelated factors including prenatal, perinatal and other biological risks, minority status, environmental disadvantage, need for services, home environment and parenting issues.

disability, child abuse and conduct disorder. Poverty also affects child rearing rendering many low socio-economic status parents to show diminished expressions of affection, reduced responsiveness to socio-emotional needs of the child, tendency to issue demands without explanations, greater use of physical punishment, and less likelihood of verbally rewarding the child. Killian correlated lack of food in the home with single parenthood, which is common in poor black families. Single parenthood has also been associated with corporal punishment and child abuse. Richter (1994), writes, "[t]hat poverty poses the most severe risk to parenting, and therefore to children's development, is without doubt" (p.43).

The high rates of violence, in all its forms in SA and especially within black communities, would certainly seem to be an influential factor on psychological development. But it would be difficult to state conclusively that violence is the major cause of lowered levels of emotional adjustment in black deaf children surveyed in this study. There are confounding variables associated with problems of familial stress and deprivation and disadvantage due to oppression, poverty, familial stress, and under-resourced education (discussed in Chapter 3). Without further research it is not possible to attribute symptoms of emotional disturbance shown by black deaf children (who by the nature of having a disability could be said to be the disadvantaged of the disadvantaged) to living in a violent society. Experience of violence is likely to contribute to the larger picture of problems in daily life, and be yet another risk factor to compromise optimal psychosocial development.

Structural forces and material adversities have powerful effects on the social and emotional functioning of the child. The extent to which these effects impact upon the individuals surveyed in this study is unclear without more detailed knowledge of the home circumstances of the children concerned. It could be suggested that the likelihood of more negative life circumstances in the history of SA children (both intrinsic and extrinsic) may partly explain the lowered emotional adjustment levels. This consideration is underscored by the poorest emotional adjustment found in the group from the least facilitative environment. Investigation of other sub-groups may provide more information on factors which promote better adjustment or serve as protectors from negative events.

10.2.3 Parental hearing status

Analysis of sub-groups with various defining characteristics was carried out to assess the possible contribution of additional factors reported in the literature as important for adequate psychosocial functioning in deaf children.

Deaf children with deaf parents have often been found to show higher self-esteem, social maturity, levels of academic achievement, and appropriate social adjustment than deaf children with hearing parents (Bat-Chava, 1993; Greenberg & Kushé, 1989; Harris, 1978; Kolod, 1994; Meadow, 1968; Meadow, 1980; Stokoe & Battison, 1981; Stone, Harris & Sterling, 1986; Yachnik, 1986). Possible explanations for more favourable outcomes for children with deaf parents has been linked to parental acceptance of deafness, enhanced communication, identification with common experiences, and membership of a shared culture. Results from this study confirm the findings of previous studies by showing that children from families with one or more additional member (D) obtained higher mean scores on social adjustment and self-image subscales of SEAI, and significantly higher mean scores on emotional adjustment than children from all hearing families (H) (Tables 23 and 24). This is an important finding as the (D) group will have included not only children with two deaf parents but also children with only one deaf parent or one deaf sibling. Therefore, according to these results, presence of another deaf family member, even if that person is a sibling and the parents are hearing, renders the chances of social and emotional problems in a deaf child as less likely, probably due to the 'shared culture' reasons outlined above. This finding may be useful in informing intervention programmes, especially with hearing parents of newly diagnosed children, so that they are better enabled to provide a more facilitative environment for the developing deaf child.

10.2.4 Inconclusive and unexplained differences between sub-groups

The scores of individual special schools using alternative modes of communication were compared. Results from this analysis are inconclusive as comparisons between schools from different countries may have been influenced by a number

of important variables. Comparisons between mean scores of schools of one nationality were also problematic because of the inequality in numbers of subjects involved. The UKS group included 25 oral children but only five TC children. Although the TC group obtained higher scores on each scale (Table 20), the difference was not significant. These results may have been compromised as data was collected at only two UK special schools (one oral, the other TC) and findings may be linked more to unknown additional school factors than mode of communication *per se*. The difficulty in comparing schools according to communicative mode was even more problematic in SA as all the oral children attended a mainstream unit whilst all the TC children attended special schools. Added to this, the numbers involved were similarly unequal, in this case the majority of children used TC methodology. Because of the methodological difficulties outlined it is not possible to conclude that one form of communication is more likely to enhance psychosocial development than another.

The comparison between the mean scores of children from UK primary and high school units produced results that were difficult to explain. High school children showed better levels of adjustment, which may be linked to Meadow and Dyssegaard's (1983b) suggestion that, as deaf children mature into adolescence, they show less developmental delay than younger children. However, the scope of this study did not allow for investigation of the percentage of primary unit children who went into the high school unit compared with the numbers who went to alternative placement options. It may be hypothesized that children who required more intensive help were not transferred to the high school unit but to a special school, resulting in high school pupils being the children who showed more adequate psychosocial development in primary school.

10.3 Life events

The development of deaf children may be understood in terms of a life events framework. The life events approach examines the way in which certain negative life circumstances or risks render children vulnerable for a variety of developmental problems (Dawes, 1994a). Within this paradigm, problems in social and emotional

adjustment can be linked to risk factors defined in terms of anomalous experiences, disordered parentage, disturbed family and rearing milieus and disadvantaged environment (Garmezy, Masten & Tellegen, 1984). Quamma and Greenberg (1994) argue that "[t]he relation between stressful life events and psychological maladjustment has become well established" (p.295). This is especially so in research with adults and adolescents. In their study, Quamma and Greenberg found a relation between stressful life events and child adjustment (mean age of child, 10,7 years).

Negative life experiences can be understood in terms of 'stressors' such as political violence and poverty. Although deafness is a different form of stressor, the life events framework may still apply. The effect of stressors depends upon a range of intrinsic and extrinsic factors. The prevalence of deafness constitutes a risk in psychological development because of factors inherent in the child such as medical problems related to aetiology, additional difficulties, interactive ability, temperament, and level of skills. Extrinsic factors which influence development include increased chances that parents and teachers will not succeed in providing a facilitative environment, attitudes of society, parental adjustment, parental acceptance and support, and educational resources. Intrinsic and extrinsic factors are inevitably interrelated as the stressor of deafness will have an individual meaning for the child involved, and a social meaning in relation to wider society. From this perspective, deafness is viewed as no longer a global and direct source of behaviour problems and personality traits, but as a stressor which in combination with other life stressors, places a child at risk for developing poor social and emotional adjustment.

The relationship between stress and outcome is complex and interactive (Pianta & Egeland, 1990). Individual differences exist between people diagnosed as deaf, and many adjust well despite intrinsic and extrinsic forces associated with stress. Bond (1993) writes:

> "[d]espite the reported high incidence of disturbed and disturbing behaviours in people who are hearing impaired, despite negative social views and 'folk-lore' ... and despite the pressures on people

> who are hearing impaired, the majority of hearing impaired children and adults manage their lives successfully" (p.31).

An ability to cope with stressful events is explained within the life events approach by 'protective factors' and 'moderating variables' which help to build resilience in the child. Protective factors include dispositional attributes, environmental conditions, biological predispositions and positive events that act to contain the expression of problems. Moderating variables limit the effects of stressors. An important moderating variable is social support. Social support can be defined as the perception by a person that they are cared for, loved or valued by others. An individual's ability to cope with the challenges of deafness will depend upon the effects of stressors (the combination of which will be different for each person), protective factors, the developmental age of the child, and the active response of the child to stressors.

In Chapter 2 the additional familial stresses of parenting a deaf child were outlined. Studies with families including children with disabilities demonstrate less supportive family interrelations, a more rigid and restrictive household, and higher levels of parental stress (Margalit, Raviv & Ankonina, 1992). The effects of family relations on child adjustment can be far reaching. Abidin, Jenkins and McGaughey (1992) examined familial risk variables and the adjustment of (hearing) children. They found that life stress, child characteristics and maternal characteristics are important for subsequent child functioning. Family stress and maternal emotional disturbance has also been found to be associated with the adjustment of hearing impaired children (mean age, 12,7 years) (Watson, Henggeler & Whelan, 1990). These researchers agree that characteristics of hearing impairment are less strongly linked with behaviour problems than family functioning.

The model of coping and adjustment described by Lazarus and Folkman (1984) has been applied to the investigation of the adjustment of deaf children. This model identifies five domains of coping resources: problem-solving skills; social networks; utilitarian resources; beliefs; physical and emotional wellbeing. The appeal of this model is that it reframes what might have been termed 'personality deficits' to

behavioural and cognitive skill deficits which can then be targets for intervention. A further advantage is that it allows for an analysis of a number of variables, including developmental and ecological considerations in the examination of child adjustment. Calderon and Greenberg (1993) applied this model to 36 hearing families with a deaf child (mean age, 10,2 years). They found that child outcome, measured by teacher ratings, was directly related to maternal problem-solving, maternal locus of control and overall parental adjustment. Mothers who indicated more positive maternal adjustment to their deaf child had children who showed lower impulsivity, greater cognitive flexibility and better social understanding. These findings emphasize the importance of the familial socio-cultural context of the child on adjustment levels.

The examination of stressful life events and coping resources focusing on ecological models of child functioning provides a better understanding of differential outcomes of individual deaf children. In the present study groups which probably experienced more life stressors showed lower levels of adjustment, particularly emotional adjustment. These groups were likely to have experienced stressors in the form of problems associated with later diagnosis, less resources and social support for parents, restricted educational opportunities. The most disadvantaged group may well have been subject to the effects of low socio-economic status, poverty and violence. The results of the analysis of sub-group scores suggest that moderating or 'buttering' effects between stress and outcome are acceptance, shared identity, and better familial relationships (shown by better child adjustment in families with additional deaf members). The value of this approach is that it places the deaf child within the larger ecological context of family and societal institutions.

10.4 Limitations and constraints

In the previous section the importance of viewing the functioning of a child within his or her socio-cultural context was emphasized. Because of the limited scope of this study such an approach was not possible. The method of investigation unfortunately did not allow for further examination of the contexts in which

individual children were developing. As a result important influences on the social and emotional development of the children concerned (such as maternal adjustment, home background, life experiences) were not evaluated. Interviews with individual parents may have provided interesting and important additional information. In their meta-analysis of different informants' reports of behavioural and emotional problems of hearing children and adolescents, Achenbach, McConaughy and Howell (1987) comment that different informants (parents and teachers) provide different pictures of child functioning. They report that the weighted mean *r* between ratings of parents and teachers was 0,27 (Pearson *r*s > 0,50 represent large degrees of association). The researchers argue that children may be assessed differently in different situations, and that assessment must be geared to this reality. Reliance on one source of normative data may not provide adequate base rates for other types of informants. Achenbach, McConaughy and Howell conclude that "[p]arents are almost always needed as informants..." (p.228). The necessity of obtaining information from different informants is so that appropriate interventions may be planned in differing situations. Furthermore, report of deviance by one informant does not necessarily mean that change is necessary in the child, but may indicate that intervention may be more appropriate in changing the perception of the informant.

Linked to the above discussion, the use of one instrument at one time may produce inaccurate results. Findings in this study were not verified by further investigation and, because they involved one rating per child, may represent functioning at that particular time rather than general level of adjustment. The measurement of current state may be affected by current difficulties and hence may suggest emotional problems not usually the norm for the child rated.

A further limitation of rating by one informant is that ratings may be influenced by that person's beliefs and values. Teachers of the deaf are inevitably involved in the educational debates regarding deaf children. Issues such as which communicative mode is beneficial for the child often involve the adoption of a particular point of view and methodology. Teachers may thus respond to inventory items in terms of their own perspective towards deafness. Hence, teachers may rate children in oral

programmes as willing to use their voice, whilst children in TC programmes are rated as willing to identify with the signing strangers. Although a somewhat cynical suggestion, it could be that teachers may be reluctant to represent a child as a 'failure' of the approach they use.

Finally, Meadow (1978) writes that in selecting deaf subjects for research the researcher is faced with a choice. A random sample representative of a larger group may be selected, or a homogeneous group based upon rigid criteria may be chosen. One basis for determining the choice of subjects is the number of deaf children that test scores can be obtained from within existing economic and logistic constraints. This study was affected by both economic and logistic constraints, particularly because of having to visit each of the participating schools more than once. As a result the number of subjects was necessarily relatively small and a criteria for inclusion had to be set (detailed in Chapter 8). The results are, therefore, not easily generalizable to other groups (such as children with lesser hearing loss, older or younger children, children with additional difficulties, children from other parts of the respective countries from selected children). In addition, the smaller numbers and use of a selection criteria makes statistical comparison to other larger groups (such as those in Zwiebel *et al.*, 1986) problematic.

Further limitations are related to the selection process. Subjects were included on the cooperation of individual school management rather than random selection. Perhaps the willingness of management to become involved in research of this nature at a busy time in the school year is an indication of additional features of the schools which is indeterminate and not easily available for analysis (for example, commitment to research, ethos of the school, personality of Head or Principal).

Despite various problematic methodological issues within this study, it is the first attempt to compare children from UK and SA in this manner. Therefore, it serves to indicate that the psychosocial development of deaf children, particularly in SA, is a valuable area of future research.

10.5 Further research

The most useful form of further research with deaf children is that which focuses on the socio-cultural context of the children investigated. Integrative research programmes of a multivariate nature which aim to assess numerous domains of child and family functioning offer the greatest promise. The assessment of psychosocial adjustment may be better realised by the adoption of the more flexible construct of 'coping strategies'. Analysis of an individual's coping responses (including, for example, problem-solving, self-control and accepting responsibility), allows the researcher to predict success in future situations and can be contextually or situationally evaluated (Kluwin, Blennerhassett & Sweet, 1990). The assessment of differential styles of coping may be related to different outcomes for the deaf child and be used to inform intervention strategies.

This study highlights the need for further research with deaf children in SA. This is especially so as education is in a state of transition and important decisions which may affect the lives of children with disabilities, including those with hearing impairments, are in the process of being made. It is important for researchers to investigate the effect of multiple variables on the adjustment of deaf children in this country, especially the most disadvantaged children about whom relatively little is known. It is this type of research which underscores the necessity of examining risk factors experienced by deaf children, as well as factors that protect or moderate such stresses and thus lead to healthy outcomes.

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APPENDIX 1

SEAI completed inventory for one subject (SA 27)

(T) t f F ? 1. Obeys the rules; follows instructions or requests from adults in authority.

T (t) f F ? 2. Kind and considerate.

T (t) f F ? 3. Relates well to peers and is accepted by them.

T (t) f F ? 4. Distinguishes between fact and fiction, real and imaginary events and/or people (understands that "Superman" does not really exist).

T t f (F) ? 5. Aggressive. Behavior may include fighting, scratching, biting other students and/or kicking or hitting animals.

T t (f) F ? 6. Demonstrates negative feelings about physical size and/or strength.

T (t) f F ? 7. Takes pride in physical appearance/ personal attractiveness: feels at least moderately pretty or handsome.

T t f (F) ? 8. Engages in behavior considered by most teachers and students to be bizarre or strange (talking or signing to self, rocking, staring at lights for long periods, twirling).

(T) t f F ? 9. Has generally acceptable emotional responses. Rages (tantrums) or violent outbursts occur only after extreme provocation if at all.

T t (f) F ? 10. Has many fears. Overly and unrealistically concerned with danger, storms, injury, death.

T (t) f F ? 11. Accepts some delay of gratification. Does not expect instant satisfaction of every need, whim or desire.

T t (f) F ? 12. Isolated. Has few or no friends. May be considered "withdrawn."

T t (f) F ? 13. Lacks competence with tools, utensils or equipment even though there is no apparent physical basis for lack of skill.

T t (f) F ? 14. Teases or annoys or pesters other students.

T t (f) F ? 15. Shows initiative in completion of assignments; motivated to finish work.

T (t) f F ? 16. Tries to communicate with others (both deaf and hearing) by any means necessary: signs, speech, writing, pantomime.

T t (f) F ? 17. Takes responsibility for fair share of tasks; helps to clean up after a project is finished.

T t f (F) ? 18. Insists on repetition of usual routines. Changes in schedules, habits, route arrangements elicit extreme negative responses.

T t (f) F ? 19. Self-reliant. Not overly dependent on others for help.

T = VERY TRUE **t = true** **f = false** **F = VERY FALSE** **? = can't rate**

T (t) f F ? 20. Performs cooperatively in group of peers. Contributes to cohesion rather than to conflict.

T t f (F) ? 21. Overly concerned with cleanliness. May wash hands constantly or be unable to tolerate specks of dust or dirt.

T t f (F) ? 22. Shows great concern or preoccupation with minute details (may insist on perfection in writing or drawing).

T (t) f F ? 23. Happy, cheerful, pleasant, easy-going.

T t (f) F ? 24. Gives up quickly. Expects to fail.

T t f (F) ? 25. Complains of physical ailments that have no apparent medical basis (headaches, stomach aches, etc.).

T (t) f F ? 26. Identifies with (shows excited recognition of) a stranger or visitor who wears a hearing aid.

T t f (F) ? 27. Engages in destructive behavior (breaking objects, defacing walls or furniture, scattering things in disarray).

T t (f) F ? 28. Relates well to adults (both men and women).

T t (f) F ? 29. Trustworthy, dependable, reliable.

T (t) f F ? 30. Anxious: nervous, worries about many commonplace events.

T t f (F) ? 31. Demonstrates negative attitudes toward sign language (refuses to sign, pretends not to understand others' signing).

T t f (F) ? 32. Misbehavior not deterred by restrictions or by threat of punishment.

T t (f) F ? 33. Creative. Shows imagination in school work and leisure/play activities.

T t (f) F ? 34. Lethargic. Lacks energy. Always tired.

T t (f) F ? 35. Fails to accept criticism, especially if it is expressed as discipline or restriction.

T t (f) F ? 36. Demonstrates negative feelings about own motor skills, dexterity, or visible handicaps.

T t f (F) ? 37. Demands attention. Must be center of everything. May insist on being first in line, or leader, or captain.

T (t) f F ? 38. Shows excited, positive responses to stranger who is using signs.

T t f (F) ? 39. Has many accidents or mishaps resulting in breakage of objects or injuries requiring first aid.

T (t) f F ?	40.	Seems to understand the feelings of others; demonstrates empathy.
T (t) f F ?	41.	Tries to understand the communication of others by any means offered: listening, lipreading, signing, writing, gestures.
T (t) f F ?	42.	Curious. Eager to learn new things. Likes new experiences.
T t f (F) ?	43.	Responds poorly to losing in games or failing to achieve in class.
T t (f) F ?	44.	Daydreams. Tunes out events in immediate environment.
T t f F (?)	45.	Accepts differences in other people; doesn't tease or exclude peers on basis of racial differences or physical handicaps.
T t f (F) ?	46.	Has habits, mannerisms or traits considered to be rude or socially unacceptable (e.g., picks nose, makes obscene/sexual references).
T (t) f F ?	47.	Participates in classroom or group activities; volunteers answers, offers opinions in discussions.
(T) t f F ?	48.	Doesn't try to copy classmates' work nor take things belonging to others.
T t f (F) ?	49.	Other students look to this student as a leader.
T (t) f F ?	50.	Demonstrates a sense of humor or wit (can appreciate funny situations or jokes at own expense).
(T) t f F ?	51.	Generous. Shares with others.
T t (f) F ?	52.	Demands attention and help constantly. Takes disproportionate share of teacher's time.
T t (f) F ?	53.	Participates well in organized play or games (takes role of leader or follower; plays to completion; follows rules).
T (t) f F ?	54.	Is willing to interact with hearing people: does not refuse to interact with peers or adults who have normal hearing.
T t f (F) ?	55.	Acts without thinking. Impulsive. Doesn't consider or doesn't care about consequences.
T t f F (?)	56.	Demonstrates acceptance/pride in own social group membership (racial, ethnic, linguistic, religious identity).
T t (f) F ?	57.	Avoids communicating through speech. Seems embarrassed to use voice.
T t (f) F ?	58.	Displays twitches, mannerisms, tics of face or body.
T t (f) F ?	59.	Denies own misbehavior; may also blame others for own misdeeds.

APPENDIX 2

SEAI completed scoring sheet for one subject (SA 27)

MEADOW-KENDALL SCHOOL-AGE INVENTORY
SCORING SHEET

Student's Name or Code No. S.A. 27

Date Completed 20.11.94

Be sure to consult the SEAI Manual for scoring instructions.

Item No.	Evaluator's Response					Scale No.	(Column A) Score		
	T	t	f	F	?		1	2	3
1.	(4)	3	2	1	?	1	4		
2.	4	(3)	2	1	?	1	3		
3.	4	(3)	2	1	?	2		3	
4.	4	(3)	2	1	?	2		3	
5.	1	2	3	(4)	?	1	4		
6.	1	2	(3)	4	?	3			3
7.	4	(3)	2	1	?	2		3	
8.	1	2	3	(4)	?	3			4
9.	(4)	3	2	1	?	1	4		
10.	1	2	(3)	4	?	3			3
11.	4	(3)	2	1	?	1	3		
12.	1	2	(3)	4	?	2		3	
13.	1	2	(3)	4	?	3			3
14.	1	2	(3)	4	?	1	3		
15.	4	3	(2)	1	?	2		2	
16.	4	(3)	2	1	?	2		3	
17.	4	3	(2)	1	?	1	2		
18.	1	2	3	(4)	?	3			4
19.	4	3	(2)	1	?	2		2	
20.	4	(3)	2	1	?	1	3		
21.	1	2	3	(4)	?	3			4
22.	1	2	3	(4)	?	3			4
23.	4	(3)	2	1	?	1	3		
24.	1	2	(3)	4	?	2		3	
25.	1	2	3	(4)	?	3			4
26.	4	(3)	2	1	?	2		3	
27.	1	2	3	(4)	?	1	4		
28.	4	3	(2)	1	?	2		2	
29.	4	3	(2)	1	?	1	2		
30.	1	(2)	3	4	?	3			2
Column A Totals							35	27	31
? Totals							0	0	0

Item No.	Evaluator's Response					Scale No.	(Column B) Score		
	T	t	f	F	?		1	2	3
31.	1	2	3	(4)	?	3			4
32.	1	2	3	(4)	?	1	4		
33.	4	3	(2)	1	?	2		2	
34.	1	2	(3)	4	?	2		3	
35.	1	2	(3)	4	?	1	3		
36.	1	2	(3)	4	?	3			3
37.	1	2	3	(4)	?	1	4		
38.	4	(3)	2	1	?	2		3	
39.	1	2	3	(4)	?	3			4
40.	4	(3)	2	1	?	1	3		
41.	4	(3)	2	1	?	2		3	
42.	4	(3)	2	1	?	2		3	
43.	1	2	3	(4)	?	1	4		
44.	1	2	(3)	4	?	2		3	
45.	4	3	2	1	(?)	1	?		
46.	1	2	3	(4)	?	1	4		
47.	4	(3)	2	1	?	2		3	
48.	(4)	3	2	1	?	1	4		
49.	4	3	2	(1)	?	2		1	
50.	4	(3)	2	1	?	2		3	
51.	(4)	3	2	1	?	1	4		
52.	1	2	(3)	4	?	1	3		
53.	4	3	(2)	1	?	2		2	
54.	4	(3)	2	1	?	2		3	
55.	1	2	3	(4)	?	1	4		
56.	4	3	2	1	(?)	2		?	
57.	1	2	(3)	4	?	2		3	
58.	1	2	(3)	4	?	3			3
59.	1	2	(3)	4	?	1	3		
Column B Totals							40	32	14
Add Column A Totals							35	27	31
							75	59	45
? Totals (A&B)							1	1	0

Transfer these figures to "Score and Summary Profile," page 4 of Inventory Form.

APPENDIX 3

SEAI score summary and profile for one subject (SA 27)

Score Summary and Profile
School-Age Inventory

S.A. 27
Student

20.11.94
Date Completed

SCALE 1: Social Adjustment

Do not compute if fewer than 18 items are completed.

Total Score from score sheet 75

a. Number of items, Scale 1 23
b. Number of ? answers 1
c. Subtract b. from a. 22

SCALE SCORE: Divide Total Score by answer on line c. **3.41**

SCALE 2: Self Image

Do not compute if fewer than 18 items are completed.

Total Score from score sheet 59

a. Number of items, Scale 2 23
b. Number of ? answers 1
c. Subtract b. from a. 22

SCALE SCORE: Divide Total Score by answer on line c. **2.68**

SCALE 3: Emotional Adjustment

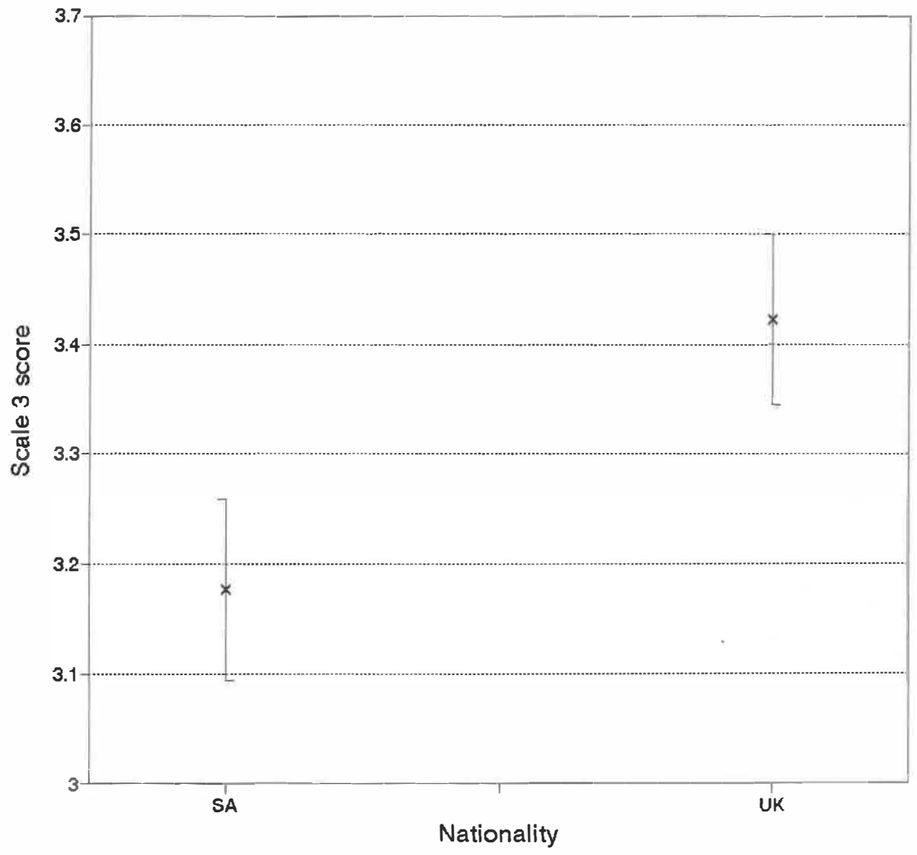
Do not compute if fewer than 10 items are completed.

Total Score from score sheet 45

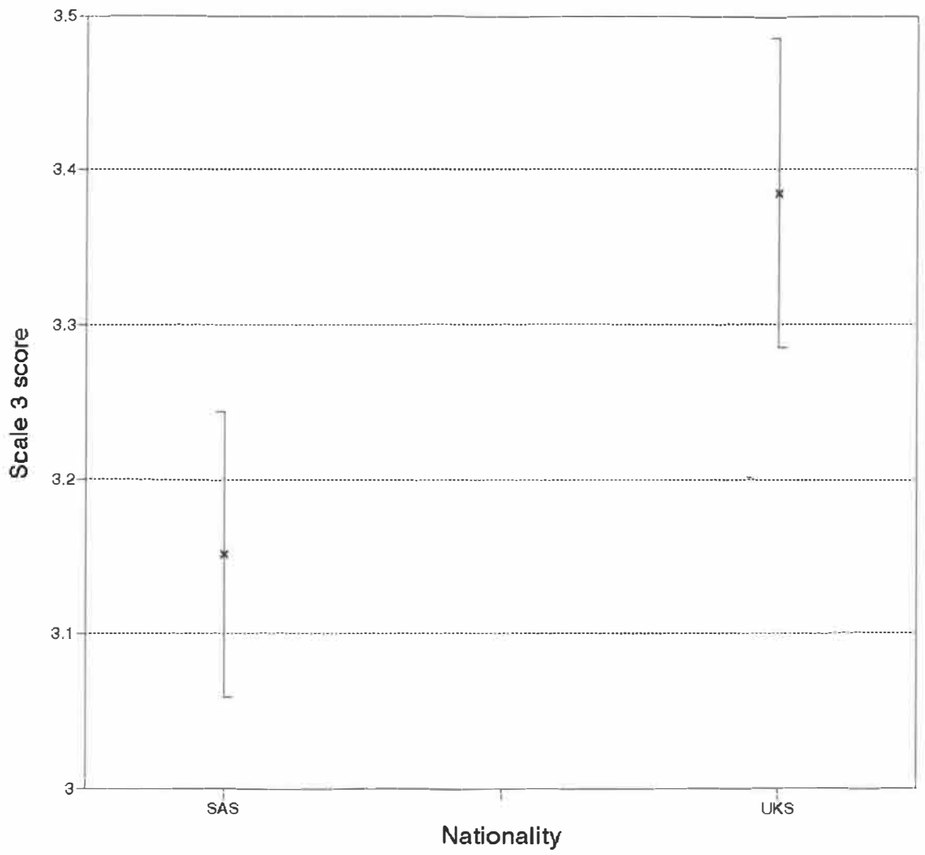
a. Number of items, Scale 3 13
b. Number of ? answers 0
c. Subtract b. from a. 13

SCALE SCORE: Divide Total Score by answer on line c. **3.46**

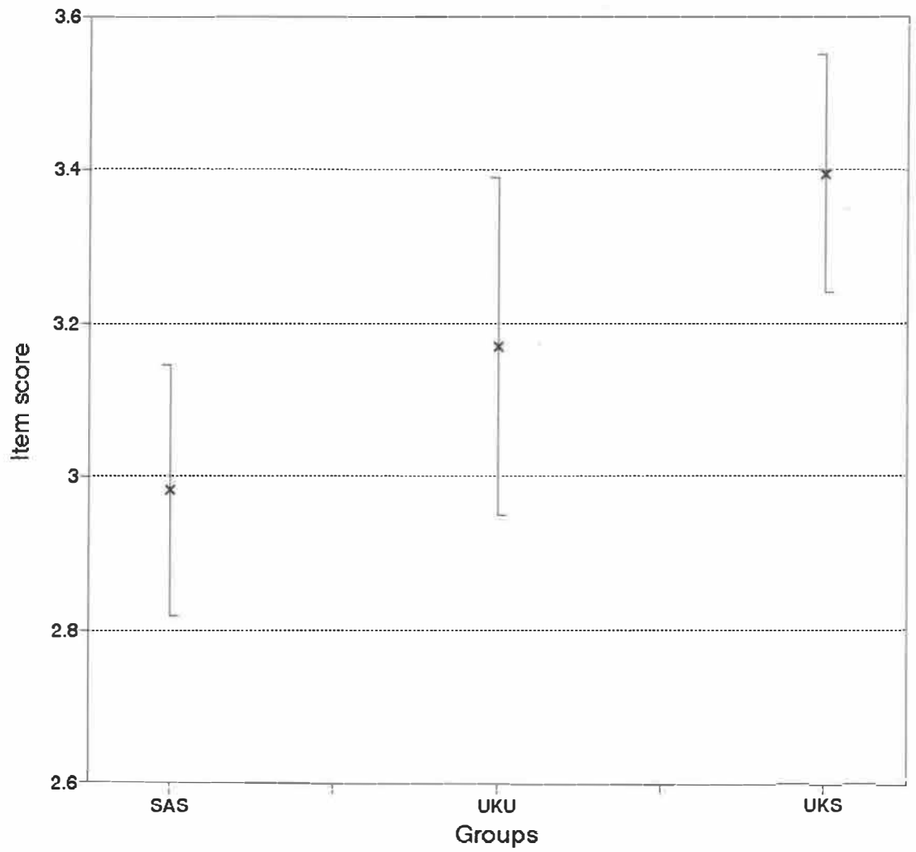
APPENDIX 4: Scale 3 (emotional adjustment) scores for complete group of UK and SA children (means and ranges)



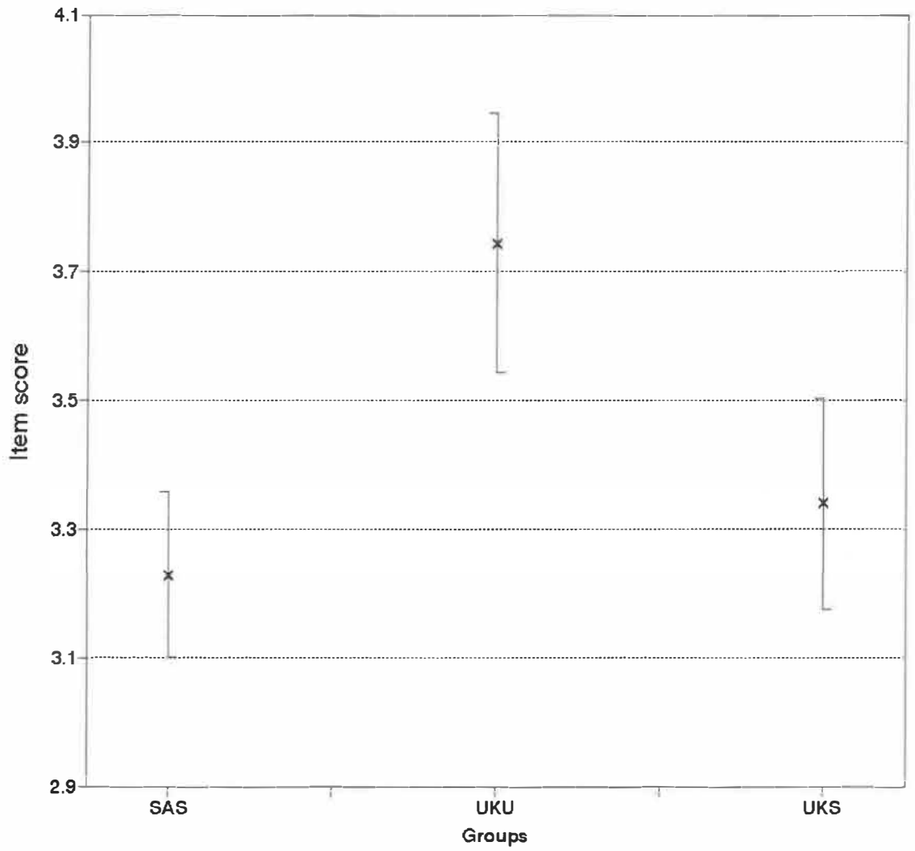
APPENDIX 5: Scale 3 (emotional adjustment) scores for special school UK (UKS) and special school SA children (SAS) (means and ranges)



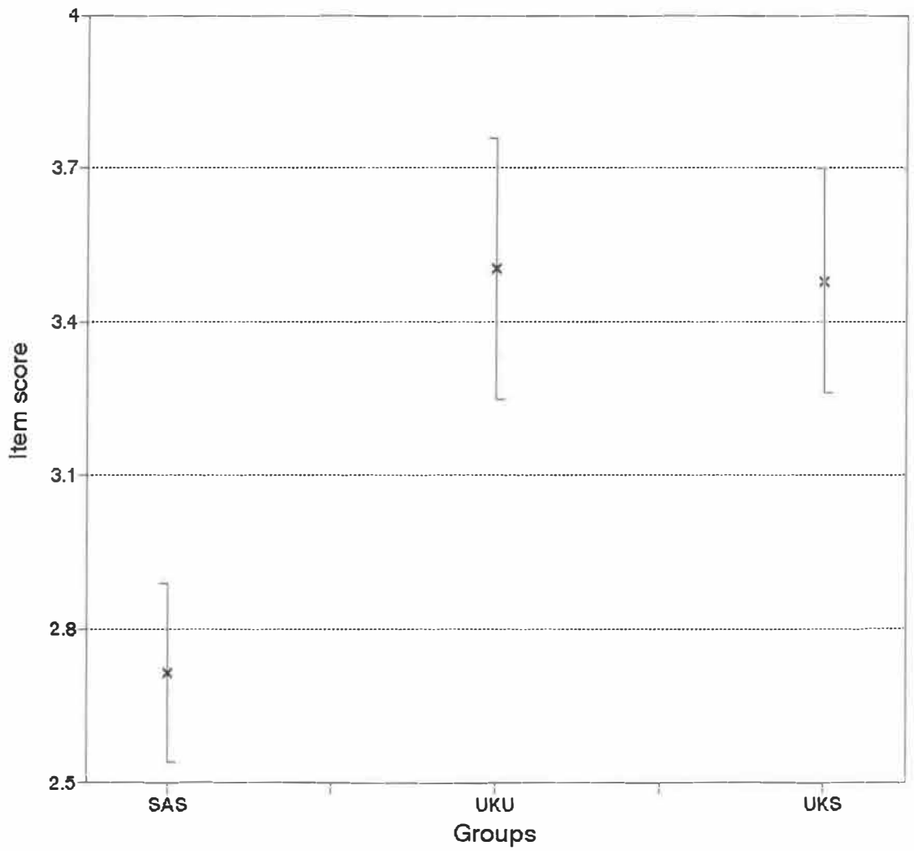
APPENDIX 6: Item 4 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



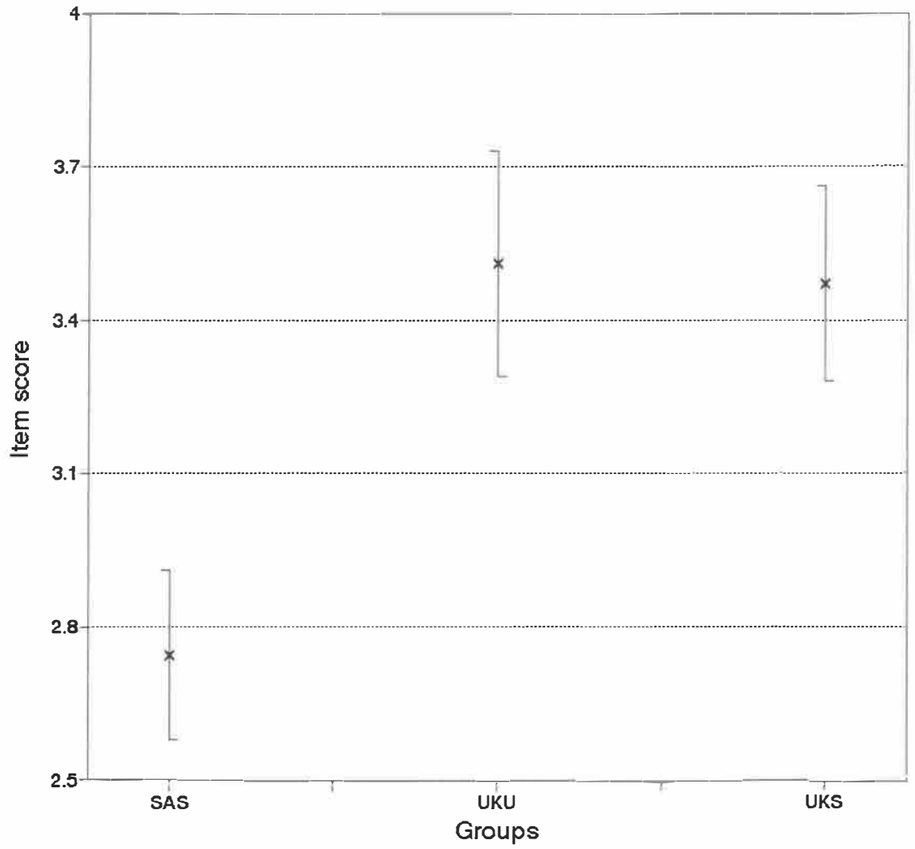
APPENDIX 7: Item 13 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS)) group (means and ranges)



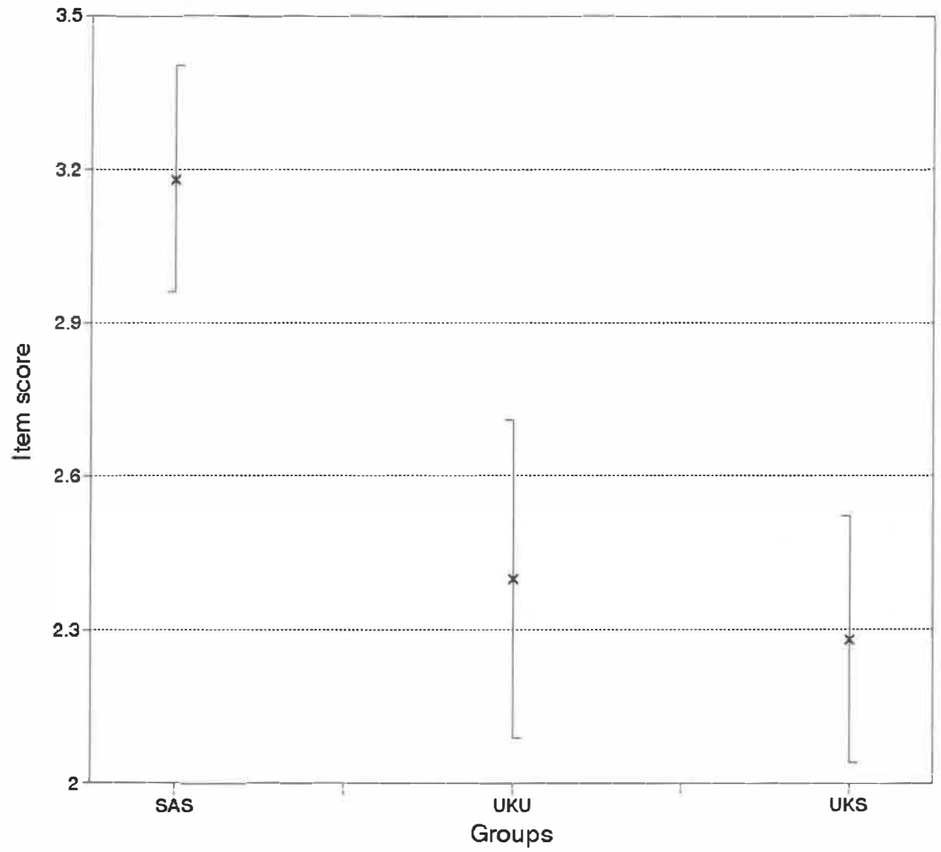
APPENDIX 8: Item 21 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



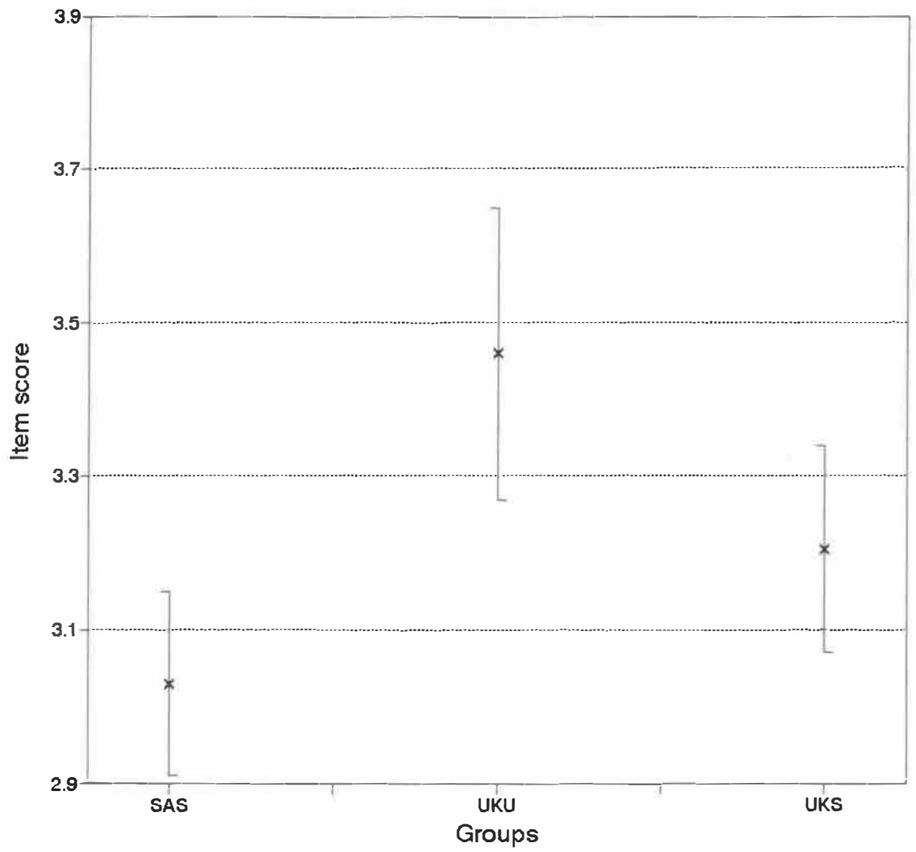
APPENDIX 9: Item 22 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



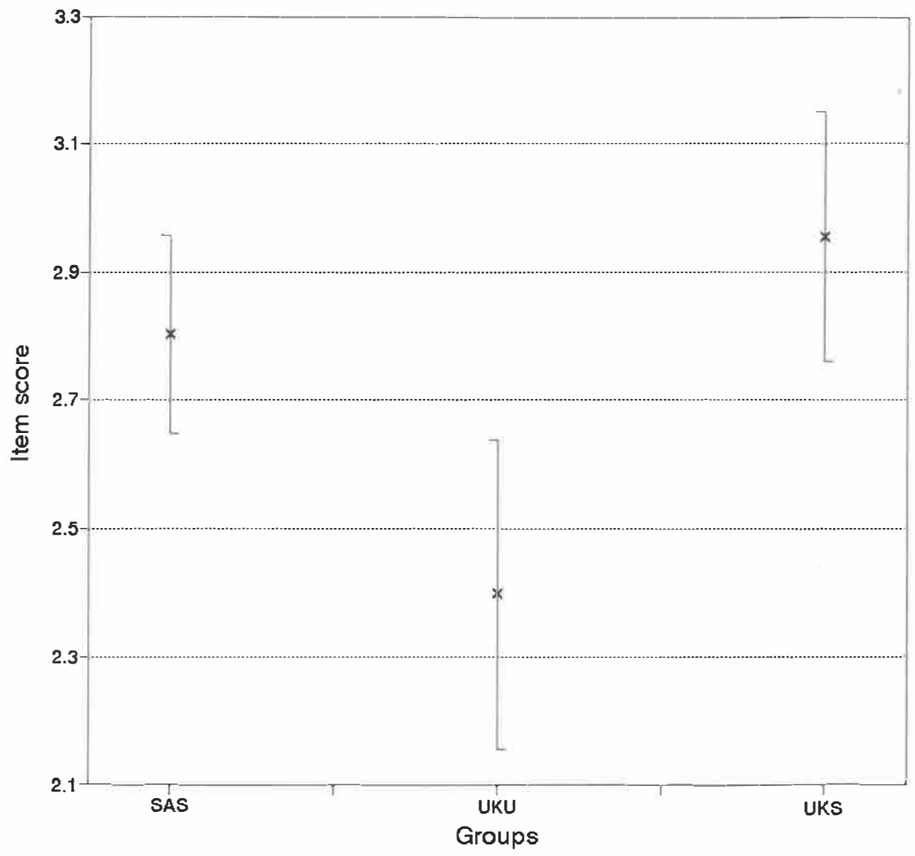
APPENDIX 10: Item 26 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



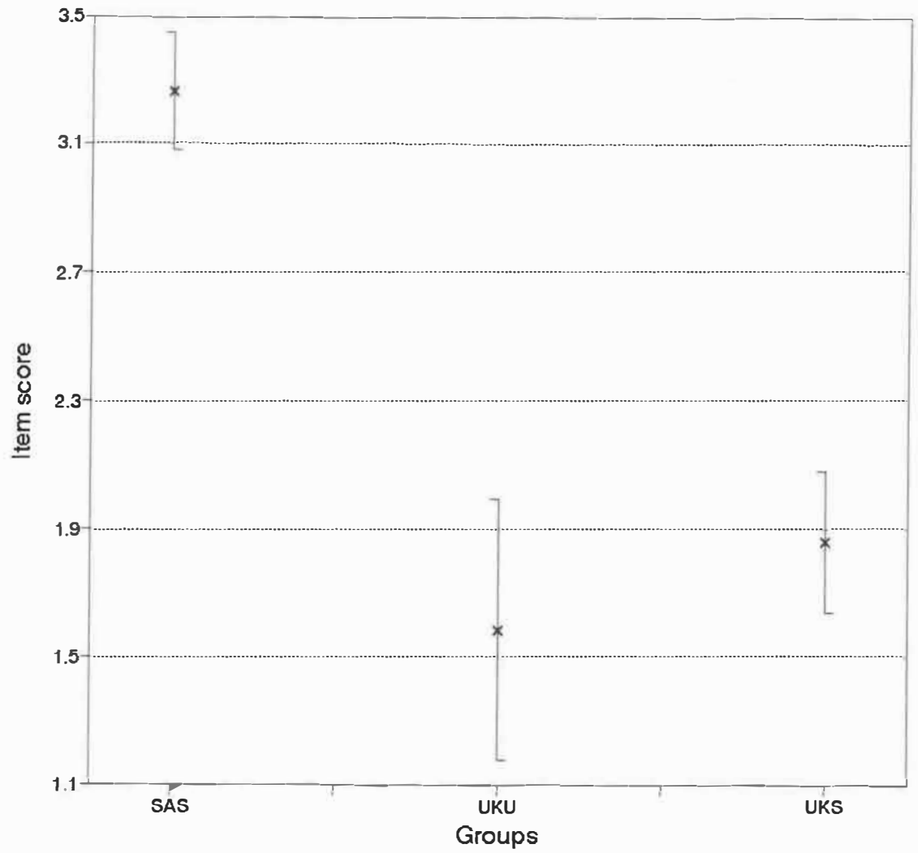
APPENDIX 11: Item 28 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



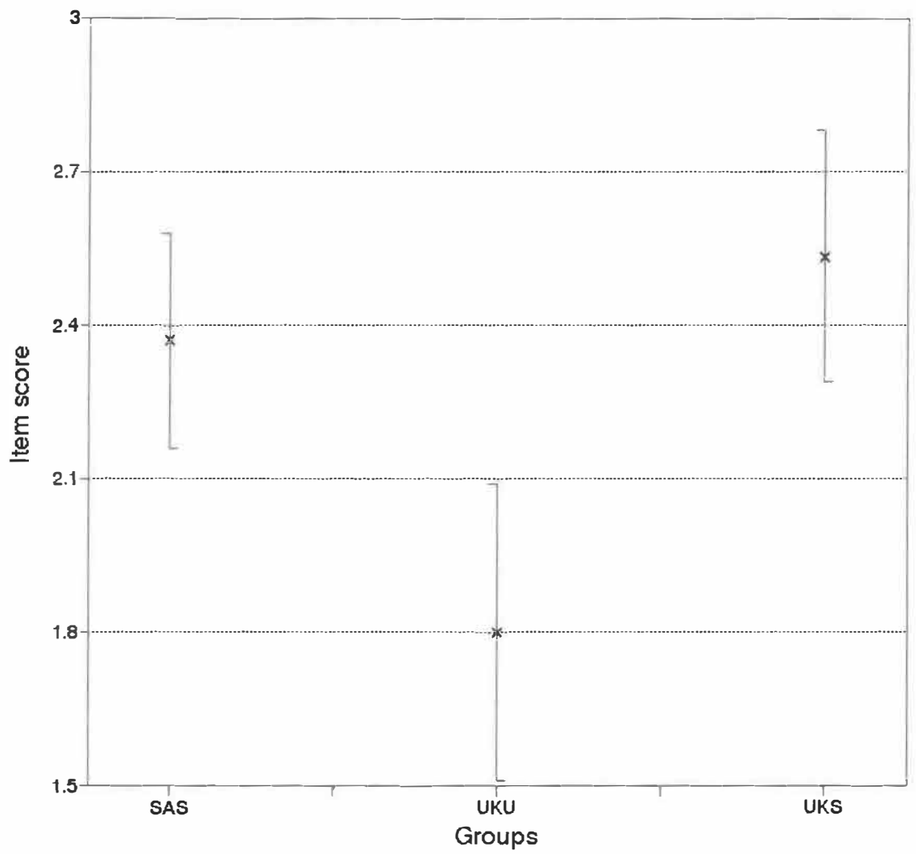
APPENDIX 12: Item 33 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



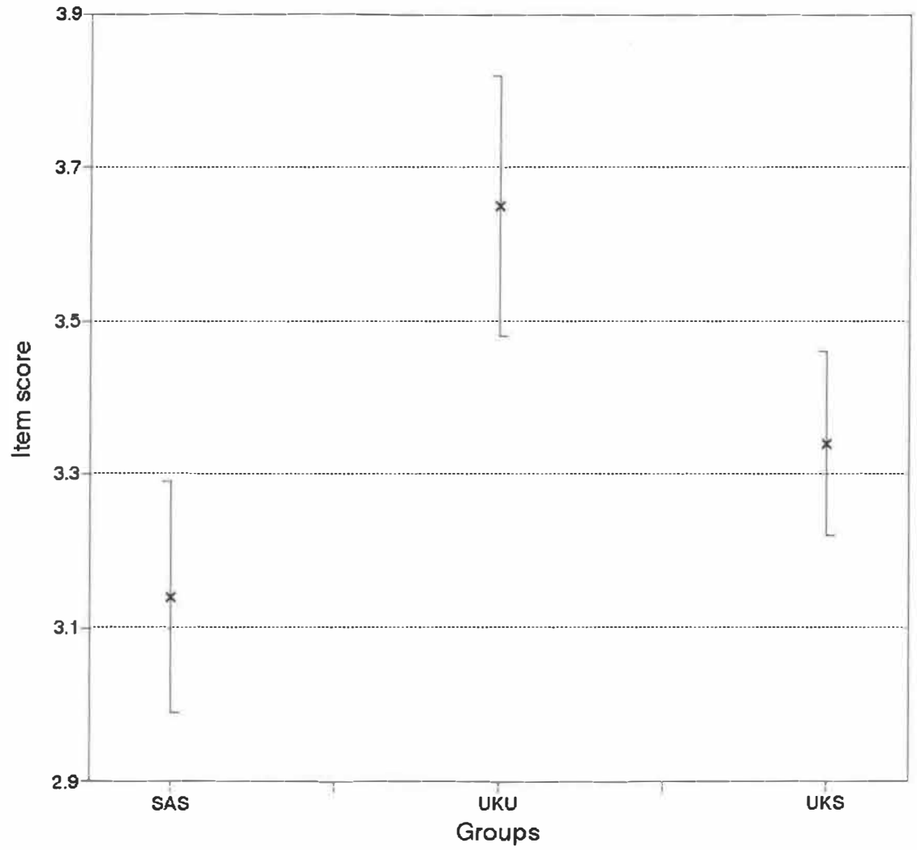
APPENDIX 13: Item 38 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



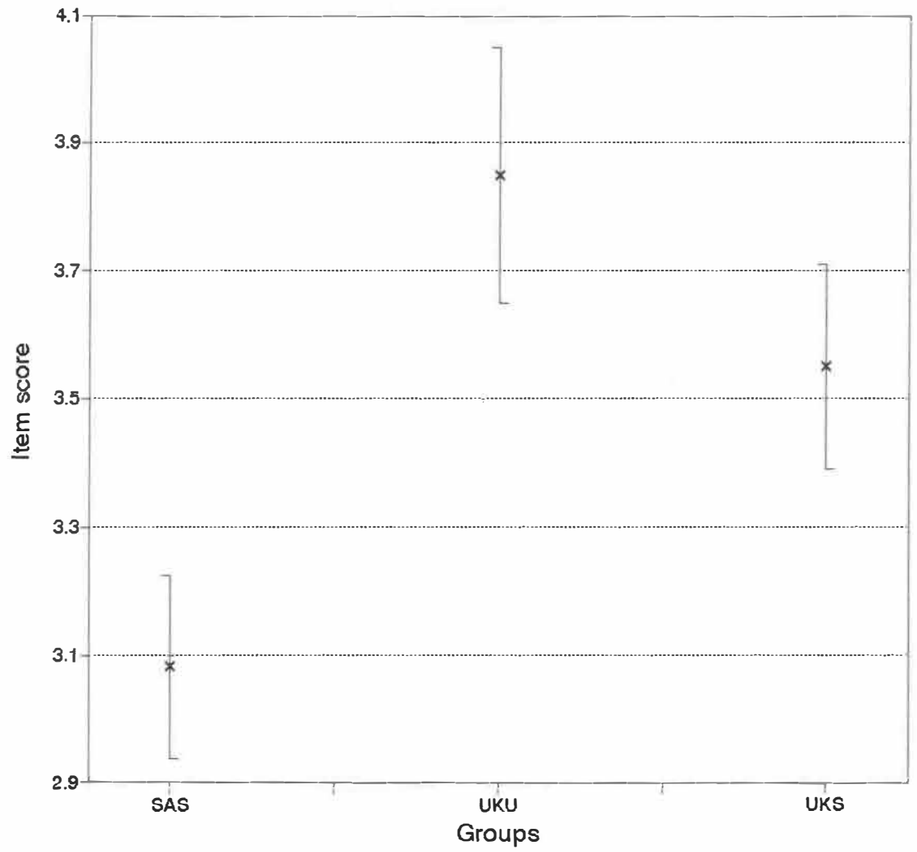
APPENDIX 14: Item 49 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



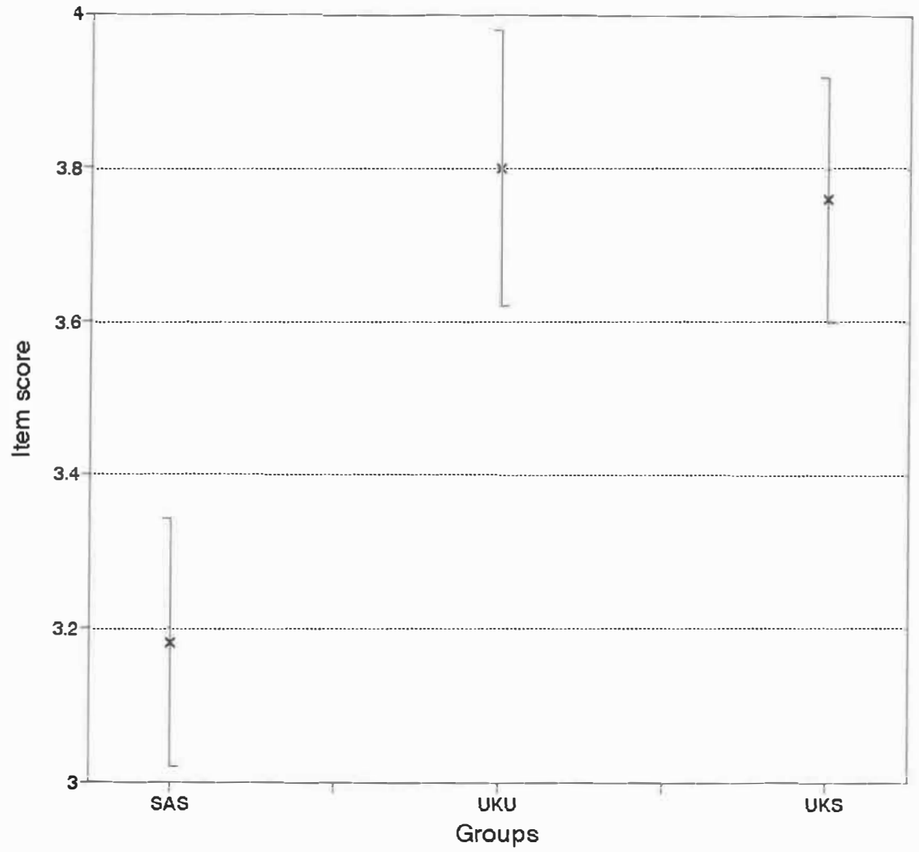
APPENDIX 15: Item 54 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



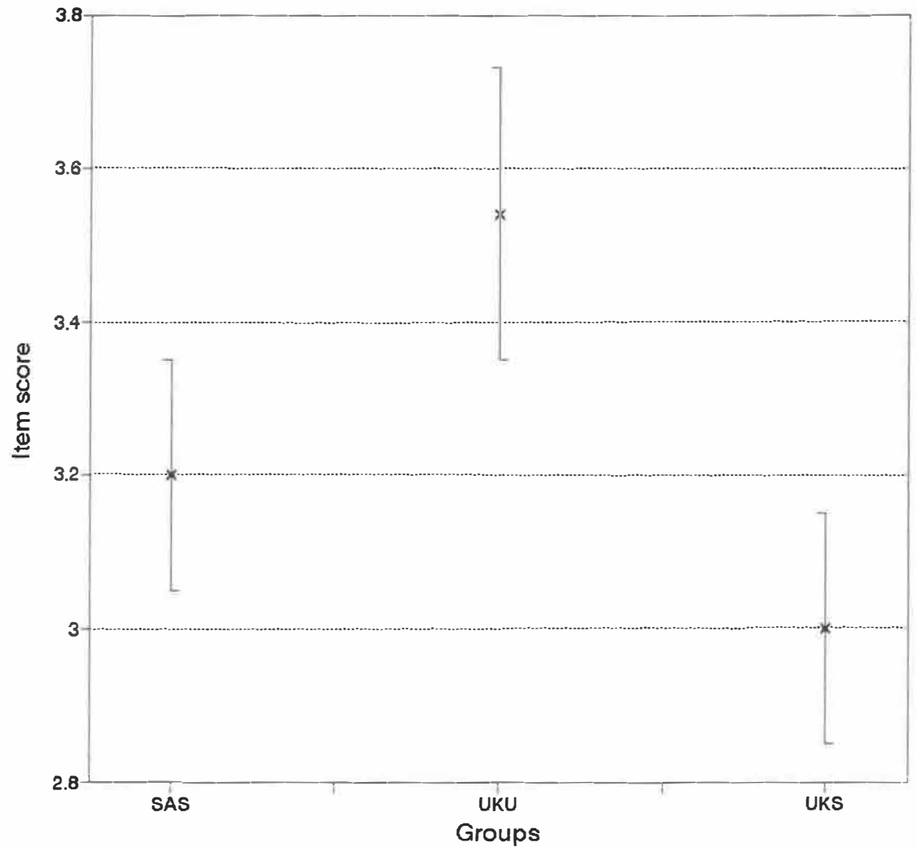
APPENDIX 16: Item 57 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



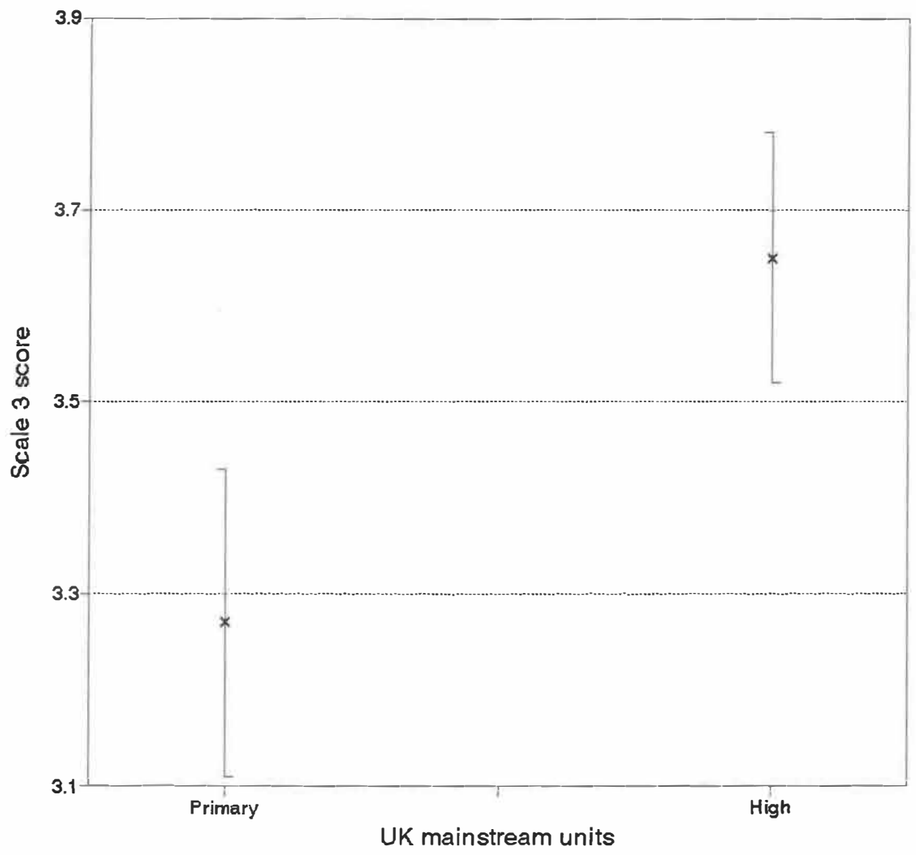
APPENDIX 17: Item 58 scores for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



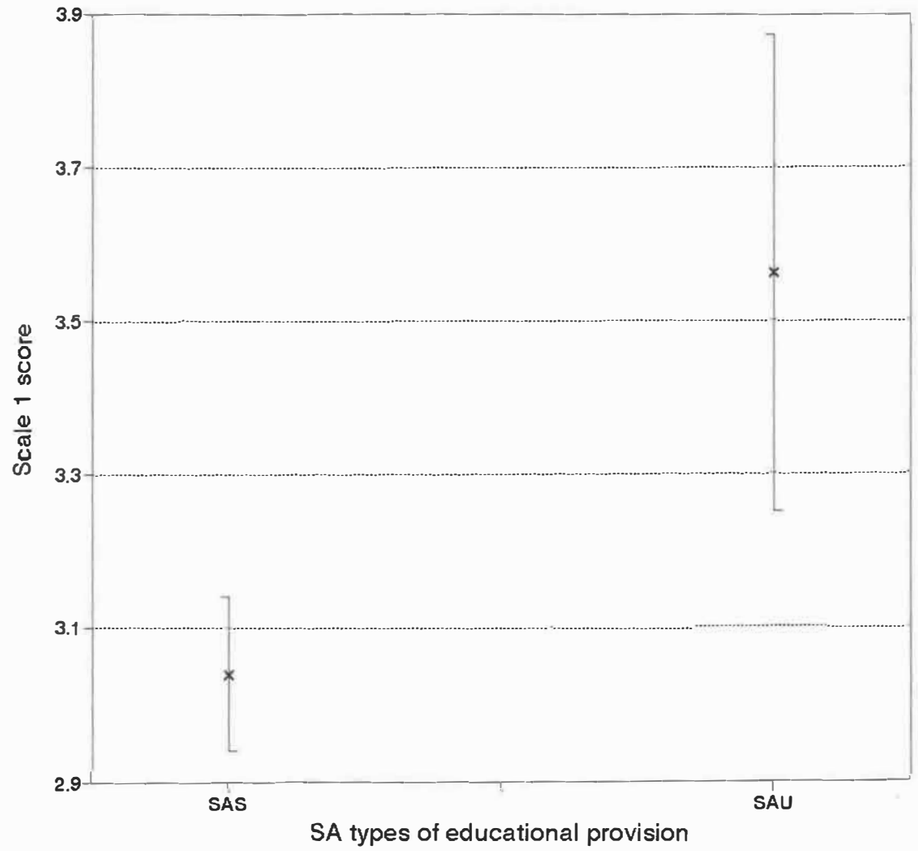
APPENDIX 18: Item 36 for UK unit (UKU) group, UK special (UKS) group and SA special (SAS) group (means and ranges)



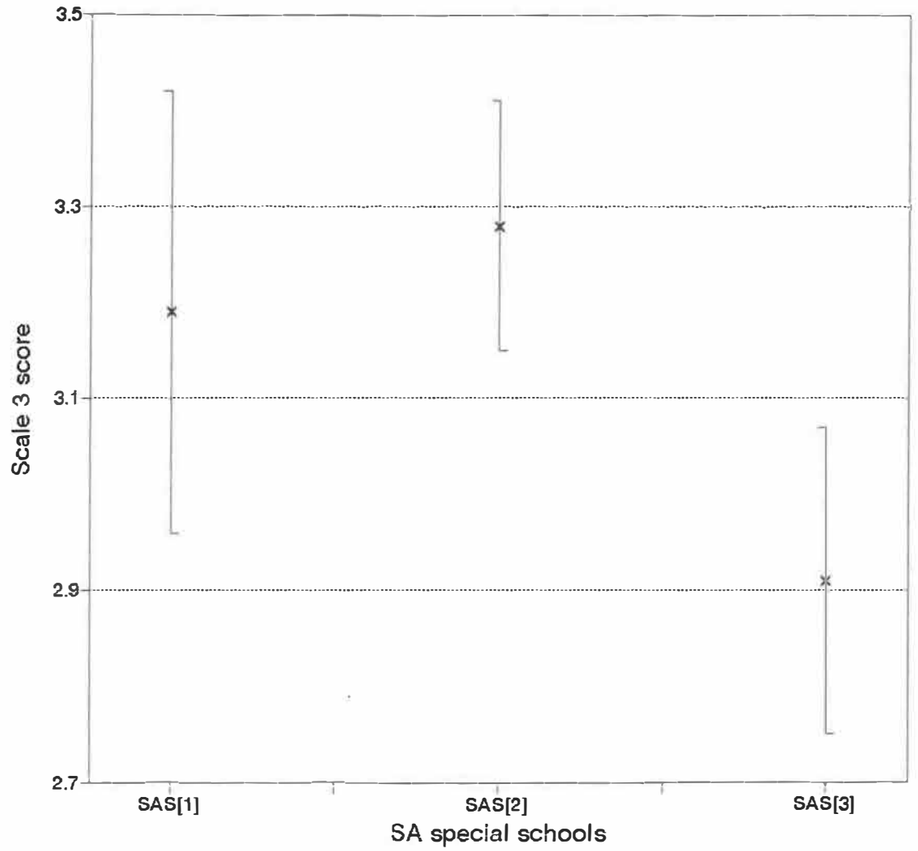
APPENDIX 19: Scale 3 (emotional adjustment) scores for primary and high school mainstream unit children in UK (means and ranges)



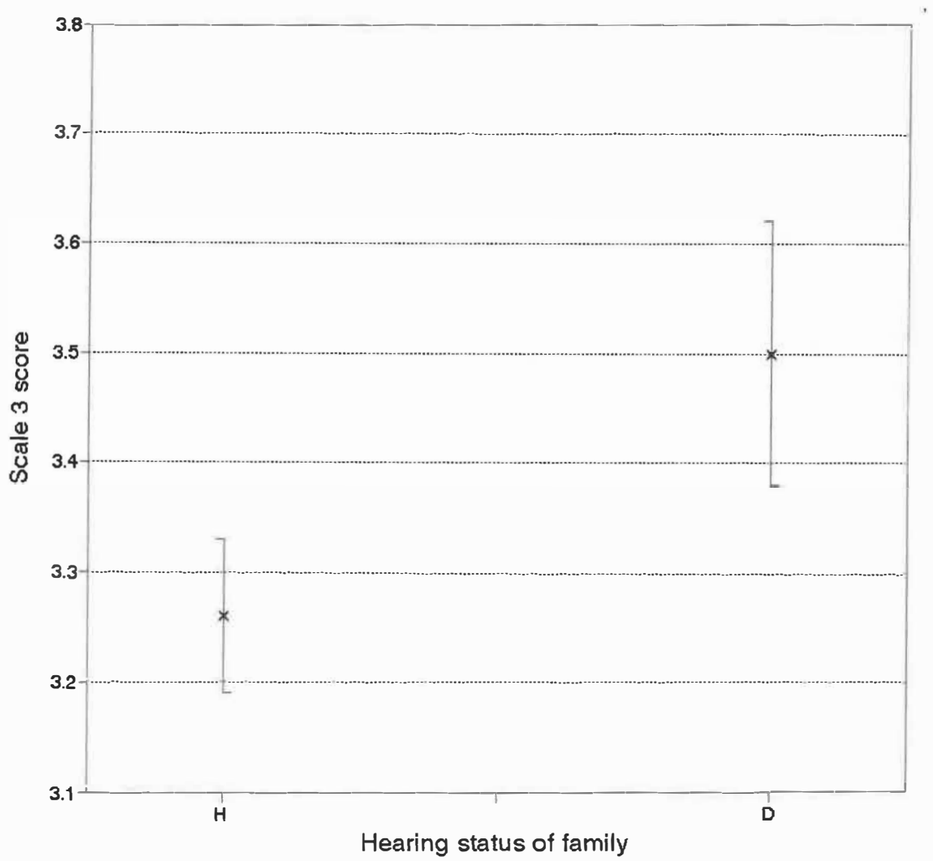
APPENDIX 20: Scale 1 (social adjustment) scores for SA mainstream unit (SAU) and special school children (SAS) (means and ranges)



APPENDIX 21: Scale 3 (emotional and adjustment) scores for children from SA special schools, SAS[1], SAS[2], SAS[3] (means and ranges)



APPENDIX 22: Scale 3 (emotional adjustment) scores for children from hearing families (H) and children from families with one or more additional deaf members (D), complete sample (means and ranges)



APPENDIX 23: Scale 3 (emotional adjustment) scores for special school children from hearing families (H) and children from families with one or more additional deaf members (D) (means and ranges)