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THE IDENTIFICATION OF SPEECH DISORDERS IN PAKISTANI HERITAGE CHILDREN

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DECLARATION OF ORIGINALITY

The material presented in this thesis is the original work of the candidate except as otherwise acknowledged. It has not been submitted previously in part or in whole, for any award at any university, at any other time.

Carol Stow

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ABSTRACT

This thesis investigates aspects of the identification of speech disorders in Pakistani heritage children who speak Mirpuri, Punjabi and Urdu and who live in England. It provides the first normative data on this population.

The majority of health and education professionals are monolingual English speakers. Consequently it was hypothesised that Pakistani heritage children with speech disorders would not be identified as readily as their monolingual English-speaking peers. A two-year survey of referrals to a speech and language therapy department confirmed a statistically significant under-referral of Pakistani heritage children with speech disorders. Questionnaires completed by education staff and interviews conducted with referral agents confirmed that lack of appropriate assessment tools and normative data regarding speech sound development in the target languages were hampering identification. The development of a speech screening tool targeting the Pakistani heritage languages is outlined. This speech screen was subsequently used with 246 children aged 1;04 – 7;11 to develop normative data including age of phoneme acquisition and occurrence of phonological error patterns. Use of the speech screen with children attending an education nursery confirmed its validity as a screening tool. Parent questionnaires conducted with parents contradicted previous findings and indicated that parents within the target community were not able to identify speech difficulties in their own children. This was the first time that such a questionnaire had been delivered in a verbal format: the parental mother tongue has no written form. Three case studies of individual children are presented. These confirm that therapy delivered in Mirpuri which targets underlying deficits in the speech processing chain will have an effect on other languages spoken by a child.

This thesis contributes to theories regarding phonological development and disorder across different populations and provides evidence to support professionals in the development of evidence-based services to Pakistani heritage children with speech disorders.

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CHAPTER ONE

INTRODUCTION AND LITERATURE REVIEW

1.1 INTRODUCTION

We live in a multi-racial, multi-cultural and multi-lingual society. Increased mobility and improved communication systems, coupled with family links, economic aspirations and continuing wars and persecution, mean that people move more readily than ever between countries. This has led to a situation where the presence of minority ethnic groups within a country is commonplace. In the UK there are an increasing number of adults and children whose first language is not English, creating a challenge for speech and language therapy services. This thesis investigates one aspect of that challenge. It focuses on children exposed to a Pakistani heritage language in the preschool years who live in an English speaking country, addressing issues of referral and assessment of children from this context who have speech disorders.

Ethnicity, culture and language are inextricably linked (Schott and Henley 1996, Battle 1998, Rutter 2001). Recently attention has been drawn to the increasing need in modern society to have a labour force of competent oral communicators (Ruben 1993, Locke, Ginsborg and Peers 2002). To meet these challenges, speech and language therapy services will need to identify, diagnose and treat people who communicate using a variety of different languages and who are drawn from varied cultural backgrounds. Some speech and language therapists will need to extend their knowledge base to encompass languages other than English. Recognising the challenges, professional organisations regulating speech and language therapists around the world have developed guidelines for working with such clients (American Speech-Language Hearing Association (ASHA) 1985, Royal College of Speech and Language Therapists (RCSLT) 1996, Speech Pathology Association of Australia (SPAA) 2002, International Association of Logopedics and Phoniatrics (IALP) 2006).

Those children who are first exposed to mother tongue at home and then to English at school are at particular risk of not being identified as having communication difficulties during their pre-school and early school years.

Speech and language difficulties may go unrecognised and the child's communication problems be attributed to learning a new language (Kayser 1995). Nevertheless, since exposure to more than one language does not cause speech and language difficulties, the proportion of such children in need of assessment and possible intervention should not differ from that of the monolingual population (Duncan 1989).

Despite the fact that bilingualism, rather than monolingualism, is the normal human condition (De Houwer 1995, Li Wei 2000), there are still large gaps in our knowledge of bilingual children with speech and language disorders. Crutchley, Conti-Ramsden and Botting (1997b) emphasised that bilingual children with Specific Language Impairment (SLI) have not received a great deal of research attention. Bilingual children are a widespread presence on community caseloads throughout England but studies of clinical efficacy in the UK have often specifically excluded bilingual children (see for example Glogowska, Roulstone, Enderby and Peters 2000, Hesketh, Adams, Nightingale and Hall 2000, Millard 2003).

The Pakistani heritage population is the second largest and most widely dispersed minority ethnic community in England (National Statistics Online 2003). Research (Crutchley *et al* 1997b, Broomfield and Dodd 2004) and anecdotal evidence is beginning to emerge which suggests that bilingual children with speech disorders are under-represented on speech and language therapy caseloads. In this context 'under-represented' is understood to mean that the proportion of Pakistani heritage children with speech disorders on local speech and language therapy caseloads does not reflect the number of Pakistani heritage children in that local area. There is no detailed evidence available regarding the representation of Pakistani heritage children on speech and language therapy caseloads. There is no published data on phonological development for the three languages most widely spoken as mother tongue within this community. There are also no published assessments available for these languages. There is currently debate within the health services regarding the efficacy of screening young children for speech and language difficulties with the debate focusing on the lack of

proven tools (Butler 1989, Bamford, Davis, Boyle, Law, Chapman, Stewart Brown and Sheldon 1998). There are no such tools to identify Pakistani heritage children with speech disorders using the medium of their mother tongue.

1.1.1 RESEARCH QUESTIONS

The research presented here set out to address some of the key questions facing speech and language therapists working with Pakistani heritage children in England:

1. Do the referral patterns of Pakistani heritage children match those of their White monolingual English-speaking peers?

2. Referral patterns reflect the behaviour of referral agents. Are there any factors influencing the decisions of referral agents which might specifically affect their decisions relating to Pakistani heritage children?

3. Referral agents and speech and language therapists use formal assessments to reach diagnostic decisions. Is it possible to develop an effective screening tool to identify Pakistani heritage children with speech disorders in their mother tongue?

4. No normative data are available for phonological acquisition in Pakistani heritage languages. What is the pattern of phonological development in Pakistani heritage children in England who speak Mirpuri, Punjabi and Urdu?

5. Once speech disorder is identified, therapeutic intervention is offered. Will therapy techniques developed with English-speaking children prove effective with children who speak Mirpuri, Punjabi and Urdu as their mother tongue?

The questions addressed arose from a clinical problem: the researcher observed that young children from the Pakistani heritage community were not being referred for assessment of speech difficulties. In addressing these questions this thesis provides novel data on a population whose children reflect the language learning experience of the majority of bilingual children world wide (Grosjean 1982): they learn their mother tongue at home and subsequently acquire their second language on school entry. There has been little previous research into the development of speech and language patterns in children from newly established migrant communities who are acquiring languages sequentially. Much of the previous research has focussed on children reared in conditions of simultaneous bilingual acquisition and on bilingualism in long established situations of language contact such as indigenous linguistic minorities (Dabane and Moore 1995). The language learning of children from newly established migrant communities is likely to be complicated by low socio-economic status (SES), cultural constraints on language learning, community attitudes to the language of the home and an environment different to that in their country of origin. The data presented in this thesis are therefore essential for both theoretical and clinical understanding of the target population. They provide evidence relating to sequential bilingual acquisition and the identification and assessment of speech disorders within a newly established migrant community. These data also help to take the field further in terms of presenting novel data relating to phonological acquisition in the target population. Areas identified as a result of the findings presented here offer a focus for future research.

The rest of this chapter, after clarifying terminology, focuses on a description of the target population, consideration of issues surrounding speech and language therapy provision for bilingual children and a review of the literature relating to key factors influencing the language learning context of the research population. These issues include SES, cultural differences in communication patterns and the nature of phonological acquisition in a bilingual context.

1.2 TERMINOLOGY

1.2.1 ETHNICITY

The terminology used in data collection regarding ethnic groupings is the subject of ongoing debate and often differences of terminology have served to cloud rather than clarify the area (Winter 2001). Medical researchers have highlighted political, methodological and practical concerns (McKenzie and Crowcroft 1996, Gerrish 2000) as well as concerns surrounding the concept of identity (Pfeffer 1998).

Some of the key areas of concern highlighted include:

- The term 'White' is too broad and consequently often meaningless: it can encompass people from clearly different national, linguistic, religious and cultural backgrounds (Gerrish 2000).

- Terms can have different meanings in different places e.g. 'Asian' in the UK generally refers to people from India, Pakistan and Bangladesh whereas in North America it refers to people from the Pacific region such as Japan, China and Malaysia (Pfeffer 1998).

- An individual may not classify themselves in the same way that an outside observer would classify them and their self-classification may change over time (Crystal 1998, Gerrish 2000).

- The possibility of scientific racism implicit in some classification terminology, for example the term 'New Commonwealth' used to describe population groups suggests to some readers 'unwelcome incomers' in contrast to the term 'Old Commonwealth' which some readers interpret as conveying that the population thus described are of established White British ethnicity (Pfeffer 1998, Robinson 1998).

1.2.1.1 ETHNICITY: CENSUS 2001 TERMINOLOGY

The Census 2001, conducted in England and Wales, collected information about ethnicity. People were required to assign themselves to one of five main ethnic groups:

- White
- Mixed
- Asian or British Asian
- Black or Black British
- Chinese or other ethnic group

Within each group people were then asked to indicate their 'cultural background'. Thus 'White' was further divided into 'British', 'Irish' and 'Any other White background'. 'Asian or British Asian' was further divided into 'Indian', 'Pakistani', 'Bangladeshi' and 'Any other Asian background' (Census Form 2001).

The Census 2001 is the most recent and accurate source of population data for England and Wales. As such, and taking into account the many concerns associated with the assignation of ethnicity labels, it was decided to adopt the terminology used in that data collection. The terms 'White' and 'Pakistani heritage' are therefore used in this research to denote those communities who described themselves in the 2001 Census as, respectively, 'White British' and 'Asian or British Asian Pakistani'.

1.2.2 BILINGUAL AND BILINGUALISM

The definition and application of the words 'bilingual' and 'bilingualism' has been, and continues to be, the subject of much debate (Baetens-Beardsmore 1986, Baker and Prys Jones 1998, Li Wei 2000). There are many different viewpoints and many qualifying adjectives have been used to indicate differing 'types' of bilingualism: for example 'simultaneous bilingual' to describe an

individual who acquires two or more languages from birth in contrast with 'sequential bilingual' to describe an individual who starts to acquire a second language at some point after their first language has begun to develop.

Broadly speaking the discussions about what is needed to be described as bilingual, centre around the following considerations:

- The individual's level of proficiency. Is it necessary to have equal skills in all languages? Are receptive skills alone sufficient to merit use of the label?

- The individual's self perception. A person may self report as monolingual because they do not value the skills they have in a second language.

- The number of languages under consideration. Should different terminology, such as the labels trilingual or multilingual, apply to people who have skills in more than two languages?

The forthcoming third edition of the RCSLT Professional Standards for Speech and Language Therapists (Communicating Quality 3, in press) uses the following definition: 'Bilinguals are individuals or groups of people who obtain communicative skills, with varying degree of proficiency, in oral and or written forms, in order to interact with speakers of one or more languages at home and in society. An individual should be regarded as bilingual regardless of the relative proficiency of the languages understood or used.' This definition of bilingualism encompasses a broad spectrum of ability to use or understand languages and it therefore includes people who have only limited receptive skills and no expressive skills in one of their languages. It also includes people who are exposed to or use more than two languages. It is this very broad definition of bilingualism which will be used in the research reported here.

In this thesis, the population is referred to as 'bilingual' because their mother tongue is a Pakistani heritage language but they will be educated in English and live in a country where English is the predominant language. It should be emphasised, however, that the data presented focus on mother tongue language abilities because the children assessed had no or extremely limited English language skills.

1.2.3 SPEECH DISORDERS

Children whose errors of pronunciation make their speech difficult to understand are not a homogeneous group. Over time many different labels and classification systems have been proposed to describe and categorise errors of pronunciation (for example see Shriberg 1982, Dodd 1995). In the research reported here the term 'speech disorders' is used to describe children who have functional delays and disorders of articulation and phonology.

1.3 THE PAKISTANI HERITAGE RESEARCH POPULATION

1.3.1 ORIGINS, SETTLEMENT PATTERNS AND POPULATION FIGURES

Pakistan is a country of approximately 148 million people (Pakistani Government 2003) which was created out of the partition of the South Asian sub-continent in 1947. There are 69 languages listed as being spoken in the country (Ethnologue 2003) with Urdu as the official national language. Pakistan has a long history of migration both internally and externally (Saifullah Khan 1979) and the 2001 Census (National Statistics Online 2003) reveals that there are approximately 747,000 Pakistani heritage people in England and Wales making up the second largest minority ethnic group. This population is the most widely dispersed minority population around England but has concentrated clusters around the old manufacturing centres in the north of England, for example around Bradford and the Greater Manchester area (Ansari 2003).

The focus of the research reported here is the Pakistani heritage community living in a large town in the north of England. The town is an old textile manufacturing town with a total population of approximately 205,357 (National Statistics Online 2003). Of this total, approximately 15,829 (i.e. 7.7%) describe themselves as of a Pakistani heritage and originate from the west Punjab region of Pakistan and the Mirpur District of Azad Kashmir (Runnymede Trust 1997). Currently Azad Kashmir is the scene of great political unrest: there is an independence movement, while Pakistan and India are in dispute over governance of the territory (Madan 1998). This region is predominantly one of poor subsistence farming areas with some larger towns and small cities. There is little, if any, access to schooling (Saifullah Khan 1977). There has been a long history, over several centuries, of both internal and external migration driven by economic, political and social factors (Saifullah Khan 1977). During the 1950s and 1960s the textile towns of Lancashire and Yorkshire sent recruitment officers to the area in response to labour shortages in the UK (Khan 1991) and this was the original source of the population that is the focus of this study. Today the population contains both third generation children, born to parents who were themselves born and raised in England and also many members who are recently arrived from Pakistan, often arriving as marriage partners. The population tends to cluster together within discrete geographic areas which also contain shops and supermarkets run by members of the community. Satellite television allows access to Pakistani television programmes and there are local radio stations broadcasting in Mirpuri, Punjabi and Urdu. In addition the BBC Asian Network radio broadcasts separate programmes in all the three languages under discussion here. The community retains strong links with their families and villages in Pakistan and extended visits to Pakistan are routine.

1.3.2 LANGUAGES SPOKEN

Three main mother tongue languages are spoken within the community under discussion here:

- Mirpuri
- Punjabi
- Urdu.

Previous references, both in academic publications and the national print media, to the languages spoken by people from a Pakistani heritage background have often used confusing, conflicting or poorly defined terminology. Indeed there has been some difference about how to spell the language name Punjabi, some authors (often, but not exclusively, describing Indian Sikh communities) preferring to use Panjabi (see for example Martin, Krishnamurthy and Bhardwaj 2003). It would seem that this confusion has arisen from varying pronunciations of the word and the fact that there is no standardised written form. There has been some discussion within the community as to whether Mirpuri is a language in its own right or is a dialect of Punjabi (Smithers 1999). Grosjean (1982) remarked on the propensity of dominant groups to attack the language of minorities by referring to them as dialects, thereby linking them to the negative connotations associated with dialects by non-linguists. Given the social hierarchy perceived to exist between Punjabi and Mirpuri speakers this propensity may be the underlying factor behind this dialect / language discussion. The difference between language and dialect is itself the subject of much discussion amongst linguists and useful overviews have been published by Crystal (1997) and Baker and Prys Jones (1998). To add to the confusion some speech and language therapy departments (see for example Bradford PCT 2004) still fail to separate the two languages at all and use a single label of 'Panjabi (Mirpuri)'. Interestingly, recent re-examination of some previously published data, described as from Punjabi speakers, indicates that this data is in fact from Mirpuri speakers (Pert, personal communication 2005).

The three languages under discussion here all come from the same Indo-European origin, have a basic Subject + Object + Verb sentence structure and share many lexical items. However, grammatical variations mean that Mirpuri and Punjabi speakers are not necessarily mutually intelligible. Furthermore

whilst Punjabi speakers might refer (in a pejorative manner) to Mirpuri as a dialect of Punjabi, Mirpuri speakers have a clear sense of their language as different. This research will therefore refer to Mirpuri, Punjabi and Urdu as separate languages.

1.3.2.1 MIRPURI

Mirpuri is spoken in the rural areas of Azad Kashmir, in particular around the city of Mirpur. The region is regarded as economically poor in comparison to many areas of Pakistan (Saifullah Khan 1977). The language is also sometimes referred to as Potohari and Pahari (Ethnologue 2004). There is no written form, although some activists are currently attempting to create an Arabic-based phonetic script (Rahman 1998). As there is no tradition of literacy, books (other than the Qur'an) are not usually found in Mirpuri speaking homes. Some commentators have incorrectly described such families as 'illiterate': as literacy is not an option it would be more appropriate to use the term 'pre-literate'. It is estimated that there are at least 500,000 speakers of Mirpuri in the UK (Rahman 1998).

1.3.2.2 PUNJABI

This language is spoken in the cities and prosperous Punjab province in the north of Pakistan. It is related to the Punjabi spoken in India but unlike that language it is not written. Mother tongue Punjabi speakers dominate the government of Pakistan and so the language is viewed as of a higher status than Mirpuri, although many mother tongue Punjabi speakers (in both Pakistan and the UK) would encourage their children to use either Urdu or English (Rahman 1998).

1.3.2.3 URDU

Urdu is the official national language of Pakistan and as such is viewed as a high status language. It has a written form and a strong literary tradition to

reinforce its high status. In fact in Pakistan less than 8% of the population speak it as their mother tongue, the majority acquiring it as an additional language (Rahman 1998). Due to the high status of Urdu, some Pakistani heritage parents in the UK for whom Mirpuri or Punjabi is their mother tongue, but who have some knowledge of Urdu, are bringing their children up to speak Urdu. There are thus some households where the parents are speaking Mirpuri or Punjabi to each other but Urdu to their children.

1.3.2.4 ENGLISH

The majority of family units in this community have one parent with either no, or very limited, skills in English. In some families neither parent speaks more than a few words in English. Some children live in extended families with grandparents who have few or no English speaking skills. These grandparents, whether living in an extended household or separately, frequently undertake child care responsibilities. As a result, the majority of children from this community currently enter nursery provision at the age of three with little or no knowledge of English. Once in the education system, from the age of three onwards, lessons and instructions are delivered in English and children are expected to acquire English rapidly: there is little mother tongue support available within the classroom beyond the age of five. As they progress through school and acquire English skills children often choose to use English with their peers, and many parents report that their school age children reply in English to a parent, even when that parent has spoken to them in mother tongue and has no receptive or expressive skills in English. This use of the 'host' language by children when responding to parents who had used their 'home' language was also observed by Dabane and Moore (1995) when researching Iberian and Algerian communities in France.

1.3.3 BILINGUALISM WITHIN THE PAKISTANI HERITAGE RESEARCH COMMUNITY

As Eliot (1981: 173) remarked 'Being bilingual in the International School in Geneva and being bilingual in the streets of Bombay are radically different experiences'. It is therefore important to examine the nature of bilingualism within the Pakistani heritage community under consideration.

- Simultaneous versus sequential bilingualism

Simultaneous bilingual language acquisition occurs when a child is exposed to more than one language from birth, often as a result of bilingual parents adopting a 'one person, one language' approach. Sequential acquisition occurs when a language is acquired at some point after the first language has been established (Hua and Wei 2005). As Grosjean (1982) highlights, most individuals acquire their bilingual language abilities as a result of sequential acquisition on school entry. This is true for the community under consideration here. The community is not homogenous in language use but as the majority of households contain at least one parent with no expressive skills in English the majority of households use a Pakistani heritage language within the home. The clustering of the community within a small geographic area, and the tendency to stay within that community for all shopping and child care needs, mean that the majority of children have no or extremely limited exposure to English prior to entry to the education system. The majority of the children in the research population are therefore sequential bilinguals, although in the large cohorts reported here it was not possible to establish an exact language history for each child.

- Number of languages spoken within each family unit

There is a high incidence of marriage partners arriving from Pakistan. This pattern of chain migration is a common pattern in migrant communities (Dabane and Moore 1995). These adults do not necessarily speak the same languages as their new partners, leading to a number of languages being used within one household. For example, in one family known to the researcher, the mother speaks Mirpuri as mother tongue, Punjabi acquired via

friendship networks, Urdu acquired via formal teaching at school and English acquired as a result of schooling and being resident in England since the age of two. The father arrived from Pakistan as a marriage partner and spoke only Punjabi and some Urdu on entry to England. The children are expected to speak Urdu to their parents and Mirpuri to their maternal grandparents (who speak only Mirpuri, despite being resident in England for over twenty five years). Since school entry they have been expected to speak English at school, although prior to school entry they had never used this language expressively. The majority of children within the research cohorts reported below have some exposure to more than one of the Pakistani heritage languages. This reflects the experience of Thompson (2000) who commented that members of the Pakistani, Bangladeshi and Indian migrant communities in Britain have an expectation of linguistic pluralism.

- Code switching

Code switching is widely recognised as occurring in the speech of bilingual speakers (Muller and Ball 2005). It involves the use of two or more codes (languages) either within a sentence (intra-sentential) or within a communicative episode (inter-sentential). Whereas some earlier writers saw it as indicative of a lack of ability in one language which forced the speaker to switch to another language (see Grosjean 1982 and Crystal 1997 for reviews of this perception), more recent writers see it as an entirely normal facet of bilingual speech and indicative of linguistic ability (Muysken 2000). Within the Pakistani heritage community it might be predicted that code switching would be observed between the Pakistani heritage mother tongue and English. Research data collected from the community being investigated here (Pert, Stow and Letts 2004) has confirmed this occurrence but has also highlighted that some speakers are additionally switching between Mirpuri, Punjabi and Urdu at an intra-sentential level.

1.4 LANGUAGE LABELS

The language an individual identifies with is often referred to as the 'mother tongue', but the use and definition of the term 'mother tongue' is itself not without debate. The United Nations defines mother tongue as the 'language usually spoken in the individual's home in his early childhood, although not necessarily used by him at present' (Romaine 1995: 19).

The major languages of the world each have a single universally recognised label but other lesser known languages may have more than one label. Speakers of some languages may only use the confusing label 'this' when asked which language they speak (Crystal 1997). In many countries the label 'our language' or 'our tongue' is used rather than a single name such as English or French (Crystal 1997, Li Wei 2000). Generic labels such as Chinese or Pakistani, referring to entire countries, may be used. This may be due to a lack of knowledge as to which language label to use or may in fact reflect the stereotypes prevalent in the majority population. Such stereotypes in England sometimes result in all people of South Asian origin, and the languages they speak, being linked together under the generic titles of Indian or Pakistani (Watson 1977, Schott and Henley 1996).

Self reporting of the language/s spoken by an individual may be influenced by factors such as the prestige, ethnicity and political affiliation which are associated with a language (Romaine 1995). Some authors have particularly highlighted the tendency for languages perceived to be of economic significance to dominate languages which are perceived to be of lesser value in the international market place (Li Wei 2000, Clyne 2003).

The status of immigrants in a country can make them particularly vulnerable to pressure regarding the language they speak. The most powerful groups in any society are able to force their language on the less powerful groups (Romaine 1995). This vulnerability, coupled with social and economic aspirations, can manifest itself not only in terms of adopting the majority language but also in the use (or reporting) of higher prestige languages already spoken within the

community. The Pakistani heritage community, where several different languages are spoken, including the official language of Pakistan, Urdu, may well be vulnerable to this pressure.

1.4.1 THE CONTEXT OF LANGUAGE USE

The language used by a bilingual individual at any given time will be influenced by many different factors. These include the social context, the topic and factors relating to prestige or status (Fishman 1967, Li Wei 2000, Baker 2001). At a societal level government intervention may influence patterns of language use. Pakistan was a British colony until 1947. English, the language of the ruling group, was therefore viewed as having the highest status. On attaining independence Urdu became symbolic of the national Pakistani Muslim identity, an identity which was central to the notion of political separateness from the Indian Hindu (and Hindi speaking) nation. The idea that different languages are used within different contexts in Pakistan has subsequently been enshrined in a series of government directives: 'A primary goal is that all Pakistani citizens should learn Urdu as a basic language while leaving regional languages for informal communication .....Urdu will be the medium of instruction in all schools' (The Teaching of Languages, a Pakistan Government report published in 1982 and quoted in Rahman 1997: 240 -241). However, the powerful influence of the English language in Pakistan remains, as exemplified by the officers in the army who still use English and are forbidden to use any other language (Rahman 1997).

The school curriculum in England is dominated by the language and culture of the majority population, in this case English. Fishman (1965, reprinted in Li Wei 2000) drew attention to two factors influencing language choice: group membership and situation. School is seen as a domain for speaking the dominant language. Children therefore expect to speak about what they perceive as school related topics and undertake what they perceive as school related activities in the majority language. This may have an impact on assessment procedures where mother tongue skills are being assessed. Romaine (1995) highlighted that the performance of a bilingual individual may

be impaired when testing is undertaken in a language not usually associated with the context.

1.4.1.1 RELIGION AND LANGUAGE

In addition to Mirpuri, Punjabi, Urdu and English the Pakistani heritage children under examination here are also exposed to a further language; Arabic. The community is predominantly (but not exclusively) Muslim. Muslim children throughout the world learn to recite the Qur'an (Lunde 2003). From the age of seven (and increasingly from the age of five) Muslim children in the Pakistani heritage research population attend their local mosque for approximately two hours a day to receive religious instruction and learn the Qur'an. This is learnt by rote in Arabic (Runnymede Trust 1997), with children often unaware of the meanings of individual words and indeed not necessarily perceiving word boundaries (Heba Attiyah, personal communication, 2002). The use of Arabic, while a prestigious skill, is limited to the context of mosque or mosque school.

1.5 THE LOCAL EDUCATION SERVICE

The 2001 Census showed that the town had a total population of 205,357, representing a population growth of 0.7% over the ten years from the previous census in 1991. This was a slower growth rate than the national average of 2.5% (National Statistics Online 2003). However, the district had comparatively more children under the age of fifteen (22.8%) than the average of 20.2% for England and Wales. The Pakistani heritage community are known to have a higher birth rate than the White population (Scott, Pearce and Goldblatt 2001). These factors are reflected in the figures for the nursery and primary school population (i.e. children aged approximately three to eleven) shown in Table 1.1 (below) which clearly indicates that while the overall primary school population is falling, the number of bilingual children is rising, both in absolute and percentage terms. Figures collected by the Local Education Authority's (LEA) additional language support service (Language

for Educational Access Project (LEAP)) show that 80% of these bilingual pupils are from a Pakistani heritage background (LEAP 2001).

Table 1.1: Numbers of pupils in nursery and Primary schools administered by the LEA (Source: Jones / LEAP 2003)

Year	Total number of pupils	Number of bilingual pupils	Bilingual pupils as a percentage
September 00-01	22,171	3,665	16.53%
September 01-02	21,796	3,952	18.13%
September 02-03	20,671	4,084	19.75%

In November 2001 the LEA administered 75 primary schools and four nursery schools. Thirty four schools had fewer than 20 bilingual pupils each and of these, six schools had no bilingual pupils. In 1998-99 (the last year such funding was available) the LEA funded additional language support staff in eighteen schools, suggesting these schools had a high density of bilingual pupils. As the majority of the Pakistani heritage community live within a relatively small, well defined, geographic area the majority of their children attend schools with a very high proportion of minority ethnic pupils.

Prior to the commencement of compulsory schooling at the age of five, all children in the town are offered a nursery placement. These placements, consisting of attendance on five half days a week, are offered for one school year. Children in such placements are therefore aged approximately three to four years old. There are very few qualified teaching staff from the Pakistani heritage community employed in the local schools but support staff who speak Pakistani heritage languages are employed within some classrooms both during the nursery year and the following Reception class year (the first year of full time compulsory education). Children are expected to acquire English rapidly: there is very little, if any, mother tongue support available beyond the Reception classes. Prior to 2000 there was funding, administered centrally by the LEA, for additional language support staff to work alongside bilingual children in schools. The LEAP service had 65.1 (full time equivalent) such staff in the year 1998-99. These staff had specialist training and undertook

regular continuing training within their service in the issues surrounding additional language learners. Central government directives led to the bulk of this funding being devolved to individual schools from 2000, with only three consultants remaining in the employ of the LEA. Schools can use this money as they choose and there are no longer centrally collected figures available for numbers of staff employed to support additional language learners.

1.5.1 THE RELATIONSHIP BETWEEN DOMINANT AND MINORITY LANGUAGES: PRACTICE WITHIN THE EDUCATION SYSTEM

It is accepted that the language used within the institutions of a society reflect the status and power of particular groups within that society (Bialystok and Cummins 1991). This is particularly evident in the response of education systems around the world to the presence of bilingual pupils, few viewing a child's bilingual skills as a resource to build upon (Romaine 1995, Tse 2001, Jordaan and Yelland 2003).

In England, following the end of the Second World War, there were waves of immigration from countries which had previously formed part of the British Empire and which were now members of the Commonwealth. Initially from the Caribbean and subsequently from India, Pakistan and Bangladesh as well as from East Africa these immigrant communities brought increasing numbers of children into the English education system who spoke little or no English. The 1966 Local Government Act recognised the need to teach such children English as a second language (TESL) and allocated specific funding under Section XI of that Act. The emphasis was to be assimilation of these children into the majority English speaking population. Subsequent concerns regarding the low achievement of minority ethnic pupils (specifically those of an Afro-Caribbean origin) led the government to commission a report from the Swann Committee of Enquiry. This report, officially called Education for All, was published in 1985. The report recommended that the teaching of English to minority ethnic pupils should take place within mainstream classes rather than as a separate teaching activity. It also stated that mainstream schools should

not be seen as the centre for maintenance of ethnic minority community languages.

In 1988 the Education Reform Act introduced the National Curriculum and the following year saw the publication of the Cox Report (Department of Education and Science 1989), a discussion document looking at the English curriculum for all pupils, whatever their first language. Crucially this report stated (1989: 10.1) that 'English should be the first language of and medium of instruction for all pupils in England'.

Currently, foreign languages are taught in schools in England for public examination purposes but the emphasis is on European languages. Languages such as Bengali, Punjabi, Turkish, Cantonese, Gujarati and Urdu are only taught at very few schools and only after another language, usually French, has been taught first (Li Wei 2000). There is funding available under the Ethnic Minority Achievement Grant (EMAG) but this money is not available for home language teaching. The resulting position is that, in the absence of a clearly stated national policy, a practice of unofficial immersion programmes has emerged to teach English (Thompson 2000).

1.6 SPEECH AND LANGUAGE THERAPY SERVICES TO PAKISTANI HERITAGE CHILDREN

1.6.1 THE DRIVE TOWARDS PROVIDING AN EQUITABLE SERVICE TO BILINGUAL CHILDREN

There are many imperatives driving the need for speech and language therapy services to provide an equitable service to all sections of the community. These encompass legal, professional and social factors as well as government led initiatives and directives.

1.6.1.1 LEGAL REQUIREMENTS

In Britain the Race Relations Act (1976) and the Race Relations Amendment Act (2000) make it illegal to discriminate against a person on racial grounds. The Commission for Racial Equality (CRE 2002: 1) defines discrimination as occurring when: 'someone is treated less favourably on grounds of their colour, race, nationality or ethnic origin.' An example of discrimination would be the failure to provide interpreters in health care contexts for a minority group who are unlikely to speak English (Schott and Henley 1996).

1.6.1.2 PROFESSIONAL STANDARDS

Professional bodies around the world make commitments to the notion of equity in their codes of ethics. The professional standards of the RCSLT (1996: 150) stipulate that 'The College acknowledges the right of every individual to have access to an appropriate speech and language therapy service for his/her identified needs. The presence of a second language, or a first language other than English, does not alter this philosophy.' Similar commitments to non-discriminatory practice are made by ASHA (2003), SPAA (2000) and the IALP (2003). In addition these professional bodies have adopted guidelines to be followed by their members when working with bilingual clients (ASHA 1985, RCSLT 1998, SPAA 2002, IALP 2006).

1.6.1.3 SOCIAL FACTORS

The pervasive link between childhood speech and language disorders and poor social outcomes, including mental health disorders and poor employment history, is well established (Howlin, Mawhood and Rutter 2000, Stringer 2004). Data have also been reported which indicate that a significant number of young men entering prison and young offender institutes have communication disorders (Johnson and Hamilton 1997, Bryan 2004). Johnson and Hamilton screened 10,414 young offenders over a 24 year period and found 1,142 in need of speech and language therapy intervention. Of these the largest group, accounting for 20.7% of the sample, were described as

having articulation disorders. Government data (National Statistics Office) shows that there is a higher proportion of ethnic minority members in the prison population than in the general population. Bryan (2004) postulates that speech and language difficulties may impede offenders' ability to participate in verbally mediated rehabilitation courses and points out that communication disorders can hinder their re-integration into society. Neither Johnson and Hamilton nor Bryan make any reference to whether any of their cohort were bilingual or had acquired English as an additional language. Caution therefore needs to be exercised before drawing conclusions from these different research studies regarding the prison population and linking them to a failure to identify and offer therapy to bilingual children. Nevertheless, it is probable that there are long-term social consequences of failure to provide an equitable service to bilingual children.

1.6.1.4 GOVERNMENT LED INITIATIVES AND DIRECTIVES

A series of government policies and associated directives have been issued since the mid 1990s which focus on health inequalities in general (The NHS Plan 2000) and on the health of ethnic minority populations in particular (Improving Health Among Ethnic Minority Populations 1997, Quality Protects: Black and Ethnic Minority Children and their Families 1998). The government has made a firm commitment to reducing the level of child poverty and social exclusion in the UK and a cornerstone of this policy is the Sure Start initiative. The central aim of Sure Start is to improve the health and well-being of families and children, before and from birth, so children are ready to flourish when they go to school (Glass 2001). Sure Start funding in excess of £540 million covered 500 socially disadvantaged areas in England by 2004 and one of the stated aims was to reduce the number of children identified in these areas with delayed language development (Pickstone, Hannon and Fox 2002). The government recognises that large numbers of minority ethnic families will be covered by this initiative (Department for Education and Employment 1999).

1.6.2 THE INCIDENCE OF SPEECH AND LANGUAGE DISORDERS IN CHILDREN

Many authors have considered the prevalence of speech and language impairments in children and a wide range of figures have been reported (for reviews see Enderby and Phillip 1986, Law, Boyle, Harris, Harkness and Nye 2000) although as Law et al (2000: 174) commented 'The data here do not address bilingual or ethnically diverse populations'. By contrast, incidence, that is the number of new cases occurring in a given time frame for a given population, has not been widely examined.

The incidence of speech and language problems in children has, however, recently been established for a speech and language therapy service in Middlesbrough, England (Broomfield and Dodd 2004). The study examined all 1100 referrals made to the local speech and language therapy service over a fifteen month interval between January 1999 and April 2000. For a single year, incidence of referrals was calculated as 16.3% for primary communication disability (i.e. including fluency and voice cases) and 14.6% for speech/language disability. As bilingualism does not cause communication disorder, there is no reason why bilingual children should have a different incidence of speech and language problems from a monolingual population (Duncan and Gibbs 1989, Crutchley *et al.* 1997b, Crutchley 1999, Winter 2001).

Scott *et al* (2001) reported differential birth rates within different ethnic groups in Great Britain. While the overall population is ageing (20% of the total population is over 65), less than 6% of people within the minority ethnic community are over 65. Conversely, the minority ethnic population has a greater proportion of people aged less than 15 years (30%) compared to the White population (19%). Taking the Scott *et al.* (2001) figures and the Middlesbrough incidence figure the following calculation can be made:

- 30% of the minority ethnic population of 4 million is under fifteen (Scott *et al.* 2001) = 1,200,000

- 14.6% (Middlesbrough incidence figure for speech/language disability) of 1,200,000 = 177,600 ethnic minority children under the age of fifteen are likely to have speech and language disorders in Great Britain.

It is not surprising, then, that Winter (1999) reported that 59% of speech and language therapists working with a paediatric caseload in England have at least one bilingual child on their caseload. Furthermore, the 2001 Census reveals the Pakistani heritage population to be the second largest minority ethnic group and the most widely dispersed through the regions of England. It is therefore likely that a high proportion of these bilingual children accessing speech and language therapy services will be from the Pakistani heritage community.

1.6.3 BILINGUAL CHILDREN IN SLT

Winter (1999, 2001) conducted a comprehensive examination of the numbers of bilingual children in speech and language therapy. Her findings highlight the difficulties in this area due to differing techniques of data collection and reporting, but do indicate that there is both under and over representation of bilingual children in different contexts of speech and language therapy provision (Winter 2001). This finding mirrors the well documented position that educationalists have encountered over time. The previous over-referral of bilingual children into special educational needs provision (Kayser 1995, Hall *et al* 2001) is now being postulated as a possible factor influencing referral agents and contributing to a current pattern of under-referral (Crutchley *et al.* 1997a, Hall *et al.* 2001).

Crutchley *et al* (1997a) did report some detailed examination of data referring to bilingual children present in a larger cohort of children that they were

investigating and who attended language units across England. These bilingual children were defined only as being exposed to a language other than English at home. No information was offered regarding which languages these were, nor whether they had been acquired simultaneously or sequentially. The authors found that the bilingual children formed a distinct sub-group and concluded that the absence of bilingual children with articulation or phonological problems from these units suggested that they were not being identified. Although a comprehensive test battery is named by these authors all the assessments are assessments of English and no evidence is presented of assessing the children's mother tongue skills. It is therefore possible to speculate that the authors did not in fact gain a complete picture of the children's abilities.

Morton, Sharma, Nicholson, Broderick and Poyser (2002) examined the records of 837 children attending the Child Development Centre in South Derbyshire, England. Data were reported for three separate 'ethnic groups': Indian, Pakistani and Mixed (predominantly European). The sample contained 53 children from a Pakistani background, reported to originate from the Mirpur district of Pakistan. The authors reported that although the Pakistani heritage group had a higher prevalence of severe learning disorder, hearing and visual problems relative to the other groups, they had a lower prevalence of language disorder and suggested that this was likely to be due to the difficulty of detecting language disorders in children whose first language is not English.

The incidence data reported for Middlesbrough by Broomfield and Dodd (2004) shows that in the cohort of 730 children assessed as having speech/language disability 33 were bilingual, representing 4.5% of the sample, compared to an ethnic minority population 7.5% of the local school population (Office for Standards in Education 2001). This indicates that bilingual children were being under represented in the Middlesbrough speech and language therapy service. No detailed data was presented to indicate

source of referral, diagnosis or language background for these bilingual children.

In the light of this paucity of information regarding numbers of bilingual children receiving speech and language therapy it is unsurprising that Muller (2003) concluded that there was a need for survey work on the referral rates of multilingual clients.

1.6.3.1 IDENTIFICATION PRIOR TO REFERRAL: REFERRAL AGENTS

Research (Edwards *et al.* 1989, Enderby and Petheram 1998, 2000) confirms that the main sources of referrals in Britain are health visitors, education services and medical services, including General Practitioners (GPs). Enderby and Petheram (2000) studied referrals of both children and adults to speech and language therapy and found the following mean figures between 1987 and 1995: health visitors accounted for 29.3% of referrals, education services for 10.4% and GPs for 6.7%. (This study covered both paediatric and adult referrals and over 35% of the referrals reported were from hospital based medical departments such as 'Cardiac Surgery' and 'Rheumatology' and are assumed to relate to the referral of adults.) Parents are also noted as an important source of referral by Edwards *et al.* (1989), accounting for 8.7% of referrals in their sample, and it may be that parents are indirectly responsible for more referrals as a result of raising their concerns with professionals who then consequently refer the child.

1.6.3.1.1 HEALTH VISITORS

Health visitors have responsibility for monitoring the well being of children from a few days after their birth until school entry. They gather information informally about the child's communication abilities both indirectly by talking with parents and directly by listening to the child. To gain such direct information, both about semantic and syntactic content as well as the child's sound system, the health visitor needs to share the same language as the

child. There are, however, few bilingual health visitors. The professional body, the Nursing and Midwifery Council, does not currently have comprehensive data on ethnic origin of health visitors as only 25% of the membership provides such information (Hutchinson personal communication 2002). Anecdotal evidence suggests that figures are not representative of the population as a whole. For example, in the two Primary Care Trusts (PCTs), responsible for the health needs of the approximately 200,000 people who live in the area described here there is one health visitor out of a total of 56 who comes from an ethnic minority background and can speak one of the ethnic minority languages, and of fifteen school health practitioners, none come from an ethnic minority background (Disley, personal communication 2003). Approximately 20% of the town's school children are from ethnic minority homes and speak a total of 50 different languages (Jones, personal communication 2004). Bowers and Oakenfull (1996) reported that the health visitors in their study were good at recognising English-speaking children with speech problems, but had difficulty identifying language difficulties. When listening to children speaking a language they do not share, it is likely that health visitors will overlook even speech errors.

1.6.3.1.2 TEACHERS

There are currently no data available on the number of teachers from minority ethnic communities in Britain. However, anecdotally it is reported that there is under-representation of teachers from minority ethnic groups (Revell 2003).

Teachers have a pivotal role to play in the referral of children for consideration of special educational needs, including speech and language difficulties. Two factors may have led to many teachers currently adopting a conservative referral policy: previous over-referral of children to special educational needs provision (Crutchley *et al.* 1997b, Baker 2001, Hall *et al.* 2001) and educational research indicating that a child takes two years to attain conversational fluency in a new language (Cummins 1979). Lancashire County Council, the council responsible for maintaining the largest number of

schools in England (Kay 2003), issues guidance to schools which includes a flow chart designed to help teachers decide if a child has language or learning needs. The chart indicates that if a child has been in school / exposed to English for less than two years, they should be closely monitored. Only when the two years barrier has been passed would the previous teacher and records be consulted and a referral made to outside agencies (Scott and Jackson 2002).

Teachers may have access to bilingual classroom assistants but lack of training for both teachers and assistants may lead to a lack of clarity regarding their respective roles and a less than optimal use of bilingual support (Haywood 2001). Hayward (personal communication 2002) reported that when bilingual assistants were asked how often they used mother tongue in the classroom 'Some answered "Not at all unless it's to tell them off!"'

1.6.3.1.3 PARENTS

Parents who do not speak the majority language are likely to have difficulty accessing health and education services. Further, many parents from ethnic minority backgrounds may have little idea about the nature of services that are available. Singh (2002) concluded that ethnic minority communities in England had an extremely low expectation of services. Other factors may also play a part in bilingual parents failing to access services for their children. Forrest (2001: 56) reported the following comment from a parent: 'You keep saying "Is something wrong with my daughter?" You know? She cannot talk because is a problem with language. It's me with my language making problem for her...Instead of help her in life, have a second language, I'm making problem for her...So you start to feel guilty.' Such feelings of guilt may well prevent a parent seeking help.

There are many stereotypical assumptions made about 'Asian' communities and their reaction to disability, frequently centred around the notion that 'they look after their own' (Shah 1996). These perceived attitudes have then

sometimes been used to explain why service uptake for minority ethnic families is lower than for White families. Some researchers are now challenging this position. Thus Bywaters, Ali, Fazil, Wallace and Singh (2003) conducted interviews with 15 Pakistani heritage families and five Bangladeshi families in England and concluded that in fact it was a lack of awareness of service availability in these families which led to what professionals perceived as low expectations.

1.6.3.1.4 GENERAL PRACTITIONERS (GPs)

Doctors in Britain are increasingly recognising the difficulties that linguistic minority groups encounter when attempting to access health services including GP consultations (Free 1998, Free and McKee 1998). In a survey of referrals to speech and language therapy, fifty percent of GPs stated that they used written criteria, provided by the local speech and language therapy service or the employing Trust, to decide whether to refer children (Anderson and van der Gaag 2000). Edwards *et al.* (1989) also noted a demand for screening tests by doctors. Some checklists have recently been developed for paediatricians to help them identify bilingual children who need onward referral to speech and language therapy (Fierro-Cobas and Chan 2001, Busari and Weggelaar 2004). These checklists do not outline speech, as opposed to language, milestones and do not target individual ethnic or language communities. It would seem that GPs do not have an appropriate checklist tool to facilitate their referral of Pakistani heritage children with speech disorders.

1.6.3.2 IDENTIFICATION PRIOR TO REFERRAL: SCREENING PROCEDURES

In recent years there has been a great deal of interest in the notion of universal screening for developmental disabilities, including speech and language disabilities. Butler (1989) undertook an extensive, and influential, review of child health surveillance in primary care. Among his findings he concluded that there was a paucity of evidence regarding the cost and

effectiveness of pre-school surveillance. A subsequent review of evidence relating more specifically to pre-school hearing, speech, language and vision screening by Bamford, Davis, Boyle, Law, Chapman, Stewart Brown and Sheldon (1998) concluded that the current screening measures did not have an adequate predictive validity. They also highlighted a lack of agreement in the evidence regarding which children would require intervention.

Law, Boyle, Harris, Harkness and Nye (1998, 2000) conducted a systematic review of literature to assess the feasibility of universal screening for primary speech and language delay. They concluded that there was insufficient evidence to warrant the introduction of such screening. However, they remarked that screening might be particularly appropriate for children from disadvantaged or culturally diverse backgrounds. This review did suggest the possibility of a two stage screening process where the first stage would be to elicit concern from the parents and the second stage would be a professionally delivered screening measure. This suggestion of parental involvement in the screening process had previously been suggested by Boyle, Gillham and Smith (1996) and was again supported by Pickstone, Hannon and Fox (2002) and by Bruce, Kornfalt, Radeborg, Hansson and Nettelbladt (2003).

1.6.3.3 IDENTIFICATION OF SPEECH DISORDERS AFTER REFERRAL

1.6.3.3.1 SPECIALIST AND BILINGUAL SPEECH AND LANGUAGE THERAPISTS

The speech and language therapy profession is dominated by white monolingual females. An ethnic monitoring exercise conducted by RCSLT in 1999 showed that of those who returned questionnaires 98.5% described themselves as white and 98.5% were female (RCSLT 1999b). Although innovative schemes designed to encourage members of minority ethnic groups to train as speech and language therapists are being introduced (Strong and Mould 2004), bilingual speech and language therapists are rare. One UK training course based in an area with a high bilingual, ethnic minority

population is taking steps to increase its current 5% of undergraduate students from this population (RCSLT 2001). Such students may, however, choose not to work in the field of bilingualism (RCSLT 1998). Further, the standard of language proficiency required for assessment and treatment of speech and language disorders is high and bilingual clinicians' knowledge of developmental patterns of a language may be limited (Lahey 1992).

Monolingual speech and language therapists who have chosen to specialise in bilingualism are a rarity: both Winter (1999) and Law *et al* (2003b) reported that there are very few SLTs who specialise in working with bilingual clients. Quantifying this vague concept of 'very few' is problematic but the RCSLT professional guidelines (1996) state that SLTs with specific responsibility for bilingual clients should be members of the RCSLT Special Interest Group (SIG) in bilingualism. The most recent membership data (August 2004) indicates that 55 speech and language therapists are members of this group. Of this cohort fewer still have the job title 'Specialist in Bilingualism' which would imply a professionally recognised level of expertise in this area. This compares to the 8,888 therapists registered as practising in the UK (RCSLT 2004b). Extrapolation of these figures indicates that less than 0.62% of the speech and language therapy profession in Britain are acknowledged as specialists in this field.

1.6.3.3.2 ASSESSMENTS

Accurate assessment is essential for accurate diagnosis and, in turn, accurate diagnosis is essential for appropriate treatment. When the clinician does not speak the same language as the child the availability of published assessments is essential to facilitate the clinician in reaching an accurate diagnosis. There are, however, few culturally appropriate assessments for bilingual children available for use by speech and language therapists (Juarez 1983, Adler 1991, Crutchley *et al* 1997b, Laing and Kamhi 2003, Müller 2003).

Roseberry-McKibbin and Eicholtz (1994) surveyed 1,145 clinicians in the United States of America (USA) to assess clinicians' services to children with limited English proficiency. Lack of assessment instruments was cited as the most frequently encountered problem by 52.3% of the sample. More recently Kritikos (2003) reported that 70% of a sample of 811 speech language pathologists in the USA noted the lack of developmental norms and standardized tools for languages other than English. Pickstone, Hannon and Fox (2002) conducted a review of instruments available to screen pre-school language development in community focussed intervention programmes in England and found no assessments available for south Asian languages.

Some researchers and clinicians have responded to the challenge posed by this lack of assessment tools and developed their own resources for assessing speech in languages other than English. Researchers who have developed such tools and then published their findings, including their target word lists, have ensured the dissemination of this knowledge even if the tests themselves are not formally published (see for example So and Leung 2004). However, assessments developed by individual practising clinicians usually remain unpublished and thus inaccessible to other clinicians (see for example Buxton and Hooke 1996). They also rarely have normative data attached. A search of the current catalogues for the major distributors of speech and language assessments in the UK (Speechmark 2005, Stass 2005, The Psychological Corporation 2004, Winslow 2005) indicates there are currently no speech assessments published for languages other than English. Furthermore, only one assessment of English, the Diagnostic Evaluation of Articulation and Phonology (Dodd, Hua, Crosbie, Holm and Ozanne 2002) has normative data attached for Pakistani heritage children. It appears that with regard to the assessment of speech disorders little progress has been made in the field since Ball (1984) remarked on the contrast between the availability of tests and associated developmental data for English and the scarcity of such tools for other languages.

1.6.3.3.3 NORMATIVE DATA

Clinicians are used to comparing data obtained during assessment with developmental milestones or normative data. There is currently a paucity of such data for bilingual populations, and indeed a paucity of data for most languages other than English. Normative data should never be applied to a population other than that from which it was developed. Normative patterns for bilingual acquisition will be different (for each language spoken by an individual) when compared to monolingual acquisition patterns for those languages (Yavas and Goldstein 1998). Norms developed from English monolingual speakers should never be applied to bilingual speakers of English (Juarez 1983, Roseberry-McKibbin 1994) as there is research evidence emerging that phonological acquisition in bilingual children acquiring languages successively is both qualitatively and quantitatively different to monolingual development of a language (Holm 1998). It is widely accepted that bilingual speakers do not form a homogeneous group (Nicoladis and Genesee 1997, Gutierrez-Clellan 1999), yet interestingly those few researchers presenting normative data for bilingual children rarely comment on whether their sample had a sequential or simultaneous pattern of acquisition or indeed give detailed information regarding the language combinations to which the children are exposed (see for example Dunn, Dunn, Whetton and Burley 1997).

1.6.3.3.4 NORMATIVE DATA FOR PAKISTANI HERITAGE CHILDREN

With specific regard to the Pakistani heritage languages which are the subject of this research, literature searches identified only one previous publication reporting normative data for early phonological development apparently relating to one of the languages under consideration. Khan (1984) reported on the phonological development of ten children, reported to be Urdu speaking, aged between twenty to thirty months over a six month period. Although the data reported are detailed, certain important factors are not reported: no information is given concerning which country the children were living in, their socio-economic background, nor the country of origin of their parents. Caution

therefore needs to be exercised in concluding that the children are from a homogeneous background similar to that of the children reported here.

The only research identified in the literature which reported on phonological skills in the target Pakistani heritage languages of Mirpuri, Punjabi and Urdu was by Holm *et al.* (1999). They studied 35 children aged 4;08 - 7;05, from the town which is the focus of the current study, who came from the same ethnic and socio-economic background as the children reported in the research here. This particular study did not comment on early phonological acquisition but did report the type and frequency of phonological processing errors when children were assessed both in their mother tongue and in English.

1.6.3.3.5 PARENT IDENTIFICATION

There is currently a movement towards encouraging parental involvement in identifying childhood difficulties (Law 1992). Many procedures being developed to help the early identification of communication problems encourage professionals to involve parents in the process of gathering information about a child's skills (see for example Gale, Holloway and Roulstone 1994). Glascoe (1991) studied 157 English speaking children and found that 72% of children found to have abnormal speech and language skills on clinical assessment had parents who were concerned about their speech and language development as measured by a parent questionnaire. Of children with negative screening results, 83% had parents with no concerns about their speech and language development. Glascoe reported these children to be aged between six and seventy-seven months but did not give a detailed breakdown of the ages of participants making it difficult to understand how children under the age of twelve months could be assessed for articulation and expressive language skills. The majority of parents completing the questionnaire were reported to have high levels of education.

Stokes (1997) reported on a sample of 398 three-year old English speaking children in Western Australia and also found parents were a reliable source for identifying speech and language difficulties. She did consider the impact of

parental education levels and concluded that education levels did not influence the ability of parents to identify speech and language difficulties although accepting that her sample contained a higher than normal proportion of parents educated to degree level (23.8% compared to 4.9% in the general population) and a lower than normal proportion of parents with no qualification (19.1% compared to 58.9% in the general population).

As Law (1992) notes, different cultures perceive childhood very differently and this may have an effect on parental expectation of language development. Bebout and Arthur (1992) questioned 166 university students at two universities (one in California and one in Canada) who came from a variety of cultural backgrounds, about their attitude to several specific communication disorders including 'misarticulation'. They concluded that some cultures may place the onus for a communication difficulty on the child, and highlighted that 'foreign-born (especially Asian) subjects were more likely to state that the speech disordered person could improve his speech if he "tried harder"' (Bebout and Arthur 1992: 49). Rodriguez and Olswang (2003) used questionnaires and interviews with thirty Mexican-American and thirty Anglo-American mothers of children with language impairment. They found that Mexican-American mothers were more likely to attribute their child's language impairment to extrinsic factors such as God's will or home-school mismatches compared to Anglo-America mothers who were more likely to attribute intrinsic factors such as a medical condition or family history. They concluded that these maternal beliefs about language impairment would affect whether a mother sought speech and language therapy advice or intervention for their child. Pachter and Dworkin (1997) administered a questionnaire to 255 mothers from four different ethnic groups living in the USA to investigate maternal expectations about infant and child development. They found that developmental expectations did differ amongst the different ethnic groups and concluded that clinicians should ask about maternal expectations. This information would then help the clinician to understand the mother's concerns (or lack thereof) regarding their child.

In recent years two language screening and assessment procedures, both originally developed in America, have been widely used with parents of young children. These two tools, The Language Development Survey (LDS) (Rescorla 1989) and the Macarthur Communication Development Inventories (MCDI) (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick and Reilly 1993), both focus on parental report of their child's communicative abilities and use vocabulary checklists. There is an increasing body of research (Rescorla 1989, Klee, Carson, Gavin, Hall, Kent and Reece 1998, Klee, Pearce and Carson 2000, Rescorla and Alley 2001, Rescorla and Achenbach 2002) using the LDS which shows a positive link between parental report of their child's expressive skills and subsequent professional assessment of that child's skills. Although parents who did not speak or read English were excluded from the original research (Rescorla 1989) subsequent validation studies did cover both monolingual and bilingual families as well as a wide range of socio-economic backgrounds. Thus Rescorla and Achenbach (2002) concluded that the LDS was a useful tool for use with children under the age of three from low SES backgrounds and for those from ethnically and linguistically diverse backgrounds. A degree of caution needs to be employed before accepting this conclusion will relate to all such diverse communities: Rescorla and Achenbach conducted their research in English and through a written medium.

Recently there has been some research presented on parental report of expressive vocabulary and word combinations specifically focussed on Spanish / English bilingual children living in America (Patterson 2000, Marchman and Martinez-Sussmann 2002). In both cases the parents had a high level of education (in the Patterson sample two thirds of parents had a university degree) and a privileged socio-economic status. Marchman and Martinez-Sussmann (2002), who used a version of the MCDI with 26 Spanish English speaking toddlers, cautioned that the parents in their sample were well educated and that the study needed to be replicated with low SES bilingual families.

Glascoe (2000:140) reports: 'Parents, regardless of their level of education or parenting experience, were equally able to raise concerns predictive of developmental problems. This surprising finding appears due to parents' tendency to compare their children with others when deriving concerns – a relatively simple cognitive skill'. The only piece of research identified which claimed to look at parental assessment of speech and language skills (rather than just language skills), in comparison to professional assessment, was conducted by researchers in the UK. This did include children from both a deprived SES background and minority ethnic background, although this ethnicity was not further quantified (Laing, Law, Levin and Logan 2002). The research aimed to evaluate two methods for identifying speech and language problems in preschool children and concluded that parental led methods of screening failed to detect some children whilst resulting in the over referral of others. Interestingly although the research had a stated aim of identifying speech and language problems the assessment named as the diagnostic tool is used to assess language difficulties and there is no evidence presented to support the idea that this research did indeed look at the identification of speech disorders.

There is an expanding body of research, outlined above, that parents have some skills in identifying language difficulties in their children. The use of parent report may be particularly useful for populations where there are no mother tongue assessments with associated normative data to guide clinicians in the identification of speech and language disorders. The effect that SES and levels of parental education may have on the accuracy of parent reporting is unclear: most researchers using parent questionnaires accept that their samples were biased towards those with higher SES and levels of education. No evidence was found in the literature of researchers using parental questionnaires either with the target Pakistani heritage community or to investigate speech disorders as opposed to language disorders.

1.6.4 CULTURAL DIFFERENCES IN COMMUNICATION PATTERNS: IMPLICATIONS FOR ASSESSMENT

Reyes (1995: 171) remarked 'Clinicians often assume that what is normal behaviour to them is normal to everyone'. In fact there are many different patterns of verbal and nonverbal communication in different cultural groupings around the world and these may have an impact on all aspects of speech and language therapy with bilingual children, from initial identification to the service through to assessment of communication abilities and the resulting intervention. Sociolinguistic factors such as how conversation is initiated, cultural norms regarding communication patterns between those of different gender and age, turn taking, the use of silence and how questions are asked will all affect the assessment of children (James 1995, Wyatt 1998, Yavas and Goldstein 1998, Marquandt and Gillam 1999). Such differences may influence the child's performance on informal measures such as play skills as well as influencing their performance on formal assessment procedures. They may also have an influence on the parents' ability to report accurately on their child's communication skills.

Johnston and Wong (2002) recognised that the existing literature primarily described Western parent-child interaction patterns. They used a survey to investigate child rearing beliefs and verbal interaction practices in 'Chinese' (born in Hong Kong, Taiwan and Canton) and 'Western' (English speaking with cultural roots in Western Europe) parents living in two cities in Canada with a large population of immigrant Chinese. The written survey was available both in English and 'Chinese' and required mothers of children aged 2;00 to 4;00 to rank their responses to various statements. The authors concluded that Chinese and Western mothers did differ in their verbal interaction patterns with their children. Chinese mothers were less likely to encourage their children to offer personal narratives and were less likely to allow their children to converse with adults who were not family members. It is interesting to note that by using the generic language label 'Chinese' this piece of research provides an example of researchers apparently failing to identify accurately the language spoken by participants.

Romaine (1995) had highlighted that information regarding general communication and child–parent communicative interaction is not yet available for every community. There is virtually no published information available relating to either child rearing practice or sociolinguistic aspects of communication within the Pakistani heritage community in England. One anthropologist made passing reference to some aspects of child rearing practice in the Mirpuri community in Pakistan: 'Village life is outdoor and gregarious...Child rearing is relaxed and shared, and children learn by observation rather than training' (Saifullah Khan 1977: 62). The same author subsequently investigated the Mirpuri community living in Bradford, England and found 'The climate and type of housing combine to impose an indoor life-style, restricted in space and frequency of social interaction, which markedly contrasts with the outdoor sociability of the family, courtyard and village [in Pakistan].....Rain and cold weather force children to play in restricted space indoors without supervision from other family members' (Saifullah Khan 1979: 52). There are indications within these reports that child rearing in this community involves little direct contact and interaction between individual adults and individual children. If these observations hold true for the target research population it could be postulated that there will be several resulting implications for the identification of speech disorders in the population:

i. If there is little direct interaction between children and adults this could mean that children's primary language models are provided by other children. These other children may be primarily restricted to siblings if children are playing indoors and there is no or limited access to playgroups for young children. This may lead to a delayed acquisition of speech and language relative to acquisition in societies where adults are providing the primary language models. This may particularly influence speech and language acquisition in first-born children.

ii. If there is little adult-child interaction parents may not have a clear idea of their own child's speech and language skills and may not therefore be aware of errors occurring in their own child's speech.

iii. If adults are not used to communicating with children as a matter of routine they are likely to have a restricted awareness of general speech and language development in children. This in turn could have two consequences: parents could be unsure whether to regard their own child's language development as 'normal' and parents would have restricted opportunities to hear other children and make direct comparisons between their own child's abilities and those of other children.

iv. If children do not routinely interact with adults they may find the assessment process, involving a situation where an unfamiliar adult is attempting to elicit a speech sample, particularly unusual and stressful. This could lead to a higher than expected rate of non co-operation from children.

These factors could all have an important influence on the identification of speech disorders in children with a Pakistani heritage background.

1.7 THE RELATIONSHIP BETWEEN SOCIO-ECONOMIC STATUS AND SPEECH AND LANGUAGE DEVELOPMENT

Young children develop their speech and language skills in very different social and linguistic environments (Heath 1983). It is acknowledged that there are many different factors which influence child rearing patterns and the resulting patterns of communication. These include class, education, gender, age, occupation and family heritage. Particular attention has been paid to the influence of socio-economic factors, many authors noting a relationship between economic poverty and delayed language development (Whitehurst 1997, Whitehurst and Fischel 2000, Locke, Ginsborg and Peers 2002). It has been postulated that in conditions of socioeconomic deprivation there is an impoverished linguistic environment and decreased access to books which

contribute to the delayed language development observed by some researchers.

Locke, Ginsborg and Peers (2002) assessed the spoken language and cognitive abilities of 240 children attending four nursery schools in areas of social and economic deprivation. The number of children attending the schools who were entitled to free school meals was used as the yardstick to identify this deprivation. While the authors do not explicitly state either the specific area or country where the research was conducted it is believed to have been conducted in the north of England. Formal assessments were used to obtain scores for receptive and expressive language abilities and these scores were then compared to normative data developed from the general population. The results indicated that more than half of the children could be diagnosed as having language delays ranging between moderate and severe in nature. This study provided further supporting evidence for the link between low SES and delayed language development in children in England. However all the children were reported as speaking English as their first language and as having little cultural diversity. It is therefore unclear that this finding can be extrapolated to cover the Pakistani heritage community in England.

There is some evidence that the link between SES and early language development extends beyond the pre-school years. Walker, Greenwood, Hart and Carta (1994) reported on 32 children in Midwestern America who had been assessed prior to school entry and were re-assessed regularly between the ages of 5;00 and 10;00. SES was assigned as a result of parental responses to a questionnaire which established parental employment, attained education level and annual family income. The findings indicated that differences in child language related to SES prior to school entry were predictive of subsequent verbal ability, children from higher socioeconomic backgrounds continuing to have better receptive and expressive language skills than those from lower socioeconomic backgrounds. All the children in this study were reported to have English as their first language but the cohort did include diverse ethnic backgrounds including Hispanic children. The authors concluded that differences among children in the study were

attributable to SES rather than cultural background. Given that education systems rely on good language and literacy skills it is possible to speculate that children who start with low skill levels in these areas will fall further behind as more reliance is placed on using these existing skills to further develop and acquire new skills.

While the relationship between SES and language development has been a long standing focus of research the relationship between SES and speech development has more recently attracted the attention of researchers. Oller, Eilers, Urbano and Cobo-Lewis (1997) investigated the onset of canonical babbling in infants raised in monolingual (defined as 'in almost every case that language was English' p.410) and simultaneous bilingual (English and Spanish) contexts. They found the age of onset of canonical babbling was not significantly different between the monolingual and bilingual infants. The parents had been assigned to one of five SES categories on the basis of parental education and employment and family stability and analysis indicated that low SES was not a risk factor for delayed age of onset of canonical babbling. However, all the families were assigned to the top four SES categories and none to the 'very low SES' category.

Hoff and Tian (2005) reported two studies which examined family SES, levels of maternal education and vocabulary development. The first study analysed videotaped naturalistic interactions between 63 children aged 16 to 30 months and their mothers in America. A statistically significant difference was established in the vocabulary size of children from different SES backgrounds, higher SES children producing significantly more word types than mid-SES children. The high SES mothers were reported to use a richer vocabulary and longer utterances when interacting with their children. The second study was conducted in Shanghai, China and used parental report (in Mandarin) to identify both parental language teaching styles and parental report of language skills for 662 children aged between 24 and 47 months. This study found a statistically significant link between maternal education and child language development. Higher levels of maternal education were linked to larger vocabularies in children and to a higher frequency of reporting of

conversation eliciting and story telling interactions between parents and children. Again this study, although investigating the impact of SES on vocabulary development, did not include parents from very low SES backgrounds and assigned parents to high and mid SES categories on the restricted basis of parental education.

Smit, Hand, Freilinger, Bernthal and Bird (1990) reported the pattern of speech sound acquisition in a cohort of 997 monolingual English-speaking children aged between 3;00 and 9;00 in America. They found that SES did not have a significant effect on patterns of speech sound acquisition. However, the only measure used in this study to identify SES was parental education, which was measured in three categories, the lowest of which was 'high school or less'. Consequently the authors accepted that their findings may only be true for SES above poverty levels as the children they assessed came from an area where education levels were high.

A large scale study of the phonological development of 684 children aged between 3;00 and 6;11 acquiring English in Britain conducted by Dodd, Holm, Zhu Hua and Crosbie (2003) also found no evidence of SES affecting phonological accuracy in any age group within the study. In this study children were assigned to one of six SES groups using a commercial classification system based on postcode related data derived from the UK census. The study did include children from all six categories, including 23% of children in the lowest SES category.

Campbell, Dollaghan, Rockette, Paradise, Feldman, Shriberg, Sabo and Kurs-Lasky (2003) investigated factors influencing delayed speech in 100 three year old monolingual English speaking children in America. Speech skills were assessed from a 15 minute speech sample and labelled either delayed or not delayed using Shriberg's (1993) Speech Disorders Classification System. This assigned a diagnostic label based on intelligibility to the listener and the presence of errors 'not expected' in a child aged 3;00. There was a control group of 539 children who did not have delayed speech. SES in this study was assigned as a result of the family's health insurance status. The

researchers concluded that, of the factors they examined, three factors were statistically significant for risk of delayed speech: male sex, positive family history and low level of maternal education. Low SES was not found to be a statistically significant factor although the authors did note that there is a pervasive link between levels of maternal education and SES.

Keating, Turrell and Ozanne (2001) investigated the prevalence, co-morbidity and SES of children with speech disorders in Australia. The records of 12,388 children aged 0-14 were examined and 209 were identified as having 'speech disorders'. Speech disorders were defined as covering 'issues relating to oral communication which presented as difficulties talking, producing speech sounds or stuttering' (Keating *et al* 2001:432). SES was determined by consideration of household income, carer's employment status and current occupation and post school educational qualifications. The authors found that children with a speech disorder were not disproportionately represented in the low SES families. While this study used a broader range of factors to assign SES than the studies reported above the allocation of the label 'speech disordered' to a child was based on reporting by a care-giver rather than by objective clinical assessment. This may have biased the data: families with a higher SES background may be more likely to identify and report a speech disorder than families from a low SES background.

While many authors have considered the relationship between SES and speech and language skills it is clear that differences in the criteria for defining SES make it difficult to compare different studies. Different methodologies will inevitably lead to different answers. Socio-economic factors may be of particular importance when considering bilingual children from migrant communities. These communities tend by their nature to be of relatively low socioeconomic status. The pervasive link between SES and parental education levels has been noted above and previous authors have noted that regardless of ethnic origins the more educated a mother, the more time she spends interacting with her children (Battle and Anderson 1998).

There was no evidence found in the literature of any studies investigating the relationship between SES and phonological development in Pakistani heritage children.

1.7.1 THE SOCIO-ECONOMIC STATUS OF THE PAKISTANI HERITAGE COMMUNITY IN ENGLAND

The central government in England acknowledges that minority ethnic communities are affected by high rates of deprivation (Department for Education and Employment 1999). More specifically Ansari (2002: 9) noted 'The economic position of the majority of British Muslims has changed little since the 1960s. Many (mostly Pakistanis and Bangladeshis) are still concentrated in semi-skilled and unskilled sectors of industry. These communities experience unemployment, poor working conditions, poverty, poor and overcrowded housing, poor health and low educational qualifications'. A recent report commissioned for the British Government Cabinet Office (Walker 2002) found that Pakistani heritage men had a disproportionately higher rate of unemployment relative to other minority ethnic groups in England. Data gathered as part of the Census 2001 indicated that approximately 68% of Pakistani and Bangladeshi households were living on low incomes (Daycare Trust 2003).

1.7.2 DEPRIVATION IN THE RESEARCH POPULATION

To allow comparison of different geographic areas the British Government publishes an 'Index of Multiple Deprivation'. This index measures seven separate domains:

- Income deprivation
- Employment deprivation
- Health deprivation and disability
- Education, skills and training deprivation
- Barriers to housing and services
- Living environment deprivation
- Crime

In the 2004 Index the town reported here was ranked as the 12th most deprived district in England out of a total of 354 districts. Using data from the 2001 Census, the 2004 Index also calculated information for 32,484 individual Super Output Areas (SOAs) in England, each having an average population of 1,500 people. The town has two SOAs in the 100 most deprived SOAs in England. These two areas, in the centre of the town, are within the main catchment area for the clinic whose referral data is reported in Chapter Two. These two areas have both recently attracted central government funding under the Sure Start initiative which targets areas of high social deprivation.

1.8 THE NATURE OF PHONOLOGICAL ACQUISITION AND DISORDER IN BILINGUAL CHILDREN

Many researchers have investigated the phonological development of normally developing monolingual children and used the data to develop both quantitative and qualitative milestones (see for example Grunwell 1987, Dodd *et al* 2003). Models of phonological acquisition have then been applied to children exhibiting difficulties in acquiring the sound system of their language in order to inform researchers developing and refining models of phonological learning (Leonard 1992). English phonological development in a monolingual context remains the most widely studied (Yavas and Goldstein 1998). Writing in 1991 Watson commented that 'Phonology is to a large extent the Cinderella of bilingual studies' (Watson 1991: 25) Recently some data are emerging giving developmental patterns for languages other than English and also for languages acquired in a bilingual context (see for example So and Leung 2004, Munro, Ball, Muller, Duckworth and Lyddy 2005). Some key areas of importance when considering phonological acquisition in bilingual children are discussed below.

1.8.1 BILINGUAL PHONOLOGICAL ACQUISITION

Much of the information relating to early normal bilingual phonological acquisition has emanated from single case studies and is usually based on parents' notes (Watson 1991). Many of these children are the offspring of academics (see for example Yavas 1995) and it can therefore be argued that there is a socio-economic bias inherent in this data relating to early bilingual acquisition. Much interest has focused around whether children develop separate phonological systems for each language they speak or a single system.

Ingram (1981) studied a two year old girl acquiring English and Italian and concluded that her speech errors supported the idea of separate phonological systems for each language. Deuchar (1989 cited in de Houwer 1995) looked at a single child acquiring Spanish and English hoping to find evidence of a single phonological system but could find no proof to support this suggestion.

Nwokah (1984) studied a group of twelve three year old children acquiring Igbo (a Nigerian language) and English in conditions of both simultaneous and sequential acquisition in Nigeria. While the data separate the two categories it is unclear how many of the cohort fell within each category. The children were seen during their year at nursery school, when the children acquiring English sequentially were first exposed to that language. Data were collected at the beginning and end of the nursery year. The findings are focussed on language development but she also reports that 'by the age of three they found it easy to separate the two languages and could see certain sounds as language-specific' (Nwokah 1984: 71). No further details are given, making it difficult to assess the strength of this evidence, but this is a rare example of a researcher reporting data from a non Indo-European language being acquired in Africa.

Vihman (1996), summarising several of her studies of infants hearing language in a monolingual context (including French, English, Japanese and Swedish), reported that these children exhibited common patterns of early

babble production whichever language they were hearing. Significantly for the study of bilingual acquisition she also reported infants hearing more than one language (i.e. in a bilingual context) demonstrated language specific babbling vocalizations by 10 months. This evidence has been used to support the notion that separate phonological systems develop from a very early age.

More recently a series of studies have been published which investigated the phonological development of both individual and small groups of bilingual children with a view to investigating the hypothesis that bilingual children have separate phonological systems for each of their languages. Evidence was found from Cantonese / English speakers (Dodd, Holm and Li Wei 1997), Italian / English speakers (Holm and Dodd 1999) and Urdu / Punjabi / Mirpuri / English speakers (Holm, Dodd, Stow and Pert 1999) to support this hypothesis. The children were observed to make a variety of errors which indicated they had separate phonological systems for each language. The findings from these studies can be summarised as:

- Contradictory error patterns observed (for example fronting a phoneme in one language and backing it in another).

- A phoneme acquired in one language but not the other.

- The same phoneme realised in error in different ways in each language (for example /kw/ realised as [p] in Cantonese and as [t] in English).

- Phonemes specific to one language were not used in the other, evidence that the children were aware of the constraints of each language's phonological system.

These above studies are all small scale and the authors comment on the need for further research to expand both the number of children and language combinations reported to validate their findings.

Reporting the acquisition of Welsh and English by children living in south-east Wales, Munro *et al* (2005) investigated a total of 83 children aged between 2;06 and 5;00. 'Children were included in the study if they had used Welsh and English for listening or speaking at any level' (Munro *et al* 2005: 29) and 44 were classified as Welsh dominant and 39 as English dominant. Presenting information relating to the age of acquisition of consonants and patterns of substitution used by the children the authors concluded they had 'added support to the notion that the subjects have separate phonological representations for similar consonants in Welsh and English' (2005: 43).

In contrast with the above findings, Ray (2002) presented evidence from a five year old speech disordered child living in America who had learnt Hindi and Gujarati simultaneously, with the sequential addition of English on school entry at age four. Assessment was reported to indicate phonological errors across all three languages although in response to parental request therapeutic intervention was given only in English. Subsequent re-assessment indicated an improvement across all three languages, leading Ray to offer support for the notion that the child had only one underlying phonological system across the three languages spoken. Prior to intervention the child's speech was described as 60% intelligible in English and 70% intelligible in Hindi and Gujarati with the three error patterns of final consonant deletion, gliding of liquids and cluster reduction occurring across all three languages. Forty treatment sessions were delivered over five months. Post intervention assessment conducted three weeks after treatment ceased indicated that intelligibility had risen to 90% in English and 95% in Hindi and Gujarati. As Ray herself notes, caution needs to be exercised in interpreting results from a single case study. Ray does not present any normative data indicating features of delay and disorder in Hindi and Gujarati. In the absence of such data it is possible to speculate that the errors reported in these languages were in fact symptomatic of a delay which resolved spontaneously over the nearly six month period as therapeutic intervention assisted improvement in English. Certainly the occurrence of gliding in a five year old monolingual speaker of English would fall within the normal range reported by Dodd *et al* (2003).

1.8.2 DELAYED AND DISORDERED PATTERNS IN BILINGUAL CHILDREN

For the speech and language therapist, knowledge of both normal developmental patterns and the nature of disordered patterns is essential in order to reach a clinical diagnosis and to inform treatment decisions (Ball 1984, Yavas 1998). In addition to having information regarding the age of acquisition of phonemes clinicians working with children with speech disorders also need to have information regarding the pattern of phonological error patterns observed as normal development occurs in a language. If no such data are available the bilingual child is at risk of being diagnosed as having a disorder on the basis of error patterns which are atypical in monolingual children but which may be normal in conditions of bilingual acquisition. Data will help facilitate application of the labels delay and disorder which in turn can influence the type and amount of intervention. However, as many authors have noted, few norms are available for the acquisition of phonology in languages other than English and fewer still outline acquisition in a bilingual context (Dodd *et al* 1997, Ray 2002, Munro *et al* 2005).

There is some evidence emerging in the literature that bilingual children are making phonological errors which would be viewed as atypical in monolingual children speaking the same language. Dodd *et al* (1997) reporting two speech disordered children acquiring Cantonese and English sequentially found examples of errors which they regarded as atypical in monolingual acquisition of each language (for example nasalization and blending of two words occurring in Cantonese) as well as examples of features they regarded as delayed (for example cluster reduction occurring in both Cantonese and English). Presenting data from children with speech disorders who were acquiring Punjabi / English, Italian / English and Cantonese / English sequentially Holm (1998) concluded that bilingual children acquiring languages sequentially demonstrated qualitative and quantitative differences in their phonological development compared to monolingual development of

each language. This conclusion was a strengthening and refinement of Watson's (1991:44) suggestion following his review of earlier research in the field that 'the bilingual may have two systems, but which differ in some way from those of monolinguals'.

1.8.3 THE CLASSIFICATION OF SPEECH DISORDERS

Children with speech disorders do not form a homogeneous group. In recent years several authors have suggested differing methods for classifying children with speech disorders in to a variety of sub-groups. These differing methodologies take into account factors such as age of onset, severity, aetiology and a description of symptoms. Assignation to such a sub-group may then have implications for types of therapeutic intervention and outcome.

Shriberg (1982) proposed a framework based on three aetiological parameters: the speech mechanism, cognitive-linguistic factors and psychosocial factors. Subsequent work by Shriberg (see for example Shriberg and Kwiatkowski 1994) suggested that this framework could be used to classify children with speech disorders although other authors who have attempted to use Shriberg's system found children who could not be readily classified (see for example Fox, Dodd and Howard 2002).

While Shriberg views classification of speech disorders focussed around aetiology as an important first step towards achieving the prevention of child speech disorders (Shriberg 2003) other authors have focussed on developing models based on presenting symptoms. Stackhouse and Wells (1997) developed a diagnostic model based on detailed assessment within a psycholinguistic framework. This systematic assessment aims to provide evidence concerning why children are making errors in their speech and this information is then used as a basis for planning intervention (Vance, Stackhouse and Wells 2005). This approach does view each child as unique but the complex assessment procedure may be problematic for the clinician with limited time available.

Dodd (1995, 2005) developed a classification system with psycholinguistic underpinnings which is based on the symptoms observed in the child's presenting speech. She proposed that children with functional speech disorder could be classified into four sub-groups:

- **Articulation disorder**

Children with a phonetic disorder who consistently produce a target sound with the same substitution or distortion, irrespective of phonetic context.

- **Phonological delay**

The error patterns observed in a child occur during normal development but are typical of younger children.

- **Consistent phonological disorder**

Consistent use of one or more non-developmental error patterns.

- **Inconsistent phonological disorder**

The chid has multiple error forms for the same lexical item. The child's phonological systems show at least 40% variability.

There is a growing body of evidence that confirms the existence of these sub-groups within groups of children who are monolingual English as well as bilingual speakers (Dodd *et al* 1997, Holm *et al* 1999, Broomfield and Dodd 2004b). Although advocates of a detailed individual psycholinguistic approach such as Stackhouse, Wells, Pascoe and Rees (2002) continue to emphasise the need to view each child as an individual and profile their individual needs rather than assign them to a sub-group, evidence is emerging for monolingual English speakers that different therapeutic interventions and techniques are appropriate and effective for each subgroup (Crosbie, Holm and Dodd 2005). In bilingual speakers it has been noted that children with speech disorder have the same *type* of disorder in both languages, no child having yet been described who has a delay in one language and a disordered pattern in

another. Surface error patterns reflecting this disorder may, however, differ in each language (Holm and Dodd 2001).

The increasing evidence that bilingual children develop separate phonological systems for each language has inevitable consequences for the speech and language therapist assessing a bilingual child with suspected speech disorder. It is essential to assess all the languages a child speaks and then compare the child's performance to normative data derived from bilingual children speaking the same language combination. Ray (2002), while presenting evidence in support of a bilingual child having a single underlying phonological system still highlighted the need to assess all languages spoken by a child.

1.8.4 IMPLICATIONS OF SEPARATE SYSTEMS FOR THERAPEUTIC INTERVENTION

To date there has been little published evidence to indicate whether intervention techniques proven to work with monolingual English speakers also work with speakers of other languages or with bilingual speakers (Goldstein 1995). A series of intervention studies (Holm, Dodd and Ozanne 1997, Holm and Dodd 1999, Holm and Dodd 2001) investigated the efficacy of intervention for Cantonese / English and Punjabi / English speaking children and particularly focussed on whether therapy delivered in one of the child's languages transferred to the other language. The studies concluded that therapy for articulatory errors (that is, errors resulting from a deficit of motor programming) delivered in one language would transfer and affect the child's production in their other language. In contrast, therapy for surface level features of a phonological disorder did not show any cross language generalisation. These clinical findings further supported the theoretical findings that children have separate phonological systems for each language they speak.

Conversely Ray (2002), as outlined above, presented evidence from one child suggesting that therapy for phonological errors in English did transfer to influence the child's production in Gujarati and Hindi. There is a clear need to add to the available data regarding types of intervention and their outcome for bilingual children with speech disorder.

1.9 IDENTIFIED GAPS IN THE KNOWLEDGE BASE

The review of literature concerning bilingual children and speech and language therapy services brought into sharp focus the lack of previous research specifically targeting the Pakistani heritage community in England, despite the demographic information that they form the second largest minority ethnic group in the country. In particular it highlighted the following features:

- There were no detailed data concerning the presence of Pakistani heritage children on community clinic caseloads. These caseloads, as opposed to those based in special educational settings, are the mainstay of speech and language therapy services and are usually the first point of contact between a child and the service. As such, community clinic caseloads are predominantly made up of children with specific language impairment (SLI) rather than children who have speech and language difficulties allied to other medical and cognitive difficulties.

- There was no evidence of the factors influencing referral agents in their decisions concerning bilingual children. Consequently it was not clear whether such decisions were made on the same basis as those for their monolingual peers.

- Assessment of bilingual children is hampered by lack of assessment tools. No existing screening tool was identified for speech disorders in the Pakistani heritage languages under consideration.

- No data were available outlining the normal pattern of phonological acquisition for the Pakistani heritage languages Mirpuri, Punjabi and Urdu.

- There is ambiguity surrounding the accuracy of parents in identifying language disorders in their children. Researchers repeatedly suggested that socio-economic and ethnic background might be significant factors. No evidence was uncovered of researchers specifically investigating either Pakistani heritage parents or the identification of speech, as opposed to language, disorders.

- Although some researchers have examined the relationship between SES and speech development they have used differing classifications to determine SES and have rarely included children from very low SES families. More specifically there was no evidence of examining speech development in a very low SES migrant community where English was not the mother tongue.

- There is little evidence concerning the efficacy of therapeutic intervention for speech disordered bilingual children and none for children speaking Mirpuri.

The research reported here examines aspects of the identification of Pakistani heritage children with speech disorder in the light of these identified gaps in the existing knowledge base. While the children fall within a broad definition of 'bilingual' it is not the focus of this research to investigate their acquisition of English. The focus is on aspects of the identification of speech disorder in children who only speak Mirpuri, Punjabi or Urdu or who have one of these languages as their dominant language, and whose therapeutic intervention, in line with professional guidelines, will be in mother tongue.

CHAPTER TWO

CASELOAD CHARACTERISTICS:

A COMPARISON OF REFERRALS FROM PAKISTANI HERITAGE AND MONOLINGUAL ENGLISH SPEAKING COMMUNITIES

2.1 INTRODUCTION

This chapter describes a survey of children referred from the minority ethnic Pakistani heritage community to the speech and language therapy department in the town over a period of 24 months. These referrals are contrasted with the monolingual English speaking children (from the majority White population) who live in the same geographic area and were referred during the same time period. Data are presented and compared across two broad categories: referral data collected from the information supplied by the referral agents and clinical data gained following a screening assessment by a speech and language therapist. The discussion section considers possible reasons for some of the differences revealed by the data. Two key features are highlighted: the low number of Pakistani heritage children referred who have speech disorders and the low level of accurate reporting of the languages spoken by the Pakistani heritage children.

2.2 RATIONALE

Anecdotal evidence and previous work by Crutchley, Conti-Ramsden and Botting (1997b) and Winter (1999) indicated that bilingual children with speech disorders are under represented on the caseloads of speech and language therapists in England. In the light of these reports the researcher decided to investigate the characteristics of Pakistani heritage children referred to the speech and language therapy department in one health district in England. These children would be compared with their monolingual English speaking peers, from the majority White community, referred in the same area. The two cohorts would thus be matched for socio-economic status. This data would give an answer to the fundamental question: Are Pakistani heritage children with speech disorders referred to speech and language therapy? Furthermore, detailed examination of the comparative data would reveal whether there were any factors at variance across the two groups which could be influencing referral patterns.

2.3 METHOD

The case notes of all children referred to one clinic over the period September 2000 to August 2002 were examined. Some individual children were referred more than once in this time period, usually as a result of a previous discharge for failing to attend appointments. The data from such children was only collected once, from their first referral.

The clinic concerned is in a busy health centre, one of eleven such clinics in the town. It serves the White monolingual English speaking population who live in the immediate vicinity. The clinic also houses the specialist bilingual service run by the speech and language therapy department. This specialist service is responsible for assessing all bilingual children referred to the department, wherever they live within the district. In fact, more than 95% of these children also live within the immediate vicinity of the clinic.

The speech and language therapy department in the town offers some specialist services towards which appropriate children, whether bilingual or monolingual, are automatically directed. These specialist services cover three main areas:

1. Pre-school children known to have multiple difficulties (often combining physical difficulties with general developmental delay)

2. Children of school age who are already attending schools for children with special needs

3. Children aged over five whose referral details indicate they are experiencing difficulties with fluency (stammering)

Such children are not seen in this community clinic and are therefore excluded from this cohort.

The department operates a system of screening all children referred within eight weeks of that referral. All children are offered an appointment to allow the

clinician to take a case history and conduct screening assessments. This procedure is designed to lead to a decision as to whether the child has been appropriately referred, needs referral elsewhere, or has speech and language skills within normal limits for their age and can therefore be discharged. It is recognised that bilingual children need assessment in both / all languages and that eliciting a case history takes longer, due to translation. Bilingual children are therefore seen on two occasions to elicit the necessary information.

Written appointments were sent to all the children who had been referred offering an initial screening session. The appointment letters sent to the parents of bilingual children informed them that a trained bilingual speech and language therapy assistant would be present at the appointment. All the bilingual children were assessed by either one of the two specialist speech and language therapists in the department whose area of expertise is the assessment and treatment of bilingual children. These clinicians come from the majority White, English speaking population, but both have some receptive and expressive skills in the Pakistani heritage languages. They routinely work with bilingual speech and language therapy assistants who are members of the local Pakistani heritage minority ethnic community. These bilingual speech and language therapy assistants have been trained within the department and have high levels of proficiency in translation skills, in addition to being familiar with the assessment tools used. The monolingual children were all assessed by one of two experienced speech and language therapists.

Provisional diagnostic labels were applied to the children after the initial assessment process, taking into account the full case history, in addition to screening assessments of the child's verbal comprehension, verbal expression and a screen of speech sound production within the context of single word production. The children with a Pakistani heritage background all had assessments conducted in their mother tongue as well as assessments in English, where appropriate. The screening assessments used with both monolingual and bilingual children are listed in Appendix 1. As the assessments used did not all have normative data attached, the diagnostic labels are clinical

decisions, made by experienced clinicians, rather than being based on the notion of deviation from a standard score.

2.4 DATA HANDLING

All the case notes were subsequently examined by the researcher and data were entered on to a Microsoft Excel spreadsheet. These data files were subsequently imported into a computer using the software Statistical Package for the Social Sciences (SPSS for Windows) Version 11 for detailed statistical analysis. As the data under examination were categorical in nature chi-square tests were used to explore the relationship between variables. Where the sample size meant that more than 20% of the cells had a count of less than five, the Monte Carlo version of chi-square was used in order to ensure an accurate level of significance.

Data collected were in two main categories: referral information (i.e. information abstracted from the details provided by the referral agent) and clinical information (i.e. information gained during the session/s with the child and their parents). Under referral data the following data were collected:

- Referral agent
- Gender of those referred
- Age at referral
- Stated reason for referral
- Language/s reported to be spoken in the home

Clinical data gathered were:

- Diagnosis
- Actual language/s spoken in the home
- Concerns regarding the child's hearing
- Number of siblings
- Position in family
- Siblings on caseload

- Current use of a bottle for feeding
- Current use of a dummy or thumb sucking

Population data collected by both central government and the local education department do not correspond to the boundaries for the clinic catchment area and so incidence data were not calculated.

2.5 RESULTS

2.5.1 DNA RATES

During the time under examination, a total of 136 Pakistani heritage and 89 monolingual children were referred to the clinic. Of the Pakistani heritage children 30 (22.06%) failed to attend for initial screening appointments. Amongst the monolingual children 19 (21.35%) failed to attend. The number of full data sets, of both referral and clinical information, available from the two groups were thus reduced to 106 and 70 respectively.

2.5.2 REFERRAL INFORMATION

2.5.2.1 REFERRAL AGENTS

The referral agents for both the Pakistani heritage and monolingual populations are set out in Table 2.1. The category 'education services' includes both teaching staff and school health practitioners.

Table 2.1 Referral agents				
	Pakistani heritage		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Health visitor	47.05%	64	56.18%	50
Education services	30.15%	41	14.61%	13
General Practitioner	3.68%	5	2.25%	2
Parent	9.56%	13	15.73%	14
ENT	0.74%	1	0.00%	0
Audiology	1.47%	2	2.25%	2
Paediatrician	2.94%	4	5.62%	5
SLT	2.21%	3	1.12%	1
Clinical medical officer	2.21%	3	2.25%	2
Total		136		89

A chi-square analysis of the data in Table 2.1 indicates that there was no significant difference between the people making referrals of bilingual or monolingual children (X^2 =10.513, df = 8, p = 0.216). Both groups were most frequently referred by health visitors.

2.5.2.2 GENDER

Table 2.2 shows the number of boys and girls referred in each population. A chi-square analysis (X^2 = 0.034, df =1, p = 0.853) showed no significant difference between the gender distribution of the two cohorts. Boys were more frequently referred than girls.

Table 2.2 Gender				
	Pakistani Heritage		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Female	33.82%	46	35.96%	32
Male	66.18%	90	64.04%	57
Total	100%	136	100%	89

2.5.2.3 AGE AT REFERRAL

Children were assigned to six month age bands. The youngest child to be referred, in the Pakistani heritage group, fell within the age band 1;00 to 1;05 and the oldest child, also of Pakistani heritage, was aged 14;11. The oldest monolingual child to be referred was aged 10;10.

Table 2.3 Age at referral

	Pakistani heritage		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
1;00-1;05	2.21%	3	0.00%	0
1;06-1;11	6.62%	9	6.74%	6
2;00-2;05	15.44%	21	14.61%	13
2;06-2;11	13.97%	19	13.48%	12
3;00-3;05	14.71%	20	19.10%	17
3;06-3;11	11.03%	15	13.48%	12
4;00-4;05	5.88%	8	10.11%	9
4;06-4;11	4.41%	6	7.87%	7
5;00-5;05	5.88%	8	2.25%	2
5;06-5;11	5.15%	7	2.25%	2
6;00-6;05	2.94%	4	3.37%	3
6;06-6;11	1.47%	2	2.25%	2
7;00-7;05	0.00%	0	0.00%	0
7;06-7;11	0.74%	1	0.00%	0
8;00-8;05	0.74%	1	0.00%	0
8;06-8;11	2.21%	3	2.25%	2
9;00-9;05	1.47%	2	0.00%	0
9;06-9;11	0.74%	1	1.12%	1
10;00-10;05	0.74%	1	0.00%	0
10;06-10;11	1.47%	2	1.12%	1
11;00-11;05	0.74%	1	0.00%	0
11;06-11;11	0.74%	1	0.00%	0
>12;00	0.74%	1	0.00%	0
Total		**136**		**89**

A chi-square analysis of these data revealed no significant difference between the two cohorts with values of $X^2 = 13.605$, df = 21, p = 0.949. Children in both groups were most likely to be referred between the ages of 1;06 and 4;11.

2.5.2.4 REASON FOR REFERRAL

A standard referral form (see Figure 2.1) was completed by referral agents. They were requested to complete their reason for referral and any additional comments.

Figure 2.1 Reproduction of part of standard referral form

Reason for Referral *[please tick all that apply]*	
Receptive Language (understanding)	
Expressive Language (putting sentences together)	
Speech Sounds	
Stammering	
Other *[please state]*	
Additional Information: *[parental concern/hearing loss/other siblings known to service ... etc.]*	

Occasionally referral agents wrote letters rather than completing the form. Wherever possible the information in the letter was used to assign a reason for referral. In three cases (one bilingual and two monolingual) no information was given indicating a reason for referral and these cases were described as 'No reason given'. The information given by the referral agents was categorised as set out in Table 2.4.

Table 2.4 Reasons for referral				
Reason for referral	**Pakistani heritage**		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Speech sounds	25.74%	35	58.43%	52
Expressive language	34.56%	47	22.47%	20
Receptive language	1.47%	2	0.00%	0
Stammering	6.62%	9	5.62%	5
Voice	0.74%	1	0.00%	0
Parental concern	11.76%	16	3.37%	3
General delay	6.62%	9	1.12%	1
Tongue tie	1.47	2	1.12%	1
School concern	5.88%	8	2.25%	2
Expressive language + speech sounds	4.41%	6	3.37%	3
No reason given	0.74%	1	2.25%	2
Total	100.00%	136	100.00%	89

Chi square analysis gave the following values: $X^2 = 30.416$, df = 10, $p < 0.001$, indicating a highly significant difference between the reasons for referral for the two cohorts. Monolingual children were most likely to be referred because of concerns about speech sounds whereas bilingual children were most likely to be referred because of concerns about expressive language.

2.5.3 CLINICAL INFORMATION

2.5.3.1 DIAGNOSIS

Following the initial assessment process each child was assigned a diagnostic label on the basis of case history information and their performance on the screening assessments. The diagnostic outcomes are presented in Table 2.5 below. Chi-square analysis revealed a highly significant difference between the two cohorts with values of: $X^2 = 27.840$, df = 13, p = 0.001.

Table 2.5 Diagnosis				
Diagnosis	**Pakistani heritage**		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Phonological delay	5.66%	6	18.57%	13
Phonological disorder	0.94%	1	2.86%	2
Articulation	4.72%	5	4.29%	3
Language delay	55.66%	59	30.00%	21
Language disorder	0.94%	1	2.86%	2
Stammering	9.43%	10	10.00%	7
Pragmatic disorders	0.94%	1	0.00%	0
Normal	14.15%	15	28.57%	20
Expressive language and articulation	4.72%	5	0.00%	0
Language delay and stammering	0.94%	1	0.00%	0
Hearing impaired	0.00%	0	1.43%	1
Selective mute	0.94%	1	0.00%	0
Learning difficulties	0.94%	1	0.00%	0
Word finding	0.00%	0	1.43%	1
Total attended	**100%**	**106**	**100%**	**70**
Did not attend	**N/A**	**30**	**N/A**	**19**

In the light of the findings indicated in Tables 2.4 and 2.5 it was decided to establish whether the reasons highlighted by referral agents matched the final diagnostic labels. This information is presented in Table 2.6.

Table 2.6 Match between reason for referral and diagnosis				
Match	**Pakistani heritage**		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Yes	43.40%	46	50.00%	35
No	41.51%	44	44.29%	31
Cannot match	15.09%	16	5.71%	4
Total	**100.00%**	**106**	**100.00%**	**70**

The low level of correspondence between reason for referral and diagnosis (43.40% for Pakistani heritage and 50.00% for monolingual children) was regarded as extremely disappointing and possible reasons for this are considered in the discussion section. A chi-square analysis of these data revealed no significant difference between the two cohorts with values of X^2 = 3.740, df = 2, p = 0.154.

2.5.3.2 LANGUAGE NAMED ON REFERRAL MATCHES ACTUAL LANGUAGE SPOKEN

When a child attends for assessment of a communication disorder it is essential that either the clinician carrying out the assessment speaks the same language or has with them trained bilingual personnel who speak that language. With this in mind the referral forms have a section asking the referral agent to tick all the languages spoken in the child's home. The form lists the five languages most widely spoken in the local schools, i.e. English, Mirpuri, Punjabi, Urdu and Bengali. There is a space to insert the name of any other language spoken. In cases where the referral agent wrote a letter rather than completing the form there were some instances where no language was specified and it was therefore not possible to establish a match. Information regarding the match between the language named on the referral and the language actually spoken by the child is presented in Table 2.7.

Table 2.7 Actual language spoken by child matched language named on referral form				
Match	**Pakistani heritage**		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Yes	45.28%	48	88.57%	62
No	32.08%	34	0.00%	0
Cannot match	22.64%	24	11.43%	8
Total	**100.00%**	**106**	**100.00%**	**70**

Chi-square analysis revealed a highly significant difference between the two cohorts with values of: $X^2 = 38.008$, $df = 2$, $p < 0.001$.

Only 45% of bilingual children had their language correctly recorded on the referral form. In some cases the language named was clearly incorrect, for example Bengali (a language spoken in Bangladesh) when the actual language was Mirpuri (a language spoken in Pakistan), whilst in three cases a generic label of 'Pakistani' was used by the referral agents. In many cases the incorrect Pakistani heritage language was named. Possible reasons for this misreporting are considered in detail in the discussion section.

2.5.3.3 CONCERNS REGARDING HEARING

Parents were asked whether their child had either a history of more than three ear infections or had been referred for a hearing test, other than routine screening appointments. This information is presented in Table 2.8.

Table 2.8 History of ear infections or referred for hearing test				
	Pakistani heritage		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Yes	19.81%	21	34.29%	24
No	80.19%	85	65.71%	46
Total	**100.00%**	**106**	**100.00%**	**70**

Chi-square analysis reveals a significant difference between the two cohorts with values of: $X^2 = 3.912$, df = 1, p = 0.048. Parents of monolingual children were more likely to report concerns regarding hearing.

2.5.3.4 SIBLINGS

Information was collected regarding position within the family, number of siblings, and whether the child had a sibling on the caseload. This information is presented in Tables 2.9 and 2.10.

Table 2.9 Position in family and number of siblings

Position in family	Pakistani heritage	Mono lingual	Number of siblings	Pakistani heritage	Mono lingual
			0	17.92% n = 19	24.29% n = 17
1	37.74% n = 40	42.86% n = 30	**1**	27.36% n = 29	42.86% n = 30
2	28.30% n = 30	34.29% n = 24	**2**	30.19% n = 32	22.86% n = 16
3	16.98% n = 18	21.43% n = 15	**3**	12.26% n = 13	10.00% n = 7
4	9.43% n = 10	1.43% n = 1	**4**	6.60% n = 7	
5	3.77% n = 4		**5**	2.83% n = 3	
6	1.89% n = 2		**6**	1.89% n = 2	
7	1.89% n = 2		**7**		
8			**8**	0.94% n = 1	
Total	**100.00** **n = 106**	**100.01%** **n = 70**		**99.99%** **n = 106**	**100.01%** **n = 70**

Chi-square calculations for position in family showed no significant difference across the two cohorts (X^2 = 10.821, df = 6 p = 0.074), although there was a trend for the child to be either the first or second born in the family. The number of siblings did show a significant difference with: X^2 = 13.461, df = 7, p = 0.041.

Table 2.10 Sibling on case load

	Pakistani heritage		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Yes	11.32%	12	24.29%	17
No	88.68%	94	75.71%	53
Total	**100.00%**	**106**	**100.00%**	**70**

Chi-square analysis reveals a significant difference between the two cohorts with values of: X^2 = 4.250, df = 1, p = 0.039, indicating that monolingual children were significantly more likely to have a sibling on the caseload.

2.5.3.5 BOTTLE FEEDING

At the time of the screening assessment the families of all children were asked whether the child still drank milk from a baby's feeding bottle. The answer 'yes' was recorded if the family reported daily consumption of at least one bottle of milk. The oldest child reported still to use a bottle on a daily basis was a Pakistani heritage child age 6;00. The results are shown in Table 2.11.

Table 2.11 Child still using a bottle on daily basis at time of assessment by speech and language therapist

	Pakistani heritage		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Yes	48.11%	51	4.29%	3
No	51.89%	55	95.71%	67
Total	**100.00%**	**106**	**100.00%**	**70**

Chi-square analysis reveals a highly significant difference between the two cohorts with values of: X^2 = 36.044, df = 1, p < 0.001, indicating that Pakistani

heritage children were significantly more likely to be drinking milk from a bottle on a daily basis.

2.5.3.6 THUMB SUCKING OR DUMMY USE

Parents were asked whether their child still used a dummy or sucked their thumb on a daily basis at the time of the screening assessment. The results are shown in Table 2.12.

Table 2.12 Child uses a dummy or sucks thumb on daily basis

	Pakistani heritage		**Monolingual**	
	(%)	**(n)**	**(%)**	**(n)**
Yes	25.47%	27	24.29%	17
No	74.53%	79	75.71%	53
Total	**100.00%**	**106**	**100.00%**	**70**

A chi-square analysis of these data revealed no significant difference between the two cohorts with values of $X^2 = 0.000$, df = 1, p = 1.000.

2.6 DISCUSSION

2.6.1 DNA RATES

It is interesting that this data collection highlighted equal rates for failing to attend appointments across the two groups of children. Anecdotal evidence has always intimated that Pakistani heritage children have a higher rate of non attendance than their White majority community peers. There is no evidence in the data presented here to support this widely held belief. Both groups did however have high rates for failing to attend appointments. These rates are higher than the rate of 14.9% reported by Broomfield (2003). Broomfield's large cohort covered a full range of socio-economic backgrounds and it may be that the higher rates observed in the present study result from the very high levels of deprivation experienced by many families.

2.6.2 REFERRAL AGENTS

Previous research (Edwards, Cape, Foreman, and Brown 1989; Enderby and Petheram 1998 and 2000; Broomfield 2003) has indicated that in England the primary source of referrals to speech and language therapy are health visitors, education services, medical services (including General Practitioners) and parents. The data reported here confirm these earlier findings for both bilingual and monolingual children. However, while health visitors are the primary source of referrals for both bilingual and monolingual children in this study there are some factors at work (notably lack of a shared language and timing of contact) which may result in some bilingual children being overlooked by health visitors. This is considered in greater detail in the section below examining reasons for referral.

The category reported here as 'education services' includes referrals from both teaching staff and school nurses. It was decided to place these in a single category after discussions with school nurses who felt that, following changes to their pattern of working, they were now less likely than before to identify communication difficulties in children. As one school nurse explained: 'It's not because I've picked up a particular problem, it's because the school have asked me to refer'. The contrasting education services referral rates of 30.2% for Pakistani heritage children and 14.6% for monolingual children was significant, indicating that schools were identifying Pakistani heritage children who have previously been overlooked by health visitors.

Broomfield (2002) reported 11.5% of referrals in her study were made by parents. Anderson and van der Gaag (2000) had previously reported that less than a quarter of parents they surveyed were aware of the open referral system to speech and language therapy, while Law (1992) commented that disadvantaged parents may make less use of services. In this current study parents of bilingual children accounted for 9.56% of referrals compared to 15.73% of referrals made by parents of monolingual children. This finding, that parents of monolingual children made 50% more referrals than bilingual parents, is likely to be a reflection both of their better understanding of the services available (and how to access them) and of their ability to speak

English, perceived to be the medium necessary to access services. As Free and McKee (1998: 380) stated 'Service use is a particularly inadequate measure of need for black and ethnic minority groups'. It may also be that parents of bilingual children, perceiving difficulties in making referrals of their own children, influence others to make the referrals: the incidence of referrals reflecting 'parental concern' is commented on below when considering reasons for referral.

2.6.3 GENDER

Previous research (Law, Boyle, Harris, Harkness and Nye 2000; Petheram and Enderby 2001; Broomfield 2002) has highlighted a gender imbalance amongst children referred to speech and language therapy with varying reports of ratios all indicating a preponderance of males. This is reflected in both cohorts studied here with a ratio of 2:1 for bilingual children and 1.8:1 for monolingual children.

2.6.4 AGE AT REFERRAL

Chi-square analysis indicates that there is no significant difference in the ages at referral of the two cohorts of children. Close examination of the data reveals that both samples peak between ages 2;00 to 4;05, coinciding with health visitor assessments at age 2;00 and entry to nursery around age 3;00 to 4;00, followed by progression to school around age 4;00 to 5;00. Interestingly, there is then a more prolonged tail of referrals of bilingual children when contrasted with the monolingual children. This would suggest that bilingual children who have previously been overlooked are being identified as they get older.

2.6.5 REASON FOR REFERRAL

The statistically significant difference between the numbers of bilingual and monolingual children referred for investigation of language problems (34.56% and 22.47% respectively) versus the numbers of these children referred for investigation of speech problems (25.74% and 58.43% respectively) is particularly striking and offers concrete evidence to support Crutchley *et al's*

suggestion (1997a: 270) that bilingual children with articulation or phonology problems are not being identified.

England is a multi-cultural, multi-lingual country and census data indicate that the number of bilingual families is rising. Despite this there is evidence that the key professionals responsible for referring children with possible communication disorders are overwhelmingly dominated by white monolingual English speakers (RCSLT 1999, Stow and Dodd 2003). Where the professional and the child do not share a language it is inevitable that the professional will encounter difficulties in deciding whether the child has difficulties which merit further investigation. To overcome this, the use of interpreters, either casual staff or trained co-workers, is recommended (RCSLT 1996).

The health visiting team responsible for referring 47.05% of bilingual children in this current survey reflect national findings in that they are overwhelmingly White, monolingual English speakers. However, attached to the team is a group of experienced interpreters who speak the Pakistani heritage languages which are the focus of this research. The finding that Pakistani heritage children with speech disorders are not being referred for assessment suggests that either these interpreters are not being used effectively or they do not have the necessary background training in child speech and language development which would enable them to alert health visitors to possible errors they can hear in the child's speech. There are many publications which outline both potential pitfalls and good practice when working with interpreters (Barnett 1989, Schott and Henley 1996, Maltby 1999, Isaac 2002, Stow and Dodd 2003). Training and time allocation are key elements in developing an effective team between health / education professional and interpreter. All members of the team need to undergo training in their respective team roles and responsibilities. Time needs to be built into the individual session with a client to enable both adequate pre-session briefing on the purpose of the session and de-briefing afterwards to facilitate discussion of any points of interest which arose during the session. The provision of training and allocation of additional time when working with bilingual families both have financial implications for service providers.

Timing of the health visitor assessment also needs consideration. Recently there has been a move away from repeated assessment by health visitors in order to reduce what has been viewed as duplication of effort. Thus, where previously health visitors assessed children both at 18 months and at 36 months, now the health visitor only routinely assesses a child once, around age 18 to 24 months of age. Providing this assessment is passed the child may not see their health visitor again. As it has been established, both for Pakistani heritage languages (see Chapter Five) and for English (Dodd, Crosbie, Zhu, Holm and Ozanne 2002) that a normally developing child will not have established a complete sound system by age 24 months it is perhaps unsurprising that health visitors appear to miss speech sound difficulties. The next assessment of the child's abilities is now conducted by nursery school staff when the child is aged between 3;00 and 4;00. For bilingual children this timing may also be problematic. Most children from the Pakistani heritage community under scrutiny here enter nursery with only mother tongue expressive skills. They are surrounded by monolingual English speaking school staff with only a few mother tongue support staff. Within the education system the focus is on the rapid acquisition of English. It is well documented (Hall 2001) that children in this situation experience a silent period where they observe and listen without expressing themselves for periods of several months before they attempt to use the new language expressively. In such circumstances it is likely that nursery staff, too, will fail to identify bilingual children making speech sound errors. As the child is likely to be speaking English when talking to teaching staff, and as research shows that bilingual children may exhibit differing surface error patterns across each language they speak (Holm, Dodd and Ozanne 1997, Holm, Dodd, Stow and Pert 1999) it is still possible that staff will not hear errors which occur only in mother tongue. In addition errors in English may be attributed to bilingualism rather than recognised as a phonological difficulty.

The high number of bilingual children (17.64%), relative to the number of monolingual children (5.62%), referred as a result of either "parental concern" or "school concern" needs highlighting. These apparently vague referrals suggest that the referring agents felt unable to pinpoint a more precise reason for referral.

2.6.6 DIAGNOSIS

Previous researchers have reported a wide range for both incidence and prevalence of speech disorders. In their systematic review Law *et al* (2000) found figures varying between 2.3% and 24.6% but commented that the studies reviewed had not included bilingual children. Harasty and Reed (1994) found a prevalence figure of 15.3% (plus or minus 3.4%) in a primary school population which did include bilingual children. Broomfield and Dodd (2004) report an incidence figure of 34.18% for primary speech disability amongst children aged two to sixteen who attended for assessment of speech and language difficulties.

The figures reported here indicate that more than twice as many monolingual children compared to bilingual children had speech disorder, i.e. 11.32% for bilingual children in comparison to 25.72% for monolingual children. It seems unlikely that this discrepancy reflects a much lower prevalence of speech disorder in bilingual children. It is more likely that referring agents are failing to identify bilingual children with speech disorder and refer them for assessment. This viewpoint is supported by the similar levels of accuracy achieved between reason for referral and diagnosis for both bilingual and monolingual children. The similar rates for a diagnosis of articulatory disorder across the two cohorts, 4.72% (bilingual) and 4.29% (monolingual), indicate that referring agents are not missing articulatory errors in bilingual children.

In this study the rate for diagnosis of language delay or disorder is 75% higher in the bilingual children (56.6%) than the monolingual children (32.86%). This differential is undoubtedly linked to the discrepancy in the diagnosis of speech disorder across the two cohorts. It is interesting to note that the rate (9.43% and 10.00%) for diagnosis of disorders of fluency (stammering) is consistent across the two cohorts, both bilingual and monolingual. This suggests that referral agents find this disorder equally easy to identify in both bilingual and monolingual children.

The rate of 'normal' diagnoses warrants further examination. Given that referral agents who do not share a language with the child they are referring must inevitably be less confident in this referral decision, it would be predicted that they refer a higher rate of false positives i.e. they refer a high rate of children who are subsequently diagnosed by the speech and language therapist as having speech and language abilities within the normal range. The data presented here shows exactly the opposite to be true. In this cohort twice as many monolingual children (28.57%) compared to Pakistani heritage children (14.15%) were assigned a diagnostic label of normal. As the clinicians responsible for screening the bilingual children are highly experienced in working with this client group it is unlikely that they were erring on the side of caution in applying diagnostic labels.

The single Pakistani heritage child who was diagnosed as a selective mute is worthy of consideration. This child was aged 5;11 and was silent in school. They were referred by the teaching staff who were concerned that the child had a language delay. In fact the child's parents (who did not speak English) were well aware that their child did not speak in school but did speak at home, and indeed, had spoken at the nursery school they had previously attended. The teaching staff, all monolingual English speakers, did not ask the parents for background information prior to referring the child.

2.6.7 MATCH BETWEEN REASON FOR REFERRAL AND DIAGNOSIS

Irrespective of whether the child was bilingual or monolingual the referral agents demonstrated a similar level of accuracy with regard to reason for referral. The higher number (15.09% compared to 5.71%) of 'cannot match' outcomes for bilingual children reflect the higher number of these children referred with the nondescript reasons of 'parental' or 'school' concern. While the referral agents achieved similar levels of accuracy for referral reasons across both cohorts it is disappointing that at best they achieved a rate of 50% accuracy. It may be that referral agents have a different understanding of the terminology used by speech and language therapy departments on referral forms. It also seems likely to reflect a lack of knowledge of both speech and language development

norms and the association between the two. It is possible that some monolingual children referred due to concerns regarding speech were subsequently diagnosed by clinicians as language cases, the referral agents having overlooked the language delay or disorder but identified the associated speech errors.

2.6.8 LANGUAGE NAMED ON REFERRAL MATCHES ACTUAL LANGUAGE SPOKEN

The significantly high rate of incorrect language reporting needs highlighting. Only 45.28% of Pakistani heritage children had their language correctly described on their referral form. At the time under examination these children accounted for between 16.5% and 18.1% of the primary school population in the town – in other words they formed a significant part of the health visiting caseload and school populations. It could be expected that the health and education professionals responsible for them would have an accurate knowledge of which language they speak. Speech and language therapists reach accurate diagnoses by carrying out detailed assessments of a child's speech and language abilities. This is clearly impossible if there isn't a language match either between the therapist and child or between a bilingual support worker and the child. Inappropriate interpreting staff will be arranged for assessment sessions if incorrect information is given on the referral form. This will result in both wasted time and financial costs as appointments have to be rearranged with the correct bilingual staff.

Many parents in this population do misrepresent the language they speak, reporting it, incorrectly, as Urdu. This appears to be due to two factors: the higher social status of Urdu and the fact that most English speakers have heard of Urdu but have not heard of Mirpuri. Such misreporting can easily be corrected if appropriate bilingual staff are available to make decisions about what language a parent and / or their child is actually speaking. However, misreporting of languages spoken is not confined to the parents of children. The researcher is aware of several bilingual support and interpreting staff employed within the local National Health Service (NHS) and Local Education Authority

(LEA) who have misrepresented to their employers the languages they speak. These staff speak Urdu and Punjabi, but not Mirpuri, and have erroneously told their employers that the local population also speak Urdu and Punjabi. The issues of availability of interpreting staff who speak appropriate Pakistani heritage languages and the assessment of the language skills of such staff are further considered in Chapter Three.

2.6.9 CONCERNS REGARDING HEARING

The reporting of referral for investigation of suspected hearing difficulties or a history of ear infections emerged as another significant difference between the two groups in this study, with monolingual children more likely to have a positive history. This is particularly interesting as previous research (Klee, Pearse and Carson 2000) has shown that evidence of such problems was highly predictive of language delay.

In an effort to establish comparative local incidence data for the overall Pakistani heritage and majority White populations (i.e. not just those children suspected of having speech and language difficulties) and consider this alongside the caseload data, the researcher contacted the local audiology department to investigate the numbers of children referred for a hearing test from across the whole of the town. However, the audiology department do not keep a record of any information reflecting the ethnic background of children referred to them. The department therefore has no data available to indicate whether a smaller proportion of children from the Pakistani heritage community are referred in comparison to the White majority community.

In the absence of such information it is necessary to consider whether any other factors may be responsible for the significant difference. In recent years there have been major publicity campaigns designed to heighten both professional and parental awareness of the risks of 'glue ear' (otitis media with effusion). Such campaigns have been conducted in English and through a written medium. It may well be that these campaigns have failed to make an impact within the Pakistani heritage community. It is also likely that Pakistani heritage

parents are less aware of facilities available to test hearing and, indeed, less able to seek out such services due to language barriers.

2.6.10 SIBLINGS

Table 2.9 reflects the fact that the Pakistani heritage community have large families; indeed they have larger households than any other ethnic group in England (National Statistics Online 2001). Examination of the data relating to position of the individual child within the family highlights the interesting finding that the higher the child's position in the family the more likely they are to be referred to speech and language therapy, irrespective of whether they are bilingual or monolingual.

It may be that the long held models of parents (and primarily mothers) providing language models need re-consideration in circumstances of high socio-economic deprivation. There has been much discussion regarding the impact of television (Wright, Huston, Murphy, St Peters, Pinon, Scantlin and Kotler 2001) and shifting patterns of family interaction. Consideration needs to be given to the possibility that increasingly it is older siblings (and their friends) who are providing language models for younger siblings. This may be particularly true for the Pakistani heritage population under consideration here, who traditionally have different patterns of child parent interaction when compared to the White middle class parents from whose children many language development norms have been derived.

The finding that monolingual children are significantly more likely to have siblings on the caseload is likely to be a reflection of the fact that historically referral agents have referred more monolingual than bilingual children.

2.6.11 BOTTLE FEEDING

It has previously been reported (Rote 1996; Thomas 1997; Lawson, Thomas and Hardiman 1998) that many Asian families in England make prolonged use of feeding milk in bottles. This was reflected in the caseload under consideration here where prolonged use of a baby's feeding bottle emerged as a highly

significant difference between the two groups, with 48.11% of Pakistani heritage children still drinking at least one bottle of milk a day at the time of the screening assessment compared to only 4.29% of White monolingual children.

These findings indicate that many Pakistani heritage children attending nursery, or indeed full time school, where they successfully drink from ordinary cups, are returning home to drink unmodified cows milk from a baby's bottle. This is likely to have an impact on the nutritional status of these children; the bottle of milk serving as a meal replacement. Cultural and social factors play a part in the offering of milk in a bottle rather than any other container: a bottle avoids the risk of spillages and thus damage to carpets and household goods which may occur if the milk is given in an open container such as a glass or cup. The bottle also allows the child to drink larger quantities over time as they can carry the bottle around with them. There is a well established link between high intakes of unmodified cows' milk and iron deficiency anaemia, and anaemia has been identified as a causal link to general developmental delay (Booth and Aukett 1997). Some evidence has been reported (Stoltzus, Kvalsig, Chwaya, Montresor, Albonico, Tielsch, Savioli, and Pollitt 2001) which specifically links iron deficiency anaemia to delayed language development. Previous research (Warrington and Storey 1989) and current anecdotal evidence (De Silva, personal communication) indicates that the Pakistani heritage community in the town does experience high levels of iron deficiency anaemia. Furthermore, children receiving nutritional input by drinking milk in a bottle (often immediately on return from the educational setting and on going to bed) rather than by eating a meal are likely to be missing out on the social interaction and language stimulation associated with family gatherings to share food.

2.6.12 THUMB SUCKING OR DUMMY USE

There was a close match between the two groups for dummy use or thumb sucking still occurring at the time of the screening assessment, with figures of 25.47% and 24.29%. There is a widespread belief (McNally 1997) that thumb sucking and dummy use affect speech development in young children. Fox, Dodd and Howard (2002) investigated risk factors associated with speech

disorder and found their speech-disordered group was more likely than their control group to have a sucking habit beyond 24 months. There is evidence linking thumb and dummy sucking to the development of anterior open bites (Farsi and Salama 1997). Some authors have presented evidence linking anterior open bites to articulation disorders, particularly, but not exclusively, linked to the production of fricatives (Warren, Allen and King 1984, Mehnert 1987, Laine 1992, Khindi and Grewel 1999). Some authors have presented evidence which is less conclusive in demonstrating this link (Mims, Kolas and Williams 1966). Authors have investigated links between gender, feeding method, SES, and sucking habits. There is contradictory evidence for all these links although low SES has been linked to increased dummy use and there is an increasing weight of evidence linking levels of maternal education to dummy sucking, it being more prevalent in families where levels of maternal education are high (Farsi and Salama 1997). Recently evidence has emerged that increased dummy use is occurring in countries where there is increasing exposure to 'Western' child rearing practice (Farsi and Salama 1997).

It has been reported (Niemela, Uhari and Mottonen, 1995) that use of a dummy by children attending day care centres was a significant risk factor for recurrent acute otitis media. Many authors have investigated a possible link between recurrent otitis media and delayed language development (see Klein and Rapin 1988). The link is unclear and it is probable that any such effect is transitory.

There are no data available regarding the rate of occurrence of otitis media in the research population investigated here. There is also no reliable evidence available regarding the rate of occurrence of anterior open bite. There is evidence that the rate of dental decay is extremely high in the local population. In 2003-2004 58% of local five year old children had dental decay compared to a national average of 39%. Closer examination of the local rate reveals an even higher figure of 81% in the local 'Asian' population (Public Health Report 2005). Anecdotal reports from the local Primary Care Trust Dental Officer (personal communication 2005) indicate that local dentists do see what they regard as a high number of children with anterior open bites.

While the evidence linking dental malocclusions and otitis media to speech disorders is ambiguous, it is of interest that one quarter of all children reported here were involved in sucking activities, particularly as over 90% of these children, both Pakistani heritage and White monolingual, were aged over 24 months.

2.7 SUMMARY

The data presented here offer firm evidence that while Pakistani heritage children are being referred to speech and language therapy services their referral patterns show some significant differences to those of their monolingual English speaking peers. In particular there is evidence that Pakistani heritage children with speech disorders are not being referred and are therefore not accessing speech and language therapy services. A further significant finding is that the languages spoken by these children are frequently misreported by referral agents, leading to potential difficulties for accurate assessment. Possible factors influencing this misreporting of the languages spoken by children and their families are discussed further in Chapter Ten.

CHAPTER THREE: SECTION ONE

QUESTIONNAIRE CONDUCTED WITH EDUCATION STAFF

3.1 INTRODUCTION

This section describes the results of a questionnaire distributed to staff working in six schools controlled by the Local Education Authority (LEA). The development of the questionnaire and methodology of administration are outlined and the responses to each question are presented. Where questions had factually definitive answers these are presented for comparative purposes.

3.2 METHOD

3.2.1 DEVELOPMENT OF THE QUESTIONNAIRE: RATIONALE

The evidence of the caseload audit presented in Chapter Two indicated that teaching staff, along with other referral agents, had an inaccurate view of which language/s an individual child was speaking. Given the importance of knowing which language a child speaks it was felt that a questionnaire administered to teaching staff would give useful insight into their level of knowledge regarding the languages spoken in the local schools. Questionnaires are acknowledged as a method for gaining information concerning 'the proportion of a population that have a certain opinion or characteristic' (Oppenheim 1992: 12). It was decided to target the questionnaire at teaching staff because they were responsible for referring 30.15% of the Pakistani heritage children referred to the speech and language therapy department compared to 14.61% of White monolingual children and their job means that they could be expected to talk to a child on a daily basis. Health visiting staff, although responsible for a higher percentage of referrals, would not see a child on a daily basis, and indeed, as outlined in Chapter One, are unlikely to see a child after the age of 2;00. Questionnaire data are acknowledged to have limitations, particularly in terms of restricting possible responses, and it was decided to supplement this questionnaire data set with interview data which are reported below in Section Two of this chapter.

3.2.2 DEVELOPMENT OF THE QUESTIONNAIRE: QUESTION DEVELOPMENT AND PILOTING

The primary aim of the questionnaire was to gain information regarding the awareness of teaching staff of the main languages spoken by children living in the town. As the questionnaire gave the opportunity to establish further information it was decided to ask questions aimed at establishing staff attitudes to mother tongue use and referral of children to speech and language therapy.

A series of seven questions were developed taking into account features viewed as good practice in questionnaire development (Bell 2005). Ambiguity and double questions were avoided as were leading questions. The first question required the respondent to answer the question 'What are the main languages spoken in (name of town) schools?' and gave five, numbered, lines for the response. Data collected by the LEA in 2001 from all nursery and primary schools in their area indicated a total of 50 languages were spoken in the schools, with 5 main languages clearly identifiable, the remaining 45 languages each being spoken by less than 1% of the total school population. The word 'main' was not defined within the questionnaire but it was accepted that by giving five numbered lines for the response there was an implicit suggestion to the respondent that five languages were being sought. The next three questions sought yes / no responses to questions aimed at ascertaining attitudes to mother tongue use. These questions, 'Should mother tongue be encouraged at home? Should mother tongue be encouraged at school? and Do you feel that only English should be encouraged at school?' were developed to reflect the ongoing debate surrounding the use of minority and majority languages within education systems around the world (Baker 2000). Number five was a statement rather than a question and also needed a yes / no response. This statement, 'Mother tongue usage slows down the learning of English', was used as it is reported to be a commonly held belief among the general population in many countries (Tse 2001). At the time the questionnaire was developed this topic was at the centre of a political debate concerning the concept of 'Britishness' which was being widely discussed in the press (see for example Barnett 2003). The last two questions related to the referral of bilingual

children to speech and language therapy. Question Six asked 'In the last year have you been concerned about any bilingual child's speech or language skills?'. If the answer was 'yes' the respondent was asked two supplementary questions: 'How many?' and 'How many of these children did you refer to the speech and language therapy service?'. Evidence reported in Chapters One and Two indicated that bilingual children were not being referred to speech and language therapy in the same way as their monolingual peers and this question aimed to investigate whether bilingual children were being noted as causing concern and if these concerns were triggering referrals. Question Seven asked 'How long should you monitor a child before referring to the speech and language therapy service?' and gave four time options. This question was developed to gain preliminary evidence in response to anecdotal reports that some teaching staff operate an unofficial 'wait and see' policy prior to referring bilingual children. Space was included for the respondents to make comments throughout the questionnaire. The questionnaire is found in Appendix 2.

It is viewed as good practice (Bell 2005) to pilot a questionnaire before its distribution in order to confirm that the instructions are clear and easy for the target population to understand and to gain insight into the length of time completion is likely to take. Modifications can then be undertaken as necessary. In this case the researcher asked two acquaintances, who are teachers working in an adjacent LEA which also has a large bilingual population, to complete a draft form of the questionnaire and subsequently give verbal feedback. The teacher who is the head of the town's LEA based service to bilingual children was also shown the questionnaire in its draft form and asked to comment. This procedure did not result in any changes being made to the draft questionnaire, all respondents reporting they felt it to be clear and easy to complete in no more than five minutes. It is accepted that this was a small pilot group who were personally known to the researcher.

It was anticipated that some of the teaching staff might themselves be bilingual and an additional, supplementary, questionnaire was developed to be completed by these staff. This supplementary questionnaire had four questions, all requiring the respondent to tick their preferred answer from a given choice,

and centred on topics raised in the literature review. Based on evidence reported in Chapter One it appeared that many bilingual staff do not have any formal assessment of their skills in languages other than English. This was the subject of Question One. Questions Two asked whether staffs' bilingual skills had been used with parents and Question Three asked the same with regard to children, with a supplementary question probing exactly what form of interaction this communication involved. Question Four sought information regarding bilingual staff involvement in data collection relating to the presence of bilingual children in their schools. The questionnaire is found in Appendix 3. This questionnaire was not piloted before use. There are very few bilingual staff employed in schools in the town and the researcher was unable to identify any who would not be involved in the main data collection.

3.2.3 DEVELOPMENT OF THE QUESTIONNAIRE: FORMAT

Teachers have many demands made on their time outside the classroom. It was decided that to ensure a high level of compliance the questionnaire should be short, using yes / no tick responses wherever possible, and should fit on to a single side of A4 paper. Space was provided for respondents to add their own comments if they desired. Anonymity had been guaranteed and staff were only asked to tick from a choice of three categories indicating their occupation. No identifiers were on the form to indicate the individual or the name of the school where they worked.

3.2.4 ADMINISTRATION OF QUESTIONNAIRE

Data collected for the caseload audit presented in Chapter Two were examined and six target schools were identified. All had referred more than one bilingual child to the speech and language therapy department during the time under review. The schools had varying proportions of bilingual pupils and their staff might therefore be representative of a broad spectrum of viewpoints when answering questions regarding bilingual children. Of these six schools one was a nursery school and the other five were primary schools, four of which had their own nursery classes. The numbers and percentage of bilingual pupils in each school is set out below in Table 3.1.

Table 3.1 Bilingual pupils in each school (Source: LEA / LEAP team)		
	Number of bilingual pupils in school	**Percentage of bilingual pupils in school**
School 1	101	45%
School 2	40	14%
School 3	202	61%
School 4	116	97%
School 5	315	100%
School 6	251	71%

Questionnaires are noted for often having poor compliance rates. Postal questionnaires may well have response rates below 40% (Oppenheim 1992). The researcher decided that in order to achieve a high response rate she would attend staff meetings at each of the target schools and ask staff to complete the questionnaires immediately. The researcher made initial contact with the head teacher of each school by phone. It was explained that as part of a research project being undertaken within the local speech and language therapy department the researcher wished to ask staff to complete a brief questionnaire, taking approximately five minutes, regarding bilingual children. The researcher requested permission to attend a staff meeting to seek staff co-operation. In all six schools the head teacher agreed to this request. The researcher subsequently attended a staff meeting at each school. At the staff meetings all the staff present were informed that a research project was being conducted investigating the referral of bilingual children to speech and language therapy. They were asked to complete the questionnaires with the understanding that any data collected would be published under strict conditions of anonymity. It was made clear that their decision to complete a questionnaire was entirely voluntary. Staff were told that they would be given feedback regarding the research on completion of the overall project. The questionnaires were then distributed for immediate completion: staff were asked to complete them in silence without consulting colleagues. Nobody declined to complete a questionnaire, giving a 100% completion rate. Questionnaires were not left for

staff who were absent from the meeting. Numbers of staff completing questionnaires in each school are set out below in Table 3.2, along with their professional status.

Table 3.2 Staff completing questionnaire

	Qualified teachers who completed questionnaire (n)	**Nursery nurses and classroom assistants who completed questionnaire (n)**	**Total number of completed questionnaires**
School 1	11	7	18
School 2	15	14	29
School 3	15	6	21
School 4	4	6	10
School 5	14	0	14
School 6	13	3	16
Total	**72**	**36**	**108**

At each school the researcher asked whether there were any staff present who viewed themselves as bilingual. The researcher did not offer any definition of the term 'bilingual'. At three schools no bilingual staff were identified as being present. At the remaining three schools a total of five bilingual staff identified themselves. All agreed to complete the supplementary questionnaire.

3.2.5 METHOD OF ANALYSIS

To facilitate data handling each school was assigned an identification number to allow the grouping of questionnaires from each individual school. The completed questionnaires were entered into a Microsoft Excel spreadsheet. The raw data were then manipulated to give both the total number and percentage of responses to each question.

3.3 RESULTS

3.3.1 LANGUAGES SPOKEN

The five main languages actually spoken across all local nursery and primary schools (LEAP 2002) are presented in Table 3.3 for comparative purposes.

Table 3.3 Languages spoken in the LEA nursery and primary schools, November 2001 (Source: LEAP 2002)	
English monolingual pupils	82%
Bilingual pupils	18%
NOTE: These above data are reproduced as in the source document. The source is an internal document used within the LEA and in this document the term 'bilingual' is not defined.	
Of the 18% of bilingual pupils:	
Punjabi	45%
Urdu	19%
Mirpuri	16%
NOTE: The relative percentages reported above for the 3 Pakistani heritage languages, Mirpuri, Punjabi and Urdu are viewed as inaccurate by the collecting agency, representing parental description of the language spoken. The total percentage across the 3 languages is regarded as accurate (Jones, personal communication 2002).	
Bengali	14%
Other languages (n = 45)	6%

A total of 20 languages were named in the completed questionnaires. Table 3.4, below, sets out the languages named by respondents at each school and allows comparison with the languages actually spoken (LEAP 2002) in each school.

Table 3.4 Languages named by school staff compared to actual languages for each school	
Actual languages spoken in school	**Languages named by school staff**
School 1 (18 questionnaires completed)	
Bengali, English, Kashmiri, Mirpuri, Pothari, Punjabi, Pushto, Urdu (n=8)	Bangladeshi, Bengali, English (17/18), French, German, Gujerati, Mirpuri (12/18), Pakistani, Punjabi, Pushto, Urdu (n=11)
School 2 (29 questionnaires completed)	
Arabic, Bengali, Chinese, English, Hindi, Punjabi, Turkish, Urdu (n=8)	Bangladeshi, Bengali, Chinese, English (26/29), Hindi, Gujerati, Mirpuri (2/29), Polish, Punjabi, Urdu (n=10)
School 3 (21 questionnaires completed)	
Bengali, Danish, English, Kashmiri, Mirpuri, Punjabi, Urdu (n=7)	Arabic, Bangladeshi, Bengali, English (21/21), Gujerati, Mirpuri (8/21), Punjabi, Urdu (n=8)
School 4 (10 questionnaires completed)	
Bengali, English, Katchi, Mirpuri, Punjabi, Urdu (n=6)	Bengali, English (8/10), French, Mirpuri (8/10), Punjabi, Urdu (n=6)
School 5 (14 questionnaires completed)	
Bengali, Dutch, English, Italian, Mirpuri, Punjabi, Pushto, Urdu (n=8)	Bangladeshi, Bengali, English (14/14), Hungarian, Italian, Mirpuri (3/14), Polish, Punjabi, Ukrainian, Urdu (n=10)
School 6 (16 questionnaires completed)	
Arabic, Bengali, Cantonese, English, Mirpuri, Portuguese, Punjabi, Urdu (n=8)	Bengali, Chinese, English (11/16), Kurdish, Mirpuri (5/16), Portuguese, Punjabi, Urdu (n=8)

In view of the inaccuracy of teaching staff regarding the languages spoken in local schools the data were further manipulated to examine the relative accuracy in percentage terms. See Table 3.5 below.

Table 3.5 What are the main languages spoken in local schools?	
Correctly named all 5 languages	14%
Correctly named all 3 Pakistani heritage languages	19%

3.3.2 USE OF MOTHER TONGUE

Respondents were asked to answer four questions regarding the use of a child's mother tongue. The given choice was between 'yes' and 'no' but some respondents chose instead to write 'don't know' in the comments section below each question. The responses are presented in Table 3.6.

Table 3.6 Questions regarding mother tongue.		
Yes	**No**	**Don't know**
Should mother tongue be encouraged at home?		
98%	1%	1%
Should mother tongue be encouraged at school?		
81%	18%	1%
Do you feel that only English should be encouraged at school?		
19%	81%	1%
Mother tongue usage slows down the learning of English.		
14%	81%	5%

3.3.3 CONCERNS REGARDING SPEECH OR LANGUAGE SKILLS OF BILINGUAL PUPILS

The questionnaire asked 'In the last year have you been concerned about any bilingual child's speech or language skills?' If the answer was 'yes' two follow up questions were then posed asking how many children had caused concern

and how many of those had been referred to the speech and language therapy department. The results are set out in Table 3.7.

Table 3.7 In the last year have you been concerned about any bilingual child's speech or language skills?	
Number of children causing concern	162
Number of these children referred	54
% of children causing concern who were referred to speech and language therapy department	33%

3.3.4 TIME ELAPSED PRIOR TO REFERRAL

The caseload audit reported in Chapter Two demonstrated a long tail of older bilingual children being referred to speech and language therapy relative to referral ages of monolingual children. The questionnaire therefore probed education staff's perceptions of appropriate monitoring time prior to onward referral to speech and language therapy, giving four time options. Some staff did not tick any of these four given options but instead chose to write 'don't know' in the comments section below this question. The results are presented below in Table 3.8.

Table 3.8 How long should you monitor a child before referring to the speech and language therapy service?		
	Number	**Percentage**
Immediate referral	28	26%
6 months	63	58%
12 months	4	4%
2 years	0	0%
Don't know	13	12%
Total	108	100%

3.3.5 ADDITIONAL COMMENTS

The questionnaires had blank spaces after each question for respondents to supply any additional comments. Question two generated two comments, whilst questions three, four and five generated one response each. Question seven, regarding the length of time which should elapse prior to referral to the speech and language therapy service, generated sixteen comments. Close examination of these sixteen comments revealed that fourteen could be classified as falling in to one of three categories:

I. Comments regarding the degree of perceived impairment e.g. 'It depends on what kind of speech problem'.
II. Comments suggesting a wait and see approach e.g. 'Depends on age and access to new languages.'
III. Comments reflecting concerns about waiting times e.g. 'Immediately as it takes so long for them to be seen'.

The remaining two, unclassified, comments were: 'Don't know – am not an SLT' and 'Do they attend appointments?' both comments written by teachers.

3.3.6 SUPPLEMENTARY QUESTIONNAIRE FOR BILINGUAL STAFF

Five education staff, three teachers and two nursery nurses, identified themselves as bilingual. All completed the supplementary questionnaire. The languages spoken by these staff members are shown in Table 3.9.

Table 3.9 Reported languages spoken by bilingual staff.

Language spoken	**Number of staff**
Urdu	3
Punjabi	2
Mirpuri	1
Spanish	1

Experience of bilingual speech and language therapy assistants led the researcher to believe that few bilingual speech and language therapy staff have

their self-reported language skills assessed at interview. No information was available to the researcher regarding interview practice in local schools. The respondents were therefore asked whether their language skills had been assessed at interview. The results are presented in Table 3.10 below.

Table 3.10 When you were interviewed for this job were you asked to provide any practical evidence of your language skills in languages other than English? (For example were you asked to talk to someone else who could speak that language?)	
Yes	1
No	4

3.3.6.1 FREQUENCY OF LANGUAGE USE

The questionnaire asked respondents to identify (from four options) how often they used their languages other than English. The results are reported in Table 3.11.

Table 3.11 Frequency of language use.	
How often do you use the language/s you speak other than English with parents / carers?	
Rarely	0
Once a term	0
Once a week	2
Daily	3
How often do you use the language/s you speak other than English with children?	
Rarely	0
Once a term	0
Once a week	0
Daily	5

3.3.6.2 CONTEXT OF LANGUAGE USE

The ability to speak to children in their mother tongue does not necessarily mean that these skills are deployed within the classroom context. Questions were asked to probe for what purpose and how frequently bilingual staff felt they used their mother tongue skills. The results are presented in Table 3.12.

Table 3.12 Context and frequency of mother tongue usage

Which of the following activities have you *ever* done with a child in mother tongue?	
	Number of staff
Give instructions	3
Caring activities	3
Disciplining messages	3
Taught a complete topic	2
Translated a complete story	2
Chatting informally	5
Which of the following activities have you done *today* with a child in mother tongue?	
	Number of staff
Give instructions	2
Caring activities	1
Disciplining messages	2
Taught a complete topic	1
Translated a complete story	1
Chatting informally	4

3.3.6.3 INVOLVEMENT IN DATA COLLECTION

As the quality of the data collected regarding languages present in the local schools had been questioned by the department collating that data (see Table 3.3 above) a question was included to examine whether bilingual staff had been asked to offer information regarding which language a child spoke in connection with such records. All five staff members stated they had been asked for such information.

3.4 DISCUSSION OF QUESTIONNAIRE RESULTS

3.4.1 KNOWLEDGE OF LANGUAGES SPOKEN IN LOCAL SCHOOLS

One of the key findings of the caseload audit reported in Chapter Two was the very low level of accuracy achieved by referral agents reporting the language/s spoken by a child. This finding is reinforced by the evidence from this questionnaire that education staff have a limited knowledge of the main languages spoken in local schools. Less than 1 in 5 correctly named the three Pakistani heritage languages although these three languages account for 80% of the languages spoken by local bilingual primary school children. It is possible to speculate that knowledge of language labels and of languages spoken will be affected by knowledge of the children within your own school. The questionnaire gave the opportunity to examine this possibility by comparing the languages named by staff with those actually recorded by the LEA as being spoken by children attending that school. These data, presented in Table 3.4, indicate that some staff use a generic name linked to the country of origin rather than a language title, for example 'Chinese'. This behaviour was observed in five of the six schools. In all these five schools there were children present from the named country. Interestingly one language, Hungarian, was named although no child in primary schools covered by the LEA is known to speak that language. Two languages, Polish and Ukrainian, named by staff at two schools, have, respectively, one and two known speakers in local primary schools but are widely spoken by an adult population who settled in the area following the Second World War. This population integrated rapidly with the local English speaking population and did not pass their languages to their children or grandchildren. It may be that staff named these languages because they were aware of adult speakers in the local community.

The questionnaire results give clear evidence that many of the teachers surveyed are unsure of language labels and unsure of the languages spoken within their schools. The increasing number of bilingual pupils in Britain means that most teachers can expect to have some experience of pupils who speak or

hear a language other than English (Hall 2001). There is a growing awareness within the education field of the need to develop expertise in this area and books are being published aimed at giving teachers the theoretical knowledge and practical skills to work with bilingual children within their classrooms (see for example Gibbons 1993, Hall *et al* 2001). The focus in schools is however on the use of English, both as the medium of instruction and the language to be used by the child. In England there is pressure on schools to demonstrate academic success via the 'league tables', published in the media, which are derived from performance in the statutory assessments undertaken by pupils at ages seven and eleven. These assessments are in English and it is unsurprising that teachers are likely to be focussed on developing English skills in their pupils (Cummins 2000).

Educationalists promote the idea that good teaching practice encompasses communication with all parents regardless of their mother tongue, and that this should include the use of both spoken and written mother tongue to indicate the notion of inclusion (Gibbons 1993, Baker 2000). The reality of lack of access to the bilingual staff needed to achieve this aim may mean that staff have little motivation to learn which languages are spoken by which parents as they view this information as of little practical value to them. An increase in the number of bilingual staff working in schools may well have an effect not just on interaction with bilingual children and their parents but also on teachers' knowledge regarding language labels.

3.4.2 TIME ALLOWED FOR MONITORING A CHILD PRIOR TO REFERRAL

The local speech and language therapy service in the town has a specialist service dedicated to bilingual children and has collaborated with the LEA to develop guidance, issued to all the local schools, regarding the early identification and referral of bilingual pupils with suspected speech and language disorders. The Department for Education and Skills (DfES) has issued guidance to schools in England underlining the importance of early assessment and intervention for bilingual pupils: 'children with a learning difficulty or

developmental delay and whose parents do not have English as a first language .... are likely to be particularly disadvantaged if any special educational needs are not identified at the earliest possible stage' (DfES 2001).

There is anecdotal evidence that teachers adopt a 'wait and see' policy prior to referring children to specialist services and Question Seven aimed to probe this possibility by asking 'How long should you monitor a child before referring to the speech and language therapy service?'. Four options were given (immediate referral / 6 months / 12 months / 2 years) as well as a space for comments. Over half the sample (58%) indicated they would wait six months compared to the 26% who indicated they would make an immediate referral, while 12% did not select any of the given options and instead wrote in the comment space that they 'didn't know'. 4% of respondents indicated they would wait twelve months. It is of concern that over half the sample indicated they would wait six months rather than making an immediate referral but it is accepted that the results may have been influenced by the options given. It is possible to argue that the given choices restricted responses and some teachers may have opted for an in-between option of, for example, three months, if that had been offered. While this argument must be considered, there is evidence that 12% of respondents avoided using the given choice options and opted instead to write in a comment. These respondents at least were not influenced by the given time options. The comments appended to this question suggested that some staff might indeed be adopting an unofficial 'wait and see policy'. The comment 'EAL pupils need time to acquire language skills' made by one teacher, may also be suggestive of a misapprehension that difficulties can only occur, be identified and then treated in English. The comment might also signify a belief that bilingual children have slower language development than monolingual children. Conversely others were apparently influenced to make immediate referrals by their knowledge of local waiting list times for speech and language therapy: 'Refer immediately because follow up is slow'. In either case, it is not clear that education staff are making informed, considered decisions; rather they appear to be responding to their own, potentially misinformed, perceptions.

Written guidance and training sessions may help to clarify the issue in teachers' minds. Documents and training developed jointly by local speech and language therapists (SLTs), educational psychologists and specialist teachers could focus on the differential diagnosis of children with speech and language difficulties, those with general learning difficulties and those with difficulties associated with acquiring English as an additional language.

3.4.3 NUMBERS OF CHILDREN REFERRED TO SPEECH AND LANGUAGE THERAPY BY EDUCATION STAFF

The fact that the majority of respondents felt they should wait at least six months before making a referral may be the explanation for the finding that in the past year only one third of children whose speech and language skills caused concern to teaching staff had in fact been referred to the speech and language therapy service (see Table 3.7). If such a strategy is adopted children may pass from one teacher to another during this time and each succeeding teacher may 're-set' the clock, thus further delaying the time of referral. This finding that two-thirds of bilingual children identified as causing concern to teaching staff were not in fact referred is itself a cause for concern. Speech and language therapy departments need to ensure that their referral procedures are widely known and that school staff are aware of the open referral policy operated within England (RCSLT 1996) which ensures anyone may initiate a referral providing they have parental permission. Internal school policies may preclude such action and in such cases the local department may need to liaise directly with the headteacher or Special Educational Needs Co-ordinator (SENCO) to ensure that all children causing concern are referred. Many speech and language therapy departments in England, recognising the role played by teaching staff in supporting children with speech and language difficulties within the classroom, hold regular training sessions for school staff. This would be an appropriate forum for clinicians to facilitate staff to refer any bilingual children about whom they are concerned.

3.4.4 ATTITUDE TO THE USE OF MOTHER TONGUE WITHIN THE CLASSROOM

Questions two to five were designed to investigate the attitudes of respondents to the use of English and mother tongue. The responses, as illustrated in Table 3.6, indicate that the majority of school based staff have a positive attitude to the use of mother tongue, both at home and within the school environment.

3.4.5 NUMBERS AND LANGUAGE PROFICIENCY OF BILINGUAL STAFF

From a cohort of 108 teachers and classroom assistants, spread across six schools, five people, from three schools, identified themselves as bilingual. This self identification as 'bilingual' was left to the respondents, with the researcher offering no guidance concerning the definition. Of these five individuals only one reported having their language skills assessed at interview. The level of linguistic proficiency of these individuals is unknown to the researcher. The questionnaires were distributed at staff meetings and so it is possible that some schools did have bilingual classroom assistants who were not present, as attendance at staff meetings is not compulsory for staff members other than qualified teachers. The shortage of bilingual qualified staff is a problem widely remarked upon by various professional bodies.

3.4.6 BILINGUAL STAFF USING MOTHER TONGUE IN THE CLASSROOM

The responses given by bilingual staff to the questions regarding use of their skills in languages other than English (see Table 3.12) indicate that within the classroom these skills are being employed for a variety of purposes, including informal 'chatting'. This is in contrast to the findings of Hayward (2001) who reported mother tongue being used by bilingual classroom assistants for only a limited range of classroom activities and in particular for disciplining messages. However, a note of caution needs to be sounded. There were only five

respondents and these are self reports: it is possible that they reflect intentions rather than actual classroom practice.

CHAPTER THREE: SECTION TWO

INTERVIEWS CONDUCTED WITH REFERRAL AGENTS

3.5 INTRODUCTION

This section is concerned with twelve interviews conducted with referral agents: six members of health visiting teams, three teachers, each of whom had the role of Special Educational Needs Coordinator (SENCO) for their school, and three school health practitioners (also widely known by their previous job title of 'school nurses'). The rationale for conducting the interviews, methodology and an analysis of the data are presented. Conclusions drawn from the analysis are discussed and considered with reference to some of the statistical data regarding patterns of referral which were presented in Chapter Two.

3.6 GENERAL RATIONALE

The caseload audit data presented in Chapter Two clearly show that the majority of referrals of Pakistani heritage children to speech and language therapy were initiated by health visitors (accounting for 47% of referrals) and by education services (accounting for 30% of referrals). The data also show that 26% of referrals of Pakistani heritage children occur after the age of 5;00 with referrals continuing when children were in secondary schools. These figures contrasted with the 15% of monolingual children referred after the age of 5;00 and none referred after the age of 10;10. This audit data also highlighted that referral agents had an inaccurate knowledge of which language/s a child spoke.

A questionnaire completed by education staff (and reported in Chapter 3 Section 1 above) had given further detailed evidence of this inaccurate knowledge. Administration of the questionnaire had also highlighted how few qualified bilingual staff were working with Pakistani heritage children. The audit findings suggested that it was difficult for referral agents to identify Pakistani heritage children with speech disorders.

Both the caseload audit and questionnaire generated quantitative data. Researchers discuss the relative merits of quantitative and qualitative data at great length and it has been highlighted by some that statistics may fail to capture the essence of the situation (Strauss and Corbin 1998) while 'qualitative analysis elucidates phenomena that would be missed or dismissed by other

methods' (Banister, Burman, Parker, Taylor and Tindall 1994). In view of this it was decided to conduct interviews with professionals who had referred Pakistani heritage children to speech and language therapy. The interview data would be examined in relation to areas of interest highlighted by the caseload audit and the questionnaire reported in Section 1 to establish any emerging themes which could then be considered in parallel with the statistical data derived from other sources. It was postulated that this combination of quantitative and qualitative data would lead towards a more broadly informed response to one of the research questions: Are there any factors influencing the decisions of referral agents which might specifically affect their decisions relating to Pakistani heritage children? Interviews would also give an opportunity to ask professionals whether they perceived any differences in their own pattern of behaviour when assessing the speech and language skills of bilingual children in comparison to monolingual children and whether they felt they would use a speech screening tool if one was available.

Some qualitative researchers have highlighted that direct observations of working practice may yield a more accurate picture than interview data (Silverman 2001). Some such observations were undertaken and are reported in Chapter Four.

3.7 METHOD

3.7.1 SAMPLING

Qualitative research employs a variety of sampling strategies. The interviews reported here resulted from criterion-based or purposive sampling (Ritchie, Lewis and Elam 2003). The interviewees were selected because they worked with bilingual children in a professional capacity and had referred children to the speech and language therapy service. They would therefore facilitate the exploration and understanding of the themes under consideration.

Qualitative samples are usually small in size: the focus is on the detail which can be extracted from the data rather than on the statistical inferences which

can be drawn (Ritchie *et al* 2003). Time restrictions, resulting both from time expended gaining the data and during its analysis, are also recognised as a constraint on sample size (Strauss and Corbin 1998, Ritchie *et al* 2003). A list of twelve potential interviewees was drawn up:

- Three SENCOs from schools with varying percentages of bilingual pupils but all serving catchment areas of high deprivation. It was decided to interview SENCOs rather than just qualified teachers because the SENCO role gives an overview of all the children in a school. SENCOs have time allocated to this role and were therefore more likely than classroom teachers to feel able to offer the time taken by an interview. The SENCO is often the route through which teachers concerned about children arrange their referral to the speech and language therapist. Teacher A had ceased to be the school SENCO the month prior to the interview and so gave many replies in the past tense.

- Three school health practitioners who between them covered all the schools sited within the main geographic area of high deprivation which formed the locus of this research.

- Six members of the two health visiting teams which were attached to general practitioner (GP) practices based in the main geographic areas experiencing a high rate of deprivation. One health visitor was specifically included in the sample because they were the sole health visitor in their department who was a member of an ethnic minority community and spoke Punjabi, one of the principal languages under consideration in this research.

3.7.2 BIAS

Interview data is by its nature open to bias both in its collection and its interpretation (Bell 2005). Three key questions have to be addressed (Silverman 2001):

I. What is the relation between the interviewee and the researcher?

II. What is the relation between interviewees' accounts and the world they describe?

III. Will the data be viewed as objective 'facts', subjective 'perceptions' or simply narratives?

Consideration was given to all these questions and the following position statements made:

I. As the researcher was the specialist speech and language therapist working with bilingual children in the locality they would be personally known by a large number of referral agents. It was accepted that all the referral agents approached would therefore be personally known to the researcher. The interviewees would be approached and asked to participate in an interview. They would be told that it was regarding research being conducted into the identification of bilingual children with speech disorders. It would be made clear that their decision to participate, or not, would in no way affect the service offered to any child they had previously referred or would subsequently refer.

II. It was accepted that the interviewees would be closely involved with the communities about which they were being asked and were likely to have an awareness of recommended professional practice as well as an awareness of their own working practice. This realisation would have an impact on the response to question III.

III. It was accepted that interview data could not be viewed as objective facts. It would be accepted as a simple narrative reflecting the viewpoint of the interviewee at the time of the interview.

All the interviews reported here were conducted by the researcher. This minimized the potential for bias occurring during the interviews, for example due to differing presentation styles (Oppenheim 1992).

3.7.3 QUESTIONS

A list of ten questions was developed (see Appendix 4). These were designed to elicit information about both general, practical aspects of the referral process (for example Question Three 'Could you outline what access you have to interpreters / assistants who speak these languages.') and more individual, personal influences (for example Question Six 'Do you feel as confident when assessing the speech and language skills of bilingual versus monolingual children?') Question One required a factual answer regarding the interviewee's job title and length of service. The following questions were open questions with the exceptions of Questions Eight and Nine which had the potential for a yes / no answer, although it would be predicted that interviewees would then add a tag comment to each response. The final question was an open question inviting the interviewee to make any further comments about any issues around bilingual children accessing speech and language therapy. Principles of question formulation (Oppenheim 1992, Legard, Keegan and Ward 2003) were taken into account: double questions, leading questions and ambiguous questions open to different interpretations were avoided. The questions were ordered in such a way as to facilitate the natural flow of the interview (Bell 2005).

3.7.4 INTERVIEW ARRANGEMENTS

The interviewees were all approached individually by telephone and asked if they would agree to be interviewed: all did agree to be interviewed. Interviews were arranged at times to suit the interviewee and were all conducted at their place of work. Only the interviewee and researcher were present at each interview. Interviews were recorded using a Tandberg Educational Audio Tutor TCR 712 tape recorder with internal microphone.

The interviews followed a structured format. The interviewer first repeated the information given on the telephone regarding the purpose of the interview. The participants were told that the researcher was investigating the referral of bilingual children to speech and language therapy and that the research would be written up for publication. Participants were reminded that their anonymity would be preserved and that their agreement to participate or withdraw would not affect any future professional contact with the researcher. All interviewees confirmed their agreement to participate. It was explained that as part of the interview format the questions would be read by the researcher from a piece of paper. Each interviewee was then asked all the questions on the previously developed list. At times the interviewees asked the researcher questions as part of their responses. In order to facilitate the flow of the interview (Oppenheim 1992) these were answered but the interviewer then reminded the interviewee that they were obliged to return to the pre-planned questions. Similarly the researcher asked some supplementary questions which arose from responses to individual questions. These supplementary questions all related to one of two questions:

- Question One (relating to length of time in post) when clarification was sometimes required to ascertain years of professional experience.

- Question Nine (relating to whether the interviewee would use a speech screen) when the interviewee was asked a supplementary question regarding whether there were any qualifications they wished to attach to a 'yes' answer if they had not spontaneously mentioned any such qualifications.

The supplementary questions were therefore all aimed at eliciting factual information. Care was taken to avoid leading questions.

3.7.5 TRANSCRIPTION

The interview tapes were subsequently transcribed. These transcriptions were of the spoken word and did not attempt to record pauses, intonation or any

other body language. Each interviewee was given a typed copy of their interview transcript and was asked to confirm it was accurate. Interviewees also gave permission at this point for the anonymised transcripts to be used for publication.

3.7.6 DATA MANAGEMENT

There are many different ways of analysing qualitative data (Spencer, Ritchie and O'Connor 2003). Taking into account the structured nature of the data collection the researcher decided to adopt a content analysis, examining the data and identifying key themes (Burman 1994, Ritchie, Spencer and O'Connor 2003, Spencer *et al* 2003). Initially all the responses to each individual question were examined and are reported below under headings which summarise the underlying theme each question was probing. All the data sets were then re-examined to establish whether any additional underlying themes emerged during interviewees' responses (Spencer *et al* 2003). As a new underlying theme was identified in one data set it was coded and the other data sets examined for any additional evidence relating to this theme. These emerging themes are also presented below.

3.8 ANALYSIS: KEY THEMES

3.8.1 EXPERIENCE

Question one asked interviewees how many years experience they had in their professional role. The information is given in Table 3.13.

Table 3.13 Number of years experience of interviewees		
	Average number of years in role	**Range of years in role**
Health visiting team (n = 6)	10.66	4 - 16
SENCOs (n = 3)	15.66	12 - 19
School health practitioners (n = 3)	14.66	12 – 18

This clearly demonstrates that all the referral agents interviewed were experienced professionals. This is unsurprising in the case of SENCOs whose job requires a level of experience. The high level of experience represented in the health visiting and school health practitioner teams reflects the national situation of an ageing profile within community nursing (Health Visitors Association 1995, Health Visitors Association 1996).

3.8.2 AWARENESS OF LANGUAGES

Question Two asked interviewees which languages were most frequently spoken by the bilingual children with whom they work.

All members of the health visiting teams and the SENCOs named the three Pakistani heritage languages Mirpuri, Punjabi and Urdu as well as Bengali. One school health practitioner named all three Pakistani heritage languages. The other two school health practitioners each named only two Pakistani heritage languages and their responses suggested self awareness that their knowledge might be inaccurate:

> 'Urdu, Punjabi, I think those are the main ones on my case I would think.'
> *School health practitioner B line 11*

3.8.3 ACCESS TO INTERPRETERS

Question Three asked interviewees to outline what access they have to interpreters.

All members of the health visiting and school health practitioner teams reported that they had access to interpreters. Qualifying comments suggested that this access involved time consuming negotiations:

> I've got to go through the translation services and that's got to be okayed by management. That's quite a logistics thing, so we do without that if we can.'
> *Health visiting team member C line 21*

> It's quite tricky. Unless I'm sure I'm going to need an interpreter I don't book one.'
> *School health practitioner B line 22*

In contrast the three SENCOs reported they had no access to interpreters and relied on any bilingual staff employed within the school:

> 'Not really no, it's a problem. We are a lot better now because we've got an Asian member of staff.'
> *Teacher A line 15*

3.8.4 DECIDING WHO TO REFER

Question Four asked how the professionals decided to refer children to speech and language therapy.

The health visiting teams all talked about whether the child passed developmental checklists or assessments and also talked about parental concerns:

> 'I will usually say to the parent that what they know about their child's development is more important than I will see in the twenty or thirty minute contact and so you are fairly reliant on parent's view to assess the child's development'
> *Health visiting team B line 49*

One health visitor also referred to 'gut instinct':

> 'A lot of it is gut instinct. Because of experience you tend to realise when, I don't know, it's really hard to explain that because it is mainly gut instinct.'
> *Health visiting team member C line 79*

Two of the three teachers immediately introduced the idea of 'wait and see' in their responses and none gave an indication that they had specific criterion to measure the child against:

> 'It was very difficult because you were always feeling, wait for them to tune in, you had this gut feeling that there's child language in there but you had to wait, oh let's give them time to settle in, time to tune in and you could be eighteen months to two years down the line before a child actually got, assessed and diagnosis needed, very frustrating. '
> *Teacher A line 46*

Interestingly all the school health practitioners immediately reported that their referrals were in response to comments from teachers:

> 'Well believe it or not it's actually class teachers.'
> *School health practitioner C line 59*

3.8.5 REFERRING BILINGUAL vs. MONOLINGUAL CHILDREN

Question Five asked the interviewees to consider whether there was any difference in their decision making regarding referring monolingual English

speaking children and bilingual children. All the teachers, four of the six members of health visiting teams and one of the three school health practitioners reported they were aware of differences in their decision making between monolingual and bilingual children:

> 'Definitely. I think people tend to leave Asian children a lot longer before they would actually say 'I think there's a problem'. They would just say it's a second language problem and often it wasn't.'
> *Teacher A line 64*

> 'It's more difficult to assess isn't it and you can only go off what parents say.'
> *Health visiting team member D line 168*

Conversely two of the three school health practitioners clearly indicated that they did not perceive any difference in their practice:

> 'It's the same'
> *School health practitioner C line 74*

Two members of the health visiting teams gave less precise answers, indicating that they were unsure whether their practice varied or not:

> 'It's really on the individual child and what's happening at that time. It can be the same, we tend to keep an eye on children of either language.'
> *Health visiting team member F line 40*

3.8.6 CONFIDENCE

Question Six asked interviewees whether they felt equally confident when assessing the speech and language skills of bilingual and monolingual children. Answers to this question clearly indicated that none of the professionals felt as confident in their dealings with children when there is no common language:

'Whereas you can make a much more informed decision about monolingual children because you know the structures of English don't you whereas not knowing the structures and that, it bothers me really that sometimes we refer children, bilingual children, but we might not have referred monolingual children.'
Teacher B line 82

3.8.7 IMPACT OF SPEECH DISORDERS

Question Seven asked interviewees to consider what impact they felt an inability to say sounds correctly might have on a child. All interviewees felt such difficulties would have an impact on a child. Answers particularly highlighted concerns regarding the possible effect on behaviour and the impact on self esteem:

It's more difficult to make themselves understood and so they could become frustrated'
Health visiting team member B line 89

'I think it's absolutely soul-destroying for the children.'
Teacher A line 86

It would seem, then, that both health and education professionals will be motivated to refer children who they suspect of having speech disorders.

3.8.8 IDENTIFYING SPEECH DISORDERS

Question Eight asked whether interviewees felt they would be able to identify a bilingual child having difficulty with speech sounds.

There was broad agreement across all the professions that identifying speech disorders in bilingual children would be difficult:

'Well to be absolutely honest I can't think of a bilingual child that has been identified with speech sound problems. I'm just trying to think. I can

name you four monolingual children at least, hand on heart, but I can't think of any at the moment.'
Teacher B line 194

'If they were very obvious I would, but I don't think I would pick them up as easily in the Asian children as in non-Asian children.'
School health practitioner B line 133

Interestingly one reply clearly indicated that the interviewee was assuming that speech sound errors would be identified in English rather than the child's mother tongue:

'No. Not as easily. I probably can actually now, yes. But certainly not as easily because bilingual children do tend to have some difference in their speech sounds. Like video and things like "v", the vees they find difficult.'
Teacher B line 171

3.8.9 USE OF A SCREENING TOOL

Question Nine asked whether interviewees would use a screening tool to identify speech sound errors in bilingual children. Supplementary questions were used to clarify whether interviewees had any qualifying conditions which would affect their use of such a tool.

All the interviewees had a favourable response to the idea of using a screening tool. The need for such a tool to be quick to administer, fit in with existing procedures and be standardised was raised by several interviewees:

'As long as it had been tried and tested, research based and it was a valid tool and it fitted in with checks that we were doing, then yes.'
Health visiting team member D line 242

'Yes. I think it would, yes..... It would have to be something that was very workable in a mainstream situation, that you could just say spend quarter of an hour doing.'
Teacher C line 295...298

3.9 ANALYSIS: UNDERLYING THEMES

As well as considering the direct answers offered to the questions posed by the researcher, the data was also examined to determine whether there were any underlying themes which emerged during the interviews. These are considered below.

3.9.1 CONCERNS REGARDING PEOPLE USED AS INTERPRETERS

Direct issues relating to the availability of interpreting staff were considered above, but interviewees also made more wide ranging comments regarding people used as interpreters.

Issues either directly or indirectly concerning confidentiality were raised:

'Sometimes it's hard when it's their families and this that and the other.'
Health visiting team member F line 20

The use of children and siblings, widely remarked upon and highlighted as indicative of poor practice in the literature (see for example Wyatt 1998), was reported:

'Sometimes I use older siblings, which I know is wrong but when you are stuck sometimes you do use siblings.'
School health practitioner A line 29

Concerns regarding the skill level and the ad hoc training given to interpreting staff were mentioned by several interviewees:

'So they've no experience of working with health visitors, no medical experience, nothing whatsoever, just their language skills and they are usually just people from the community without any formal qualifications at all. So the training is in house really.
Health visiting team member C line 36

3.9.2 ABDICATION OF RESPONSIBILITY

Comments made by several interviewees made it clear that they felt responsibility for a child's well-being rested with their parents rather than with the professional:

'I don't feel as concerned because I can now say to myself, I know it's a fashionable thing this, at the moment it's the parents responsibility, not mine.'
Health visiting team member A line 84

'I would always say "it's your child, it's your responsibility, we only give you guidance."'
Health visiting team member D line 223

3.9.3 ATTITUDE TO ASIAN FAMILIES

Interestingly, some interviewees made comments indicating that they did not feel parents within the Asian community acknowledged their child's difficulties:

'I feel there is a great reluctance within the community to acknowledge problems because you lose face, that's my impression, in communities that there are a lot of things which are hidden.'
Health visiting team member B line 130

'I think parents taking it seriously is a bit of an issue. We get a lot of non-attendance. I suppose you get them among monolingual children as well

but we do tend to get, I'm not always sure we relay our concerns sufficiently to parents.'
Teacher B line 206

'I think it's Asian parents as well don't understand. Yes I think they do make excuses, oh well they are learning two languages and they are going to mosque'
Teacher C line 134

3.9.4 TIME CONSTRAINTS AND CHANGES IN THE TIMING OF ROUTINE ASSESSMENTS

Changes in the timing of routine developmental checks carried out by health visiting teams are discussed in Chapter Four. School health practitioners in these interviews highlighted changes in their working practice involving a move away from a routine assessment to a screening procedure: comments indicated that the practitioners regretted the consequent loss of an opportunity to engage with children and assess their communication skills in an informal manner.

'The unfortunate thing about doing the developmental screening.....you don't really have a conversation with the child. Whereas when we were doing the reception assessment you definitely had a conversation with them.'
School health practitioner C line 78

A suggestion of time constraints can be inferred from one comment:

'It's just rewording what you are saying to get down to the bottom of things. Eventually if you've got enough time in the day.'
Health visiting team member F line 120

3.9.5 THE DIFFICULTY OF ELICITING SPEECH FROM CHILDREN FROM THE PAKISTANI HERITAGE COMMUNITY

The data reported in Chapter Five, relating to the development of normative data, indicated a large number of children in the Pakistani heritage community were reluctant to speak to the data collectors. This was a difficulty commented on by several interviewees:

> 'I think the main difficulty culturally is that some of the Asian children I see have almost a pathological shyness and are not encouraged to talk to stranger *(sic)* white people and that is the big issue.'
> *Health visiting team member B line 67*

> 'Nine times out of ten the children won't speak.'
> *Health visiting team member F line 63*

3.9.6 CONCERNS REGARDING CLASSIFYING CHILDREN AS HAVING SPECIAL EDUCATIONAL NEEDS

Historically there have been incidents where bilingual children, due to inappropriate assessment in a language other than their mother tongue, were classified as having special educational needs, when in fact they only needed support to learn an additional language (Hall *et al* 2001). Both the 1981 Education Act (Department of Education and Science 1981) and the 1993 Education Act (Department for Education 1993) sought to ensure this practice did not continue. In these interviews two of the teaching staff raised concerns regarding this issue and in doing so highlighted the need for targeted assessment tools to measure the skills of bilingual pupils:

> 'They were frightened of saying too soon this child, because you can't, you aren't allowed to class a second language child as having special needs purely because of the language difference. It was often you were shying away from doing it when you actually felt it was more than just a language problem, but you had no way of confirming it either, it was just that gut feeling you had.' *Teacher A line 66*

'I know that sometimes bilingual children will be put on the special needs register earlier because it might be a 'need to help' problem rather than a special needs problem, because they are still developing a language. But I'd rather put them on and then take them off and then do something about it rather than leave it for a couple of years and then think "Oh my God this child's got a serious problem". But it's not easy and I've thought this for a while. I know the Head was concerned about it at one point because she saw quite a few bilingual children on the register and I've said "well look we've got these concerns at the moment, we need to go through the process of English development and then we can think again"'.

Teacher B line 85

3.9.7 DEPRIVATION

Some comments described the effects of deprivation on the town centre population in general:

'Within the English group you would also have a group who would feel quite nervous about going to something like that *[a Sure Start group],* nervous about being in a group, nervous about being compared with people in the group, what kind of pram you have, how your child behaves in a group. Within the Asian community you would probably have fewer who felt empowered to go to the group and a larger category who would need a lot of encouragement.'

Health visiting team member B line 213

'I don't think it's lack of information. I think it is lack of the ability to prioritise their lifestyles and I think speech is a lesser problem to some families than it should be'

Health visiting team member C line 264

3.9.8 SPEECH AND LANGUAGE THERAPY NOT VALUED BY PARENTS

In response to the final question regarding bilingual children accessing the speech and language therapy service six interviewees indicated that access to a speech and language therapist was not seen as a high priority by the families with whom they work.

> 'I think speech is a lesser problem to some families than it should be.'
> *Health visiting team member C line 264*

> 'I get the distinct feeling that perhaps parents don't feel as motivated like what they should be'
> *School Health Practitioner C 129*

3.9.9 WAITING LISTS

On completion of the planned interview questions, interviewees were asked whether they would like to add any comments regarding bilingual children accessing the speech and language therapy service. Four interviewees commented on the long waiting list for speech and language therapy:

> 'I think it's....probably about waiting time, about how long children have to wait. It's the waiting times, and then obviously because they have, they are bilingual, I feel, I could be wrong, but I do feel they wait longer. Parents perceive it as a problem.'
> *Health visiting team member D line 264*

3.10 DISCUSSION

3.10.1 LANGUAGES

The interview data indicate that the majority of interviewees were aware of the three Pakistani heritage languages and did know the correct language labels. The two who were unable to name all three languages indicated that they felt their knowledge was incomplete. The data also indicated that although health

service professionals had access to interpreting staff their services were not necessarily used. The interpreters are not permanently assigned to these staff and it is time consuming to arrange an appointment with them. Furthermore, booking their time is not always possible:

> The service of interpreters is a little bit unpredictable in that we are not quite sure, we haven't got set hours a week where we could get an interpreter and there is a particular problem after three o'clock.'
> *Health visiting team member B line 17, line 22*

This may offer a possible explanation for the high rate of incorrect language descriptions noted during the caseload audit: although staff have an awareness of different languages they cannot themselves speak them and have to be guided by what they are told either by the parents (in the absence of an interpreter) or indeed by an interpreter:

> 'When I first came to this caseload...we did have...part interpreter, part auxiliary....I worked with her for four years before I realised we had different dialects.'
> *Health visiting team member A line 29*

The varying background skills and level of language skills displayed by interpreters was also commented upon. Currently there are no national standards for people employed as interpreters within the National Health Service (NHS) or the education system, although some employment agencies and NHS organisations are beginning to ask for certificated evidence of language skills. Few employers offer courses designed to develop skills in professionals working with interpreters. The introduction of such courses and of a standard level of language skill for interpreters would seem to be needed.

3.10.2 RESPONSIBILITY

Some professionals indicated during these interviews that they felt responsibility for identifying needs and seeking help was now more focussed on parents than

it had been in the past. Several also highlighted that young Pakistani heritage children are often very reluctant to speak to unknown adults. If children will not speak to the professional then that professional is entirely reliant on parental report of the child's communication abilities. There were also indications that professionals felt that Pakistani heritage parents did not understand language development milestones or the need for the intervention of a therapist. Lack of awareness of the role of SLTs has long been a challenge for the SLT profession and this lack of awareness is unsurprising in a migrant community. In a situation where there is no clear acceptance of responsibility by some potential referral agents it is possible that children will 'slip through the net' and not be identified and referred to speech and language therapy. There is a real need for SLT clinicians to be pro-active in explaining both expected speech and language milestones and their own role in helping children who are not achieving these milestones. One interviewee provided a novel suggestion:

> 'I would like to have a special prescription pad and say I am prescribing you this valuable resource'
> *Health visiting team member B line 201*

3.10.3 LENGTH OF WAITING LISTS

The fact that several referral agents should spontaneously raise the length of waiting lists has implications for the service concerned. Comments regarding the waiting list length had also been written in by teachers completing the questionnaire reported in Section One. There is research evidence that waiting list length can influence referral behaviour (Keating, Syrmis, Hamilton and McMahon 1998). There was in fact evidence within the interview data to suggest that referral agents were adapting their behaviour in response to waiting lists:

> 'The waiting list was so long to get them any help anyhow and you just kept on trying something else.'
> *Teacher A line 103*

Waiting times for medical treatment within the NHS are currently the focus of much central government and media concern. It is likely that waiting times for speech and language therapy services will eventually come under public scrutiny. It is certainly possible to speculate that a population unconvinced of the need for the service in the first place will be less inclined to attend appointments if there is a lengthy wait between the initial screening appointment and the subsequent offer of therapy.

3.10.4 ATTITUDE TO PAKISTANI HERITAGE FAMILIES

The concepts of 'racism' and 'institutionalised racism' are highly controversial areas. In England the Race Relations Amendment Act 2000 makes it illegal to discriminate against an individual on the basis of their ethnic origin. No comments were recorded in these interviews which came in to this category. There was, however, evidence of professionals reporting their 'beliefs' regarding what they labelled as 'Asian' families. In this case 'beliefs' are defined as 'inferences made by an observer' (Rokeach 1973, quoted in Robinson 1998). There is a potential difficulty if a professional allows their 'beliefs', which may be erroneous, to influence their decision making (Robinson 1998), for example by not referring a child to an SLT because they believe the family are not concerned about their child and will therefore not attend appointments. All professionals need to guard against basing their practice on 'beliefs'. Training courses for health and education professionals need to cover this area.

3.10.5 SCREENING TOOL

The majority of interviewees acknowledged that there were differences in the way they made referral decisions regarding monolingual and bilingual children and several health professionals commented that they used developmental checklists although conversely none of the education staff did so. The majority also reported that they did not feel confident when working with bilingual families and teacher comments indicated that in the light of this lack of confidence they were operating a 'wait and see' policy. Teachers also indicated concerns that awareness of the previous tendency to over-diagnose bilingual

children with Special Educational Needs (SEN) had made them reluctant to identify children about whom they were not absolutely sure. All interviewees said that they would be willing to use a speech screening tool if one was developed. It is likely that such a tool, linked to normative data which would allow referral agents to make comparisons with normal development, would facilitate identification and ensure referral agents were more confident in their decision making. The development of such a tool can therefore be viewed as a priority.

3.11 CONCLUSION

As outlined at the beginning of this chapter the questionnaires and interviews were developed in the belief that they would yield data allowing a more broadly informed response to the research question 'Are there any factors influencing the decisions of referral agents which might specifically affect their decisions relating to Pakistani heritage children?' The data presented above indicate that there are indeed several key factors influencing these decisions. Two appear to be critical in this respect:

- Availability and accessibility of skilled interpreting staff
- Lack of availability of appropriate screening measures

The development of a speech screening tool for use with Pakistani heritage children is the focus of the next chapter.

CHAPTER FOUR

THE DEVELOPMENT OF A SPEECH SCREENING TOOL FOR USE WITH PAKISTANI HERITAGE CHILDREN

4.1 INTRODUCTION

This chapter describes the development of a screening tool, designed to be used by health visitors and school health practitioners, to identify Pakistani heritage children making speech sound errors. All stages of the development of this tool, including a six month trial conducted with a group of health professionals, as well as two speech and language therapists, are outlined, along with an overview of the outcome of this trial. In the discussion section the implications of this trial are considered in tandem with the changes which occurred in the timing and style of health visitor and school health practitioner working practice.

4.2 RATIONALE

The survey of referrals to speech and language therapy, reported in Chapter Two, clearly shows that Pakistani heritage children with speech disorders are not being identified by referral agents. The data also clearly show that the principal referral agents are health visitors and education services (including school health practitioners). Interviews conducted with members of both these professions (see Chapter Three) indicated a willingness to use a screening tool if one was available. It was therefore decided to develop such a tool and issue it on a trial basis to a group of health professionals for a period of six months. This would allow the researcher to assess the feasibility of these professionals using such a tool to facilitate their identification of Pakistani heritage children with speech disorders. At the same time the viability of this tool being used by qualified speech and language therapists could also be evaluated to establish whether it would yield useful information for clinicians.

4.3 GAINING INSIGHT INTO HEALTH VISITOR ASSESSMENTS OF THREE- YEAR OLD CHILDREN

In their interviews with the researcher the health professionals had raised three key issues: a new speech screening tool should be quick and easy to administer and fit in to their normal screening procedure. Some interviewees had also commented that it should be backed by research evidence.

In order to understand what might fit into a normal screening procedure, both in terms of time availability and appropriate format, the researcher first undertook an observation of a health visitor carrying out routine screening assessments.

4.3.1 OBSERVATION OF HEALTH VISITOR CONDUCTING ROUTINE THREE-YEAR ASSESSMENTS

Observation has been defined as 'a systematic description of events, behaviours and artefacts in the social setting under study' (Marshall and Rossman (1989: 79) quoted in Bannister 1994: 19). Observation may take many different forms: it may be structured or unstructured and the observer may be a participant or non-participant in the proceedings being observed (Bell 2005). The observation reported here was unstructured and the researcher was a non-participant.

In the town there are two teams of health visitors who work with the majority of Pakistani heritage families. The researcher approached the larger team, consisting of four health visitors, and asked to spend half a day observing assessments being conducted on three-year old children. The team responded that all their assessments followed the same procedure and that observation would be acceptable to any of them. Each health visitor conducted assessments on pre-booked dates: a convenient date was nominated by the researcher without knowing in advance which health visitor would be observed. The assessments took place in a large room in a health centre. The researcher sat in the room and her presence was explained to parents, who agreed to this observation. The researcher made notes during and between each child's assessment. These contemporaneous records were subsequently examined and the observations are summarised below under headings which reflect some of the key themes identified in the interviews reported in Chapter Three.

4.3.1.1 TIME FACTORS

Appointments had been sent to six children. Each child was allocated fifteen minutes. During this time the health visitor had to complete the following tasks:

- Measure the child's height and weight, both of which were then plotted on a chart in a record book held by the parents

- Check the child's vaccination history

- Check whether the child was registered with a dentist and was registered for a nursery, or school, placement for the following year, as appropriate

- Assess the child's ability to copy simple drawings of a circle and a line, build a tower of small bricks and thread beads onto a string

- Assess the child's speech and language skills. This was achieved by showing them a simple picture book and asking them to name the pictures: the children were also asked to name the colours of the bricks used to build a tower

- Ask the parents whether they had any concerns regarding their child and answer any concerns raised

- Feedback to the parents on their child's performance during the assessment.

Time was allocated between appointments to allow the health visitor to complete her own records.

4.3.1.2 ATTENDANCE

Three of the six children attended. Two children attended with their mothers. One attended with both mother and father. The children observed were aged between 3;03 and 3;06. All came from Pakistani heritage families.

4.3.1.3 ACCESS TO INTERPRETING STAFF

An interpreter attached to the health visiting team had been booked to attend the session. She self-reported as an Urdu and Punjabi speaker. As the adults in the first family spoke English she left the room to carry out some administrative tasks and did not return.

4.3.1.4 SILENCE IN PRESENCE OF UNKNOWN ADULTS

One of the three children remained silent throughout the session. Another child would not speak above a whisper.

4.3.2 OBSERVATION SESSION: IMPLICATIONS FOR DEVELOPMENT OF A SPEECH SCREEN

The observation clearly indicated that very little time would be available within a routine three-year assessment for the administration of any additional screening assessment such as the proposed speech screen. One of the three children would not speak and another presented as reluctant to interact, preferring to use only a whisper: this highlighted that any assessment materials must appear interesting and easily recognisable to the target population. The children were observed spontaneously looking at books which were used during the course of the assessment and this confirmed the possibility of using picture material.

4.4 DEVELOPMENT OF WORD LIST

The use of picture naming to develop data which can subsequently be analysed to indicate the presence or absence of speech disorders is a common practice (see for example Armstrong and Ainley no date, Stevens and Isles 2001, Dodd, Hua, Crosbie, Holm and Ozanne 2002). Development of an appropriate target word list involves consideration of both theoretical and practical factors. The particular factors considered in relation to this speech screen are discussed below.

4.4.1 CLASSES OF PHONEMES TO BE ASSESSED

Examination of the literature indicated there was no information available regarding the phonemic inventory of Mirpuri. There was some evidence available regarding Punjabi (Bhardwaj 1995) and Urdu (Bhatia and Koul 2000), although caution had to be exercised with regard to the Punjabi data which described Indian rather than Pakistani Punjabi. On the basis of the limited information available it was decided to assess the following categories:

- Nasals
- Plosives (including dentalized and aspirated variants)
- Fricatives
- Affricates
- Approximants
- Vowels

4.4.2 POSITION OF TARGET PHONEMES IN WORD

As health visitors and school health practitioners have no training in phonetics it was decided that the screening tool should require only a yes / no decision from the health professionals as to whether the child had produced the correct sound. It was anticipated that placing the sound to be assessed at the beginning of the word would further facilitate this decision. All target phonemes therefore occurred in the word initial position.

4.4.3 ITEM DIFFICULTY

The concept of item difficulty relates to the proportion of people who can correctly complete an item. The aim of any speech assessment should therefore be to have items of low difficulty as this will facilitate collection of a full sample of spontaneous utterances for analysis (James 2001). If the target is of high difficulty this may result in the child being given a prompt: this is undesirable as there is evidence that imitation can result in fewer errors than occur in a child's spontaneous speech (Weston 1997). As there are no data

available for vocabulary acquisition in the Pakistani heritage community the researcher considered information from two separate sources to guide development of the word list with regard to item difficulty: anecdotal evidence from professionals experienced in working with the target population and the lists reflecting early word acquisition in English developed by Gillham (1979). The researcher developed a possible list which would cover the phonemes to be sampled and discussed this with two Pakistani heritage speech and language therapy assistants and a specialist speech and language therapist. Some possible targets were discarded as a result of this process: for example the target /gudɑ/ ('dog') which would be easy to depict and occurs early in the vocabulary of English speakers (Gillham 1979) was discarded as few Pakistani heritage families have dogs. This, coupled with limited access to children's picture books where dogs might be seen, meant that it was felt to be a late developing word in the community. It was also reported anecdotally that there is a high level of fear among children (and their mothers) in the local community regarding dogs. Two words included as a result of input from community members were 'lion' and 'elephant'. Lion was felt appropriate because of its common appearance on television and video cartoons and elephant is the trademark name of a brand of flour (a dietary staple) widely used in the community, a pictorial image of an elephant appearing on every sack of flour.

4.4.4 WORD CLASSES

The word list developed as a result of considering both the phonemes to be sampled and item difficulty contained 21 words. These consisted of 19 nouns, one verb and one adjective. Some authors have highlighted the desirability of including a variety of word classes in assessments, citing the possibility that sound acquisition is later in some syntactic classes than others (James 2005). The preponderance of nouns occurred as a result of the deliberate decision to focus on words which it was felt would develop early in a child's vocabulary. A deliberate decision was also taken not to include verbs if possible. Concurrent research being conducted within the same community was yielding preliminary data (subsequently confirmed, see Pert, in press) indicating that children of nursery age were highly likely to use code-switched compound verbs in place of

lexical verbs. The single verb used in the screen, 'crying', was regarded as occurring early in a child's acquisition and had not been observed to be the subject of code-switching.

4.4.5 SYLLABLE STRUCTURES

The word list was finally inspected to ensure that it contained a variety of polysyllabic words representing structures other than CVC. Inspection of the word list revealed that six of the words in each language were of CVC construction with the remaining words spread across a variety of structures as shown in Table 4.1 below.

Table 4.1 Syllable structures and frequency of occurrence in speech screen

	Frequency of occurrence of structure							
	CVC	CVCV	CVCVC	CVCVCV	CVCCV	VCV	VCCV	VCVC
Mirpuri	6	6	1	2	0	3	3	0
Punjabi	6	4	1	2	3	3	2	0
Urdu	6	6	1	0	4	1	2	1

Note: Urdu speakers in the target population use both a linguistically correct CV+CVCV+CV production for 'crying' and a widely used CVCV production. Either would be accepted during administration of the test.

It is accepted that length and syllable structure will influence production and the consequent desirability of using words other than monosyllabic CVC constructions in speech assessments has been highlighted by several authors (see for example James 2001, Munro *et al* 2005).

4.4.6 GENERAL FACTORS

In addition to the theoretical factors outlined above two additional factors influenced the development of the word list: imageability and the commonality of lexical items across all three of the target languages.

4.4.6.1 IMAGEABILITY

Imageability is an important contributory factor influencing item difficulty. It was felt to be of particular importance here as many of the younger children were likely to be unfamiliar with printed material.

4.4.6.2 LEXICAL ITEM COMMON TO ALL THREE TARGET LANGUAGES

In order to facilitate administration of the assessment it was decided to ensure that wherever possible the target lexical item was the same across all three target languages. It was recognised that within the community there is code switching occurring across the three languages: commonality of target would help to ensure that if a child had to be given a prompt that prompt should be accurate no matter which language a child spoke. The final word list contained ten items that were the same across all three languages, seven items which were felt to have only minor differences, usually associated with vowel length (e.g. /kæn/ (Mirpuri and Punjabi) /kɑn/ (Urdu)) and four items which were different. In order to discourage the possibility of the child codeswitching into English, words which appeared to be of English origin (possible 'loan words') were avoided.

4.4.7 DEVELOPMENT OF STIMULUS MATERIALS

The final word list, consisting of twenty one words, was given to an illustrator who was asked to produce simple, uncluttered line drawings which were culturally appropriate for the target Pakistani heritage community. A decision was made to use line drawings rather than photographs as it was felt line drawings were less likely to age over time. Draft illustrations were shown to two adult members of the Pakistani heritage community, who worked as bilingual speech and language therapy assistants, to confirm that the pictures were both culturally appropriate and culturally inoffensive.

4.4.8 TRANSCRIPTION OF TARGET WORDS, PRODUCTION OF SCORE SHEET AND PRODUCTION OF SPEECH SCREEN IN BOOK FORM

The researcher and a colleague transcribed two adult speakers producing the target words. The two transcriptions were compared and a final target agreed upon. This target transcription was then produced by one of the two speech and language therapists and the two adult speakers asked to comment on whether that realisation sounded correct to them.

The transcriptions were placed on to each illustration along with a written form designed to be understood by someone unfamiliar with the International Phonetic Alphabet (IPA). Thus, for example, /t̪opi/ was written as 'toe-pea'. A score sheet was developed which required only a tick if the listener felt the child had said the initial sound correctly and a line if the child was inaccurate. Thus the health professional was not asked to write down what they thought the child had actually said. The illustrations, the score sheet and an accompanying instruction manual were printed using Microsoft Word on A5 sheets. These sheets were then laminated and bound into book form with a spiral binding. The score sheet and an example of a stimulus picture are included in Appendix 5.

4.5 TRAINING SESSION AND ISSUE OF TRIAL VERSION OF SPEECH SCREEN

A half day training session was run by the researcher to which all members of the health visiting and school health practitioner teams who currently worked with Pakistani heritage families were invited. This was a total of 14 individuals: six health visitors, three nursery nurses attached to the health visiting teams, two school health practitioners and three interpreters. One health visitor and one school health practitioner were unable to attend and one health visitor could attend for only part of the session. No members of the health visiting team of interpreters attended. The speech screen was demonstrated and the health professionals were given an opportunity to ask questions. Information was also given about the normal developmental pattern of phoneme acquisition in

English. Following this training session copies of the trial version of the speech screen were distributed to the health visitors and school health practitioners who had attended the full session. A total of five copies were therefore distributed. None were distributed to the nursery nurses attached to the health visiting teams as these teams wished the health visitors to be responsible for the trial of the screen. As no normative data were available for the population at this time no specific guidelines were given regarding who to refer to the speech and language therapy service from the screen: a request was made to refer any child whose performance caused concern. The health professionals were informed that they could contact the researcher at any time if they had any queries and were requested to use the screen as often as they felt appropriate or possible. It was agreed in principal that follow-up discussions would be arranged at the end of the six month trial period.

The trial version of the speech screen was also issued to two speech and language therapists who worked with Pakistani heritage children: one worked in a Sure Start area and only saw children under the age of four, one worked in a clinic setting seeing children of all ages. These therapists were requested to use the screen for six months. A follow up meeting was arranged for the end of the six month trial period to report to the researcher on their experience using the speech screen with the target population.

4.6 OUTCOMES

Around the time the speech screen was issued to the health professionals a change occurred in their working practice. A national debate about the efficacy and timing of developmental screening procedures had resulted in recommendations that the screening conducted by health visitors at around the age of three years should be abandoned. In its place was to be substituted a new screening assessment at age eighteen months. The health visitors involved in this research had voiced concerns that this change would not be appropriate for the children with whom they worked and had assured the researcher that they would continue with the assessment at three years. During the six month period when the speech screen was on trial it became apparent that continuing

the existing three year assessment in tandem with the new eighteen month assessment was not possible due to time limitations. The three year assessment was therefore discontinued. This had a major impact on the viability of the speech screen as a tool to be used by health professionals with children aged three and over.

4.6.1 HEALTH PROFESSIONALS - GENERAL

During the trial period of six months, one child, a girl aged 5;06, was referred to speech and language therapy by a school health practitioner who had completed the speech screen. Comparison with assessments completed in clinic by the speech and language therapist revealed that the score sheet had been correctly completed and identified the child as fronting plosives.

No health visitors made referrals which were accompanied by speech screen score sheets during the trial period. On three occasions health visitors contacted the researcher to request that book bindings be repaired. This phenomenon was investigated by the researcher as no such occurrences had been reported by the speech and language therapists using the trial version. It transpired that on one occasion an interpreter had bent the book back on itself, thus breaking the binding, and on two occasions the books had been given to young children to play with. The children had then thrown the books across the room, breaking the binding.

4.6.2 HEALTH PROFESSIONALS - INDIVIDUAL

At the end of the six month trial period two health visitors provided feedback on the screen. This represented a follow up of 40% of those issued with trial versions. The two individuals were self selecting: the researcher sent a request to the health visiting teams to nominate two people and then arranged to meet the two individuals whose names were returned. They were seen on an individual basis.

Discussions with these two health visitors raised the following points:

1. Both health visitors reported that although they had not referred any children with completed score sheets they had attempted to use the speech screen with some children.

2. One health visitor had the score sheets from six children with whom she had attempted the screen. The children varied in age from 1;08 to 3;02. Of these six children only one, aged 3;00, had co-operated with the screen. Ten of this child's twenty one responses had been in English. These words had been written in on the score sheet with no comment regarding whether they had been correctly produced or not.

3. Both health visitors reported that routine assessments at eighteen months were now conducted by a nursery nurse on their team. As a result they tended not to see children after the age of twelve months, unless they had specific concerns about a child or were requested to visit by the child's parents.

4. Both health visitors reported that when a child did say a target word they could not tell whether it was correct or not.

5. Both health visitors reported attempting to use the book with younger children but with no success. Both felt that young children in this community were unfamiliar with books. One health visitor commented that parents laugh when health visitors give out free books to children as part of screening procedures at age nine and eighteen months.

6. Both health visitors reported concerns regarding their workload and said that they did not have time to complete such an assessment, even with a co-operative child.

7. One health visitor stated that lack of interpreter time had caused difficulties and meant that she could not use the screen.

8. Both health visitors reported that when they had attempted to administer the screen by enlisting the help of the child's mother, the mothers had not always been clear what word they were trying to elicit (for example apparently eliciting the words 'face' or 'head' or 'boy' when the target, 'nose', was clearly highlighted on the line drawing of a face). The health visitors had apparently not intervened to explain the correct target to the mothers, feeling that they did not want to discourage them.

9. One health visitor had brought some written comments provided by the interpreter she worked with most frequently. This interpreter was a Punjabi and Urdu speaker. These comments all focused around two issues:

   - The interpreter questioned whether the target word was correct for the individual language (i.e. reporting that a target word was not in her opinion used in Punjabi but only in Urdu).
   - The interpreter questioned whether the written presentation of the target word was correct, for example stating that 'sarf', given to represent /sɑ:f/, should be spelt 'saaf' and 'jar-bee', given to represent /dʒabi/, should be 'chaabi'.

4.6.3 SPEECH AND LANGUAGE THERAPISTS

The two speech and language therapists who had used the speech screen both reported that young children under the age of four had some difficulty with the pictures and appeared unfamiliar with books and 2-D representations. Both had substituted real objects for pictures in order to elicit the target words with pre-school children. Both therapists reported that they regarded the tool as an effective screening assessment.

4.7 DISCUSSION

The speech screen was developed as a tool to be used by health professionals, and principally by health visitors at the three-year assessment, to facilitate the early referral of children with speech disorders. This aim could not be realised once the pattern of developmental assessments conducted by the health visiting team was moved to the earlier age of eighteen months. At eighteen months use of such a speech screen is unrealistic. At the same time the direct contact between school health practitioners and children also changed. Previously each child had been seen for a detailed individual medical examination during their first year in school (i.e. the year following attendance at nursery). This encounter was changed to a system of completing checklists. These unexpected external factors, beyond the control of the researcher, meant that the speech screen could not succeed in its original aim. However, the development of the screen and the trial period highlighted several factors which are worth further consideration.

4.7.1 DEVELOPING A WORD LIST TO ASSESS CHILDREN WHOSE LANGUAGE AND CULTURE ARE NOT SHARED WITH THE AUTHOR

Although there are many published assessments to measure speech in English speaking children their authors rarely give any insight into how the word list was developed. Those who do make any comments offering some insight rarely go in to any great depth (see for example Armstrong and Ainley no date, Stevens and Isles 2001). There are very few examples of speech assessments for languages other than English. The few authors who have published literature outlining the development of speech assessments for languages other than English (see for example So and Leung 2004, Munro *et al* 2005) do offer more information concerning the factors considered when compiling their word lists. There was, however, no evidence uncovered in the literature concerning the development of an assessment by an author who did not themselves speak the language which was to be assessed. A further compounding factor in the development of the speech screen described here is that the author comes from a different cultural background to the target population. This raised many unusual issues which had to be resolved.

4.7.1.1 Establishing that a sound is a phoneme in the target language when there is no data concerning phoneme distribution

There were no published data available regarding the phoneme distribution of Mirpuri. Once a draft word list featuring the target sounds in word initial position had been compiled with the aid of two native speakers the researcher then invited these two native speakers to listen to minimal pair variants to help confirm that the initial sounds were indeed phonemically significant. Thus, for example, the significance of the aspiration associated with voiceless bilabial plosives was confirmed: /pʰʊl/ means 'flower' in Mirpuri while the unaspirated form /pʊl/ means 'bridge'.

4.7.1.2 Choosing lexical items which contain identified phonemes in word initial position

There are no dictionaries available for Mirpuri nor for the form of Punjabi spoken by Pakistani heritage communities. The researcher had to ask two native speakers of these languages to compile a list of possible target words for each phoneme that had been identified. Members of the general population, particularly those with no training in phonetics to help guide their ability to distinguish individual phones, find this task difficult. To facilitate this process the speakers were given pictures of everyday objects and asked to name them in their mother tongue. The researcher listened to this realisation and made a preliminary decision as to the initial phoneme which was subsequently confirmed during the detailed transcription process.

4.7.1.3 Ensuring target transcriptions reflect community realisation

Individual speakers of a language are likely to produce individual phonetic realisations of a target word as a result of regional variations. Thus it is accepted in England that a Southern speaker of English is likely to use a longer vowel in the word 'bath' than will a Northern speaker (McMahon 2002). A clinician who is a native speaker of the language would therefore recognise this

as representing a regional variation rather than as a vowel distortion indicating possible disorder. As the screen was to be used by non-native speakers it was necessary to transcribe more than one speaker to establish what could be regarded as a representative target transcription. The two speech and language therapists who had been issued with trial copies of the screen were asked to further monitor the accuracy of these transcriptions. Whenever a child produced a realisation that differed from the target the clinician would subsequently check with the parent 'I think that word should be produced as [target transcription] – is that how you would say it?'

4.7.1.4 Translation equivalence

As Bell (1991) highlighted, even at single word level there are issues concerning translation equivalence. It was necessary to ensure that the identified target items were not subject to variation within the community. A clinician who is a native speaker will naturally identify apparently off-target responses which result from regional variation. For example a picture of a cup filled with liquid might elicit the target 'tea' in the south of England but might elicit the regionally acceptable 'brew' in Lancashire and Yorkshire. As the researcher was not a native speaker and the target administrators of the speech screen were similarly assumed to be non-native speakers it was essential that the target represented the only likely response to the pictured item in order to avoid confusion. Thus the item 'spider' was discarded when it became apparent that although the target speakers transcribed, along with many other speakers, used the word [mʌki], some members of the community used the word [kirɑ]. Subsequent investigation established that [kirɑ] is a semantically linked but more generally defined word used to describe many insects.

4.7.1.5 Choosing words that are culturally appropriate

Two separate questions had to be addressed with regard to the concept of 'culturally appropriate'; 'Will the item cause offence?' and 'Will the item be recognised?' With respect to the first question, care was taken with regard to what might be viewed as Muslim religious sensitivity; for example pictures of

pigs may offend some Muslims as pigs are regarded as forbidden animals. There has been some debate within the wider Muslim community about the appropriateness of such pictures (Wainwright 2003): many families would not be offended but it is possible that some families would find such pictures offensive. In such situations it is wise to err on the side of caution and at least ensure that *assessment* materials cannot cause offence as such equipment may deter some children, and their parents, from interacting with the professional concerned. Some potential lexical targets were discarded due to the possibility of offending a fusion of religious and community based sensibilities; thus an illustration of some body parts which are traditionally covered, such as a female arm, might cause offence. With respect to the second question, care was taken to avoid items which might be regarded as being in daily use within the majority White population but which are rarely used in the target population. One such example is cutlery. Within this community cutlery other than spoons is rarely used by adults and in many families is never used by children. The use of a word such as 'knife', a lexical item widely used in assessments of English, would therefore be inappropriate.

4.7.2 INTERPRETERS

The need to work alongside interpreting staff is inevitable when health professionals are working with a community whose language they do not speak. In Chapter One some of the implications of this parallel working were considered and it was highlighted that it is necessary to provide appropriate training to both interpreters and health professionals to ensure good working practice which will facilitate the identification of children with speech disorders. The development of the speech screen bought further evidence of this need for training and additionally raised concerns regarding availability of interpreting staff.

4.7.2.1 Offering relevant training to interpreters

A training session to which all members of the health visiting and school health practitioner teams were invited was not attended by any members of the

associated interpreting team. Informal questioning of both the health professionals and the interpreters indicated that although there were no policy reasons why the interpreters should not attend there was no positive ethos assuming that they would attend training sessions. In the absence of such an ethos the interpreters, who were unclear whether it was 'appropriate' for them to attend and who voiced concerns that the training session might be academically too rigorous for them, chose instead to use the time to undertake other duties relating to their employment.

4.7.2.2 Availability of interpreters

The comments made by one health visitor that lack of interpreter time had restricted her ability to use the screen reinforces the remarks made in Chapter Three concerning the restricted availability of interpreters. It seems possible that while interpreters are in one sense 'available' to health professionals, the logistics of making the necessary arrangements to work together are too complex, resulting in occasions when an interpreter is not present although their presence would be beneficial.

4.7.2.3 Facilitating health professionals and interpreters to work as a team

It was highlighted in Chapter One that few professionals receive practical training in the skills involved in working alongside interpreting staff, although there are several publications which give valuable information regarding good practice (Juarez 1983, Schott and Henley 1996, Wyatt 1998, Burnett and Fassil 2002). The feedback received from one health visitor regarding her use of the speech screen included comments from an interpreter with whom she worked, indicating a degree of collaborative practice existed between them. During the observation of a health visitor assessing a three-year old child, the interpreter left the room when it was apparent that the parents spoke English, although the child being assessed did not. It could be postulated from this observation that the interpreter's role was viewed solely as facilitating communication with the adults. In fact the interpreter could have interacted directly with the child, gaining direct insight into the child's communication skills which was denied to the health visitor.

Some authors have highlighted the potential for misdiagnosis to occur when there is a lack of understanding of the interpreter's role on both sides of the interpreter / health professional team. Kambanaros and van Steenbrugge (2004) reported a case where phonological errors in a bilingual adult patient who had suffered a CVA were initially classified as semantic paraphasias due to the translations rather than the actual realisations being reported by the interpreter. The similarities in mother tongue between the target and the patient's realisation were only subsequently highlighted. Interpreters therefore need to have a detailed understanding of what the health professional is looking for / what needs highlighting during a session when they are working together. It might be possible to train interpreters to have an understanding of broad language and speech developmental milestones. If they were then encouraged to interact directly with the child they could apply this knowledge and indicate concerns to the health visitor if they felt the child was performing at a level below the expected milestone for their age.

Interpreters are not familiar with the IPA. There have been some attempts within speech and language therapy departments to develop formal written protocols designed to facilitate the recording of language samples from bilingual children by bilingual speech and language therapy assistants (see for example Pert and Stow 2003). The use of the Roman alphabet by interpreters to capture useful information from the speech screen is doubtful. It would appear though that a joint exploration of the roles of each individual in the interpreter / health professional partnership may well facilitate new styles of working together which will be beneficial for the identification of Pakistani heritage children with speech disorders.

4.7.3 LACK OF FAMILIARITY WITH WRITTEN MATERIALS

The lack of familiarity that this community have with books and 2-D representations was highlighted both by the speech and language therapists and by the health visitors. The fact that a health visitor's interpreter broke one book by handling it inappropriately reinforces that some adults in the community

may be unfamiliar with books. Successful assessment of pre-school children from this community may need to rely more heavily on real objects. This could have many clinical implications. Real objects can be both heavy and bulky: if miniatures are used to overcome this, the performance of young children may be affected if they have not had the opportunity to learn about miniature objects through play.

The comments made by the health visitor's interpreter regarding how to write Punjabi and Urdu words in English script give an insight into how difficult it may be for community members to identify speech sound errors when there is no written form for the target word. Thus she reported that the target /dʒabi/ should start with a voiceless, not voiced, affricate. During the development of the word list the adults whose speech was transcribed both clearly used the voiced realisation, but when the two therapists transcribing their speech asked them to consider the voiced versus the voiceless realisation, neither could hear the difference. This raises the possibility that in the absence of a written form there is more tolerance of variation between voiced and voiceless affricates in Mirpuri. This is an area in need of further research.

4.7.4 LACK OF TIME

Lack of time was a recurrent theme. The health visiting teams covering the areas where the Pakistani heritage community is clustered, report that they carry heavy individual caseloads. Given that the high level of deprivation experienced within the community (National Statistics Online 2003) is likely to generate a large number of concomitant concerns, this time pressure may lead health visitors to place less priority on accurate assessment of a child's speech skills relative to other factors with which they are dealing. It may be that there is a need for SLTs to be more pro-active in seeking out Pakistani heritage children with speech disorders. The possibility of adapting the speech screen for use as a tool to facilitate large scale screening by SLTs is considered below.

4.7.5 STAFF TURNOVER

A high rate of staff turnover was noted. Over fifty percent of the health professionals who attended the training session were no longer in the same posts twelve months later. This means that knowledge gained via the training session was lost to the community to whom it related. On one level this could be countered by a rolling programme of training offered on a regular basis. There is however a deeper seated issue which needs consideration. It is possible that staff are leaving these positions because of lack of job satisfaction resulting from their self-perceived inability to carry out the job to a satisfactory level. Lack of appropriate assessment tools may be a contributory factor in the development of this lack of job satisfaction.

4.7.6 HEALTH PROFESSIONALS REPORTED THEY COULD NOT IDENTIFY THE FIRST SOUND IN THE TARGET WORD

Speech and language therapists undertake extensive training in phonetics as part of their professional training. Other health professionals do not. It had been anticipated by the researcher that health professionals could make a simple yes / no decision regarding whether the first sound in a word had been produced correctly or not. On the evidence available it seems that in fact of the five health professionals targeted in this research, only one, a school health practitioner assessing a child aged 5;06, demonstrated such skills. All other health professionals either did not complete score sheets or reported that they could not tell whether the child was on target or not. Because such professionals are not used to listening to words at the level of individual sounds it may be unrealistic to expect them to attempt such a task.

4.7.7 CHILDREN DO NOT SPEAK DURING CONTACT WITH HEALTH PROFESSIONALS

Members of the health visiting teams had previously indicated (see Chapter Three) that many children from this community did not talk to them. During the researcher's observations of a health visitor screening children, one of the three

children did not talk at all and another child only whispered a few single words. In such circumstances it would not be possible to assess a child's speech. It should be remembered that health visitors, unlike speech and language therapists, are not trained to elicit communication from children. Their focus is on developing a rapport with parents rather than with the child and they expect to ask parents about their child's abilities if they do not directly observe the behaviour being examined. With regard to communication skills their task is to decide whether a child has achieved certain developmental levels and then arrange onward referral as they view appropriate.

It is likely that several factors are contributing to the apparent reluctance of children from this community to communicate, and indeed interact, with members of the health professions. Culturally determined pragmatic patterns of interaction, such as the expectation in the Pakistani heritage community that a child show respect to adults by remaining silent in their presence, may play a role. Sociolinguistic factors may be at work: McClure (1977, cited in Grosjean 1982) reported that Spanish speaking children encountering English speaking teachers initially used Spanish but then resorted to one of two strategies: silence and passivity or the use of non-verbal communication. Environmental factors may be at work: time restrictions encountered by health professionals mean that more children are being seen within a clinic rather than in their own home. This is also the place they attend for vaccinations and is therefore associated with pain and discomfort by many children who are subsequently unlikely to trust any adults in the same environment.

Given the apparent difficulty of eliciting speech from many young Pakistani heritage children it may be more appropriate to develop a checklist for health visitors based on patterns of normal speech development which they can complete with parents. Several authors (see for example Boyle, Gillham and Smith 1996, Bruce, Kornfalt, Radeborg, Hansson and Nettelbladt 2003) have indicated that checklists completed by both professionals and parents may be effective in identifying language disorders.

4.8 CONCLUDING REMARK

Although several factors conspired to prevent the speech screen being a useful tool for health visitors and school health practitioners, its development did provide a tool which two speech and language therapists reported to be a useful addition to their clinical tools for Pakistani heritage children. Because they found the screen quick to administer they could incorporate it in to their existing clinic screening regime and this reported speed of administration caused them to comment on the possibility of using it to conduct wide scale screens within Sure Start settings where local SLTs were focussing on working with large groups of children.

The SLTs had been transcribing all the phonemes elicited during assessment and not just the initial sound, increasing the number of realisations recorded and also the number of word positions examined. While accepting that the assessment could not be viewed as a full assessment on which to base treatment plans, the researcher decided to develop normative data associated with the speech screen to enhance its usefulness to clinicians and to provide the first detailed evidence of the pattern of phoneme acquisition and the occurrence of phonological error patterns in the Pakistani heritage community. The development of this data set is described in Chapter Five.

CHAPTER 5

NORMATIVE DATA DEVELOPED WITH THE SPEECH SCREEN

5.1 INTRODUCTION

This chapter describes the use of the speech screen to develop normative data relating to Pakistani heritage children living in England. The screen was used with 246 children aged between 1;04 and 7;11 who did not have previously identified special needs and who had not been referred to speech and language therapy.

Data are presented showing:

- The age of acquisition of phonemes.
- Phonological error patterns identified from the data.
- Performance on the assessment in terms of completed items and consonants attempted.

The discussion section highlights the children's performance in terms of number of items completed and considers this alongside comments reported from health visitors in Chapter Three concerning the difficulty of eliciting speech from these children. Possible cultural factors and the influence of exposure to English are also considered. The reported sequence of acquisition of phonemes is unremarkable although occurring at a slightly later age than might be expected and possible reasons for this are considered. The phonological error patterns reported are discussed in relation to previous research findings for other languages.

5.2 RATIONALE

The findings reported in Chapter Four demonstrated that health visitors and school health practitioners had not found the speech screen a viable tool to aid their identification of children with speech disorders. Conversely, speech and language therapists had found it a useful clinical tool. Speech and language therapists use many tests which have normative data attached and are used to comparing children to their typically developing peers: indeed, many treatment decisions are based on the notion of deviation from the norm. There is currently no assessment of Mirpuri, Punjabi and Urdu phonology available commercially which has normative data attached, allowing clinicians to make confident

decisions about a child's performance relative to their typically developing peers. The researcher therefore decided to use the speech screen to develop such data.

5.3 METHOD

5.3.1 CONSENT

The researcher, accompanied by a bilingual speech and language therapy assistant who is a member of the local Pakistani heritage community, approached parents in a variety of education and community settings. The project was explained verbally to the parents in their mother tongue and they were asked to give signed consent on a form approved by the local research ethics committee. The parents were asked to confirm that their child had not been referred to speech and language therapy and did not have any previously identified special needs. All the parents who were approached gave their consent.

5.3.2 VENUE

Assessments were carried out in six schools, two playgroups held in community centres, children's own homes and at two community health clinics. The child's mother was present during all assessments in the youngest age band.

5.3.3 DATA COLLECTORS

All data were collected by one of four individuals:

- Two speech and language therapists who specialise in working with bilingual children. The researcher was one of these data collectors. Both these therapists have enough expertise in Mirpuri, Punjabi and Urdu to elicit the target responses.

- Two final year student speech and language therapists who had been trained by the researcher to administer the test. This training encompassed both practical aspects of transcribing the children's

responses and an introduction to the three target languages sufficient to enable the students to elicit the target responses.

The two qualified speech and language therapists saw the majority (74%) of children. The two student speech and language therapists collected data from the remaining 26% of children. All the children seen by the two students were over the age of 3;00 and were seen in an educational setting, either a nursery or school. None of the four individual data collectors came from the same ethnic or cultural background as the children from whom data were collected. It was planned to have a bilingual speech and language therapy assistant present during data collection: due to unplanned circumstances such as sickness this was not always possible. A bilingual speech and language therapy assistant from the Pakistani heritage community was therefore present during 69% of the assessments. It was considered possible that the presence or absence of a bilingual assistant might have an influence on the data collected, particularly with regard to the number of responses elicited from an individual child. Data examining this factor is therefore reported below in the discussion which occurs at section 5.5.1.

5.3.4 ELICITING RESPONSES

Children were presented with the drawings in the speech screen and asked to name the picture. Where no response was elicited children were offered a phonemic cue. Where necessary this was followed by a forced alternative choice, before children were (if necessary) encouraged to repeat the target after the tester. Responses were transcribed contemporaneously by the tester. Real objects were used with all children under the age of three and with those older children who were felt to be responding poorly to the picture material.

5.3.5 RELIABILITY

In order to confirm inter-rater reliability between the two qualified speech and language therapists, 20 children were seen by both speech and language therapists simultaneously and the transcriptions from each therapist were then compared. The two student speech and language therapists recorded their

sessions on a Tandberg Educational Audio Tutor TCR 712 tape recorder with internal microphone. Ten percent of these scripts were then re-transcribed by one of the two qualified speech and language therapists. In all cases the inter-rater reliability was confirmed as higher than 95%.

5.3.6 ANALYSIS

Speech samples can be analysed in a variety of ways. The purpose here was two-fold: to develop data relating to the age of acquisition of phonemes and to gather information relating to the occurrence and pattern of errors which occur in children speaking Mirpuri, Punjabi and Urdu when assessed on the speech screen. Several different theoretical models have been proposed to explain the observed errors which occur in children's speech. One such approach, broadly described as linear phonology, describes acquisition and disorder in terms of rules. These rules state the conditions that result in a specific error and are viewed as independent of each other. An example of such a rule, referred to by clinicians as 'backing' occurs when the manner of articulation is preserved but the place of articulation is moved to a more posterior position, for example /t/ being realised as /k/. This approach is widely used clinically by speech and language therapists who describe the errors they observe in terms of these rules (or phonological error patterns) and was therefore used when considering the errors observed to occur in the data reported here.

In order to develop data relating to the severity of a possible disorder the percentage of consonants correct score was calculated for each child. This measure was originally developed for application to samples of connected speech but is now widely used when analysing data derived from single word naming tasks (Shriberg, Austin, Lewis, McSweeny and Wilson 1997).

Transcription records were analysed by the researcher and data entered into a Microsoft Excel spreadsheet to enable statistical manipulation of the results.

5.4 RESULTS

5.4.1 SUBJECTS

A total of 246 children aged between 1;04 and 7;11 were assessed: 122 females and 124 males. For data handling purposes the children were grouped in to age bands at six month intervals. The figures are detailed in Table 5.1.

Table 5.1 Children assessed to develop normative data

Age	Age Band	Frequency	Female	Male
0 - 2;05	0	13	7	6
2;06 - 2;11	1	11	6	5
3;00 - 3;05	2	21	10	11
3;06 - 3;11	3	58	27	31
4;00 - 4;05	4	41	23	18
4;06 - 4;11	5	17	9	8
5;00 - 5;05	6	15	6	9
5;06 - 5;11	7	21	10	11
6;00 - 6;05	8	12	5	7
6;06 - 6;11	9	12	5	7
7;00 - 7;05	10	17	10	7
7;06 - 7;11	11	8	4	4
Totals		**246**	**122**	**124**

Relatively larger numbers of children aged 3;00 to 4;05 were seen as these are the ages represented in nurseries: the time when most of the children are first exposed to, and expected to use, English. These ages are also those at which children are first likely to come into regular contact with the education and health officials who would be expected to identify any speech sound difficulties.

5.4.2 LANGUAGES

At the time consent was gained parents were also asked to report what language they viewed as their child's mother tongue. Subsequently in some cases where the mother tongue was stated as Urdu by their parents children

were noted to use Mirpuri during assessment: they were then moved to this category for data analysis.

Table 5.2 Languages spoken by age band (%)			
	Mirpuri %	**Punjabi %**	**Urdu %**
Band 0	46	16	38
Band 1	64	18	18
Band 2	62	33	5
Band 3	69	10	21
Band 4	51	20	29
Band 5	24	47	29
Band 6	47	20	33
Band 7	19	48	33
Band 8	58	42	0
Band 9	58	25	17
Band 10	47	35	18
Band 11	63	37	0

Of the 246 children a total of 129 (52%) spoke Mirpuri, 63 (26%) spoke Punjabi and 54 (22%) spoke Urdu.

5.4.3 ITEMS COMPLETED

There were twenty one items in the speech screen: if the child was not responsive the data collectors did not discontinue the assessment but offered the child the opportunity to attempt each of the target words. Table 5.3 (below) shows the mean and range for number of completed items and number of spontaneous attempts for each age band. Only in age band 6 (i.e. age 5;00 – 5;05) did all the children name every item, although interestingly, at 54%, this group also had the second lowest mean for spontaneous attempts. From the sample of 246 children, 23 (9.35%) made no response at all. The oldest child to make no response was aged 4;08. Examination of previously published data relating to the development of assessments of speech sounds in children and normative data for phonological acquisition (see for example James 2001, Dodd *et al* 2002, Munro *et al* 2005) revealed no evidence of authors publishing

information regarding numbers of children who failed to offer any response to their assessment. The incidence of 'non-responders' reported here is therefore of particular interest and is discussed in section 5.5.1.

Table 5.3 Items completed on speech screen

Age Band	Completed items: Mean	Completed items: Range	% of completed items which were spontaneous attempts: Mean	% of completed items which were spontaneous attempts: Range
0	4.0	0 - 18	70%	0-100%
1	14.7	0 - 21	71%	33 -100%
2	15.8	0 - 21	63%	6-100%
3	18.5	0 - 21	61%	0-100%
4	17.0	0 - 21	65%	0-100%
5	18.5	0 - 21	63%	0-100%
6	21.0	21 - 21	54%	0-100%
7	21.0	20 - 21	59%	19-100%
8	20.2	16 - 21	53%	10-100%
9	20.7	19 - 21	71%	0-100%
10	20.4	18 - 21	79%	38-100%
11	20.4	19 - 21	87%	71-100%

5.4.3.1 Item difficulty

Closer analysis of the number of items completed allows consideration of item difficulty i.e. the number of children responding appropriately to an item. These data are shown in Table 5.4.

Table 5.4 Item difficulty			
	Type of response		
Item	**Spontaneous (%)**	**Prompted (%)**	**No response (%)**
Chicken	29.7	48.4	22.0
Boy	41.9	37.8	20.3
Nose	50.8	31.3	17.9
Water	65.4	19.1	15.4
Flower	51.2	32.5	16.3
Hat	64.6	21.5	13.8
Milk	70.3	17.1	12.6
Ear	63.0	21.1	15.9
Clothes	53.7	30.9	15.4
Banana	59.8	25.6	14.6
Floor	29.7	50.8	19.5
Clean	51.2	32.9	15.9
Lion	48.4	36.6	15.0
Key	72.4	13.0	14.6
Dish	57.3	28.0	14.6
Crying	59.3	24.0	16.7
Egg	55.7	29.3	15.0
Eye	59.3	24.0	16.7
Elephant	35.8	45.5	18.7
Flour	45.9	38.2	15.9
Glasses	65.0	19.5	15.4

This analysis of item difficulty clearly indicates two items, chicken and floor, as having the least number of spontaneous responses. Key and milk are identified as the items most often named spontaneously. The first two items in the screen, chicken and boy, are identified as the two items most likely to produce no response. The implications of this analysis of item difficulty are considered in the discussion section.

5.4.4 CONSONANTS ATTEMPTED AND NUMBER OF CONSONANTS CORRECT

The mean number of consonants attempted showed an upward trend until Age Band 5 (age 4;06-4;11) whereupon it plateaued before a slight decrease from Age Band 8 onwards. The figures are shown in Table 5.5.

Table 5.5 Consonants attempted on speech screen

Age Band	**Consonants attempted: Mean**	**Consonants attempted: Range**
0	10.5	0 - 38
1	38.9	13 - 45
2	40.9	27 - 46
3	39.5	2 - 47
4	40.0	9 - 46
5	44.7	38 - 48
6	44.3	42 - 47
7	44.5	41 - 48
8	42.4	33 - 46
9	43.1	39 - 48
10	42.7	37 - 47
11	42.9	39 – 45

The mean number of consonants correct also showed an upward trend until Age Band 5. The percentage of consonants attempted which were correct showed an upward trend until Age Band 10, with a slight decrease in Age Band 11. Detailed figures are shown in Table 5.6.

Table 5.6 Number of consonants correct on speech screen				
Age Band	**Consonants correct: Mean**	**Consonants correct: Range**	**% consonants correct of attempted: Mean**	**% consonants correct of attempted: Range**
0	6.9	0 - 32	73%	38–100%
1	27.1	0 - 40	79%	64–89%
2	32.8	21 - 41	80%	56– 91%
3	33.8	2 - 44	88%	58-100%
4	36.7	9 - 45	92%	77–100%
5	42.2	34 - 48	94%	76-100%
6	41.9	37 - 45	95%	87-100%
7	43.2	40 - 47	97%	89-100%
8	41.5	31 - 46	98%	93-100%
9	42.3	39 - 47	98%	93-100%
10	42.2	36 - 45	99%	91-100%
11	41.8	39 - 45	97%	93-100%

5.4.5 AGE OF ACQUISITION OF CONSONANTS

The acquisition of speech sounds can be considered in terms of phonetic or phonemic acquisition. Phonetic acquisition refers to the child's ability to articulate a sound either in isolation or within a word, even if it does not occur at the correct place within that word. Phonemic acquisition refers to the correct use of a speech sound in the context of a word.

The criteria used to define phonemic acquisition have been the subject of much debate. This debate centres around two main areas:

- Whether a sound has to be produced correctly in all word positions (see for example Templin 1957) or only in initial and final positions, as required by Smit *et al* (1990).

- What percentage of children within a given age group must produce and use a sound correctly for it to be viewed as acquired. Differing percentages have been proposed: Munro *et al* (2005: 38) specified that a sound was acquired if at least 75% of children in a given age band achieved 75% accuracy for that sound. A 75% criterion was also used by Prather, Hedrick and Kern (1975) while Dodd *et al* (2003) used a 90% criterion. Amayreh and Dyson (1998) proposed three categories of acquisition, based on the number of children within an age group producing a sound correctly. Thus they suggested the 'age of customary production' is reached when 50% of children in a given age band can produce a sound correctly in two word positions, 'the age of acquisition' is reached when 75% of children in a given age band can produce a sound in all positions and the 'age of mastery' is reached when 90% of children in a given age band produce a sound correctly in all positions.

A further compounding factor to be considered when discussing age of phoneme acquisition is the observation that acquisition may not be stable across succeeding age groups. Thus some sounds may be produced correctly by more children in a younger age band when compared to children in an older age band. This apparent fluctuation in acquisition has been widely observed (see for example Zhu Hua 2000, Munro *et al* 2005) and may reflect the cross-sectional nature of data collection where groups of individual children are studied rather than a longitudinal study where the same children are studied over time. It may also reflect inconsistency within an individual child's production.

It is therefore important when presenting data relating to the age of acquisition of phonemes to indicate clearly the criteria being employed. The data presented here regarding age of acquisition should be viewed as relating specifically to performance on this speech screen. Further sampling using a more detailed assessment and using more demanding criteria might generate different data relating to age of acquisition. As speed of administration was a key factor in the development of the speech screen (as it is in the development of all screening tools) the word list did not allow each phoneme to be tested in all word positions. The main categories of nasals, plosives (including dentalized and

aspirated variants), fricatives, affricates, approximants and vowels all occurred in word initial position and at least one representative from each category also occurred in word final position, with the exception of affricates which do not occur in a word final position.

In view of the relatively limited sample obtained by the screen it was decided to categorize a phoneme as acquired by an individual child if they produced one realisation on target in any word position. Group data are presented in Tables 5.7-5.10 for each sound indicating whether that sound was acquired (i.e. elicited correctly once in any word position) by more than 75% and 90% of each age band. Given the relatively low threshold employed for acquisition by the individual child the presentation of data showing the 90% rate for the group level data may be viewed as a more appropriate level to deem a phoneme as acquired.

It should be noted that three sounds /ŋ/, /g/ and /h/ never achieved the 90% criterion. /ŋ/ and /g/ were only assessed in the Urdu word list, while /h/ was assessed in the Punjabi and Urdu word lists. The relatively low numbers of children speaking Punjabi and Urdu in the normative sample (see table 5.2) made it difficult to reach the 90% level within any one age band. The data relating to these particular sounds should therefore be treated with caution.

Table 5.7 Development of consonant inventory - nasals

Age	0 – 2;05	2;06 – 2;11	3;00 – 3;05	3;06 – 3;11	4;00 - 4;05	4;06 – 4;11	5;00 – 5;05	5;06 – 5;11	6;00 – 6;05	6;06 – 6;11	7;00 – 7;05	7;06 – 7;11
/ m /				---------	---------	----------			----------			---------
/ n /			----------	---------	---------	----------						---------
/ ŋ /				----------		----------	----------					---------
/ ɲ /										----------		---------
Age Band	**0 n = 13**	**1 n = 11**	**2 n = 21**	**3 n = 58**	**4 n = 41**	**5 n = 17**	**6 n = 15**	**7 n = 21**	**8 n = 12**	**9 n = 12**	**10 n = 17**	**11 n = 8**

Key		----------	
	Below 75%	75%-89%	>90%

Table 5.8 Development of consonant inventory - plosives

Age	0 – 2;05	2;06 – 2;11	3;00 – 3;05	3;06 – 3;11	4;00 - 4;05	4;06 – 4;11	5;00 – 5;05	5;06 – 5;11	6;00 – 6;05	6;06 – 6;11	7;00 – 7;05	7;06 – 7;11
/ p /			----------	----------	----------	---------						----------
/ p^h/				---------		---------	----------		----------			
/ b /						---------						
/ t̪/							----------			----------		---------
/ $t̪^h$ /						---------		----------			----------	----------
/ t̪ /												
/ d̪ /				----------	----------						---------	
/d̪/				----------	----------	---------	---------	--------	--------			----------
/ k /			----------									
/ g /												
Age	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Band	**n = 13**	**n = 11**	**n = 21**	**n = 58**	**n = 41**	**n = 17**	**n = 15**	**n = 21**	**n = 12**	**n = 12**	**n = 17**	**n = 8**

Key			
	Below 75%	75%-89%	>90%

Table 5.9 Development of consonant inventory – fricatives and affricates

Age	0 – 2;05	2;06 – 2;11	3;00 – 3;05	3;06 – 3;11	4;00 - 4;05	4;06 – 4;11	5;00 – 5;05	5;06 – 5;11	6;00 – 6;05	6;06 – 6;11	7;00 – 7;05	7;06 – 7;11
/f/				--------	--------	--------						
/s/						----------						
/ʃ/						----------						
/h/						----------		----------			---------	----------
/dʒ/							----------		----------	---------		
Age Band	**0 n = 13**	**1 n = 11**	**2 n = 21**	**3 n = 58**	**4 n = 41**	**5 n = 17**	**6 n = 15**	**7 n = 21**	**8 n = 12**	**9 n = 12**	**10 n = 17**	**11 n = 8**

Key		----------	
	Below 75%	75%-89%	>90%

Table 5.10 Development of consonant inventory – liquids

Age	0 – 2;05	2;06 – 2;11	3;00 – 3;05	3;06 – 3;11	4;00 - 4;05	4;06 – 4;11	5;00 – 5;05	5;06 – 5;11	6;00 – 6;05	6;06 – 6;11	7;00 – 7;05	7;06 – 7;11
/ɾ/					---------	---------						
/ɽ/				--------	---------	---------						
/l/			--------	--------	---------	---------						
Age Band	**0 n = 13**	**1 n = 11**	**2 n = 21**	**3 n = 58**	**4 n = 41**	**5 n = 17**	**6 n = 15**	**7 n = 21**	**8 n = 12**	**9 n = 12**	**10 n = 17**	**11 n = 8**

Key			
	Below 75%	75%-89%	>90%

5.4.6 VOWELS

The speech screen was designed to elicit all twelve vowels which occur in Mirpuri, Punjabi and Urdu. All the children's responses were transcribed in full and examination of these transcriptions indicated that no vowel errors were recorded within this normative sample. The age at which vowel development is complete has been the subject of debate. Donegan (2002: 2) reported 'most studies suggest vowel production is reasonably accurate by age three' although some authors do report development within the vowel system beyond the age of three (James 2001). In their reporting of normative data for monolingual English acquisition Dodd *et al* (2003) reported 97.39% vowels correct in their youngest 3;00 – 3;11 age group. Smit *et al* (1990: 781) in developing their normative data for speech sound acquisition of English in two states in America specifically did not analyse vowel productions because 'of evidence that vowel errors are rare by the age of 3;00'. There is agreement that vowel errors are rare and are characteristic of speech disorder (Stackhouse and Wells 1997, James 2001, Pollock 2002). A group of acquisition studies reporting phonological acquisition in 14 languages, both in monolingual and bilingual contexts, confirmed the earlier acquisition of vowels compared to consonants and their resistance to disordered patterns (Zhu Hua and Dodd 2006). There is no evidence in the literature that children exposed to two languages are more likely to make vowel errors.

5.4.7 PRESENCE OF PHONOLOGICAL ERROR PATTERNS

The occurrence of phonological error patterns was recorded. A child was recorded as exhibiting an error pattern if that pattern was observed once within the data recorded for that child. This threshold was adopted due to the limited nature of the sample: the same threshold has been adopted by previous researchers (Hodson and Paden 1981, Roberts, Burchinal and Footo 1990) reporting small sample sizes. Dodd *et al* (2003) reported a larger sample size and adopted a higher threshold of five examples of a particular error type, modified to two examples for weak syllable deletion and assimilation. Table 5.11 presents data indicating those error patterns which

were present in more than 10% of each age band. In each case precise figures relating to the actual percentage of children making the error in each age band are presented. Individual examples of such errors are shown in Table 5.12. Errors which occurred in less than 10% of an age band i.e. 90% of children did not make such errors, were designated as less common errors and are shown in Table 5.13. Using a cut-off point of 10% allows a broad reporting of the phonological error patterns observed: to use a higher cut-off point would have meant the exclusion of some data as some individual age bands contain relatively small numbers of children.

Table 5.11 Phonological error patterns present in more than 10% of age band

Age	**0 – 2;05**	**2;06 – 2;11**	**3;00 – 3;05**	**3;06 – 3;11**	**4;00 - 4;05**	**4;06 – 4;11**	**5;00 – 5;05**	**5;06 – 5;11**	**6;00 – 6;05**	**6;06 – 6;11**	**7;00 – 7;05**	**7;06 – 7;11**
Gliding		27%	38%	19%	29%		27%		17%			
Front		27%	14%	29%	29%	23%						25%
Weak syllable deletion	15%	27%	14%	12%			13%					
Stop	46%	18%		33%	17%	23%	13%					
Consonant deletion (CD): Initial		18%		15%			13%					
CD: Medial				12%	15%							
CD: Final	15%	18%		15%								
Back							13%					
Voicing		27%	14%	29%	12%	12%						37%
Reduplication	30%	45%				23%						
Age Band	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**

Table 5.11 (continued) Phonological error patterns present in more than 10% of age band

Age	**0 – 2;05**	**2;06 – 2;11**	**3;00 – 3;05**	**3;06 – 3;11**	**4;00 - 4;05**	**4;06 – 4;11**	**5;00 – 5;05**	**5;06 – 5;11**	**6;00 – 6;05**	**6;06 – 6;11**	**7;00 – 7;05**	**7;06 – 7;11**
Assimilation	15%	45%	14%									
Intrusive Consonant				26%	12%		27%	19%		17%		
De-nasalization	15%											
De-retroflex		18%	33%	19%	12%		13%					
De-dentalization			19%	26%	17%	18%	13%				12%	
Age Band	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**

Table 5.12 Examples of phonological error patterns identified		
Gliding		
ɾona → lona	muɾa → mula	ʃeːɾ → ʃel
Fronting		
kukəɾi → tutəli	ẽnək → ẽnet	fʌɾɪʃ → fʌɻɪs
Weak syllable deletion		
kukəɾi → ɾi		
Stopping		
sɑːf → tɑː	dʒabi → dabi	ʃeɾ → del
hʌɳɖi → kændi		
Consonant deletion: Initial		
sɑːf → ɑː	ɾona → ona	dʒabi → abi
Consonant deletion: Medial		
muɾa → mua		
Consonant deletion: Final		
ɖuɖ → du		pʰul → pu
Backing		
ɑʈʰi → ɑki	ʌɳɖi → ʌŋgi	pʰul → gʰul
Voicing		
kela → gela	kæn → gæn	murgi → murki
Reduplication		
ɖuɖ → ɖuɖu		
Assimilation		
dʒabi → babi	ʈopi → popi	ɾona → nona
sɑːf → fɑːf		
Intrusive consonant		
ʃeɾ → ʃeɾt	kæn → kænd	sɑːf → sɑːft
sɑːf → stɑːf		
Deaffrication		
dʒabi → ʃabi		dʒabi → zabi

Table 5.13 Examples of less common errors present in less than 10% of age band

Age Band	Error	Example
0	Error on aspirated consonant	pʰʊl → pfʊl
	Retroflex → dental	aʈa → aʈ̪a
1	dʒ → j	dʒabi → jabi
	Use of ejective	ẽnek → ẽnek’
	Error on aspirated consonant	pʰʊl → pʊl
	Error of manner	pãɳi → mãɳi
2	Use of ejective	ɑk → ɑk’
	Affrication	sɑ:f → tʃɑ:k
	r error	ɾona → bona
	Use of glottal stop	fɛɾɪʃ → fɛʔɪʃ
3	Nasal to liquid	næk → læk
	Metathesis	ʈ̪opi → boti kʌpəɾ̥ẽ → pʌkəɾe
	r error	ʃe:ɾ → ʃe:b
4	Error on aspirated consonant	ɑtʰi → ɑθi
7	Aspirated consonant → retroflex	ɑtʰi → ɑʈi

5.5 DISCUSSION

5.5.1 NUMBER OF ITEMS COMPLETED AND ITEM DIFFICULTY

Interviews conducted with health visitors and reported in Chapter Three indicated that these professionals experienced some difficulty getting

Pakistani heritage children to talk to them. This difficulty was again reflected in the data collection reported here. In all age bands up to 4;06 - 4;11 there were some children who failed to offer any response to the screen. These children, deemed to be 'non-responders', remained silent throughout the assessment, failing even to make a verbal comment such as 'don't know' or a non-verbal response such as a head shake which could be interpreted as a communicative attempt. They accounted for 9.35% of the total sample. An examination of test manuals failed to identify any other authors reporting such a group of children within their normative samples (see for example Dunn *et al* 1997, Dodd *et al* 2002). Smit *et al* (1990: 779), reporting a sample of 997 children, comment that children under 2;06 were assessed but were not reported because 'many children did not tolerate the test procedures...by the age of 3;00 virtually all children who began the testing procedure also completed it and refusals to attempt particular words were rare'. In the absence of detailed figures it is possible to speculate that either previous authors eliminated any such children from their samples before analysing data or that such children did not occur in their samples. Within a separate sample of 163 Pakistani heritage children aged 2;06 – 7;05, drawn from the same community as the sample reported here, and being measured on a trial assessment of expressive language in Mirpuri, Punjabi and Urdu, there was a higher non-responder rate of 12.80% (Pert, personal communication 2006). It would seem that non-responders are therefore an important category within the target population and reasons for this occurrence need to be considered.

Previous authors (Wyatt 1998, Wei, Miller, Dodd and Hua 2005) have highlighted the use of silence within some cultures to indicate politeness, particularly in the presence of strangers who are viewed as having a higher social position. Such culturally determined child rearing patterns may have influenced the behaviour of the children in the normative sample. Clinical observations by the researcher, confirmed by reports from bilingual assistants who are members of the community, indicate that children from this community are expected to show high levels of respect for adults. This is demonstrated by silence in the presence of adults. The assessment

environment, where unfamiliar adults were attempting to elicit speech from the child, was therefore an unusual experience for that child. McClure (1977) reporting on young Mexican American children described them to make a binary (knows *versus* does not know) decision on the linguistic competence of an adult. Thus these children on school entry initially addressed their teacher in Spanish. They then apparently made the decision that the teacher did not understand Spanish and resorted to either silence and passivity or to non-verbal communication. All the children in the current normative sample were faced with a White adult and may well have made the decision that this adult was in a position of power and did not speak their language: both observations could have led the children to resort to silence. There were no no-responders present above age band 5 (i.e. age 5;00 and above) adding support to the suggestion that silence in the presence of adults is at least in part culturally determined: by this age all the children would have been attending an educational setting and would have experience of White adults interacting with children and expecting responses to questions.

There are additional factors which might be predicted to contribute to children deciding to remain silent throughout the assessment. Students collected 26% of the data: it is possible that they have weaker skills at eliciting responses from children. Examination of the data reveals that only 26.8% of the non-responders were seen by students, suggesting that this was not a major factor. Similarly it might be predicted that the absence of a bilingual assistant from the Pakistani heritage community would have a detrimental effect on data collection and increase the likelihood of a child being a non-responder. The data show, however, that a bilingual assistant was in fact present when 69.56% of the non-responders were seen.

As well as children deemed to be non-responders there were children in all groups except age 5;00 - 5;05 who failed to name some items. Recognising that children in the target population are likely to be unfamiliar with picture material, real objects were used with all children under the age of 3;00 and with those older children who were offering few or no responses. The background of socio-economic deprivation, with its reported association with

language delay (Whitehurst 1997, Locke, Ginsborg and Peers 2002), may have influenced the number of items that the younger children attempted. The two items with the highest spontaneous response rate, key and milk, are likely to be high frequency words within the community. Milk forms an important part of the diet of children up to and beyond school entry, while mothers in the community often carry only a house key when they leave the family home. Car keys are also commonly given to children to play with by their fathers. Two items which were animal names, chicken and elephant, both had spontaneous response rates below 36%. The normative sample of children were unlikely to have direct experience of these animals and there is very limited access to books within the normative population. Elephant had however been predicted to be widely known as an elephant is pictured on the most popular brand of flour used to make roti (chappatti), a daily food staple. The poor spontaneous response rate to these two items suggests that, in line with predictions based on previously observed communication patterns in conditions of socio-economic deprivation, adults are not engaging children in conversation: egg, a food name, was spontaneously elicited from over half the sample and might be assumed to be linked to chicken. The two items which elicited the highest no-response rate were the first two items on the screen, suggesting that the children needed time to warm up to the activity.

Age bands six and seven, i.e. ages 5;00 – 5;11 had the smallest range of items completed, all children in band six naming all the items and only two children in band seven failing to name one item each. The range expanded again thereafter with some older children failing to name up to five items. It may be that the older children, with extended exposure to English, were becoming less confident in their mother tongue and therefore were more reluctant to attempt items about which they were unsure.

The finding that young children from this community are reluctant or unable to name simple objects has important implications for the clinician attempting to elicit speech samples for diagnostic purposes. With specific regard to the administration of the speech screen it will be important to measure the

number of responses made by a child against the normative data presented here regarding the number of items completed.

5.5.2 CONSONANTS ATTEMPTED AND PERCENTAGE OF CONSONANTS CORRECT

The mean number of consonants attempted shows an essentially upward trend until the age of 4;11 when it plateaus for twelve months before showing a slight downward trend from the age of 6;00. The percentage of consonants correct shows an upward trend until the age of 7;05, thereafter showing a slight decline. Again these figures may well reflect the impact of exposure to English and the increased demand from education staff for expression in English from the age of 5;00.

5.5.3 AGE OF ACQUISITION OF CONSONANTS

There is evidence within the data presented of an uneven pattern of acquisition, some phonemes reported as acquired by children in younger age bands not being maintained by older children. Thus, for example, */k/* is acquired by 90% of children in age band 3 but then by only 75% of children in the next two age bands, before stabilising again at the 90% level from age band 6 onwards. Munro *et al* (2005) reporting on acquisition patterns in Welsh – English bilingual children also reported instances where acquisition was not maintained by children in succeeding age bands.

Different authors have postulated a variety of factors which may influence the rate at which children develop their speech sound repertoire. SES, gender, number of siblings and position within the family, intelligence, personality and parenting style have all been suggested as variables (Wells 1986). If such variables are demonstrated to have an effect on speech sound development this would have an impact on how normative data should be developed and applied to clinical populations. Researchers investigating the possible impact of such factors have additionally to bear in mind that subtle interactions between individual factors may also be responsible for any observed

variations. Two possible factors are of particular interest with regard to the current research population: SES and the effect of sequential bilingualism where the mother tongue is a minority language.

5.5.3.1 Socio-economic status

There has been conflicting evidence with regard to the effect of SES on speech sound development. Templin (1957) observed high SES children to acquire phonemes more rapidly than low SES children. More recently two studies, both reporting on large cohorts of children, failed to find any significant differences. Smit *et al* (1990) found no significant difference across SES as determined by level of parental education while Dodd *et al* (2003) found no significant difference across the six SES groups within their study.

5.5.3.2 The impact of acquiring a minority language mother tongue

To date there have been very few studies of speech sound development in any languages other than English. So and Leung (2004), reporting a population acquiring their mother tongue in a majority environment, found a more rapid rate of phoneme acquisition in Cantonese than that found in English. There is little evidence of researchers considering the effect that minority language mother tongue acquisition may have on the rate of speech sound development. Dodd *et al* (2002) did include a separate set of normative data for Pakistani heritage children acquiring English as an additional language and noted a trend for the articulation of fricatives and affricates in English to be slightly delayed relative to their monolingual English-speaking peers. Conversely they noted that /ɹ/ was acquired earlier than in the monolingual English-speaking group. No information was given regarding the length of time the children had been acquiring English. The Pakistani heritage group these data were derived from contained 54.21% of children from the lowest two of six SES groupings compared to 37% of children from these two SES groups in the main monolingual English-speaking cohort: it is therefore

possible to speculate that SES was a compounding influence in the observed slight delay.

In the light of the conflicting and limited evidence surrounding the possible impact of SES and minority language acquisition on the rate of speech sound development it is possible to speculate that both need to be considered when developing normative data relating to the target Pakistani heritage population.

In an attempt to ensure the applicability of their normative data to a large population authors usually attempt to ensure a spread of SES groups across their cohort. In the current context, where it is acknowledged at a national level that the target population is disproportionately represented in the lowest SES groups (Ansari 2002, Walker 2002) no attempt was made to seek a wide distribution of SES. Given the geographic area from which the normative sample was drawn it is assumed that the entire sample came from low SES groups. Similarly, no attempt was made to categorise children according to the amount or length of their exposure to English. It is accepted that bilingual children are a heterogeneous group and this very heterogeneity within the normative population should increase the applicability of the data derived from this group.

5.5.3.3 Comparison with previous research on the Pakistani heritage community

There has been very little previous research published on the phonological acquisition of the three Pakistani heritage languages Mirpuri, Punjabi and Urdu. Literature searches identified only one previous publication reporting data concerning age of acquisition of phonemes apparently relating to one of the languages, Urdu, under discussion here.

Khan (1984) reported on the phonological development of ten Urdu speaking children aged between twenty and thirty months over a six month period. Her key findings included:

- The first initial consonants are labial then dental plosives. Velar plosives did not appear before 28 months.

- Aspirated forms appeared in initial position at 28-30 months.

- Fricatives appeared after 28 months and are commonly substituted by stops.

- /r/ was acquired very late, generally after 28 or 29 months and was either deleted or replaced by /l/

Although the data reported are detailed, certain important factors are not reported: no information is given concerning which country the children were living in, their socio-economic background, nor the country of origin of their parents. Caution therefore needs to be exercised in concluding that these children are from a homogeneous background to that of the children reported here.

Broadly speaking, however, the data presented here reflect the findings of Khan (1984) with regard to order of acquisition of consonants *viz* plosives followed by fricatives. Nasals are also among the first sounds to be firmly established. The unexpectedly early appearance of a dentalized alveolar plosive relative to other consonants in the current data is explained by the use of the word /d̪ʊd̪/ (milk) to elicit this sound. The prolonged role played by milk in the diet of children in the target community (reported in Chapter Two) ensures that this remains a high frequency word. Several authors (see for example Vihman 1996: 146) have commented on the influence of the ambient language experienced by a child on phonological development.

The data presented suggest a relatively late establishment of consonants in this speech community in comparison to the age of acquisition reported for

monolingual English-speaking children (Dodd *et al* 2003). The relative difficulty of eliciting speech samples from the children in this normative sample, which has been discussed above, had some influence on this observation as it influenced the age at which the thresholds for acquisition were passed. Caution therefore needs to be exercised regarding whether the data indicate an overall delay *per se* or whether it reflects the apparently culturally determined difficulty in obtaining speech samples from children in the target population. Despite this note of caution clinicians can use this data with confidence. The data do reflect the performance of the target population on this speech screen. Furthermore, given the preference for a screen to have the potential to over-identify rather than under-identify children it would be of more concern if the data were indicating relatively lower rather than higher ages for acquisition.

5.5.4 PHONOLOGICAL ERROR PATTERNS

Literature searches identified only one previous publication which reported phonological error patterns occurring in Pakistani heritage children. Holm, Dodd, Stow and Pert (1999) reported on 35 children aged 4;08 -7;05 who spoke Mirpuri, Punjabi and Urdu. These children spoke the same languages and came from the same geographic, cultural and socio-economic background as the children reported in the data here. The most frequent error patterns found were: voicing, stopping, backing, cluster reduction, weak syllable and initial consonant deletion. Gliding of /ɽ/ to /l/ was also noted. The phonological error patterns identified in the data reported here are broadly in line with those identified by Holm *et al* (1999). Some areas which were not reported previously and are of particular interest are considered below.

5.5.4.1 Fronting

Fronting was observed to occur in all age groups except three: 0 - 2;05, 5;00 - 5;05 and 6;00 - 6;05. A relatively high incidence, in excess of 20%, was reported in four age groups 2;06 – 2;11, 3;06 – 3;11,4;00 – 4;05 and 4;06 –

4;11. Overall 45 children were reported as fronting, representing 18.29% of the total sample of 246 children. Closer examination of the data reveals that the majority (37, representing 82.22%) of the children reported as fronting were fronting the post-alveolar fricative /ʃ/ to the alveolar fricative /s/. This was occurring on the words for 'lion' (fronting in word initial position) and 'floor' (fronting in word final position). 'Floor' has previously been highlighted as one of the two items with the fewest spontaneous responses: it is possible to speculate that the number of children producing this item in response to a prompt may have contributed to the lower level of accuracy and so the data were further analysed to consider this possibility. This analysis revealed that of the errors recorded on the item 'floor' 12 out of 24 (50%) of errors were on prompted responses. It is therefore unclear from the current sample whether prompted responses influenced the observed incidence of fronting.

Only one individual child, aged 4;06, fronted all occurrences of velar plosives. This child did not front any other phonemes.

5.5.4.2 Intrusive consonant

The use of an intrusive consonant was reported in over a quarter of the sample in age bands 3 (3;06-3;11) and 6 (5;00-5;05). Intrusive consonants also occurred in more than 10% of the samples in three further age bands: 4, 7, and 9. Closer examination of this observed occurrence indicates that three target items were responsible for 34% of the occurrences of an intrusive consonant: clean (/sɑ:f/), lion (/ʃeɾ/) and ear (/kæn/). In all cases associated with these particular target items the intrusive consonant was an alveolar plosive. The analysis of item difficulty did not highlight any of these target items as a cause for concern. 'Clean' and 'lion' both contain fricatives and fricatives were not present in more than 75% of the sample until after age band 5. It can be postulated that in some cases the occurrence was evidence of the child's developing phonological system, as the newly acquired fricative is added to the previously substituted plosive (/sɑ:f/ ➔ [stɑ:f]). The

occurrence of an intrusive consonant in ear is of particular interest as all recorded cases were of a word final plosive (/kæn/ ➔ [kænd]). Holm *et al* (1999) reported on 35 Pakistani heritage children aged 4;08-7;05 and found that when assessed in English over 50% of their sample stopped word final nasals in this way (/kɹɑʊn/ ➔ [kɹɑʊnd]). Normative data relating to error patterns occurring in typically developing children acquiring 14 different languages, in both monolingual and bilingual contexts, only mentioned the use of intrusive consonants in one other language, English acquired in a monolingual context, where it occurred in less than 10% of the normative sample (Hua and Dodd 2006). The use of intrusive consonants in the target Pakistani heritage population is in need of further investigation.

5.5.4.3 Gliding

A relatively high incidence of gliding was observed throughout the sample: in excess of 25% in age bands 1, 2, 4, and 6 and in excess of 15% in age bands 3 and 8. In all cases this occurred as /r/ ➔ [l]. The replacement of /r/ has been reported to occur during phonological development in several different languages (Zhu Hua and Dodd 2006) although it has been noted that the phoneme which replaces it may vary (for example /r/ is typically replaced with /j/ in Potonghua). Dodd *et al* (2002) reported that /r/ was typically replaced with /w/ in English. The evidence reported here that /r/ ➔ [l] occurs in children speaking Mirpuri, Punjabi and Urdu supports evidence from a smaller sample reported by Holm *et al* (1999) who also reported Pakistani heritage children to realise /r/ ➔ [l] when speaking English.

5.5.4.4 Assimilation

Assimilation occurred in the three youngest age bands, peaking at a high rate of 45% in age band 1 (2;06-2;11). The oldest child observed to use this process was aged 3;03. Ingram (1976) reported assimilation occurring in the early stages of the development of English speaking children and Dodd *et al* (2002: 75) reported observing 'occasional' instances of assimilation in English

speaking children up to the age of 2;11. Topbas (1997) also observed assimilation occurring in her sample of Turkish speaking children but reported this error pattern was suppressed by the age of 2;04. It is possible to speculate that the relatively late occurrence of assimilation observed in the current population may be linked to the relatively later development of their phonological system which is also reported: it may be the result of inter-action between several factors occurring as the individual child's phonological system is undergoing rapid development. The high rate of 45% observed in age band 1 could also be a result of more individual utterances being elicited from these children than from their younger peers (who although younger in age were similar in terms of phonological acquisition) reported in the previous surveys. This seems unlikely: although detailed data are not given by age, Topbas (1997) does state that a mean of 151 words per child were elicited across her entire sample.

5.5.4.5 Reduplication

The incidence of reduplication in the current data is explained by the use of the target word /d̪ʊd̪/ (milk) which adults tend to realise in an immature, reduplicated style as /d̪ʊd̪ʊ/ when talking to young children. Adult speakers are quite clear that this is not an acceptable form for adults to use. This realisation was in fact used by some children in each age band up to and including Band 8 (age 6;00 – 6;05). The oldest child to use this form was in Band 11 and aged 7;08.

5.5.4.6 Voicing

The high incidence of voicing errors, particularly in the oldest age band, needs some consideration. It was reported in Chapter Four that adult speakers appear to have difficulty distinguishing voiced / voiceless contrasts on affricates and it was speculated that lack of a written form may have an influence on this feature. The figures reported here appear to support this suggestion. Clinicians will need to investigate each individual family's

tolerance of the voiced / voiceless distinction before assuming that this is an error in need of clinical remediation.

5.6 CONCLUDING REMARK

The data presented above give normative values relating to the performance of children on this particular screening assessment. Certain unusual features identified within these data and discussed above, point the way for future research. Having developed the screening tool and its associated data, it became possible to test its efficacy by using it to screen a group of nursery age children to give information relating to the research question 'Is it possible to develop an effective screening tool to identify Pakistani heritage children with speech disorders?' Additionally the caseload survey reported in Chapter Two had indicated that Pakistani heritage children with speech disorders were not being referred to speech and language therapy. Screening a cohort of nursery children would supply evidence to indicate whether such children do exist and are not being identified by referral agents. The use of the screening tool with a cohort of nursery children is reported in Chapter Six.

CHAPTER SIX

USING THE SPEECH SCREEN IN A NURSERY TO IDENTIFY PAKISTANI HERITAGE CHILDREN WITH SPEECH DISORDERS

6.1 INTRODUCTION

Once a culturally appropriate speech screen had been produced (see Chapter Four) and then used to establish the normal patterns of acquisition for the Pakistani heritage languages under investigation (see Chapter Five) it was necessary to trial the screen with a cohort of children to establish:

I. That Pakistani heritage children with speech disorders do exist in the community but they are not being identified by referral agents.

II. That the speech screen will identify such children.

This chapter describes the administration of the Pakistani heritage speech screen to a cohort of children attending a nursery school, none of whom had been referred to speech and language therapy.

6.2 RATIONALE

Evidence has been presented that Pakistani heritage children with speech disorders are not being referred to speech and language therapy (see Chapter Two). Interviews and a questionnaire completed by referral agents highlighted several factors which would act as contributory factors in this failure to identify children (Chapter Three). The development of a culturally appropriate speech screen (Chapter Four) and associated normative data (Chapter Five) should allow Pakistani heritage children with speech disorders to be identified by speech and language therapists. To verify this it was decided to undertake a comprehensive screening procedure with children attending one nursery school. Several factors influenced the decision to focus on one nursery school:

I. The nursery year is the one where children are first consistently exposed to English and first come into daily contact with professionals who can refer them to speech and language therapy.

II. The majority of children referred to speech and language therapy have been referred by the end of the nursery school year.

III. The chosen school was situated in the centre of an area of known socio economic deprivation and had an intake of 100% non-White children whose mother tongue was not English. School staff might therefore be considered as having experience in working with pupils who are acquiring English as an additional language. Two of the school staff were bilingual and came from the Pakistani heritage community.

6.3 METHOD

6.3.1 CONSENT

The head teacher of a nursery school was approached and asked if the researchers could undertake a comprehensive screen of the Pakistani heritage children within the nursery. The head teacher, and subsequently the entire staff, was told only that the researcher was investigating the acquisition of Pakistani heritage languages and the referral of Pakistani heritage children to speech and language therapy. In September, during the first week of the autumn term (i.e. the first week that the children attended the nursery) the researcher, accompanied by two experienced bilingual speech and language therapy assistants, visited the nursery each day to collect signed consent forms from parents. These consent forms had been approved by the local research ethics committee. The bilingual speech and language therapy assistants between them spoke all three of the Pakistani heritage languages under investigation. Children attend either morning or afternoon sessions so the nursery was visited twice each day. It was decided to collect consents in the first week of term as at this stage parents are staying longer with their children, in order to settle them in to the new environment. It was therefore felt that parents would not be in a hurry to return home and would be more likely to listen to the explanation of the research being offered by the bilingual assistants. Parents were offered a verbal explanation of the research aims in their mother tongue and assured of their child's anonymity. A written explanation of the research aims was available in English but was not taken by any parent, although a few parents did speak English. The availability of such a written explanation had been required by the local research ethics committee. Parents were given the opportunity to ask the

researcher questions. Some parents did ask about the content of the pictures, expressing concerns that they might contain culturally offensive images. Such parents were reassured when shown the pictures. The only exclusion criteria used was that children should not have been referred to speech and language therapy or have previously identified special needs. All the parents who were approached gave consent for their child to participate. A total of 58 consent forms were obtained. The consent forms and parent information letter are in Appendix Six.

6.3.2 ASSESSMENTS ADMINISTERED

All the children were assessed using both the Pakistani heritage speech screen (Bilingual Speech Sound Screen for Pakistani heritage languages: BiSSS) and an English speech screen (the speech screen from the Diagnostic Evaluation of Articulation and Phonology: DEAP). To facilitate application of a clinical diagnosis, in line with the decisions made on the children referred to speech and language therapy and reported in Chapter Two, screening assessments of verbal comprehension and expressive language skills in mother tongue were also administered. This allowed the researcher to consider speech errors in the context of overall language delay and thus a clinical diagnosis of overall language delay to be reached rather than looking at possible speech delay in isolation.

As with any screening tool it was important to establish the sensitivity and specificity of the measure. Sensitivity relates to the ability of the tool to identify the normal child as a normal child (i.e. avoid over-identification) and specificity relates to the ability of the tool to identify those with an impairment (i.e. avoid under-identification) (James 2001). In order to gain information with regard to these particular features a full assessment of Mirpuri, Punjabi and Urdu phonology (the Rochdale Assessment of Mirpuri Phonology: RAMP) was also administered to 18 children. These 18 children included all ten children whose performance on BiSSS had indicated a possible speech disorder plus eight children who had made no errors on BiSSS and who were randomly selected to have a RAMP assessment. The RAMP is a comprehensive assessment of Mirpuri, Punjabi and Urdu phonology. Some words are elicited more than once,

giving an opportunity to establish whether the child is consistent in production. The full list of the assessments used is shown in Table 6.1.

Table 6.1 Assessments used to screen nursery children
Verbal comprehension screen in mother tongue
Derbyshire Language Scheme Rapid Screening Test **(DLS)** (Masidlover and Knowles). (Research adaptations for Mirpuri, Punjabi and Urdu: Pert and Stow)
Expressive language in mother tongue
je zindegi: An early sentences expressive assessment for Mirpuri, Punjabi and Urdu **(JZ)** (Research edition: Pert and Stow)
Speech screen in mother tongue
Bilingual Speech Sounds Screen for Pakistani Heritage Languages **(BiSSS)** (Research edition: Stow)
Speech screen in English
The Diagnostic Evaluation of Articulation and Phonology **(DEAP)** screening assessment (Dodd, Hua, Crosbie, Holm and Ozanne, 2002)
Full speech assessment in mother tongue
The Rochdale Assessment of Mirpuri Phonology with Urdu and Punjabi **(RAMP)** (Stow and Pert, 1998)

The DEAP diagnostic screen is an English speech screen of ten words, each of which is elicited twice. It is increasingly widely used by clinicians in the UK and has some normative data attached to it for children speaking 'Punjabi languages' i.e. Mirpuri, Punjabi and Urdu in addition to English. Unsurprisingly this normative data is limited for children of nursery age and younger, who are likely to have had very limited exposure to English. There is anecdotal evidence that clinicians, who are not specialists in bilingualism but are experienced at using the assessment with English monolingual children, are using this screen on its own in an attempt to diagnose speech disorders in Pakistani heritage children through the medium of English. (This practise is clearly proscribed in the DEAP manual which states that both languages a child speaks should be assessed.) The development of BiSSS gave the researcher the opportunity to conduct a full screening assessment of children in their mother tongue

encompassing receptive language, expressive language and speech skills. The administration of the DEAP screen would give the opportunity to consider how mother tongue speakers of Mirpuri, Punjabi and Urdu attending a nursery setting where they were spoken to in English would perform on a screen of English speech sounds, a language to which they had little previous access. This performance could then be compared to their mother tongue performance. The data derived from the administration of the DEAP screen were not used to allocate a diagnostic label to the children. They are presented separately in Section 6.6.

6.3.3 DATA COLLECTION

Data were collected during October and November. Each child had therefore had a minimum of four weeks to settle in to the nursery environment. An attempt was also made to follow-up thirteen children at the end of the school year. These children had either been identified as having speech disorders as a result of the first data collection or had given incomplete data sets meaning a diagnostic label could not be allocated to them. These follow up data are reported in Section 6.4.9.

Data were collected by two teams. Each team consisted of one speech and language therapist who specialised in working with bilingual children and an experienced bilingual speech and language therapy assistant who came from the local Pakistani heritage community and spoke all three of the languages under investigation. The specialist speech and language therapists were both members of the majority White ethnic community and spoke English as their mother tongue, but both had some receptive and expressive skills in the Pakistani heritage languages spoken by the children. Parents had been invited to attend the screening session if they wished: none chose to attend. Each team worked in a quiet room within the nursery building. Some of the children had a shorter attention span and were unable to complete all the assessments in one session: such children were seen a second time to complete the full assessment battery. As an incentive to encourage participation in the sessions all children were offered the opportunity to play a reward game while completing the assessments and all were given a reward sticker on completion of the session.

In order to confirm inter-rater reliability five children were seen by both speech and language therapists simultaneously. The BiSSS and DEAP transcriptions from each therapist were then compared. The inter-rater reliability was confirmed as higher than 95%.

6.3.4 DATA HANDLING

The raw data from each child were collated and scored by the researcher. Each data set was allocated a unique identifying number to facilitate data tracking. The data were entered into an Excel spreadsheet and manipulated to calculate percentages where appropriate.

6.4 RESULTS

6.4.1 CONSENT FORM OUTCOMES

The fifty eight consent forms obtained from parents yielded a total of forty nine children who were deemed to have participated in the screening process. Thirty seven children gave complete data sets and nine gave incomplete data sets. An additional three children were happy to come in to the room and play with the data collection team but would not cooperate with any assessment activity i.e. they were non-responders. No child displayed any signs of distress during the screening procedure. Nine children whose parents had consented to their participation in the screening process were unable to participate: either due to long term absence or because they refused to accompany the data collectors. Children who refused to participate were approached on at least three separate days before being logged as not prepared to cooperate. The consent form outcomes are presented in Table 6.2.

Table 6.2 Consent form outcomes		
	Number	**%**
Complete data sets	37	64%
Incomplete data sets	9	16%
Came into room but did not respond	3	5%
Sub total	***49***	***85%***
Would not enter room	7	12%
Absent (in Pakistan)	2	3%
Total	**58**	**100%**

Table 6.3 shows the age and gender characteristics of the 12% of children who refused to accompany the data collectors. These children are distinct from the 'non-responders' who accompanied the data collectors but then declined to speak. The youngest child who refused was 3;03 and the oldest 4;00.

Table 6.3 Children who refused to accompany data collectors				
Age	**Age band**	**Number of children**	**Female**	**Male**
3;00 - 3;05	2	1	0	1
3;06 - 3;11	3	4	1	3
4;00 - 4;05	4	2	0	2
Total		**7**	**1**	**6**

The possible impact of gender on various aspects of the development of communication skills has been investigated by many authors. Law *et al* (1998) in their comprehensive review of previous research concluded that there was evidence of a higher prevalence of speech and language delay in males than in females. Petheram and Enderby (2001) reviewed referral data for children and adults from 11 speech and language therapy service providers over a nine year period and found males accounted for 60% of referrals. Fombonne (2003) reviewed epidemiological surveys of autism and observed that all of the studies reviewed reported more boys than girls with the condition. A broad spectrum of

evidence therefore suggests that males are more susceptible than females to have difficulties with communication skills. In the light of this evidence it is therefore interesting that 21% of males approached declined the opportunity to engage in a communicative interaction compared to 4% of females. With such small numbers no firm conclusion can be reached but it is possible to speculate that there is evidence here of a gender imbalance within a group of young children whose cultural background does not encourage interaction with adults: males appear to be more reluctant communicators than females.

6.4.2 AGE AND GENDER OF CHILDREN SCREENED

The forty nine children who were screened varied in age between 3;01 years and 4;01 years. Females accounted for 53% of the cohort and males for 47%. Full details of the age and gender distribution are given in Table 6.4.

Table 6.4 Age and gender distribution of children who attended screening assessment (n = 49)

Age	Age band	Number of children	Female	Male
3;00 - 3;05	2	19	9	10
3;06 - 3;11	3	26	15	11
4;00 - 4;05	4	4	2	2
Total		**49**	**26**	**23**

6.4.3 LANGUAGES SPOKEN

The majority of children screened spoke Mirpuri. No child was considered to have English as a dominant language although some were noted to have social greetings such as "hello" and "bye" in English. A language label was allocated as a result of the bilingual speech and language therapy assistants engaging the child in conversation in the nursery prior to entering the assessment room. The three children who entered the room but would not engage in the screening activities and the two children giving incomplete data sets who would not cooperate with any expressive activities (IDs S4 and S49), had their language determined following a conversation between a bilingual speech and language

therapy assistant and their parents. The distribution of languages spoken is given in Table 6.5.

Table 6.5 Languages spoken by children		
Language	**Frequency**	**Percentage**
Mirpuri	45	92%
Punjabi	1	2%
Urdu	3	6%
Total	**49**	**100%**

6.4.4 COMPLETE DATA SETS: CLINICAL DIAGNOSIS

The complete data sets were collated by the researcher, who then allocated a clinical diagnostic label to each child on the basis of their performance in mother tongue on the mother tongue verbal comprehension screen (DLS), mother tongue expressive language screen (JZ) and the BiSSS. The DEAP results were not used to achieve these clinical diagnostic labels and are reported separately below. The majority of children (73%) were classified as typically developing, while six children (16%) were classified as language delayed. Three children (8%) were classified as having delayed phonological acquisition and one as having disordered phonology. No children were identified as making articulatory errors. The clinical diagnostic categories are given in Table 6.6.

Table 6.6 Clinical diagnosis for complete data sets (n = 37)		
Clinical diagnosis	**Number**	**%**
Typically developing	27	73%
Language delay	6	16%
Language disorder	0	0%
Delayed phonological acquisition	3	8%
Disordered phonology	1	3%
Articulation	0	0%
Total	**37**	**100%**

6.4.5 INCOMPLETE DATA SETS

Nine children gave incomplete data sets. In these cases each child became unresponsive for some assessments whilst offering full cooperation for other assessments. The screening assessments that these children did complete are given in Table 6.7.

Table 6.7 Incomplete data sets (n = 9)

ID and number (n) of children	**Completed assessments**			
	DLS	**JZ**	**BiSSS**	**DEAP**
S12, S23, S25 (3)	✓	✓		
S4, S49 (2)	✓			
S47 (1)	✓		✓	✓
S11, S35, S55 (3)			✓	✓

It was unclear why these children gave only limited cooperation to the data collectors. Given that only two of the nine (S4 and S49) refused to engage in any expressive tasks at all it does not appear possible to explain on the grounds that the children were actually non-responders who were prepared to do the DLS, a receptive assessment requiring no verbal output from the child. In each case at least one further attempt was made to gain the child's cooperation on a day subsequent to the one on which they had ceased cooperating.

Children who gave incomplete data sets could not be allocated diagnostic labels. However, their data were examined to see if any possible speech disorders could be identified. Two children had contributed restricted data that was suggestive of delayed phonological acquisition and one of phonological disorder. All three children were included in the list of children to be sought for follow up at the end of the school year.

Table 6.8 Partial diagnosis summary for incomplete data sets	
Number of children (ID)	**Partial diagnosis**
2	Language normal Speech N/A
2 (S35, S47)	Language N/A Phonological delay
1	Verbal comprehension normal Language N/A
1 (S11)	Language N/A Phonological disorder
1	Language delay Speech N/A
1	Comprehension normal Language N/A Speech N/A
1	Language N/A Speech normal

6.4.6 BiSSS RESULTS

Data grouped by age band were manipulated to derive calculations for both mean and range of:

- Completed items
- Spontaneous attempts
- Consonants attempted
- Consonants correct of those attempted

These calculations are presented in Tables 6.9 – 6.13. Data derived from the normative population described in Chapter Five are given for comparative purposes. As with the normative data, the children who did not respond at all were eliminated from the calculations after the 'completed items' calculation.

Table 6.9 Completed items				
Age band	**Completed items: Mean**	***Completed items: Mean Norms***	**Completed items: Range**	***Completed items: Range Norms***
2 n=19	16	*16*	0 - 21	*0 - 21*
3 n=26	18	*19*	0 - 21	*0 - 21*
4 n=4	16	*17*	0 - 21	*0 - 21*

Table 6.9 demonstrates that this cohort of nursery children showed a close correspondence to the normative population for the number of items they completed on the speech screen. However, the mean number of spontaneous responses was slightly below the normative means as Table 6.10 demonstrates.

Table 6.10 Spontaneous attempts				
Age band	**Percentage spontaneous attempts: Mean**	***Percentage spontaneous attempts: Mean Norms***	**Percentage spontaneous attempts: Range**	***Percentage spontaneous attempts: Range Norms***
2 n=15	54%	*63%*	0 – 76%	*6 -100%*
3 n=23	57%	*61%*	10 – 100%	*0 – 100%*
4 n=3	56%	*65%*	48 – 71%	*0 – 100%*

Table 6.10 indicates that the range of spontaneous attempts was more restricted for bands 2 and 4 when compared to the normative data, with no child in these age bands completing all the items spontaneously. It is not clear why there is this observed difference between the current sample and the normative sample. It is possible to speculate that the place and timing of assessment had some impact: all of the current sample were seen in a nursery setting and had

only been in that setting for less than two months. They may therefore have been less confident and preferred to wait for a prompt compared to the children in the normative sample who were seen in a variety of settings and settings, furthermore, with which they may have been more familiar. Certainly observations relating to Band 4 of the current sample should be treated with extreme caution due to the very small sample size (three) giving the opportunity for the performance of one child to have a significant impact on the data. In contrast Band 4 of the normative sample contained 41 children.

Table 6.11 Consonants attempted

Age band	**Consonants attempted: Mean**	***Consonants attempted: Mean Norms***	**Consonants attempted: Range**	***Consonants attempted: Range Norms***
2 n=15	41	*41*	34 – 45	*27 – 46*
3 n=23	42	*40*	37 – 44	*2 – 47*
4 n=3	42	*40*	42 - 43	*9 - 46*

The mean number of consonants attempted closely matched the normative data. Interestingly the *range* of consonants attempted was much smaller for this nursery cohort across all three age bands in comparison to the normative data and more focussed around the upper end of the range. Again it is difficult to interpret this observed difference between the two samples. It may be that being in nursery for less than two months had a dual effect: although on the one hand lack of familiarity with the setting made the children more reluctant to offer spontaneous speech, on the other hand it may have made the children more likely to respond to repeated requests from figures of authority.

Table 6.12 Consonants correct				
Age band	**Consonants correct: Mean**	***Consonants correct: Mean Norms***	**Consonants correct: Range**	***Consonants correct: Range Norms***
2 n=15	34	*33*	16 – 41	*21 – 41*
3 n=23	38	*34*	31 – 43	*2 – 44*
4 n=3	39	*37*	35 - 41	*9 - 45*

Table 6.12 demonstrates that this nursery cohort performed slightly better than the normative data in terms of consonants correct. Bands 3 and 4 demonstrated a range much more focussed around the upper limits when compared to the normative data. Again caution needs to be exercised with regard to Band 4. This slightly better performance is also reflected in the figures presented in Table 6.13 for percentage of consonants correct (PCC) of those attempted.

Table 6.13 Percentage consonants correct (PCC) of attempted				
Age band	**Percentage consonants correct of attempted: Mean**	***Percentage consonants correct of attempted: Mean Norms***	**Percentage consonants correct of attempted: Range**	***Percentage consonants correct of attempted: Range Norms***
2 n=15	83%	*80%*	38 – 95%	*56 – 91%*
3 n=23	90%	*88%*	77 – 100%	*58 – 100%*
4 n=3	92%	*92%*	83 – 98%	*77 – 100%*

6.4.7 ERROR PATTERNS PRESENT

Close scrutiny of each individual transcription revealed that a wide variety of error patterns were occurring. Full details are presented in Table 6.14.

Table 6.14 Error patterns present in mother tongue

Process	Age Band 2 n = 15	Age Band 2 %	Age Band 3 n = 23	Age Band 3 %	Age Band 4 n = 3	Age Band 4 %
Gliding	14	**93%**	11	**48%**	2	**67%**
Fronting	8	**53%**	3	**13%**	1	**33%**
Weak syllable deletion	0	**0**	2	**9%**	0	**0**
Stopping	4	**27%**	8	**35%**	1	**33%**
C D: initial	4	**27%**	4	**17%**	0	**0**
CD: medial	8	**53%**	7	**30%**	0	**0**
C D: final	3	**20%**	3	**13%**	1	**33%**
Backing	1	**7%**	0	**0**	0	**0**
Voicing	2	**13%**	0	**0**	0	**0**
Reduplication	2	**13%**	2	**9%**	1	**33%**
Assimilation	4	**27%**	3	**13%**	1	**33%**
Intrusive consonant	3	**20%**	2	**9%**	0	**0**
Deaffrication	2	**13%**	5	**22%**	0	**0**
Affrication	0	**0**	1	**4%**	0	**0**

As discussed above, the very small sample size in Band 4 means that the results presented for that band should be treated with extreme caution. There are however several error patterns present in Bands 2 and 3 which need further consideration. The extremely high incidence of gliding reported particularly merits highlighting. The rates of 93% for Band 2 and 48% for Band 3 are both approximately two and a half times the rates of 38% (Band 2) and 19% (Band 3) reported in the normative data. It is unclear why there is such a large disparity between the normative data and the current nursery sample with regard to the occurrence of gliding. Certainly the nursery sample size within each age band was smaller than in the normative sample and a degree of caution needs to be exercised when looking at percentage figures derived from small sample sizes as individual performance within a small sample can have a disproportionate effect on the percentage figure. The rate of 27% for stopping in Band 2 is more

than double the rate observed in the same band within the normative data although the rate of 35% observed in the following band (i.e. Band 3) closely matches the 33% rate observed in the normative data. The rate of 27% for assimilation in Band 2 is almost double that reported in the normative sample although in falling to 13% in Band 3 this process appears to be following the same sharp decrease noted in successive age bands in the normative sample.

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6.4.8 SENSITIVITY AND SPECIFICITY

In order to measure the sensitivity and specificity of the speech screen a total of 18 children were also assessed on the full mother tongue speech assessment, RAMP. These 18 included all ten of the children identified as having a possible speech disorder by the screen plus eight randomly selected children whose performance on the screen had not identified any areas for concern. The results are summarised in Table 6.15.

Table 6.15 Children assessed on both BiSSS and RAMP

	Speech identified as normal on RAMP	Speech disorder identified on RAMP
Speech identified as normal on BiSSS	8	0
Possible speech disorder identified on BiSSS	5	5

Forty four percent of this sample performed within normal limits on both the screen and the full assessment (true negatives). The screen identified twenty eight percent of the sample as having a possible speech disorder which was confirmed by the full assessment (true positives). Twenty eight percent of the sample were identified as having a possible speech disorder by the screen but this was not confirmed by the full assessment (false positives). There were no instances of children who performed within normal limits on the screen then being identified with a speech disorder by the full assessment (false negatives).

The speech screen therefore appears to have good measures of sensitivity and specificity: in particular there were no false negatives. Some false positives

were generated but as previous authors (Wiig, Secord and Semel 1992) have argued, it is preferable for a screen to over-identify rather than under-identify a possible problem.

6.4.9 RE-ASSESSMENT AFTER EIGHT MONTHS

At the end of the school year in which the original screening assessment was conducted, an attempt was made to follow up some of the children. The two data collection teams again visited the nursery and attempted to see thirteen children who had previously been classified into five separate categories:

- The child assigned a clinical diagnosis of phonological disorder.
- All three children assigned a clinical diagnosis of delayed phonological acquisition.
- All three children who had previously entered the room but then failed to respond to any of the screening assessments.
- All three children who gave incomplete data sets but whose speech screen indicated a speech disorder.
- Three of the remaining six children who gave incomplete data sets.

The same battery of screening assessments was administered on this occasion as had been administered previously and under the same conditions. The teams were blind to the child's original categorisation. These re-assessments occurred between eight and nine months after the original screening procedure. The new diagnostic categories are in Table 6.16.

Table 6.16 Diagnosis following re-assessment at plus eight months			
ID	**Original age**	**Original diagnosis**	**New diagnosis at reassessment**
S4	3;09	Incomplete (Comprehension normal)	Absent NB. Reported to have poor attendance record
S5	3;01	Came into room but did not respond	Absent NB. Reported to have poor attendance record
S8	3;06	Phonological delay	Absent NB. Reported to have poor attendance record
S11	3;03	Incomplete (?phonological disorder)	Delayed phonology NB. Moved into English as dominant expressive language
S12	3;08	Incomplete (Comprehension normal ?language delay)	Normal NB. Moved into English as dominant expressive language
S14	3;08	Came into room but did not respond	Incomplete data set: receptive screen normal NB. Undergoing formal assessment procedure for issue of statement of special educational needs with regard to behavioural difficulties
S21	3;01	Came into room but did not respond	Interdental articulation / gliding NB. Moved into English as dominant expressive language
S23	4;00	Incomplete (Language normal)	Normal
S29	3;03	Phonological delay	Normal
S30	3;04	Phonological disorder	Phonological disorder
S35	3;07	Incomplete (? phonological delay)	Normal NB. Moved into English as dominant expressive language
S44	3;08	Phonological delay	Normal
S47	3;03	Incomplete (? phonological delay)	Absent NB. Reported to have poor attendance record

The children recorded as absent at this re-assessment were all sought on at least two occasions over a two week period and were all reported by the nursery to have poor attendance records. In general, children attending the nursery have a good attendance record (OFSTED 2001). Of these four children, two had previously given incomplete data sets and one was a non-responder, suggesting that none were confident communicators. Four other children who had previously given incomplete data sets did give complete data sets on follow-up and were noted to have moved to using English as their dominant language. In the light of this observation it is possible to speculate that they gave incomplete data sets on the first occasion because they were already moving from dominance in a Pakistani heritage language towards English dominance. One of these children, S11, is considered in detail in the next section, which considers individual children in detail, alongside child S30 and child S44 who had both been identified with speech disorders following the first round of assessments.

Of the three non-responders on the first occasion, one was absent at follow-up, one gave a full data set at follow-up which indicated an articulation disorder and one again failed to give a full data set and was noted to be undergoing a formal assessment within the education system with regard to behaviour difficulties. Such disparate outcomes at follow-up with such a small sample mean that no clear conclusions can be drawn with regard to this group of non-responders. It is however interesting to note their occurrence within this nursery sample as well as within the normative sample.

6.4.10 INDIVIDUAL CHILDREN

Three individual children are presented below in more detail to allow detailed investigation of performance both on the speech screen and on the full speech assessment. These children are of particular interest: each was identified as having a possible speech disorder after the screening assessment. One showed features of disordered phonology and two displayed features of delayed phonological acquisition. Of these latter two children one had moved to having English as their dominant language at follow-up after eight months.

6.4.10.1 CHILD S30

Child reference S30 was a male aged 3;04 when first screened. He was reassessed at age 3;11.

Table 6.17 Child S30 Summary of items attempted and consonants correct at age 3;04

	Age 3;04	***Norms (Mean)***
Spontaneous attempts	10 (48%)	*63%*
Prompted attempts	11 (52%)	
Consonants attempted	42	*40.9*
Consonants correct	16 (38%)	*32.8 (80%)*

S30 completed all 21 items on BiSSS, above the mean of 15.8 for his age group. His rate of 48% for spontaneous responses was however lower than the 63% mean for his age. Reflecting the number of items he attempted his number of consonants attempted was also higher than the mean for his age. However, his score for consonants correct was below the mean of 32.8 and fell outside the range for his age.

Table 6.18 Child S30 Summary of errors on the BiSSS at age 3;04

Process	**Example**
Gliding	/ɽona/ → [lona]
Fronting	/ækɪa/ → [ætɪa]
Stopping	/ʃeɾ/ → [tel]
CD: Initial	/t̪opi/ → [op]
CD: Final	/d̪ud̪/ → [d̪ʊ]
Assimilation	/dʒabi/ → [babi]
Other	/ẽnka/ → [kena] /kʌpəɾ̥ẽ/ → [pʊtə]

Table 6.18 indicates that S30 was using three error patterns (stopping, CD: Initial and CD: Final) which occurred in less than 10% of his age band in the normative sample. He was also making unusual errors which were difficult to categorise. On the basis of the presence of these error patterns and his very low score for consonants correct it was suspected that S30 had a phonological disorder. A full assessment using the RAMP confirmed the disordered pattern. As the RAMP gives the opportunity to elicit some words on more than one occasion it also highlighted the inconsistencies in S30's production:

Table 6.19 Child S30 Summary of inconsistent errors on the RAMP at age 3;04 (Target → 1st attempt → 2nd attempt)
/dʒaz/ → [da^{h}] → [dæd']
/seb/ → [tet]→ [tʃe]
/kæn/ → [kæŋ] → [kən]

Using the categories described by Dodd (1995, 2005) these inconsistencies led to S30 being assigned a diagnostic label of inconsistent phonological disorder.

S30 was re-assessed at age 3;11. Table 6.20 indicates that he again attempted all the items on BiSSS and had now moved above the mean score for his age band on the percentage of spontaneous attempts. The percentage of consonants correct was still below the mean and outside the range for his age band.

Table 6.20 Child S30 Summary of items attempted and consonants correct at age 3;11		
	Age 3;11	***Norms (Mean)***
Spontaneous attempts	16 (75%)	*61%*
Prompted attempts	5 (25%)	
Consonants attempted	42	*39.5*
Consonants correct	20 (48%)	*33.8 (88%)*

Error patterns on the BiSSS were classified as follows:

Table 6.21 Child S30 Summary of errors on the BiSSS at age 3;11	
Process	**Example**
Gliding	/mʊɾa/ → [bələ]
Fronting	/ẽnka/ → [enta]
Stopping	/sɑf/ → [tɑf]
Assimilation	/pɑɳi/ → [mɑɳi]
Other	/næk/ → [daʔ] /t̪opi/ → [beti] /dʒabi/ → [pʰæti]

RAMP again confirmed inconsistent productions, for example:

Table 6.22 Child S30 Summary of errors on the RAMP at age 3;11
/dʒaz/ → [dzæʰd] → [dæd]
/kan/ → [kʌn] → [kæn]
/dɾaxt̪/ → [dæk] → [dæʰ]

There is evidence (Forrest, Elbert and Dinnsen 2000) that monolingual English speakers with inconsistent phonological substitutions are more resistant to remediation following therapeutic intervention than those making consistent errors. S30 had no therapeutic intervention and these two assessments, conducted with an eight month time interval, indicate that although he made some improvement (PCC increased from 38% to 48%) these were broadly in line with predicted improvements resulting from maturation (80% PCC in Band 2 to 88% PCC in Band 3).

6.4.10.2 CHILD S44

Child reference S44 was a female aged 3;08 when first screened. She was reassessed at age 4;04.

Table 6.23 Child S44 Summary of items attempted and consonants correct at age 3;08

	Age 3;08	***Norms (Mean)***
Spontaneous attempts	15 (71%)	*61%*
Prompted attempts	6 (29%)	
Consonants attempted	42	*39.5*
Consonants correct	33 (79%)	*33.8 (88%)*

Table 6.23 shows that S44 completed all the items on BiSSS and produced more items spontaneously than the normative sample. She also attempted more consonants than the mean for her age but of these she produced a lower percentage than the mean on target and her score only just fell inside the range for consonants correct. Table 6.24 indicates that she was using three error patterns (backing, assimilating and metathesis) which occurred in fewer than 10% of the normative data. On the basis of this evidence it was suspected that S44 had a speech disorder.

Table 6.24 Child S44 Summary of errors on the BiSSS at age 3;08

Process	**Example**
Gliding	/mʊɾa/ → [mʊja]
Fronting	/fɛɾɪʃ/ → [fɛɾɪs]
Backing	/sɑːf/ → [ʃɑːf]
Assimilation	/ɽona/ → [nona]
Metathesis	/kʌpəɾẽ/ → [pʌkəɾe]

A full assessment using the RAMP produced evidence, as shown in Table 6.25, suggesting that S44 was in fact in the process of acquiring both fricatives and approximants.

Table 6.25 Child S44 Summary of RAMP at age 3;08
While some approximants were being omitted, some approximants were being correctly used, suggesting that they were in the process of being acquired, for example: • /bʌkɹi/ → [bʌkəli] • /ɹɪtʃ/ → [jɪtʃ] • /bɪstɹ/ produced correctly • /vɹkɑ/ produced correctly • /ʃeɹ/ produced correctly
Fricatives were still not stable in production, again suggesting that they were in the process of acquisition, for example: • /dʒaz/ → [dʒaʃ] → [das] • /bɑɹɪʃ/ → [bɑɹɪs] • /seb/ produced correctly • /huʃ/ produced correctly • /mʌtʃi/ produced correctly • /dʒʌn/ produced correctly

As RAMP produced evidence of only one example of inconsistency and evidence that S44 was acquiring fricatives and approximants she was assigned a diagnostic label of delayed phonological acquisition (Dodd 1995, 2005).

Re-assessed at age 4;04 (see Table 6.26), S44 was again performing above the normative data in terms of spontaneous attempts and consonants attempted. Now she was also exceeding the consonants correct score and produced only one error on the speech screen: /sɑːf/ → [sɑː].

Table 6.26 Child S44 Summary of items attempted and consonants correct at age 4;04		
	Age 4;04	***Norms (Mean)***
Spontaneous attempts	18 (86%)	*65%*
Prompted attempts	3 (14%)	
Consonants attempted	42	*40*
Consonants correct	41 (98%)	*36.7 (92%)*

6.4.10.3 CHILD S11

Child S11 was a male aged 3;03 when first screened. He was reassessed at age 3;11.

Table 6.27 Child S11 Summary of items attempted and consonants correct		
	Age 3;03	***Norms (Mean)***
Spontaneous attempts	0	*63%*
Prompted attempts	18 (100%)	
Consonants attempted	34	*40.9*
Consonants correct	18 (53%)	*32.8 (80%)*

Table 6.27 indicates that S11 was below the mean for both number of items completed and number of spontaneous attempts although he fell within the range for both. The number of consonants attempted and the percentage of attempted consonants which were correct were both below the mean and additionally the percentage of consonants correct fell outside the range for his age band. The error patterns present in the speech of S11 (see Table 6.28) included three (initial and final consonant deletion and backing) which were present in fewer than 10% of the normative sample.

Table 6.28 Child S11 Summary of errors on the BiSSS at age 3;03	
Process	**Example**
Gliding	/kela/ → [keja]
Fronting	/ẽnka/ → [emə]
CD: initial	/kʌpəɾẽ/ → [ʌpi]
CD: final	/d̪ud̪/ → [d̪u]
Backing	/sɑ:f/ → [sɑ:z]
Assimilation	/pãɳi/ → [mãɳi] /t̪opi/ → [popi]
Other	/ɽona/ → [dʊd] /dʒabi/ → [dædʒi]

A full assessment using the RAMP gave further evidence of the error patterns in Table 6.28 as well as further examples of unusual errors as shown in Table 6.29.

Table 6.29 Child S11 Examples of disordered errors on the RAMP at age 3;03		
/zbɑ:n/ → [mɑ:n]	/dʒɛndɑ/ → [dʌdɑ]	/hat/ → [tat]
/sap/ → [sat]	/bandəɾ/ → [mʌnə]	/sɑ:f/ → [fɑp]
/gʌdi/ → [ədi]		

As S11 would not complete receptive and expressive screening assessments it was inappropriate to assign a diagnostic label. He showed no evidence of articulation or inconsistent phonological disorder. His speech showed errors suggesting a disordered pattern but with the caveat that there was no evidence concerning his expressive language level. In the absence of such information it was possible to speculate that S11 had delayed language development and that such a delay might account for his lack of co-operation on receptive and expressive language tasks.

S11 was re-assessed at age 3;11 and the quantitative results are shown in Table 6.30. By this age S11 was making more spontaneous attempts than he had eight months previously and the number of consonants attempted and percentage of consonants correct were both slightly above the norms for his age.

Table 6.30 Child S11 Summary of items attempted and consonants correct at age 3;11

	Age 3;11	***Norms (Mean)***
Spontaneous attempts	9 (43%)	*61%*
Prompted attempts	12 (57%)	
Consonants attempted	42	*39.5*
Consonants correct	39 (93%)	*33.8 (88%)*

Only three errors were noted on the speech screen:

- /kæn/ → [æn]
- /kʌpəɾẽ/ → [kʌpə]
- /ɽona/ → [lona]

At re-assessment it was clear that S11 was now using English as his main language. He produced all the items in BiSSS in English first, before producing Mirpuri items on further request. The DEAP screen was therefore administered again. Interestingly even though English was now his main language he produced only one word (spider) spontaneously, needing prompts for all the other items.

S11's productions in English (see Table 6.31) reflected some features which occur in less than 10% of monolingual English speaking children at age 3;11 (Dodd et al 2002) and he might therefore be considered to have features of delay if he were a monolingual speaker of English. However, these features are not indicative of delay for bilingual Pakistani heritage children at age 3;11 (Dodd *et al* 2002) and furthermore the errors occurred on prompted rather than spontaneous responses.

Table 6.31 Child S11 Examples of S11's *prompted* English production on the DEAP screen at age 3;11
/sɪzəz/ → [tɪdə]
/helikɒptə/ → [hekɒtə]
/eləfənt/ → [elisən] → [elɪfəp]

Given that S11 had clearly moved to English as his dominant language at the time of reassessment it is possible to speculate that his failure to contribute a full data set on first assessment resulted from his inability to use or understand Mirpuri at sentence level, the stimulus language used. This speculation is not supported by the evidence. S11's parents did not speak English and reported that he used Mirpuri. He also required prompting for the items he completed on the DEAP screen as well as for those he completed on the BiSSS.

6.4.11 DEAP DIAGNOSTIC SCREEN DATA

The two data collection teams attempted to administer the DEAP diagnostic screening assessment to all forty nine children who entered the room where the screening process was being undertaken. Eight children were silent and did not offer any output in response to the screen. The remaining forty one children completed the DEAP screen: the thirty seven children who gave complete data sets and four children who gave incomplete data sets.

The DEAP screen was always administered as the final assessment of the screening battery. The bilingual speech and language therapy assistant would switch from speaking mother tongue into speaking English and ask the child whether they knew any English. Irrespective of the child's response (or lack of response) the assistant would then encourage the child to name the stimulus pictures. If the child was either silent or named the stimulus picture in mother tongue the assistant would model the word in English and encourage the child to copy the model.

Table 6.32 shows the number of words attempted by the nursery children on each of the two attempts. The majority of children did attempt all ten words: 80% at the first attempt and 82% at the second attempt.

Table 6.32 Words attempted on DEAP

Total attempts	**Number of children 1st attempt**	**% 1st attempt**	**Number of children 2nd attempt**	**% 2nd attempt**
0	8	16%	8	16%
1	0	0%	0	0%
2	0	0%	0	0%
3	0	0%	0	0%
4	0	0%	0	0%
<5		***16%***		***16%***
5	0	0%	0	0%
6	0	0%	0	0%
7	0	0%	0	0%
8	1	2%	0	0%
9	1	2%	1	2%
10	39	80%	40	82%
Total	**49**		**49**	

Table 6.33 puts the data presented in Table 6.32 into context. Although the majority of children did attempt all the words in the DEAP screen the majority of them were not producing the words spontaneously but were copying a model produced by the bilingual speech and language therapy assistants.

Table 6.33 Spontaneous words on DEAP				
Spontaneous words	**Number of children 1st attempt**	**% 1st attempt**	**Number of children 2nd attempt**	**% 2nd attempt**
0	25	51%	23	47%
1	6	12%	4	8%
2	6	12%	4	8%
3	5	10%	4	8%
4	1	2%	3	6%
<5	***43***	***87%***	***38***	***78%***
5	0	0%	3	6%
6	2	4%	2	4%
7	0	0%	1	2%
8	1	2%	1	2%
9	0	0%	0	0%
10	3	6%	4	8%
Total	**49**		**49**	

The eight children who made no attempt at the screen were eliminated from further analysis. The DEAP transcriptions were then examined to establish whether children made phonological errors in English and whether those errors were matched by their performance in mother tongue. Table 6.34 highlights the stark contrast between errors recorded in mother tongue and those recorded in English.

Table 6.34 Children who made phonological errors on DEAP n = 41 of which: • 37 are complete data sets • 4 are incomplete data sets but child completed DEAP		
	Yes	**No**
% who made phonological errors	100%	0%
% whose errors on DEAP matched errors in mother tongue	0%	100%

The DEAP screen allows the calculation of an inconsistency score. A score of 50% or more is viewed as cause for concern and further investigation. In this cohort of children 79% registered an inconsistency score of 50% or more. The inconsistency scores are presented in Table 6.35.

Table 6.35 Inconsistency score on DEAP (n = 41)		
Inconsistency score	**Number of children**	**% of children**
100%	1	2%
90%	4	10%
80%	6	15%
70%	8	20%
60%	8	20%
50%	5	12%
Sub total ≥ 50%	**32**	**79%**
40%	4	10%
30%	5	12%
<30%	0	0
Total	**41**	

6.4.11.1 DEAP DATA FROM INDIVIDUAL CHILDREN

Table 6.36 Examples of errors on the DEAP screen made by Pakistani heritage children who did not speak English

ID, diagnosis and inconsistency score	**Examples (all in imitation)** **Target → 1st attempt → 2nd attempt**
S1 Diagnosis: normal 70%	/fɪʃɪŋ/ → [fɪntʃɪŋ] → [fɪʃɪŋt] /spaɪdə/ → [sʌbsɪd] → [sʌbaɪdə] /helɪkɒptə/ → [elɪkɒstə] → [ʌkstə] /eləfənt/ → [ʌmɪstət] → [ʌməstʌts]
S13 Diagnosis: normal 90%	/fɪʃɪŋ/ → [fɪʃɪn] → [fɪŋkɪʃ] /spaɪdə/ → [sdæbər] → [sdæʰ]
S24 Diagnosis: language delay 80%	/bɹɪdʒ/ → [buf] → [bwɪʒ] /spaɪdə/ → [bætə] → [baftəs] /umbɹelə/ → [ubufwə] → [ububələ]
S26 Diagnosis: normal 80%	/spaɪdə/ → [səbə] → [də] /umbɹelə/ → [belə] → [kəwelə]
S40 Diagnosis: language delay 50%	/umbɹelə/ → [ubjə] → [ələdə]
S41 Diagnosis: normal 80%	/umbɹelə/ → [wedə] → [belə]
S42 Diagnosis: language delay 90%	/gluvz/ → [wubz] → [bubz] /umbɹelə/ → [blelə] → [bweʰ]

Table 6.36 (continued) Examples of errors on the DEAP screen made by Pakistani heritage children who did not speak English	
ID, diagnosis and inconsistency score	**Examples (all in imitation)** **Target → 1st attempt → 2nd attempt**
S48 Diagnosis: normal 50%	/fɪʃɪŋ/ → [fɪŋgɪs] → [fɪʰsɪŋ]
S52 Diagnosis: language delay 70%	/θæŋkju/ → [dæju] → [kæʃu] /sɪzəz/ → [ɬɪdə] → [zʔə]

The evidence presented in Table 6.36 demonstrates clearly the errors and lack of consistency demonstrated by children within their imitated utterances on DEAP. The manual for DEAP indicates that any child scoring more than 50% on the inconsistency rating for the screen should have further investigations to establish whether they have inconsistent speech disorder. In fact the diagnostic labels assigned as a result of mother tongue assessments indicated that only one of the children had inconsistent speech disorder. It is likely that the inconsistencies in English arose as a result of the target items being elicited in imitation. This is discussed in detail in the discussion section below.

6.4.11.2 DISCUSSION OF DEAP DATA

There is evidence that imitated productions of real words may be more accurate than spontaneous productions (Weston 1997, Vance, Stackhouse and Wells 2005). Many researchers do however include data from imitated utterances as well as spontaneous utterances, although imitated utterances may be coded to indicate that they have been prompted (see for example Dodd *et al* 2002, Munro *et al* 2005). The evidence presented in Table 6.33 indicates that the majority of data collected on DEAP were imitated utterances. The apparently paradoxical evidence of Table 6.34 that *all* the children who were assessed made phonological errors on DEAP (when they might be predicted to make few

errors) therefore needs consideration. Vance *et al* (2005) investigated performance on naming, word repetition and non-word repetition (NWR) tasks in three to seven year old children. At ages three and four scores on repetition tasks were significantly better than on naming tasks. They found no significant difference between the two repetition categories at age three years but by age four, word repetition had become significantly more accurate than NWR. The lower accuracy on NWR tasks continued up to the oldest age assessed (7;11). The children in the current nursery sample were all mother tongue speakers of Mirpuri, Punjabi and Urdu with very limited experience of English. It is therefore likely that the repetition task which DEAP effectively became for them was in fact a NWR task as they had no lexical representations available to assist them. Furthermore, seven of the ten targets on the DEAP screen have two or more syllables and Vance *et al* (2005) also found that stimulus length had a detrimental effect on NWR, an observation they attributed to the reliance placed on short-term memory capacity by NWR tasks.

The data presented in Table 6.34, showing that the errors made by children on DEAP did not match the errors made by the same children on BiSSS, suggest evidence exists within the data sets to support the theory that children develop separate phonological systems for each language they speak. Detailed consideration of the *spontaneous* words elicited from individual children (Table 6.37) does yield some examples which support this theory:

Table 6.37 Examples of *spontaneous* words on BiSSS and DEAP suggesting the existence of separate phonological systems	
Mirpuri	**English**
S39 Produced labio-dental fricative in Mirpuri but stopped it in English	
/sɑf/ correct	/fɪʃɪŋ/ ➔ [pɪʃɪŋ]
S51 Using voiceless alveolar fricative in Mirpuri but omitting it in English Producing dentalised alveolar plosive in Mirpuri but substituting an affricate for an alveolar plosive in English Deaffrication in Mirpuri but producing an affricate in English	
/sɑf/ correct /d̪ud̪/ correct /dʒabi/ ➔ /zabi/	/sbaɪdə/ ➔ [paɪtʃə]

However, many of the examples in the data sets involve words which were produced in imitation. It is therefore unclear what weight should be attributed to this evidence in view of the previously discussed suggestion that as there was no evidence of the children's proficiency in English, and in view of their assumed very restricted knowledge of English, the DEAP screen was in fact a NWR task.

Many previous authors (see for example Kayser 1995, Wyatt 1998, Yavas and Goldstein 1998) have highlighted the need to assess a child in all the languages they speak before applying a diagnostic label. There is anecdotal evidence that in conditions of immersion within the education system, where children speak a minority language, assessments are being conducted only in the language of the education system, in this case in English. The evidence presented above supports the viewpoint that such inappropriate practice could lead to the over-identification of speech disorders.

6.5 NURSERY STAFF REPORTS ON COHORT

The nursery staff were asked on three separate occasions whether any children in the nursery were causing them concern with regard to any aspect of their communication skills. On each occasion the researcher visited the nursery at a time when there were no children present: either at lunchtime or at the end of the school day when the children had gone home. These visits occurred at the end of the first half term, at the end of the first full term and at the end of the school year. Each time, every member of staff was approached individually and asked whether they had any such concerns.

At the end of the first half term all the nursery staff said that children were still settling in and so they had not yet identified any children about whom they were concerned. At the end of the first full term the nursery staff identified five children to the researcher:

I. Child A was reported to be silent in nursery. In response to the researcher enquiring which language was spoken at home the member of staff reporting these concerns stated the language was Mirpuri.

II. Child B was reported to wear hearing aids and to be seen by the peripatetic teachers of the hearing impaired. In response to the researcher enquiring which language was spoken at home the member of staff reporting these concerns stated that they did not know.

III. Child C was under investigation by paediatricians with regard to a possible diagnosis of Autistic Spectrum Disorder. In response to the researcher enquiring which language was spoken at home the member of staff reporting these concerns stated that they did not know.

IV. Child D had been referred to the speech and language therapy department prior to nursery entry (and had a diagnosis of severe language delay).

V. Child E was reported to be of concern because staff were not sure if they were 'using mother tongue or babbling'. In response to the researcher

enquiring which language was spoken at home the member of staff reporting these concerns stated that they did not know.

At the end of the school year the nursery staff only identified Child D as causing them concern: no other child was named at this point.

6.6 DISCUSSION

Evidence presented in earlier chapters highlighted the fact that Pakistani heritage children with speech disorders are not referred to speech and language therapy and also highlighted possible reasons why referral agents may have difficulties identifying such children. Theoretically Pakistani heritage children with speech disorders must exist within the community but until now there has been no evidence proving either that such children exist or that referral agents have overlooked them. In this chapter the researcher set out to investigate these possibilities and in so doing to assess the efficacy of the bilingual speech screen.

Given that a screening tool should not give false negative results but that generation of false positive results (which can then be fully investigated) is acceptable, this data collection therefore confirms the BiSSS as a viable screening tool. The data collection also confirmed that a trained speech and language therapist could administer BiSSS in less than five minutes, confirming it as a rapid means of data acquisition, another essential requisite for a screening tool (Law 1992).

The ability of the BiSSS to identify Pakistani heritage children with speech disorders was confirmed by the data collection. Ten children who were identified as a cause for concern after the screen also had detailed assessments on the RAMP. This confirmed speech disorders in five of these children i.e. BiSSS generated five true positives and five false positives. Of the eight children who completed BiSSS without any concerns being identified, and who subsequently also completed the RAMP, none were identified as having any features of speech disorders. This indicates that BiSSS is not giving false negative results.

The administration of the DEAP screen to this cohort of children confirmed that assessment in English will not identify speech disorders in Pakistani heritage children with limited exposure to English. The DEAP results do give an interesting insight in to how children who actually have normal abilities in their mother tongue can appear delayed or even disordered when attempting to produce words in imitation.

This data collection occurred over a ten month period which coincided with the children having their (presumed) first daily exposure to English and being expected to acquire English expressively. No data were available to the researcher to indicate how much exposure individual children had in fact had to English as a result of having either a parent or older siblings who spoke English. It was clear that at the time of the first assessment all the children had a Pakistani heritage language as their dominant language. Some children also displayed evidence of some abilities in English. By the time of the second assessment all children displayed some skills in English, with some now clearly using English as their dominant language. It is possible to speculate that the children who came into the room but then failed to cooperate at all on the first data collection did in fact have more skills in English than in mother tongue. There were however only three children in this category and although one child (S21) had moved to English as a dominant language by the follow up assessment, one child was absent at follow up, so no decision could be made, and a further child (S14) still refused full cooperation. On such limited evidence no conclusions can be drawn. It should however be noted that the two data collection teams each consisted of one member clearly from the Pakistani heritage community and one member clearly from the majority White, English speaking community. In such circumstances it might be predicted that a child with English as their dominant language would still chose to communicate – if only to say that they did not understand what was being said.

This data collection therefore highlights the need to know a child's full language history. Such information is vital to facilitate a decision regarding whether apparent features of delay (or disorder) are in fact features of a typically developing bilingual speech system when the amount of exposure to a language is taken into account.

The BiSSS did identify some children making speech errors who were subsequently classified as having an overall delay in mother tongue, once their verbal comprehension and expressive language data were taken into account. The speed with which the BiSSS can be administered would make it a useful tool for the monitoring of such children to ensure their speech skills keep pace with their language development.

During the conduct of this phase of the research several occurrences confirmed points which had been raised at earlier stages.

The lack of knowledge amongst referral agents as to which languages are spoken has been previously highlighted. During this screening process on one occasion a member of the nursery staff was asked what language was spoken by a particular child who was in her group. The information was needed by the researcher as the child was about to be seen for data collection and although willing to enter the room, had not yet spoken a word in reply to the bilingual speech and language therapy assistant's attempts to engage them in conversation during play. The staff member replied that she did not know and there were no records available for her to find out. Similarly when the researcher asked nursery staff if they had any children about whom they were concerned the staff were unable to tell the researcher which languages some of the identified children spoke. In previous years schools did keep records of the languages spoken by children within each school. These data were then submitted to a central team coordinating input to support pupils for whom English is an additional language. Structural reorganisation of this team, resulting in a decentralisation of resources back to individual schools, meant that at the time this piece of data collection was undertaken schools were not required to submit a language audit to a central team. The researcher was unable to establish whether such information had been collected, and was unavailable to individual staff members, or whether, in the absence of a central imperative, no such information had been collected. In either case the result was nursery staff who were unaware of which language a child spoke and who apparently had no database to consult.

The fact that children from the Pakistani heritage community are reluctant to speak to adults had been raised by several health visitors during interviews conducted with them and evidence of non-responders was found within the normative population reported in Chapter Five. The findings of this screen confirmed this occurrence. Twelve percent of children would not enter the room with the researcher and an additional five percent did enter the room but then remained silent and uncooperative (non-responders). A further sixteen percent gave only partial cooperation. This means that thirty three percent of this cohort did not give full cooperation during the assessment process. The researchers were highly experienced at working with this client group and used several different strategies to encourage cooperation. They were also operating under less onerous time restrictions than health visitors and attempted to see non cooperating children on more than one occasion. This failure of Pakistani heritage children to engage with professionals will undoubtedly be a factor in the failure to identify children with speech disorders.

During the course of this data collection an incident occurred which further highlighted the failure of some children to engage with adults and gave an interesting insight into the response of adults to this behaviour. One day there was a short period of time available before parents were due to arrive to collect children at the end of the nursery session. The researchers felt that in this time they could manage to see one more child, providing that child was cooperative and would not need a lot of time spending coaxing them to cooperate. In the light of this the researcher approached a member of the nursery staff with the list of children still to be seen and asked the staff member to identify a child likely to be most cooperative. The child thus identified then accompanied the researcher into the room: and remained silent and uncooperative throughout all attempts at assessment. When the researcher returned the child to the nursery and explained this to the member of the nursery staff that staff member replied that they, too, had never heard the child speak, but remarked that the child was always cooperative. This is an example of the often quoted myth of the silent child, not raising any concerns amongst professionals and remaining overlooked because their behaviour is not disruptive and of immediate concern to professionals, who apparently tend to focus instead on the more disruptive children.

Children absent from the nursery, either with a history of poor school attendance or due to extended holidays in Pakistan, had an impact on this data collection. Two children whose parents signed consent forms were then absent on extended holidays in Pakistan within the first half of term and four children (30%) were unavailable during the follow up assessment period and were reported to have an irregular attendance pattern. There has been concern expressed at a national level (Department for Education and Skills 2004) about the extended absences from school of many minority ethnic children and the consequent effect this has on the child's education. The pattern of extended holidays to Pakistan and their potentially disruptive effect has been noted with particular regard to the community under discussion here (Ofsted 2003). Such absences not only mean that individual children are more likely to miss particular opportunities for any difficulties to be identified, it also encourages staff to re-set the clock. It has previously been established that professionals working with bilingual children tend to 'make allowances' and give such children extra time to settle in before flagging up any concerns they may have about their communicative skills (see Chapter Three). Following extended holidays abroad, where the child has only communicated in a language other than English and has not attended an educational setting, school staff again expect children to need a period of re-adjustment and do not have expectations that the child's communicative abilities should match that of their peers. The comment 'They're just back from Pakistan so they won't do much for us at the moment' has often been made to the researcher by school staff.

This data collection from forty nine children identified one child with an inconsistent phonological disorder (S30). One child with delayed phonological acquisition was lost to follow up, while the other two children identified with delayed phonological acquisition at initial assessment had moved within normal limits at reassessment. Interestingly, the screening programme also identified one child (S21) at follow up who had moved into English as their dominant language and who was making articulatory errors. This child had been a non-responder on first assessment so there are no data available concerning articulatory performance at the initial assessment. None of these children were identified by nursery staff as causing them concern. Not only is this failure to

identify these children of concern *per se*, it is likely to contribute to a further extended period before these particular children are identified. The children all attended a nursery school and at the end of the school year were due to transfer to several different primary schools. As the nursery school is physically separate from these primary schools and thus has no shared venue (such as a staff room) for staff to meet and informally share concerns about particular children, the only medium available for raising staff concerns about a child is through the written medium, in the form of the records that accompany a child. Education staff always give children a 'settling in period' when they have moved in to a new school and seem to have a particular propensity to give bilingual children additional time before expecting them to reach similar levels of communicative competence compared to their peers. If a child makes the transition from nursery school to primary school without having any accompanying concerns raised by their nursery teachers, the primary teacher is even more likely to make allowances for the child, assuming that any lack of communicative competence is in some way the result of the move from one school to another.

The child, S21, who demonstrated inter-dental articulation on fricatives and was consistently substituting /l / for /ɹ / is of great interest because these errors were occurring in English and this child was known to talk to nursery staff. It is possible to speculate that although nursery staff heard the errors they attributed them to acquisition of English as an additional language and so did not express any concerns.

The children who nursery staff did identify as causing concern at the end of the first term may give insight in to what features staff use to identify children with communication difficulties. One of the children (Child B) had a clear physical marker, in the form of hearing aids, indicating that they had a difficulty with communication. One child (Child C) had very unusual patterns of behaviour which affected their interaction not only with nursery staff but also with other children. One child (Child A) was completely silent and withdrawn within the nursery and had not been observed talking or interacting with other children. In contrast to Child A, one child (Child E) was eager to talk to staff members, who

could not understand what they said. This child had been observed to talk to other children. The final child, Child D, did have a severe language delay which prevented them from communicating either with the nursery staff or other children, and an accompanying delay in verbal comprehension (in mother tongue) made it obvious that they were struggling to understand what was happening in the nursery and were relying on observing and then copying the actions of other children. It would seem that the nursery staff were identifying only those children with what can be regarded as gross communicative difficulties (Child B, Child D) and those either with behaviour problems (Child A, Child C) or who were actively drawing attention to themselves in some way (Child E).

CHAPTER SEVEN

ASSESSING THE WIDER APPLICATION OF THE SPEECH SCREEN

7.1 INTRODUCTION

This chapter describes the use of the speech screen with a population of Pakistani heritage children living at some distance from the original research population. Chapter Four included a consideration of the difficulties involved in developing a speech screen for a language and a culture that you do not share. One factor highlighted was the difficulty in predicting which lexical items might be subject to regional variation and it was therefore considered appropriate to assess the speech screen's wider applicability by using it with a Pakistani heritage population living in a different part of England. During the data collection described in this chapter the speech screen was administered under two different conditions. Twelve children were seen by two speech and language therapists (SLTs) who specialise in working with bilingual children and were familiar with the screen. An additional eight children were seen by a non-specialist speech and language therapist working with a speech and language therapy assistant: both were White, monolingual English speakers. The discussion section considers both the implications for the use of the speech screen with Pakistani heritage populations throughout the UK and its use by non-specialist SLTs working without the support of bilingual speech and language therapy assistants.

7.2 BACKGROUND INFORMATION

The town where these current data were collected is an old industrial town in the north east of England, over one hundred miles distant from the town at the centre of this research. The Census 2001 indicated that 3.6% of the local population are from the Pakistani heritage community (National Statistics Online 2001). The area is economically deprived, with an unemployment rate almost double the national average for England and Wales (National Statistics Online 2001).

7.3 RATIONALE ONE: ESTABLISHING THAT THE SPEECH SCREEN IS APPROPRIATE FOR USE WITH THE WIDER PAKISTANI HERITAGE POPULATION

The evidence presented in Chapter Six indicated that the speech screen was a valid tool for identifying children with speech disorders in the Pakistani heritage community in one town in England. Item difficulty had been investigated in the normative data presented in Chapter Five. When developing a word list in English an English speaker would be able to predict some items which might be subject to regional variation, for example a picture of a cup containing a brown liquid is likely to elicit the lexical items 'tea' or 'coffee' in the south of England but is more likely to elicit 'brew' in some areas in the north of England. It was difficult to predict such possible regional variations with the current word list as the researcher did not speak the target languages. Census data (National Statistics Online 2001) indicates that the Pakistani heritage community is the most widely dispersed minority ethnic population throughout England and Wales. Using the speech screen with this new, geographically distant, community would give some insight in to whether the speech screen was appropriate for use with the wider Pakistani heritage community or only for use with the community in the town where it was developed.

7.4 RATIONALE TWO: ESTABLISHING THAT NON-SPECIALIST SLTs CAN USE THE SPEECH SCREEN

During the data collections discussed in Chapters Five and Six the speech screen had been administered by two SLTs both of whom specialised in working with bilingual clients and both of whom worked alongside bilingual speech and language therapy assistants. Furthermore both specialist speech and language therapists had adequate skills in the Pakistani heritage languages to ensure they could administer the assessments and make comments in mother tongue regarding the pictures in the assessments. This is not the normal working circumstance of a speech and language therapist working with bilingual children in England: Chapter One highlighted that there are few specialists in bilingualism and few trained bilingual staff. For the speech screen to be regarded as a useful screening tool it must be possible for qualified but non-

specialist SLTs to be able to use it. It was therefore necessary to establish whether the speech screen could be administered by monolingual speech and language therapists with no expertise in the field of bilingualism and working without the support of bilingual staff.

7.5 METHOD ONE

The two experienced SLTs travelled to the town in the north-east of England. Local SLTs had previously collected research consent forms from the parents of Pakistani heritage children attending a nursery school in a Sure Start area. None of these children had been referred to the speech and language therapy department. A total of twelve children were seen by the two experienced therapists. No bilingual speech and language therapy assistant was available to assist with data collection.

Each child was assessed using the same battery of mother tongue screening assessments as reported in Chapter Six. This allowed a clinical diagnosis to be made on the basis of screening assessments of verbal comprehension, expressive language and the speech screen. Each assessment session was commenced in Punjabi, the language named as being spoken by all these children, but subsequently changed to the language actually used by the child as appropriate. The children were seen in a quiet room in the nursery building. The data collection was undertaken at a time when each child had a minimum of three months experience in the nursery environment.

These screening sessions were observed by two members of the local speech and language therapy department: a recently qualified speech and language therapist, and a monolingual English speaking speech and language therapy assistant, who had a degree in linguistics and was therefore a competent user of the IPA.

7.6 METHOD TWO

The speech and language therapist and the monolingual assistant subsequently assessed eight nursery children using the same battery of screening

assessments. The data from these children were sent to the researcher for analysis.

7.7 DATA HANDLING

The data from all twenty children were collated and analysed by the researcher using Microsoft Excel. Detailed statistical analysis of the data generated by the speech screen was confined to consideration of the number of items completed and the number of spontaneous attempts: these figures were compared to the normative data. The aim of this data collection was to investigate the wider application of the speech screen. In order to confirm this, the important issue was to confirm that Pakistani heritage children outside the immediate vicinity of the original town would also be familiar with the lexical items being assessed and that non specialist speech and language therapists could use the screen to elicit these targets.

7.8 RESULTS

7.8.1 CONSENT FORM OUTCOMES

All of the children for whom consent forms were obtained were available for assessment and entered the assessment room. Three children would not respond to the assessors and three children gave an incomplete data set, leaving 70% of children who gave complete data sets. These outcomes are shown in Table 7.1 and compare favourably with the 64% of complete data sets produced in the nursery cohort presented in Chapter Six.

Table 7.1 Consent form outcomes

	n	**%**
Complete data set	14	70%
Incomplete data set	3	15%
Came into room but would not respond	3	15%
Total	**20**	**100%**

7.8.2 AGE AND GENDER OF CHILDREN

A total of twenty children were screened, ten female and ten male. The youngest child was aged 3;06 and the oldest aged 4;06. The age and gender distribution are shown in Table 7.2.

Table 7.2 Age and gender of children

Age	Age band	n	Female	Male
3;06 – 3;11	**3**	8	4	4
4;00 – 4;05	**4**	11	6	5
4;06 – 4;11	**5**	1	0	1
Total		**20**	**10**	**10**

7.8.3 LANGUAGES SPOKEN

More than half the children spoke Mirpuri. The language spoken by two children could not be identified as the children would not respond to the assessors and there was no access to their parents. Six children used mainly English during the screening sessions and so were labelled as 'English dominant'. These children did also offer some expressive output which indicated that they had some abilities in Mirpuri. The languages spoken by the children are shown in Table 7.3.

Table 7.3 Languages spoken

Language	n	%
Mirpuri	11	55%
Punjabi	1	5%
Urdu	0	0%
English dominant	6	30%
Not known	2	10%
Total	**20**	**100%**

7.8.4 DIAGNOSIS

The majority (i.e. 79%) of the 14 children who gave complete data sets were allocated a clinical diagnosis of typically developing. Three children had a general language delay with features of delay across all three of the assessed modalities: verbal comprehension, expressive language and speech. One child had an isolated phonological delay and is considered in the discussion section below. The clinical diagnoses are shown in Table 7.4.

Table 7.4 Clinical diagnosis for complete data sets

Diagnosis	**n**	**%**
Typically developing	11	79%
Language delay	2	14%
Language disorder	0	0%
Delayed phonological acquisition	1	7%
Phonological disorder	0	0%
Articulation	0	0%
Total	**14**	**100%**

7.8.5 ITEMS COMPLETED

The data for number of items completed on the speech screen and the number of spontaneous items completed are presented in Tables 7.5 and 7.6.

Table 7.5 Completed items

	Current data		***Normative data***	
Age band	**Mean**	**Range**	***Mean***	***Range***
3 **n = 8**	13	0 - 21	*19*	*0 - 21*
4 **n = 11**	17	0 - 21	*17*	*0 - 21*
5 **n = 1**	Number of items = 19		*19*	*0 - 21*

Examination of these figures shows an apparently depressed mean number of thirteen items completed for age band three, relative to the mean of nineteen achieved in the normative data reported in Chapter Five. However, caution should always be exercised when handling data from small samples and this current sample of Band 3 children contained only eight children. The mean is being affected by the presence of two (i.e. 25% of the age band) children who entered the room but did not respond to any assessments. The figures for spontaneous responses are more encouraging. As with the normative data, the data from the non-responding children is not taken into account. The current children are now shown to be achieving at similar or better levels compared to the normative data.

Table 7.6 Spontaneous attempts

	Current children		***Normative data***	
Age band	**Mean**	**Range**	***Mean***	***Range***
3 **n = 8**	64%	29% - 100%	*61%*	*0 – 100%*
4 **n = 11**	64%	0 – 100%	*65%*	*0 – 100%*
5 **n = 1**	100%		*63%*	*0 – 100%*

Examination of the transcriptions revealed only two instances of children producing unexpected responses to the target stimuli. These two instances, which both occurred with the non-specialist SLT team, are considered in Section 7.9.2. Although of interest they are not a cause for concern with regard to item difficulty.

7.9 DISCUSSION

This data collection aimed to answer two questions:

I. Will the speech screen be appropriate for use with the Pakistani heritage communities dispersed around the UK?

II. Will non-specialist speech and language therapists working without bilingual support staff be able to administer the speech screen?

The evidence presented above indicates that question one can now be answered in the affirmative, and there is evidence to suggest that question two can also be answered positively although it is accepted that the sample of non-specialist SLTs was extremely small, consisting of only one non-specialist SLT and one monolingual English speaking speech and language therapy assistant. These two individuals did have the opportunity to observe experienced clinicians administering the speech screen but it is encouraging that they did not subsequently feel it necessary to make any further contact with these clinicians, particularly as they were not issued with any written guidance regarding administration. Such written guidance is normally attached to speech assessments. Caution needs to be exercised before concluding that the screen can be easily administered by any non- specialist SLT.

The Pakistani heritage children in this second population responded positively to the speech screen. The data presented in Table 7.6 above, indicating the number of spontaneous utterances, clearly shows that the target lexical items were familiar to the children and the picture stimuli were able to generate an appropriate response. Furthermore the speech screen identified one child with a possible speech disorder.

7.9.1 IDENTIFICATION OF A CHILD WITH POSSIBLE SPEECH DISORDER

M4 was a girl aged 4;03 at the time of assessment. Screening assessments of her receptive and expressive language skills in Mirpuri were within normal limits for her age. She had not been referred to the speech and language therapy department and the nursery had not reported any concerns regarding her communication skills. Her PCC score of 79% was below the mean for her age (92%) but just fell within the range for her age (77%-100%). The errors she made on the speech screen are shown in Table 7.7.

Table 7.7 Errors made by child M4	
Fronting	/kʊkəɻi/ → [dʊdəɻi] /næk/ → [næt] /kæn/ → [tæn] /kela/ → [tela] /enka/ → [enta]
CD: Initial	/kʌpərə/ → [ʌpərə]
CD: Final	/fɛrɪʃ/ → [fɛrɪ]
Voicing	/kʊkəɻi/ → [dʊdəɻi]

Some of the examples described in Table 7.7 as fronting could be described as assimilation or consonant harmony: again this error pattern is unusual at this age, occurring in less than 10% of the normative population. The errors observed indicated that M4 had a particular difficulty with the production of /k/ which she either omitted or fronted to an alveolar position. Within the normative sample /k/ had been acquired by 75% of children in M4's age band. Fronting was observed in 29% of children at this age, although usually occurring with fricatives rather than plosives. Voicing errors also occurred in 12% of the normative population at this age but initial and final consonant deletion did not occur in more than 10% of children of this age. Administration of the speech screen therefore indicated that M4 needed further detailed assessment to identify the exact nature of her suspected atypical phonological acquisition.

7.9.2 ADMINISTRATION OF SPEECH SCREEN BY NON-SPECIALIST SPEECH AND LANGUAGE THERAPY STAFF

The non-specialist speech and language therapist and the monolingual speech and language therapy assistant spent one day observing data collection being undertaken by the specialist speech and language therapists and were then able to undertake data collection on their own. Neither reported any difficulties

administering the speech screen or sought further advice. Both did report that children tended to try using English and needed a great deal of encouragement to use the target Pakistani heritage languages. This is unsurprising in view of the pragmatics of the situation. The child was in an English speaking school environment and facing a White adult who clearly did not speak a Pakistani heritage language. Many previous researchers have observed children in such situations attempting to use the language of the education system (Grosjean 1982, Romaine 1995).

Detailed examination of the data collected by this non-specialist team highlighted an interesting, and predictable, result of working with children with whom you do not share a language. Two of the eight children produced off-target mother tongue words which were transcribed. Lack of lexical knowledge meant that the non-specialist, monolingual English speaking team could not tell whether the children were making phonologically disordered responses or were producing apparently unrelated words. In fact both children produced phonologically correct words which were semantically linked to the target word as shown in Table 7.8.

Table 7.8 Semantically linked and phonologically correct realisations	
Child M 16	[tʃavɬ] ('rice') when the target was /aʈa/ ('flour')
Child M 19	[ʈoʈ̪i] ('chapatti') when the target was /aʈa/ ('flour')

This highlights the need for non-specialist SLTs to be instructed to transcribe all the child's responses and then check with the child's parents or an interpreter to establish the nature of the off-target response.

7.9.3 USE OF ENGLISH BY CHILDREN

This data collection produced data indicating that six children had English as a dominant language, although all six also produced some output in Mirpuri. Three of these children were identified within the twelve seen by the specialist team and three within the eight seen by the non-specialist team. As there was

no bilingual member of the Pakistani heritage community in the assessment room, it was not possible to establish whether English really was their dominant language or whether they did in fact have strong Mirpuri skills as well. It is possible to speculate that in the absence of an obvious member of their own community, and in the context of the nursery environment where they were expected to use English, the children made a pragmatic decision to use English whenever their skills allowed, as noted above.

7.9.4 REPORTED LANGUAGE USE

An unexpected finding arising from this data collection related to the languages spoken by the children who were assessed. The local speech and language therapy department had a bilingual speech and language therapy assistant who was a member of the Pakistani heritage community and self reported as a speaker of Punjabi and Urdu. She had informed the local speech and language therapists that although there were some Mirpuri speakers in the town, they formed a minority and were not to be found in the community attending the target nursery. The children due to be seen were all described as Punjabi speakers by their parents. In fact, assessment clearly revealed that the majority were Mirpuri speakers and only one child was a Punjabi speaker.

7.10 CONCLUSION

This small scale data collection gave the opportunity to assess the use of the speech screen in a different location and when administered by non-specialist SLT staff. Use under these conditions confirmed that the stimuli and target items were appropriate and that the screen could identify children with possible speech disorders. The data collection again produced evidence of two features which have been previously described: the misreporting of the languages spoken by Pakistani heritage children and the existence of children within the community who will remain totally unresponsive in an assessment setting. These features are therefore unlikely to be a characteristic only of the original normative population and are therefore likely to be characteristic of the wider

Pakistani heritage population in England. Clinicians will need to be alerted to these characteristics.

CHAPTER EIGHT

THE USE OF A PARENT QUESTIONNAIRE WITH TWO SAMPLES: CASELOAD PARENTS AND NURSERY PARENTS

8.1 INTRODUCTION

This chapter describes the development of a parental questionnaire designed to establish whether parents from the Pakistani heritage community could identify speech disorders in their own children. The questionnaire was subsequently completed by two separate samples of 25 parents:

I. Twenty five parents of Pakistani heritage children who had been referred to speech and language therapy.

II. Twenty five Pakistani heritage parents whose children had not been referred to speech and language therapy but who had been screened in nursery to measure the efficacy of the bilingual speech sound screen.

In both groups the children had been assessed using the same battery of screening assessments and provisional diagnostic labels applied as a consequence. Results from the two groups are presented and compared.

8.2 RATIONALE

Evidence presented in Chapter Two clearly indicated that Pakistani heritage children with speech disorders are not being referred to the speech and language therapy service. The smaller proportion of Pakistani heritage children referred to the service by their parents when compared to their White monolingual peers was highlighted. Despite this, some professionals were making referrals which quoted as their reason for referral 'parental concern'.

Previous research has indicated that parents are accurate in describing their children's language skills (Rescorla 1989, Stokes 1997). It was therefore decided to investigate whether parents from this particular community were accurate in describing their children's speech skills. If parental report was found to be accurate then referral of appropriate children could be facilitated either by professionals directly asking the parents about their child's skills or by empowering parents to make direct referrals of their own children.

It was decided to administer a parent questionnaire to two separate cohorts of parents: parents whose children had been referred to speech and language therapy and those who had not. One group of parents would complete the questionnaire in a clinic environment and one group in a nursery environment. It was hoped that in this way some conclusions could be reached regarding the following research questions:

I. Would administering such a questionnaire be a logistically viable method?

II. Would the questionnaire results indicate that parents from this community could accurately describe their child's speech?

III. Would the questionnaire highlight any differences between the two cohorts i.e. those whose children had been referred and those who had not?

It was accepted that both samples would include parents whose children were diagnosed as normal. The practicalities of this data collection led to the acceptance that administering the questionnaire to a clinic population chosen by their date of referral (i.e. twenty five consecutive referrals) rather than by their diagnostic outcome would not allow a match in the age of the children being reported by their parents. It was concluded that this might indeed give some, albeit limited, insight into whether parents of older or younger children were more accurate in reporting on their child's speech.

8.3 METHOD

8.3.1 DEVELOPMENT OF QUESTIONNAIRE

As reported in Chapter One, a literature search had not produced any evidence of researchers using parental questionnaires either with the target Pakistani heritage community or to investigate speech, as opposed to language, disorders. In the absence of such a questionnaire it was decided to take an existing tool, the Language Development Survey (LDS) (Rescorla 1989), and

adapt and extend it to become a questionnaire focussing on speech, rather than language, and appropriate for use within the Pakistani heritage community in England.

Many authors have developed language screening tools which seek to tap parental knowledge of their children's language skills (Pickstone, Hannon and Fox 2002). In general terms screening tools need to meet certain criteria (Law 1992: 110):

- Easy and quick to administer
- Acceptable to subjects
- Accurate in measuring any attribute being tested
- Precise, giving consistent results in the hands of different testers
- Sensitive in the hands of different testers
- Specific, giving a high percentage of negative results when the subjects do not have the disease

Since its original publication (Rescorla 1989) the LDS has been used by many researchers working with different client groups and in different contexts. This has confirmed that the LDS meets these criteria for a screening tool (see for example Rescorla 1989, Zimmerman, Rhoads, Rothbaum, Feierstein, Russo and Rescorla 1997, Patterson 2000, Rescorla and Alley 2001, Rescorla and Aachenbach 2002, Rescorla, Ratner, Jusczyk and Jusczyk 2005). The LDS has been used with young children from differing socio-economic and ethnic groups (see for example Zimmerman *et al* 1997, Rescorla and Aachenbach 2002) as well as with monolingual and bilingual children speaking a variety of language combinations (see for example Patterson 2000, Rescorla and Aachenbach 2002). Carson, Klee, Carson and Hime (2003) used the LDS in combination with language samples from parent-child play interactions. These language samples were analysed to develop phonological profiles for their subjects. The authors found that two-year old children identified by the LDS as being at risk for language delay and who also had a restricted phonetic profile were more at risk for continued language delay at age three. They therefore suggested adding an appendix to the LDS regarding phonological development, which they

suggested could include asking parents how their child would say a given list of words. Patterson (2000: 127), reporting on the use of a modified version of the LDS with twelve Spanish / English speaking bilingual families, commented that 'many parents reported how their child pronounced certain words'.

As the LDS has been widely used with children from differing cultural, socio-economic and language groups and as researchers have begun to consider the possibilities of adding questions regarding children's speech sound development to the LDS it was decided to adapt the LDS for use with the Pakistani heritage community at the heart of the current research.

All the questions asked in the LDS were retained, other than the vocabulary checklist. A question was inserted to register the country where the respondent attended school, to complement existing questions regarding parental education. Questions were added which encouraged the parent to focus on their child's speech. Thus, questions invited the parent to consider whether other people could understand their child and to make a comparison with other children of the same age: Glascoe (1999: 4) had highlighted 'the tendency of parents, regardless of educational levels, to compare their children with others when forming appraisals'. Specific words and possible alternative realisations were quoted and the parent asked to offer an opinion on how their child would produce these words. These words were all elicited by the speech screen so that direct comparison should be possible. Additionally parents were asked whether they had noticed the child mispronouncing family names: the Islamic culture has a wide repertoire of names indicating how one person is related to another. These are widely used within the community being studied and it was felt that prompting parents to consider these names, in combination with given names, would lead parents to consider their child's ability to use a wide variety of speech sounds.

8.3.2 TRANSLATION OF QUESTIONNAIRE

Having developed the questions to be asked it was then necessary to arrange translation into the Pakistani heritage languages. As Mirpuri and Punjabi do not

have written forms, and the majority of community members who speak Urdu do not read Urdu, verbal translations had to be agreed.

When translating questionnaires from one language to another it is important to ensure linguistic and cultural equivalence (Chang, Chau and Holroyd 1999, Bhopal, Vettini, Hunt, Weibe, Hanna and Amos 2004). This can be a particular challenge when translating from a written form in one language to a verbal form in a language which does not have a written form. In accordance with recognised features of good practice in the field (Bell 1991), the translation process was broken down into three separate stages:

I. An initial discussion was held with two bilingual speech and language therapy assistants. These assistants spoke all three of the Pakistani heritage languages under consideration. This discussion formulated provisional translations into each of the three languages. Particular attention was paid to the translation of the words 'sounds' and 'mispronouncing'.

II. The provisional translation was then discussed with two other bilingual speech and language therapy assistants: in addition to English one of these assistants spoke Mirpuri and one spoke Punjabi and Urdu.

III. The provisional translation was checked with two bilingual members of the community, to ensure that it would be understood by people who had no experience of speech and language therapy and its associated terminology. One of these community members holds a professionally recognised diploma in interpreting skills from The Institute of Linguists in London.

The full questionnaire is attached as Appendix 7.

8.3.3 TRAINING STAFF TO DELIVER QUESTIONNAIRE

Prior to the data collection the researcher led a training session with the two bilingual speech and language therapy assistants who would be administering

the questionnaire. The aim of this training was to ensure the assistants were familiar with the translation and knew how to respond if they felt the parents had failed to understand the question asked.

8.3.4 ADMINISTRATION OF QUESTIONNAIRE

In all cases, across both samples, the bilingual assistant asked the parent a question and then recorded the response on the recording form, before proceeding to the next question. Where parents were asked to choose between ranked options for their reply the options were automatically repeated twice; and were repeated as many times as requested by the respondent in order to facilitate an accurate choice.

8.3.5 SUBJECTS: CASELOAD SAMPLE

The questionnaire was administered to the parents of twenty five Pakistani heritage children who had been referred consecutively to the speech and language therapy department and who attended for their screening appointment. The questionnaire was included as part of the routine documentation completed at the initial screening appointment and was completed prior to any diagnostic assessments being administered. All the children were attending within eight weeks of their referral. In all cases the researcher was present when the bilingual assistant completed the questionnaire with the parents.

8.3.6 SUBJECTS: NURSERY SAMPLE

The researcher drew up a list of twenty five children from the cohort who had been screened during the screening procedure described in Chapter Six. This list encompassed children representing all the outcome categories from that screening procedure, but included all the children identified as having delayed phonological acquisition or phonological disorder. The identification numbers were drawn randomly to decide which parents from each category would be approached. On this occasion two sets of parents and their children were absent in Pakistan and could not complete the questionnaire. These children were two of the three children previously identified as having delayed

phonological acquisition. In their place were substituted one child with language delay and one typically developing child. The diagnostic categories of children whose parents completed the questionnaire are in Tables 8.3 and 8.4 in the results section.

The bilingual speech and language therapy assistants attended the nursery on a daily basis and approached parents either as the parents brought their child to nursery or returned to collect their child at the end of a nursery session. Parents were asked if they would answer a few questions regarding their child's talking. No parents refused to complete the questionnaire. The bilingual assistants were blind to the diagnostic category of the child. The data from the questionnaires were entered in to an Excel spreadsheet to allow collation of data and calculation of percentages.

8.4 RESULTS

8.4.1 AGE AND GENDER DISTRIBUTION

The caseload sample showed a wide variety in age from 1;10 to 9;00, while the nursery sample covered a range of twelve months, varying from 3;03 to 4;03. As would be predicted (Law et al 2000, Petheram and Enderby 2001) there was a preponderance of males in the clinic sample compared to a more even distribution of males and females in the nursery sample. Age and gender distribution of the two samples are shown in Tables 8.1 and 8.2.

Table 8.1 Caseload sample: Age and gender distribution				
Age	**Age Band**	**Frequency**	**Female**	**Male**
1;06-1;11	2	1	0	1
2;00-2;05	3	4	1	3
2;06-2;11	4	7	3	4
3;00-3;05	5	4	0	4
3;06-3;11	6	1	0	1
4;00-4;05	7	2	0	2
4;06-4;11	8	2	0	2
5;00-5;05	9	0	0	0
5;06-5;11	10	0	0	0
6;00-6;05	11	2	1	1
6;06-6;11	12	0	0	0
7;00-7;05	13	0	0	0
7;06-7;11	14	0	0	0
8;00-8;05	15	1	1	0
8;06-8;11	16	0	0	0
9;00-9;05	17	1	0	1
Total		**25**	**6**	**19**

Table 8.2 Nursery sample: Age and gender distribution				
Age	**Age Band**	**Frequency**	**Female**	**Male**
3;00-3;05	5	7	3	4
3;06-3;11	6	13	6	7
4;00-4;05	7	5	1	4
Total		**25**	**10**	**15**

8.4.2 DIAGNOSTIC CATEGORY OF CHILDREN WHOSE PARENTS COMPLETED QUESTIONNAIRE

Each cohort contained parents whose children had been classified as having typically developing speech and language skills as well as children with phonological disorder, delayed phonological acquisition and language delay.

The nursery cohort contained 44% for whom no diagnostic category was available due to their lack of cooperation.

Table 8.3 Caseload sample: Diagnostic categories of children whose parents completed questionnaire

Diagnosis	**n**	**%**
Delayed phonological acquisition	1	4%
Phonological disorder	2	8%
Language delay	14	56%
Language disorder	3	12%
Fluency	2	8%
Voice	1	4%
Normal	2	8%
Total	**25**	**100%**

Table 8.4 Nursery sample: Diagnostic categories of children whose parents completed questionnaire

Diagnostic category	**n**	**%**
Delayed phonological acquisition	1	4%
Phonological disorder	1	4%
Language delay	4	16%
Normal	8	32%
Diagnostic category not available		
Would not enter room	4	16%
Came into room but would not respond	3	12%
Incomplete data sets of whom: **1 = Possible phonological disorder** **2 = Possible delayed phonological acquisition** **1 = Typically developing phonology**	4	16%
Total	**25**	**100%**

8.4.3 WHO COMPLETED THE QUESTIONNAIRE

The results both in this category and the following categories regarding education and employment should be treated with a degree of caution. The data reflects the status of the person completing the form and that selection may have been affected by the difference between the point at which the questionnaire was completed i.e. one cohort of parents were approached at a pre-arranged appointment time while the other cohort were approached in the course of a routine, daily activity.

In both cohorts the majority of questionnaires were completed by the child's mother. On some occasions both parents were present. When this occurred the bilingual assistants would ask which parent was going to answer the questions: on all such occasions the parents nominated the mother to answer. The data are presented in Table 8.5.

Table 8.5 Caseload and nursery samples: Parent completing the questionnaire

	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Mother	18	72%	21	84%
Father	7	28%	4	16%
Total	**25**	**100%**	**25**	**100%**

8.4.4 QUESTIONS REGARDING PARENTAL EDUCATION

Parents were asked in what country and for how long they attended school (see Tables 8.6 to 8.9 below).Twice as many parents in the caseload sample compared to the nursery sample had themselves been educated in the UK. It seems likely that the country where the parent attended school had an influence on the age at which this education ceased: education is compulsory until age 16 in the UK but little formal education is available at secondary age in Pakistan. It is notable that no parent in the nursery cohort reported attending school beyond the age of sixteen. In both cohorts there were parents who had no formal education at all: in the nursery cohort these parents accounted for 24% of the sample.

Table 8.6: Caseload and nursery samples: Where parent completing the questionnaire went to school

	Caseload		Nursery	
	n	**%**	**n**	**%**
UK	18	72%	9	36%
Pakistan	6	24%	10	40%
Did not attend school	1	4%	6	24%
Total	**25**	**100%**	**25**	**100%**

Table 8.7 Caseload and nursery samples: When the parent completing the questionnaire left school

	Caseload		Nursery	
	n	**%**	**n**	**%**
Did not attend school	1	4%	6	24%
Below 16	0	0%	3	12%
Secondary	17	68%	16	64%
At 18	5	20%	0	0%
Higher education	2	8%	0	0%
Total	**25**	**100%**	**25**	**100%**

Table 8.8 Caseload Sample: Where and for how long did the parent completing the questionnaire attend school

	DNA	**Below age 16**	**Secondary**	**At 18**	**Higher education**
UK	0	0	14	3	1
Pakistan	0	0	3	2	1
DNA	1				
Total (n)	**1**	**0**	**17**	**5**	**2**
%	**4%**	**0%**	**68%**	**20%**	**8%**

Table 8.9 Nursery Sample: Where and for how long did the parent completing the questionnaire attend school					
	DNA	**Below age 16**	**Secondary**	**At 18**	**Higher education**
UK	0	0	9	0	0
Pakistan	0	3	7	0	0
DNA	6				
Total (n)	**6**	**3**	**16**	**0**	**0**
%	**24%**	**12%**	**64%**	**0%**	**0%**

8.4.5 OCCUPATION CHARACTERISTICS

All the children whose parents completed the questionnaire lived in an area of high socio-economic deprivation. Within any such area there will, however, be some variation in the occupational status of individuals. Given that previous responses had highlighted a difference in education levels between the two cohorts it could be predicted that occupational status would reflect this difference. This difference is indeed reflected in Tables 8.10 and 8.11 below.

Table 8.10 Caseload sample: Occupation characteristics of person completing the questionnaire								
Occupation	**n**	**%**	**Full time**		**Part time**		**Not working**	
Housewife	13	52%	6 men 1 woman		2 men 3 women		13 women	
Taxi driver	3	12%						
Factory worker	3	12%						
Nursery nurse	2	8%						
Shop assistant	0	0						
Clerical	2	8%						
Professional	2	8%						
Total	**25**	**100**	**n=7**	**28%**	**n=5**	**20%**	**n=13**	**52%**

Table 8.11 Nursery sample: Occupation characteristics of person completing the questionnaire

Occupation	n	%	Full time		Part time		Not working	
Housewife	17	68%	2 men 1 woman		1 man 2 women		1 man 18 women	
Taxi driver	2	8%						
Factory worker	2	8%						
Nursery nurse	0	0						
Shop assistant	2	8%						
Clerical	2	8%						
Professional	0	0						
Total	**25**	**100**	**n=3**	**12%**	**n=3**	**12%**	**n=19**	**76%**

8.4.6 LANGUAGE USE IN THE HOME

The respondents were asked to name all the languages spoken in the family home, rather than just the language/s they spoke themselves. The results are shown in Table 8.12. Mirpuri was the dominant language in both samples. The occurrence of English being spoken in addition to a Pakistani heritage language was three times more likely in households from the caseload sample, where it was spoken in 36% of households, compared to households in the nursery sample, where it was reported to be spoken in only 12% of the sample. This is likely to be a reflection of the higher proportion of caseload parents who were educated in the UK, where English is used within the education system, compared to the higher proportion of nursery parents who were educated in Pakistan.

Table 8.12 Caseload and nursery samples: Languages spoken at home				
	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Mirpuri only	11	44%	20	80%
Punjabi only	2	8%	0	0%
Urdu only	2	8%	1	4%
English only	0	0%	0	0%
Mirpuri and Urdu	0	0%	1	4%
Punjabi and Urdu	1	4%	0	0%
Mirpuri and English	2	8%	3	12%
Punjabi and English	4	16%	0	0%
Urdu and English	1	4%	0	0%
Punjabi / Urdu / English	2	8%	0	0%
Total	**25**	**100%**	**25**	**100%**

8.4.7 FAMILY HISTORY OF SPEECH AND LANGUAGE DIFFICULTIES

In both the caseload and nursery samples over 80% of respondents did not indicate a family history of speech and language difficulties. However three children in the caseload sample were reported to have siblings previously referred to speech and language therapy compared to only one child in the nursery sample. The results are shown in Table 8.13.

Table 8.13 Caseload and nursery samples: Positive family history of SLT problems				
	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	3	12%	1	4%
No	22	88%	24	96%
Total	**25**	**100%**	**25**	**100%**

8.4.8 PREMATURE BIRTH

Parents were asked to report if their child was born prematurely. Prematurity in this instance was defined as less than 38 weeks gestation. Premature birth has been linked in some research to a subsequent pattern of communication difficulties (Fox, Dodd and Howard 2002). There was little difference identified across the two samples, with over 85% in both samples reported to have been born at term. Results are in Table 8.14.

Table 8.14 Caseload and nursery samples: Was the child born prematurely?

	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	2	8%	3	12%
No	23	92%	22	88%
Total	**25**	**100%**	**25**	**100%**

8.4.9 HISTORY OF HEARING DIFFICULTIES

Parents were asked whether their child had either been seen at the audiology department for a hearing test (other than a routine screening appointment) or had a history of at least three ear infections. For both samples more than 85% were reported to have no such history. Three children in the caseload sample were reported to have such a history compared to only one child in the nursery sample. Results are shown in Table 8.15.

Table 8.15 Caseload and nursery samples: Child referred to audiology or has a history of ear infections

	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	3	12%	1	4%
No	22	88%	24	96%
Total	**25**	**100%**	**25**	**100%**

8.4.10 CHILDCARE OUTSIDE THE HOME

Parents were asked if the child was regularly cared for out of the home. If an answer was given in the affirmative the parent was then asked supplementary questions to establish that such childcare involved payment. Only such paid childcare arrangements were recorded. Many families in this community use their extended family networks to assist with casual childcare on a routine, and often daily, basis. The relatively high use of paid childcare at 20% in the caseload sample compared to only 4% in the nursery sample may be regarded as a reflection of two different elements:

- More caseload parents reported full time occupations.
- Children attending childcare facilities such as private nurseries rarely attend a local education authority nursery as well.

The results are shown in Table 8.16.

Table 8.16 Caseload and nursery samples: Child cared for out of home

	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	5	20%	1	4%
No	20	80%	24	96%
Total	**25**	**100%**	**25**	**100%**

8.4.11 PARENTAL CONCERNS

All parents were asked whether they were concerned about their child's talking. This question was deliberately presented in general terms to encourage an answer encompassing all facets of the child's expressive skills. The fact that more parents in the caseload sample expressed concern than in the nursery sample is unremarkable, given the number of children in the nursery sample who were classified as normal. However, of the seven parents in the nursery sample whose children had been identified with difficulties, only two stated that they had concerns regarding their child's talking. One was the mother of nursery child Mahboob, considered in detail below, and the other was a parent who had noticed (correctly) that their child was non-fluent. This parent had not realised

that their child's language skills were also delayed. The fact that within the caseload sample 32% of parents reported themselves to be unconcerned (despite the fact that someone had sufficient concerns regarding the child to arrange their referral to the speech and language therapist) needs consideration and may well be further evidence that parental expectations within the Pakistani heritage community do not match the developmental milestones expected by professionals. The data are presented in Table 8.17.

Table 8.17 Caseload and nursery samples: Is there parental concern?

	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	17	68%	5	20%
No	8	32%	20	80%
Total	**25**	**100%**	**25**	**100%**

8.4.12 PARENTS REPORTING THEIR CHILD USES INCORRECT SOUNDS

Two separate questions asked parents to report whether they had noticed their child using incorrect sounds or producing a word which differed from the adult realisation of that word. Unsurprisingly the caseload sample reported a higher rate of speech sound errors (52%) compared to the nursery sample (12%). However, the same caseload sample surprisingly reported few errors noted on family names (28%). The data are presented in Tables 8.18 and 8.19.

Table 8.18 Caseload and nursery samples: Does your child use the same sounds as an adult?

	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	12	48%	22	88%
No	13	52%	3	12%
Total	**25**	**100%**	**25**	**100%**

Table 8.19 Caseload and nursery samples: Does your child ever mispronounce family names?				
	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	7	28%	2	8%
No	17	68%	23	92%
Child doesn't talk	1	4%	0	0%
Total	**25**	**100%**	**25**	**100%**

8.4.13 PARENTAL COMPARISON OF THEIR CHILD TO THE CHILD'S PEERS

In an attempt to encourage parents to consider their child's expressive skills in comparison to the skills of that child's peers all parents were asked if they felt their child's talking was as good as other children of the same age. The caseload parents recorded a higher number of negative responses but importantly both samples produced parents who responded that they did not know. The data are presented in Table 8.20.

Table 8.20 Caseload and nursery samples: Do you think your child's talking is as good as other children of his / her age?				
	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	7	28%	22	88%
No	16	64%	2	8%
Don't know	2	8%	1	4%
Total	**25**	**100%**	**25**	**100%**

8.4.14 PARENTAL ABILITY TO UNDERSTAND THEIR CHILD

Parents were asked to listen to five descriptors of their ability to understand their child and then chose the descriptor which most closely matched their ability. The data are presented in Tables 8.21 and 8.22 below. The responses are restricted to the top two categories for the nursery sample but are spread across all five categories for the caseload sample. Of the seven nursery parents whose children had given data on the screening assessments which indicated

they would be difficult to understand, four identified with statement number one 'I can always understand my child' and three with statement number two 'I can always understand what my child says but sometimes he uses the wrong sounds'.

Table 8.21 Caseload sample: Which best describes how you feel about your child's talking?

	n	%
1. I can always understand my child	10	40%
2. I can always understand what my child says but sometimes he uses the wrong sounds	11	44%
3. I can sometimes understand my child	2	8%
4. I find it very difficult to understand my child	1	4%
5. None of the above; he doesn't talk yet	1	4%
Total	**25**	**100%**

Table 8.22 Nursery sample: Which best describes how you feel about your child's talking?

	n	%
1. I can always understand my child	21	84%
2. I can always understand what my child says but sometimes he uses the wrong sounds	4	16%
3. I can sometimes understand my child	0	0%
4. I find it very difficult to understand my child	0	0%
5. None of the above; he doesn't talk yet	0	0%
Total	**25**	**100%**

8.4.15 PARENTAL REPORT OF ABILITY OF OTHERS TO UNDERSTAND THE CHILD

Parents in both samples reported having to explain to others what their child had said (see Table 8.23). As would be predicted this was reported more frequently in the caseload sample. A more detailed question asked parents about whether particular family members could understand what the child was saying (see Tables 8.24 and 8.25). The nursery sample reported only one

single instance (a cousin) who could not understand the child. If we assume internal consistency between the responses depicted in Tables 8.23, 8.24 and 8.25 this means that four of the five nursery parents reporting that they sometimes had to explain what their child had said were referring only to encounters with people outside the family circle. In contrast the caseload sample reported many instances of family members unable to understand the child.

Table 8.23 Caseload and nursery samples: Do you ever have to explain to others what your child has said?

	Caseload		**Nursery**	
	n	**%**	**n**	**%**
Yes	17	68%	5	20%
No	7	28%	20	80%
My child doesn't talk	1	4%	0	0%
Total	**25**	**100%**	**25**	**100%**

Table 8.24 Caseload sample: Do the following always understand what your child has said?

	Yes (n)	**%**	**No (n)**	**%**	**N/A (n)**
Other parent	18	72%	5	20%	2
Grandparents	16	64%	4	16%	5
Aunts / uncles	15	60%	6	24%	4
Cousins	13	52%	5	20%	7
Siblings	14	56%	2	8%	9

Table 8.25 Nursery sample: Do the following always understand what your child has said?

	Yes (n)	%	No (n)	%	N/A (n)
Other parent	25	100%	0	0%	0
Grandparents	25	100%	0	0%	0
Aunts / uncles	25	100%	0	0%	0
Cousins	24	96%	1	4%	0
Siblings	17	68%	0	0%	8

8.4.16 ACCURACY OF PARENTS PREDICTING HOW THEIR CHILD WOULD PRODUCE SPECIFIC WORDS

The parents in the two samples were asked to predict how their child would produce six specific words. They were given two options: the correct realisation and a common off-target realisation. Parents were also given the option to report a different realisation to the options offered. The words were all targets on the BiSSS. The accuracy of the parental predictions are presented in Tables 8.26 and 8.27 below. 'Unable to match' was recorded when the child did not produce the target word. In both samples more than 25% of parents were never correct in predicting their child's responses. Overall the nursery parents showed a better ability to predict their child's responses, with 44% of them being correct four or more times, in comparison with the caseload parents amongst whom only 28% were correct four or more times. The target word for 'milk' was the word most accurately reported in the caseload sample and also resulted in a high level of correct responses in the nursery sample. The standardization data for the BiSSS indicates that this is a word which appears very early in the child's vocabulary and it is postulated that it occurs with a high frequency. It may be that the relative success of the parents in predicting production of this word is due either to the fact that the children are most likely to produce this word correctly, or to the fact that this is a word the parents hear their child using frequently.

Table 8.26 Caseload sample: Parents correct about child's ability to say the word

Target	***milk***		***key***		***clean***	
	n	**%**	**n**	**%**	**n**	**%**
Yes	12	48%	9	36%	6	24%
No	6	24%	7	28%	9	36%
Unable to match	7	28%	9	36%	10	40%
Total	**25**	**100%**	**25**	**100%**	**25**	**100%**
Target	***banana***		***ear***		***crying***	
Yes	9	36%	7	28%	10	40%
No	8	32%	6	24%	1	4%
Unable to match	8	32%	12	48%	14	56%
Total	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 8.27 Nursery sample: Parents correct about child's ability to say the word

Target	***milk***		***key***		***clean***	
	n	**%**	**n**	**%**	**n**	**%**
Yes	13	52%	10	40%	7	28%
No	5	20%	8	32%	11	44%
Unable to match	7	28%	7	28%	7	28%
Total	**25**	**100%**	**25**	**100%**	**25**	**100%**
Target	***banana***		***ear***		***crying***	
Yes	13	52%	14	56%	11	44%
No	5	20%	4	16%	7	28%
Unable to match	7	28%	7	28%	7	28%
Total	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 8.28 Caseload and nursery samples: Number of times the parent was correct

	Caseload		Nursery	
Number of times correct	**n**	**%**	**n**	**%**
0	9	36%	7	28%
1	5	20%	2	8%
2	0	0%	3	12%
3	4	16%	2	8%
4	2	8%	3	12%
5	2	8%	6	24%
6	3	12%	2	8%
Total	**25**	**100%**	**25**	**100%**

8.4.17 PARENTAL REPORT OF THE CHILD'S THREE LONGEST AND BEST SENTENCES

In the LDS the parents were asked to report their child's three longest and best sentences as a means of verifying parental report that the child was joining words together in an apparently novel way, rather than simply repeating automatic speech or taught phrases (Rescorla 1989). The question was retained in this adapted questionnaire in order to give some insight into what language levels the parents would report in their children. A prompt had been pre-arranged in case any parents reported difficulties with recalling examples of connected speech from their children. In such cases parents were asked if they could recall anything the child had talked about that day. Parents were also given the option to report that they could not remember individual sentences as their child would hold a conversation. Six caseload parents did choose this option: the youngest such child was 2;06 and the oldest 9;00, with two children falling within the range of ages of the nursery children. In contrast, none of the nursery parents reported their children could hold a conversation and the parents of three nursery children, S55, S57 and S58, were unable to give three examples of their child's connected speech. It is possible to speculate that they did not routinely engage in communicative interaction with their child.

There is no evidence in the literature of previous researchers reporting the data collected in response to this question on the LDS and there is therefore no comparison available relative to the current data sets. This lack of previously published data sets may indicate that earlier researchers found nothing remarkable within the responses to this question, the responses simply serving to confirm parental report of a child's ability to use sentences expressively, as the question had been designed to do. Examination of the current data sets does however indicate what may be an unusual pattern: the majority of the sentences (57.98% of the individual examples across both nursery and caseload children) are examples of children asking for one of three basic needs to be met i.e. children asking for food, drink or to be taken out. A further basic need, for assistance with toileting, is indicated in six (5.04%) examples. These examples relate to five of the nursery age children (i.e. 22.72% of the nursery children for whom data were obtained). One caseload child, whose age falls within the age range of the nursery children, was also reported to request assistance with toileting. Again cultural factors may be at work here. Children are technically required to be toilet trained on entry to nursery but children within this Pakistani heritage community are toilet trained very late in comparison to their White peers, the majority only being trained in the summer holidays immediately preceding their entry to nursery. As such, many children in their first term at nursery (when the nursery data collection occurred) are in fact still undergoing toilet training and so parents are likely to have a heightened awareness of requests for assistance with toileting.

There are only eight examples (6.72% of the total number of examples given) of children asking questions and seeking information from their parents although language development models would predict a high incidence of questions occurring in the speech of children within the age range included in this sample (Sheridan 1975, Cruttenden 1979). Only one child was reported to recite nursery rhymes. This was reported to occur in English: there are no such rhymes reported to occur in Mirpuri, Punjabi or Urdu. One further example given for another child was of a song chorus: the song is from a popular Bollywood musical which is likely to be viewed repeatedly on video within the family home.

The data are reported in translated form rather than in mother tongue and the effect of translating from one language to another does need to be considered. The repeated use of 'Give me....' rather than 'Please can I have....' when making a request may indicate a set of demanding and not very polite children to an English speaker. In fact, although the translation is accurate (a more polite form does exist in mother tongue) the 'Give me' form is widely used by children and accepted by adults within the community. The full, translated, examples of the children's reported three best and longest sentences are presented in Tables 8.29 and 8.30.

Table 8.29 Caseload sample: Parental report of the child's three longest and best sentences

Ref. No.	**Age of child**	**Diagnosis**	**Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)**
C1	3;05	Language delay	1. This is my car 2. I want to go with Mum 3. I want to drink milk
C2	3;05	Phonological disorder	1. Give me (a) biscuit 2. Take me to nursery 3. Give me milk
C3	4;00	Fluency	1. Give me crisps 2. Take me outside 3. Where is Israr gone?

Key

Words in round brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.29 (continued) Caseload sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
C4	8;00	Normal	1. Give me (a) drink (of) water 2. I eat roti 3. I go to school
C5	2;05	Language delay	1. Mummy give 2. Roti 3. Dummy
C6	2;02	Language delay	Reports only has vocabulary of two words: 1. Mum 2. Tissue
C7	2;06 **NB Twin of C8**	Language delay	1. Give me (an) apple 2. I eat 3. Outside
C8	2;06 **NB Twin of C7**	Language delay	1. Give me (an) apple 2. I eat 3. Outside
C9	2;05	Language delay	1. (The) milk is hot 2. I know *[in English]* 3. Mum it's not funny *[in English]*

Key

Words in round brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.29 (continued) Caseload sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
C10	2;05	Language delay	1. Mummy *[in English]* 2. Daddy *[in English]* 3. Daddy keys *[in English]*
C11	6;00	Phonological delay	**Parental report that will hold a conversation and parent unable to supply individual sentences as examples**
C12	2;11	Language delay	1. Brother no do 2. Daddy me go out 3. Uncle bringing sweets
C13	3;11	Language disorder	1. I want to eat 2. I want to go in (the) car 3. Is my dad home?
C14	6;03	Voice	**Parental report that will hold a conversation and parent unable to supply individual sentences as examples**
C15	4;06	Phonological disorder	**Parental report that will hold a conversation and parent unable to supply individual sentences as examples**
C16	2;11	Language delay	1. I go out 2. I am going to (the) shop 3. I am going to uncle's house

Key

Words in brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.29 (continued) Caseload sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
C17	1;10	Language delay	1. Mum 2. Sidra (***sibling's name***) **3. Points to desired objects**
C18	9;00	Fluency	**Parental report that will hold a conversation and parent unable to supply individual sentences as examples**
C19	2;07	Language disorder	1. What done? 2. No mum 3. Drinking juice
C20	4;07	Language delay	**Parental report that will hold a conversation and parent unable to supply individual sentences as examples**
C21	4;02	Language disorder	1. Give (me) water 2. Doing wee wee 3. Put (the) light (on for) me
C22	3;02	Language delay	1. Billi **(child's own name)** broken 2. Mummy to go Asda 3. 4 words from a song chorus (nearest translation = hip hip hurray hurray)

Key

Words in brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.29 (continued) Caseload sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
C23	3;01	Language delay	1. Daddy car 2. Me go mummy *[in English]* 3. Baby go *[in English]*
C24	2;06	Normal	**Parental report that will hold a conversation in English and parent unable to supply individual sentences as examples**
C25	2;06	Language delay	*1.* Nursery rhymes *[in English]* 2. Can count to 10 *[in English]* 3. (I am) eating chicken and rice

Key

Words in brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.30 Nursery sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
S1	3;07	Normal	**Single words only**
S5	3;03	Would not come in to room	1. Give me water 2. I want to eat something 3. I am going outside
S6	3;05	Normal	1. Take me in (the) car 2. Give me juice 3. Get me (the) toys
S7	4;01	Would not come in to room	1. Put (the) TV on 2. Give me milk 3. I (am) go(ing) (to the) toilet
S8	3;07	Phonological delay	1. Hello mummy how are you? *[in English]* 2. Can I have some food? *[in English]* 3. Where are we going shopping? *[in English]*
S9	3;03	Normal	1. Give me something to eat *[in English]* 2. I want to go to toilet *[in English]* 3. Take me out *[in English]*

Key

Words in brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.30 (continued) Nursery sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
S11	3;04	Incomplete data set	1. Give me milk 2. Go (to the) toilet 3. Go outside
S14	3;10	Would not respond	1. Give me (a) banana 2. I want to go (to the) toilet 3. Give me water
S16	3;07	Normal	1. Give me (an) apple 2. Give me milk 3. Give me something (I can) eat
S19	4;01	Would not come in to room	1. Give me food 2. Give me water 3. I want to go out
S21	3;03	Would not respond	*1.* Christmas today *[in English]* *2.* Me want milk *[in English]* 3. Power Rangers TV *[in English]*
S24	3;10	Language delay	1. Where mummy gone? 2. Give me water 3. Give me sweets

Key

Words in brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.30 (continued) Nursery sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
S28	3;10	Normal	1. Give me water 2. Give me drink 3. Give me roti
S30	3;05	Phonological disorder	1. Give me biscuit 2. Take me to nursery 3. Give me milk
S37	3;11	Normal	1. Give me water 2. Put (the) TV on 3. Give me something to eat
S40	4;00	Language delay	1. Where Sohail gone? 2. Give me water 3. Go school
S41	3;05	Normal	1. Take me to the park *[in English]* 2. I want a drink *[in English]* 3. I want to go to the toilet *[in English]*
S42	4;00	Language delay	1. Eat that 2. Go in town 3. School go
S44	3;09	Phonological delay	1. Take me to (the) nursery 2. Give me roti 3. Take me to (the) park

Key

Words in brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

Table 8.30 (continued) Nursery sample: Parental report of the child's three longest and best sentences

Ref. No.	Age of child	Diagnosis	Three longest and best sentences (all occurred in mother tongue which has been translated into English for presentation purposes unless otherwise indicated)
S46	3;11	Would not come in to room	1. Oh my goodness *[in English]* 2. Milk time *[in English]* 3. Single words
S47	3;06	Incomplete data set	1. I want milk 2. I want (to) go to nursery 3. I am hungry
S52	4;03	Language delay	1. I go out 2. I eat sweet 3. I drink drink
S55	3;08	Incomplete data set	**Mother stated she did not have enough time to think of the answer**
S57	3;07	Normal	**Father stated he did not know**
S58	3;08	Would not come in to room	1. I want to go out 2. Give me something to eat **Mother unable to think of further example**

Key

Words in brackets are words inserted into the translation which were not used in mother tongue. This occurs for two main reasons:

Either 1) They do not exist (for example there are no words for articles).

Or *2)* Although the word was not used by the child in mother tongue an adult speaker would infer the existence of the word/s and accept the sentence as correct.

Where an utterance was in English this is indicated in square brackets after the utterance.

8.4.18 INDIVIDUAL CHILDREN

The consideration of grouped data can mask differences at an individual level. The questionnaire responses of two individual parents are therefore considered in detail below, in combination with the data from their children. These parents, one each from the caseload and nursery samples, both had male children

diagnosed on the basis of screening assessments as having phonological disorder.

8.4.18.1 CASELOAD CHILD: C15, Ali

Ali's mother:

- Went to school in the UK
- Left school at the age of sixteen
- Is a housewife
- Speaks Mirpuri and English

- Within the family home only Mirpuri is spoken.
- No family history of SLT
- Ali was not premature
- Ali has a positive history of ear infections
- Ali is not in paid childcare
- Mother is concerned re Ali's talking
- Reports Ali to use incorrect sounds when talking
- Does not think Ali's talking is as good as others his age
- Reports: 'I can always understand what my child says but sometimes I think he uses the wrong sounds'
- Does have to explain to others what Ali has said
- Reports that father, grandparents and aunts and uncles cannot always understand Ali
- Has noticed Ali mispronouncing his brother's name

Table 8.31 Caseload child Ali age 4;06: examples of expressive output on 'je zindegi' assessment
Mother reports Ali can hold a conversation
(she) is doing (the) phone. *Target: (the) girl is talking.*
(she) looking (the) newspaper. *Target: (the) lady is reading (a) newspaper.*
(he) is washing (the) baby. Has got a girl's baby. *Target: (the) boy is washing (the) dolly.*
(he) picking (a) plant. *Target: (the) boy is smelling (the) flowers.*

Table 8.32 Caseload child Ali age 4;06		
Target	**Parental prediction**	**Realisation**
ɖuɖ	ɖuɖ	ɖuɖə
ʤabi	dabi	dabi
sɑ:f	tɑ:f	dɑ:
kela	kela	dela
kæn	kæn	dæn
ɾona	lona	lona

8.4.18.2 NURSERY CHILD: S30, Mahboob

- Mahboob's mother:
  - Did not go to school
  - Is a housewife
  - Speaks Mirpuri (which she reports as 'Urdu')
- Within the family home only Mirpuri is spoken
- No family history of SLT
- Mahboob was not premature
- Mahboob has no history of ear infections
- Mahboob is not in paid childcare

- Mother is concerned re Mahboob's talking
- Reports Mahboob to use incorrect sounds when talking
- Thinks Mahboob's talking is as good as others his age
- Reports: 'I can always understand what my child says but sometimes I think he uses the wrong sounds'
- Does have to explain to others what Mahboob has said
- Reports that all relatives can always understand Mahboob
- Has not noticed Mahboob mispronouncing any family names

Table 8.33 Nursery child Mahboob age 3;04 : examples of expressive output on je zindegi.
Mother reports three longest and best sentences as: Give me biscuit Take me to nursery Give me milk
Phone. Boy *Target: (the) girl is talking.*
here (she) reading newspaper *Target: (the) lady is reading (a) newspaper.*
Mahboob doing bath *Target: (the) boy is washing (the) doll.*
Mahboob flower *Target: (the) boy is smelling (the) flowers.*

Table 8.34 Nursery child Mahboob age 3;04		
Target	**Parental prediction**	**Realisation**
ɖʊɖ	ɖʊɖ	ɖʊ
dʒabi	dʒabi	babi
sɑ:f	sɑ:f	tɑ
kela	kela	ke
kæn	kæn	kæ
ɾona	lona	lona

8.4.18.3 DISCUSSION OF INDIVIDUAL CHILDREN

There are both similarities and differences between the questionnaire responses of these two mothers and both are representative of trends previously identified within the two groups of caseload and nursery parents.

The mother of the caseload child, Ali, went to school in the UK and speaks English in addition to Mirpuri, in contrast to the mother of the nursery child, Mahboob, who did not go to school and only speaks Mirpuri. Both mothers report that they have concerns regarding their child's talking and both report having to explain to others what their child has said. Interestingly, though, Ali's mother reports that several family members are unable to understand him, while Mahboob's mother reports that all family members can understand him. Ali's mother is able to give an example of a family name that he mispronounces but Mahboob's mother does not report noticing any such errors. Ali's mother gives answers that are consistent with each other, but Mahboob's mother appears to give conflicting responses when she reports both that she is concerned regarding his talking but that she feels his talking is as good as other children of his age. Within the community there is a great feeling of pride in the achievements of children, and an associated level of rivalry, and it may be that Mahboob's mother could not accept that his skills were any less than those of another child, albeit that she had concerns. In strict phonological terms neither mother achieves a high level of accuracy in detailed prediction of their child's performance on producing the six specified words. The predictions of Ali's mother indicate that she has an awareness that he is stopping fricatives and affricates and gliding although she does not appear to realise that he is fronting plosives. Her prediction that Ali will only produce three of the six words correctly is more realistic than Mahboob's mother who predicts he will produce five of the six words correctly and appears only to have noticed that he is gliding, overlooking evidence that he is stopping and omitting consonants.

On the evidence presented here it is difficult to establish how accurate these mothers were in reporting their child's three best and longest sentences. Ali's mother reported that he could hold a conversation. Certainly one of Ali's

responses on je zindegi: '*(he) is washing (the) baby. (He) has got a girl's baby.*' suggests that he is a child prepared to contribute more than the bare minimum in a communication attempt. Mahboob's mother reports three sentences which appear to be broadly in line with his output on je zindegi. Perhaps the more significant point is the underlying idea that Ali's mother apparently offers and expects conversation with her son.

8.5 DISCUSSION

8.5.1 THE EFFICACY OF THE QUESTIONNAIRE: GENERAL

When developing and administering this questionnaire the researcher set out to answer three questions regarding the efficacy of such a questionnaire. In this discussion section all three original research questions will be considered, as well as topics arising from the parental responses to the questionnaire. Consideration is also given to the fact that the data presented here contrasts with previous evidence regarding parental accuracy when reporting children's communication skills.

- *Would administering the questionnaire be a logistically viable method?*

Translation of the original questions proved to be a time consuming and complex process, affected by the lack of a written form for the languages into which they were being translated. Lack of a written form also meant that parents could not be given a written questionnaire and asked to complete it in their own time: this has cost implications for delivery. The questionnaire was delivered by experienced bilingual speech and language therapy assistants who had been trained in its delivery. However, despite this training, assistants inevitably lack the professional training and resulting insight into the underlying principles being investigated: this raises the possibility that they could have affected the data collection by subtle (and to them unimportant) variation in the way they sought information. As the researcher is not a fluent speaker of the languages concerned, and was not present during the nursery data collection, it was not possible to guarantee a consistent administration. The bilingual assistants did all spontaneously report that they enjoyed completing the questionnaires and felt it created a good basis for discussing children with their parents. This

echoes Rescorla's (1989: 595) report that 'mothers find the LDS stimulating and enjoyable to complete'. In summary, it was logistically viable to administer the questionnaire, although more time consuming than questionnaires left with parents to complete in their own time, and it formed a good basis for a discussion with parents concerning their child's speech abilities.

- *Would the questionnaire results indicate that parents from this community could accurately describe their child's speech?*

The questionnaire results indicate that parents in this community have a relatively low level of accuracy when reporting on their child's speech, with more than 25% of parents in both samples never correct in predicting their child's responses. Overall the nursery parents were more accurate than the caseload parents, 44% of them achieving four or more correct predictions out of six. As there are no similar data published concerning parents' predictions of their child's speech performance it is not possible to compare the accuracy of these parents with the performance of others. Parental ability to report their child's language levels is considered separately below.

- *Would the questionnaire highlight any differences between the nursery and caseload samples?*

As would be expected, given the relatively higher occurrence of 'normal' children in the nursery sample, there were differences observed across the two samples, for example in terms of the numbers of family members reported to be unable to understand the child. However, there was a clear and unexpected difference observed in the education and language backgrounds of the caseload and nursery parents. These differences are discussed in greater detail in the following section.

8.5.2 THE INFLUENCE OF OTHER FAMILY MEMBERS

As outlined in Chapter One, little has been written about child rearing practice with particular reference to the Pakistani heritage (and primarily Mirpuri) community under consideration here. In many cases general statements are made encompassing 'South Asian' communities, thus linking together the peoples of Pakistan, India and Bangladesh, which culturally and linguistically

are three very different countries. Generalisations inevitably result: 'In the Indian subcontinent ...pregnancy, childbirth and the care of babies and young children are usually women's area of responsibility. The older women of the family are an important source of support and guidance' (Schott and Henley, 1996: 281). Similarly, Pachter and Dworkin (1997: 1146) investigated four different cultural groups and concluded that 'when asked who or what has been the most helpful in teaching about child rearing the most common response was the respondent's mother or parents.' While caution should be exercised before relating such generalisations to the particular community under consideration here, this reported influence of older family members may give some insight into some of the behaviour reflected in the questionnaires. Within the nursery sample only a single individual (a cousin) was highlighted as being unable to understand one child (a child who was described as normal following assessment). In contrast, within the caseload sample there was a higher rate of family members reported not to understand the child. Seven children (28% of the sample) were reported not to be understood by members of their family: of these, four children could not be understood by grandparents and two of the remaining three could not be understood by aunts or uncles. It may be that pressure from family members helped to trigger the referral of the child to speech and language therapy.

8.5.3 LEVEL OF PARENTAL EDUCATION AND USE OF ENGLISH BY PARENTS

The caseload parents reported higher levels of parental education and more use of English within the home than did the nursery parents. These higher levels may reflect families who have more awareness about availability of services and more ability to access them. The lower levels of education and lack of English skills reported in the nursery sample parents might indicate that these parents lack information about services such as speech and language therapy. There is no motivation to look for problems or identify them to professionals if you are unaware that help can be available to deal with such problems. At no point did the bilingual assistants explain to the nursery parents what speech and language therapists do: in contrast caseload parents always receive a brief explanation of the role of speech and language therapists when

they first attend the service and many have previously been given a brief explanation by the person making the referral.

A degree of caution should, however, be exercised regarding the differing patterns of education and employment reported across the two samples. This may well be influenced by the fact that picking children up from nursery is a routine daily activity whereas going to clinic is not, so parents attending clinic may have deliberately chosen to take the day off work. However in cases where both parents attended clinic the mother was always nominated to answer the questionnaire. Furthermore perhaps the more significant, underlying, fact worthy of consideration is that the nursery sample parents are the individuals having daily contact with the professionals in the nursery. As such they are therefore the parents who would be indicating parental concern, if there was any, and the majority (88% of the sample) did not speak English, the language spoken by the workers at the nursery.

8.5.4 THE EFFICACY OF THE QUESTIONNAIRE: SPECIFIC

Fifty children completed the screening procedure which included a parent questionnaire. Five children were subsequently identified who were provisionally diagnosed on the basis of screening assessments as having speech disorders. Examination of these individual children's completed parent questionnaires gives some information regarding the efficacy of the parent questionnaire at highlighting individual children who are at risk for speech disorders.

The direct question 'Are you worried about your child's talking?' might be predicted to be of particular interest when using a questionnaire to highlight children at risk for speech disorders but it is couched in general terms rather than being focussed on speech abilities. The question was answered in the affirmative by four of the five parents. It was however also answered in the affirmative by an additional 18 parents, four from the nursery sample and 14 from the caseload sample. Of the total of 22 parents raising concerns in response to this question 18 did have children who were subsequently diagnosed following the comprehensive screening procedure as having

communication difficulties. Twenty eight parents reported no concerns in response to this question and of these ten had children categorised as having typically developing speech and language skills, eight had children who did not co-operate with the screening process and ten had children with speech and language difficulties. This direct question does not therefore highlight children whose speech skills need screening.

The detailed data presented in the results section above did indicate differences between the two samples in terms of levels of parental education, ability to speak English and of other relatives unable to understand the child. Closer examination of the questionnaires relating to the five children with speech disorders does indicate some patterns emerging. The two parents of the nursery children neither spoke English nor had received any formal education. Both felt their child's speech was as good as their peers, neither predicted any errors in their child's speech and neither reported family members to have difficulty understanding the child. Of the three parents of caseload children, one parent did not speak English and had no formal education. She felt her child's speech was as good as their peers, did not predict any errors in their speech and did not report any family members to have difficulty understanding the child. In contrast the other two caseload parents both spoke English in addition to Mirpuri, had been to school in England, reported that their child's speech was not as good as that of their peers and correctly predicted errors in their child's speech, achieving accuracy rates of 50.00% and 83.33%. Neither reported any family members unable to understand the child.

There is therefore no clear evidence that the parent questionnaire will facilitate the identification of individual Pakistani heritage children with speech disorders although certain features identified via the questionnaire may be markers pointing the way towards children in need of further investigation.

8.5.5 PARENT-CHILD INTERACTION

As was reported in Chapter One, there is little published information regarding the patterns of adult-child interactions in the Pakistani heritage community. Anecdotal information indicates that mothers have responsibility for child care

but there is a level of formality in the relationship, with children expected to show respect to all adults and not initiate communication. In such circumstances the accuracy of parental report of their child's speech and language skills may be poor. It may be that the parent genuinely does not know about their child's communication skills because they rarely hear the child talking. The question asking parents whether their child's talking was as good as other children (Table 8.20 above) received three 'don't know' responses, a possible indicator of parents unsure of their own child's abilities, or possibly unsure of the expected skills in a child of that age. The evidence presented in the 'Three longest and best sentences' data (Tables 8.29 and 8.30 above) gives an interesting insight into the pattern of parent-child communication within this community and reinforces the suggestion that such interaction is limited in nature. The majority of utterances reported indicate a pattern of children requesting their needs be met, with few examples of questions which require verbal responses from the adult. One caseload parent of twins was unable to give different examples for each child and reported the same examples for them both. One nursery parent openly stated that they did not know any examples of what their child could say, another stated they did not have enough time to think of the answer, suggesting it was not easy for them to remember examples of what their child could say, and a further parent could think of only two examples, although both of these were multi-word utterances, suggesting the child would have a wider repertoire than just two utterances. There is some limited evidence in the data that there is even more restricted interaction between fathers and their children than between mothers and their children: see for example the father of nursery child S57 who was unable to give any examples of what his child said and the fact that where both parents attended, the mother was always nominated to complete the questionnaire.

Although the data presented do suggest that parent-child interaction within the target community is limited it is not clear how monolingual English speaking parents from a similar SES background would answer this question. There is evidence that adult-child communicative interactions are more limited in conditions of low SES (Battle and Anderson 1998, Hoff and Tian 2005), restricting the pool of data from which parents could draw examples. It is possible to speculate that low SES parents would focus on the word 'longest'

when thinking of examples from their child's repertoire rather than 'best'. The connotation that 'best' may imply a lexically or syntactically complex example which is not necessarily 'long' may only be considered by a parent with some professional insight into the possibility. Previously published research which has used the LDS as a source of data has focussed on discussing results from the vocabulary checklist which was not included in the current questionnaire. As such the data gained from parents regarding examples of their child's longest and best sentences has not been reported: it was simply used to confirm a parent's assertion that the child was linking words together in to sentences. There is therefore no previously published data against which to compare this data set of reported children's sentences. Klee (personal communication 2006) does, however, report that a data set of 900 sentences collected by him using the LDS does not show any evidence of patterns or consistencies emerging of the type reported in the current data set.

8.5.6 COMPARISON WITH PREVIOUS FINDINGS RELATING TO PARENT QUESTIONNAIRES

Previous researchers have reported findings which indicate that parent questionnaires are a reliable source for the identification of children at risk for language disorders (for example Rescorla 1989, Stokes 1997, Rescorla and Alley 2001). There is little evidence of researchers using parent questionnaires to identify children with speech disorders. Stokes (1997: 153) did include a question relating to intelligibility and found 'the intelligibility item produced both true positives and false positives'. Stokes' data was from a sample of parents who had education levels above the average profile for the population from which they were drawn and who had English as a mother tongue. The data presented here, from a sample of parents who did not have English as a mother tongue and who had relatively low levels of education, are in marked contrast to these earlier findings. The parents in the current research were not able to report accurately on their children's speech abilities.

8.5.7 IMPLICATION FOR FUTURE RESEARCH AND CLINICAL PRACTISE

The administration of this parent questionnaire has highlighted several issues which need further research. The questionnaire asked parents if they were concerned about their child's talking but did not ask what the parental expectations were. It may be that there is a mismatch between professional expectations, based on the normal developmental profile of the majority White community, and parental expectations in this Pakistani heritage community. Certainly, some parents from the Pakistani heritage community have told the researcher that their mother tongue is 'a difficult language', possibly to justify their children's poor language skills. It may be that parents in this community (as in others) 'make allowances' to account for their child's difficulties. The addition of a question designed to elicit the parents' expectations may give useful insight into the community's understanding of speech and language development and on a clinical level may provide a starting point to discuss what are realistic expectations for a child's communication skills.

The evidence that parent-child interaction may be very limited in the Pakistani heritage community warrants further investigation. It would be useful to compare parental reports of a child's expressive abilities with observed interactions between the parent and child.

Parents in the current sample had relatively little time to complete the questionnaire. Although the bilingual assistants did not make any attempt to hurry the parents there would almost certainly have been a perceived need to answer the questions as soon as possible, due to the external environmental pressures imposed by presence in a health clinic or a nursery setting and the presence of children. The verbal nature of the questionnaire delivery certainly discouraged opportunities to return to an earlier question and reconsider the first response given. It might be that the accuracy with which a parent reported their child's ability to say specified words would be increased if that parent had time to reflect, or indeed to monitor their child's speech for those specific words. Although previous research has reported results from questionnaires posted to parents for completion in their own time and own homes (Klee, Pearce and Carson 2000) there is no evidence to indicate how long parents spend completing such questionnaires when there are no time constraints. A verbal

presentation cannot be avoided when working in a language that has no written form but it would be interesting to see whether subsequent re-administration of the questionnaire after the parents had had the opportunity to reflect on both the questions and their answers might improve accuracy of response.

Although the questionnaire in its current form did not appear to be highlighting children at risk for speech disorders it did give an insight into factors at work within the Pakistani heritage community which clinicians need to consider. The potential role of family members in triggering referrals which the questionnaire highlighted suggests that any health prevention or awareness work conducted by clinicians should target a broader group of adults than the mothers who are usually the sole target for such work. The questionnaire also highlights that children referred to the speech and language therapy service are more likely to have parents who went to school in England and can speak English. Such parents are therefore more likely to understand publicity leaflets advertising the existence of services and to feel confident about seeking assistance for their children. Clinicians need to develop innovative ways of spreading information concerning their services among populations with no access to English and with no written form in their mother tongue.

CHAPTER NINE

INDIVIDUAL CASE STUDIES

9.1 INTRODUCTION

The research presented here has examined various aspects of the identification of speech disorders in Pakistani heritage children. Three individual case studies are now presented. These three individual case studies were selected for close examination because two of them, Mustafa and Mahboob, were the only Pakistani heritage children identified within the data as having phonological disorder, while the third case, Naveed, had a phonological delay and his referral triggered the referral of Mustafa. This close examination casts additional light on some of the key features previously highlighted by the research reported here.

9.2 METHOD

All three children had been seen in the local speech and language therapy department by a specialist speech and language therapist. A bilingual speech and language therapy assistant who spoke all three Pakistani heritage languages under consideration was present during all clinic sessions. The departmental case notes were traced and examined by the researcher. Their cases are presented in the order in which they were referred to the department.

9.3 NAVEED

9.3.1 REFERRAL INFORMATION

Naveed was a male aged 5;10 when he was referred to the speech and language therapy department by a nursery nurse at his school. His referral form stated 'Unclear speech. Poor vocabulary'. The referring agent had not completed the section of the referral form requesting information about the languages spoken in the home.

9.3.2 CLINICAL INFORMATION

Naveed was the middle of three male siblings. None of his siblings had previously been referred to speech and language therapy although during Naveed's initial screening appointment his mother referred his younger sibling (see Mustafa, below). Naveed's mother reported no history of concerns

regarding his hearing and no history of prolonged feeding from a bottle. Naveed did not use a dummy or suck his thumb.

9.3.2.1 Languages spoken

Naveed's family spoke Mirpuri. He was always brought to clinic by his mother who spoke English in addition to her mother tongue, Mirpuri. Naveed spoke Mirpuri as his mother tongue and could also speak English.

9.3.3 DETAILS OF ASSESSMENTS

9.3.3.1 Assessments in Mirpuri at age 6;00: Receptive skills

Naveed's receptive skills in his mother tongue were screened using the Derbyshire Language Scheme Rapid Screening Test (DLS RST) (Mirpuri adaptation, research edition, Pert and Stow). On this assessment Naveed could consistently follow instructions involving three key words and had some skills with more complex instructions:

e.g. Put the comb under the plate.

Put the car under the box and give me the plate.

Where there was a choice available for each word underlined.

This indicated that Naveed had receptive skills within the normal range.

9.3.3.2 Assessments in Mirpuri at age 6;00: Expressive language skills

Expressive skills in mother tongue were assessed using je zindegi: an early sentences expressive assessment for Mirpuri (Research edition: Pert and Stow). Naveed used appropriate sentences in Mirpuri during this assessment: an example is presented in Table 9.1.

Table 9.1 Example of Naveed's picture descriptions in Mirpuri			
	Subject	**Object**	**Verb**
Target	*man*	*ladder*	*is climbing on*
Naveed's utterance	dad	ladder	is climbing on
English translation	(The) dad is climbing on (a) ladder		

Notes

1. The words in brackets in the English translation do not have an exact equivalent in Mirpuri but are inserted into the English translation to indicate that Naveed did not omit any words.
2. The use of the word 'Dad' might be viewed as immature in comparison to 'man' but should be viewed as normal within this Pakistani heritage community where familial names are extensively used.

The case notes also stated that Naveed held a conversation in Mirpuri with the bilingual speech and language therapy assistant.

9.3.3.3 Assessments in Mirpuri at age 6;00: Expressive phonology

Naveed's expressive phonology was assessed in Mirpuri using the Rochdale Assessment of Mirpuri Phonology (RAMP) (Stow and Pert 1998). A percentage of consonants correct (PCC) calculation (Shriberg *et al* 1997) was made and the data examined to identify any phonological error patterns present. Naveed was noted to be fronting velar plosives and stopping, omitting or de-affricating fricatives and affricates. Details are given in Table 9.2.

Table 9.2 Examples of Naveed's production of single words in Mirpuri at age 6;00	
	Mirpuri
Fronting of velar plosives	/bʌkʰɑ/ → [bʌtʰɑ] /bʌkɾi/ → [bʌti] /dɔkɾi/ → [dɔti]
Errors on fricatives and affricates	/zbɑ:n/ → [bɑ:n] /tʌsviɾ/ → [tʌʔiɾ] /mʌtʃi:/ → [mʌti:]
Percentage of consonants correct	
68%	
Note Normative data developed by Holm, Dodd, Stow and Pert (1999) for RAMP indicate a normal score of 86% consonants correct for a child aged in the range 5;07 – 7;00.	

9.3.3.4 Assessments in English at age 6;00: Expressive language skills

Naveed was assessed using the Renfrew Action Picture Test (RAPT) (Renfrew 1985). This assessment does not have bilingual normative data and was therefore used to develop descriptive data giving an indication of Naveed's expressive skills in English. Examples are shown in Table 9.3.

Table 9.3 Example of Naveed's picture descriptions in English

	Subject	**Verb**	**Object**
Target	*she*	*is holding*	*a teddy*
Naveed's utterance		holding	a teddy

Notes

1. Naveed omits the subject "she". However, Mirpuri, Naveed's mother tongue, is a pro-drop language and in Mirpuri the subject is usually marked only by a gender inflection on the verb.
2. Naveed includes a determiner. There are no determiners in Mirpuri.

Target	**She fell down the stairs and broke her glasses.**
Naveed's utterance	He fell down the stairs and he broke umm what they called ...[eŋka]

Notes

1. Naveed uses an incorrect male pronoun.
2. Naveed does not know the English word 'glasses' and codeswitches to use the correct word in Mirpuri.
3. Naveed correctly uses the past tense.
4. Naveed correctly uses determiners.

9.3.3.5 Assessments in English at age 6;00: Expressive phonology

Naveed was assessed in English using the South Tyneside Assessment of Phonology (STAP) (Armstrong and Ainley 1988) and a PCC calculation made. The same two error patterns observed in his Mirpuri productions were again noted in English: fronting of velar plosives and stopping or omission of fricatives and affricates. Examples are shown in Table 9.4.

Table 9.4 Examples of Naveed's production of single words in English at age 6;00	
	English
Fronting of velar plosives	/kɑz/ ➔ [tɑ] /klɑʊn/ ➔ [tɑʊnd] /bæg/ ➔ [bæd]
Note Stopping of word final nasals in English was identified as a normal error pattern occurring in bilingual Mirpuri / English speakers (Holm, Dodd, Stow and Pert 1999)	
Errors on fricatives and affricates	/spk/ ➔ [pt] /titʃə/ ➔ [titə] /meʒə/ ➔ [medə]
Percentage of consonants correct	
63%	
Note There are no data available to give guidance regarding PCC scores on STAP.	

9.3.4 DIAGNOSIS

Following this full assessment Naveed was assigned a diagnosis of phonological delay because the only error patterns observed occur in the speech of younger, typically developing Mirpuri and English speaking bilingual children (Holm *et al* 1999). Productions of single words were noted to be consistent both in English and in Mirpuri and within the series of subtypes of speech disorder proposed by Dodd (1995) Naveed was placed in the subgroup of children with 'delayed phonological acquisition'.

9.3.5 OUTCOME

Naveed was placed on a waiting list for therapy. He had to wait two years before he was offered individual therapy. Informal re-assessment in both Mirpuri and English at this point confirmed the persistence of the error patterns previously identified in his speech i.e. fronting of velar plosives and stopping, omission or de-affrication of fricatives and affricates.

Initially therapy sessions were conducted in Mirpuri by a bilingual speech and language therapy assistant, following a programme written by a specialist speech and language therapist. Mirpuri was selected as the initial medium for intervention as it was Naveed's mother tongue and a language in which he had conversational level skills. Naveed had also stated a preference for speaking Mirpuri rather than English. The first three sessions, focussing on the production and use of velar plosives, were conducted weekly and each lasted for approximately thirty minutes. Due to lack of availability of bilingual assistant time, therapy was then discontinued for a period of three months before resuming for a further seven, once weekly, sessions.

Work in the first three sessions focussed on production of /k/ in isolation, then in word initial position at single word and then sentence level. Work progressed to the production of /k/ in word final positions. When weekly therapy sessions resumed after the three month break informal re-assessment indicated that Naveed had retained his ability to use /k/ in all word positions in single words in Mirpuri and although some errors occurred in connected speech, Naveed was noted to self correct these errors. Work then commenced on the production of fricatives and affricates, again in Mirpuri. After four sessions these had also been established in all word positions. At this point Naveed's mother indicated that she had noticed errors in Naveed's production of /sk/ when he was reading to her in English. This consonant cluster does not occur in Mirpuri. Informal assessment probes in English confirmed that while Naveed's production of both the individual phonemes /s/ and /k/ was stable in English, when producing the consonant cluster he was again fronting the velar plosive. Two further thirty

minute sessions were conducted focussing on phonological awareness and the production of the cluster /sk/ in English. Full re-assessment of Naveed's skills using RAMP and STAP during the tenth therapy session revealed no errors at single word level and Naveed was discharged from the speech and language therapy service.

9.4 MUSTAFA

9.4.1 REFERRAL INFORMATION

Mustafa was a male aged 4;05 when he was referred to the speech and language therapy department by his mother. Mustafa's mother made this verbal referral when attending the department with his older brother, Naveed. She stated that she was concerned that Mustafa was more difficult to understand than Naveed.

9.4.2 CLINICAL INFORMATION

Mustafa was the youngest of three male siblings. His elder brother (Naveed) had been referred to speech and language therapy. Mustafa's mother reported no history of concerns regarding his hearing and Mustafa did not use a dummy or suck his thumb. Mustafa had regular bottles of milk until he was three.

9.4.2.1 Languages spoken

Mustafa's mother reported that the family spoke Urdu. In conversation with a bilingual speech and language therapy assistant she agreed that the family actually spoke Mirpuri and not Urdu. Mustafa spoke Mirpuri as his mother tongue and had some expressive skills in English.

9.4.3 DETAILS OF ASSESSMENTS

9.4.3.1 Assessments in Mirpuri at age 4;07: Receptive skills

Mustafa's receptive skills in his mother tongue were screened using the DLS RST (Mirpuri adaptation, research edition, Pert and Stow).

On this assessment Mustafa could consistently follow instructions involving two key words and had some skills with instructions involving three key words:

e.g. Put the teddy in the box.
Put the comb under the plate.
Where there was a choice available for each word underlined.

This indicated that Mustafa had receptive skills within the normal range.

9.4.3.2 Assessments in Mirpuri at age 4;07: Expressive language skills

Expressive skills in mother tongue were assessed using je zindegi: an early sentences expressive assessment for Mirpuri (Research edition: Pert and Stow). Mustafa used appropriate sentences in Mirpuri during this assessment.

Table 9.5 Example of Mustafa's picture descriptions in Mirpuri at age 4;07

	Subject	**Object**	**Verb**
Target	*man*	*ladder*	*is climbing on*
Mustafa's utterance		ladder	has climbed up
English translation	(He) has climbed up (the) ladder		

Note

The words in brackets in the English translation do not have an exact equivalent in Mirpuri but are inserted into the English translation to indicate that Mustafa did not omit any words. In this example the gender was signalled with a correct inflection on the verb.

9.4.3.3 Assessments in Mirpuri at age 4;07: Expressive phonology

Mustafa's expressive phonology was assessed in Mirpuri using the RAMP. Four error patterns were identified in Mustafa's phonological output:

- Assimilation
- Fronting of velar plosives
- Stopping of fricatives and de-affrication
- Initial consonant deletion

Examples of these error patterns are shown below in Table 9.6 along with the PCC calculation.

Table 9.6 Examples of Mustafa's production of single words in Mirpuri at age 4;07		
Assimilation		
/naʰk/ ➔ [dæt]		
Fronting of velar plosives		
/kan/ ➔ [tæn]		/pʰəkɑnɑ/ ➔ [bətana]
/naʰk/ ➔ [dæt]	/gɑ/ ➔ [dɑ]	/ʔag/ ➔ [atʰ]
Stopping of fricatives and de-affrication		
/saʰp/ ➔ [dæpʰ]	/dʒaz/ ➔ [dæd]	/ʃeɾ/ ➔ [dʒ]
/ɦuʃ/ ➔ [ʌt]	/dʒɛndɑ/ ➔ [dena]	/ɾɪtʃ/ ➔ [dɪtʰ]
Initial consonant deletion		
/tʌsviɾ/ ➔ [ədijə]		/kʌɽi/ ➔ [edi]
/ɦaʈ/ ➔ [æʈʰa]		/lefafa/ ➔ [ɪfata]
Percentage of consonants correct		
23.5%		
Note At age 4;07 Mustafa fell just outside the range of normative data developed by Holm, Dodd, Stow and Pert (1999) for RAMP. However this data indicated that the age range 4;08 – 5;06 had a normal score of 84% consonants correct.		

In addition to the features of delay shown in Table 9.6, Mustafa was also noted to make unusual sound substitutions and examples are shown below in Table 9.7.

Table 9.7 Examples of Mustafa's production of single words in Mirpuri showing unusual sound substitutions	
Target	**Realisation**
/b/	/bɪli/ → [mɪni] /bʌkɾi/ → [wædi] /baɾɪʃ/ → [fɑdi]
/m/	/muɽgi/ → [fʌdi] /mʌkʰi/ → [bʌdʒi]
/l/	/bɪli/ → [mɪni]
/ɾ/	/ɾɪtʃ/ → [dɪtʰ]
/ɽ/	/ɽoɽi/ → [dodi]

Examination of the items which are assessed on more than one occasion on the RAMP indicated that Mustafa was inconsistent in his production of single words in Mirpuri. Examples are shown in Table 9.8.

Table 9.8 Examples of Mustafa's inconsistent utterances			
Target	**Realisations**		
/zban/	[an]	[man]	[ban]
/laʰt/	[læk]		[dæt]
/seb/	[be]		[deb]

9.4.3.4 Assessments in English at age 4;07: Expressive skills

The clinician carrying out the assessment sessions noted that informal assessment of Mustafa's expressive skills in English, as measured by being

asked to describe culturally appropriate verb pictures, indicated he could use simple utterances consisting mainly of nouns.

9.4.4 DIAGNOSIS

Mustafa's speech exhibited simplification processes that are observed in younger children's speech (phonological delay) and also unusual sound substitutions and inconsistencies which suggested a disordered phonological system. As a result of this full assessment Mustafa was assigned a diagnosis of phonological disorder. Within the series of subtypes of speech disorder proposed by Dodd (1995) Mustafa was placed in the subgroup of children with 'inconsistent disorder'.

9.4.5 OUTCOME

Following diagnosis Mustafa was placed on a waiting list and was not seen for a year. Regular clinic based therapy commenced when Mustafa was aged 5;07. Therapy sessions were conducted on an individual basis by a specialist speech and language therapist working with a bilingual speech and language therapy assistant. Once therapy had commenced an application was made under the 1996 Education Act for a Statement of Special Educational Needs with a view to obtaining placement at the local Speech and Language Unit maintained by the LEA. This specialist unit, attached to a mainstream primary school, has places for twelve infant age children i.e. ages approximately 5;00 to 7;00. The children have non verbal skills within the normal range but have specific difficulties with speech and language for which they need intensive input. There are two full time teachers, a part time support assistant and a whole time equivalent speech and language therapist, specialising in Specific Language Impairment (SLI). The children have daily individual and group therapy as well as having their individual therapy aims integrated into the daily classroom routine. The unit is over-subscribed and operates a waiting list.

As part of the procedure to obtain a Statement of Special Educational Needs Mustafa was assessed by an educational psychologist. These assessments revealed Mustafa to have non-verbal skills within the high average range. He

was subsequently placed on the waiting list for the Speech and Language Unit and was finally admitted to the unit at the age of 6;10.

During the fifteen month period prior to his admission to the Speech and Language Unit, Mustafa had weekly clinic based therapy. In fact over this time period he attended for only eighteen, thirty minute sessions, a total of nine hours. Mustafa's therapy was delivered in Mirpuri as it was his mother tongue and assessment indicated that expressively it was the language in which he had the higher level of competence. The initial twelve sessions focussed on identification and then production of bilabial nasals and plosives in isolation and then word initial positions. Work subsequently moved to a core vocabulary approach which continued once Mustafa was admitted to the Speech and Language Unit. Reassessment of Mustapha's phonological system in both Mirpuri (using RAMP) and English (using STAP) at age 5;11 yielded the following PCC scores:

Table 9.10 Mustafa's PCC scores at age 5;11

Language	**Percentage of consonants correct**
Mirpuri (measured on RAMP)	38.2%
Note Normative data developed by Holm, Dodd, Stow and Pert (1999) for RAMP indicate a normal score of 86% consonants correct for a child aged in the range 5;07 – 7;00.	
English (measured on STAP)	32.6%
Note There are no data available to give guidance regarding PCC scores on STAP.	

This re-assessment occurred after Mustafa had received six sessions of therapy spread over a nine month period.

The teaching staff at the Speech and Language Unit are all White, monolingual English speakers and Mustafa was the only bilingual child attending the unit. The daily classroom routine was therefore in English, as it had been at his previous school, but Mustafa's core vocabulary programme was set and carried out in Mirpuri. This was achieved initially by a specialist speech and language therapist who had enough Mirpuri skills to deliver the programme, supported by

tape recordings of targets spoken by a mother tongue speaker of Mirpuri. Subsequently a Mirpuri speaking support assistant was appointed to deliver Mustafa's therapy programme.

Following intensive input at the unit Mustafa was again reassessed at age 7;06 and the results are shown in Table 9.11. At this time Mustafa had attended the unit for eight months, including ten weeks of school holiday during which no therapeutic input was offered.

Table 9.11 Mustafa's PCC scores at age 7;06

Language	**Percentage of consonants correct**
Mirpuri (measured on RAMP)	67.6%
Note At age 7;06 Mustafa fell just outside the normative data developed by Holm, Dodd, Stow and Pert (1999) for RAMP. These data indicate a normal score of 86.6% consonants correct for a child aged in the range 7;01 – 7;05.	
English (measured on STAP)	43.7%
Note There are no data available to give guidance regarding PCC scores on STAP.	

Assessment in English using the Preschool and Primary Inventory of Phonological Awareness (Dodd, Crosbie, McIntosh, Teitzel and Ozanne 2000) at the same age indicated Mustafa had particular difficulty with rhyme awareness (scoring five out of twelve) and phoneme segmentation (scoring two out of twelve). While these scores need to be interpreted with caution as Mustafa was acquiring English as an additional language it should be remembered that this assessment was conducted when Mustafa had completed four years in an education system where he was always taught in English and three years of formal teaching of reading in English.

Expressively at the age of 7;06 Mustafa was reported to be an adequate communicator in English, readily initiating conversations in English with his monolingual English speaking peers at school. Formal assessment on the Renfrew Action Picture Test (Renfrew 1985) (see Table 9.12 for examples) at age 7;06 confirmed that while Mustafa had mastered some of the features of

English which are not used in his mother tongue, for example determiners, his English language skills still had features of delay when compared to his monolingual English speaking peers.

Table 9.12 Example of Mustafa's expressive language in English at age 7;06	
Stimulus: A picture showing a man on a ladder. The ladder is leaning against a roof and an apparently frightened cat is on the roof.	
Mustafa's response	The man climb on the ladder and the cat in the roof. The man climbing on the ladder.
Stimulus: A picture showing a woman carrying a bag which has a tear in it. Apples are falling out of the bag and a man is picking the apples up.	
Mustafa's response	The bag is broken and the apples fall down. The apple, the boy pick up the apple.

By the age of 7;06 Mustafa was beyond the age for attendance at the speech and language unit but remained in the mainstream school to which the unit is attached, receiving daily support and input from the unit staff.

9.5 MAHBOOB

9.5.1 REFERRAL INFORMATION

Mahboob was a male aged 3;11 when he first attended the speech and language therapy department. Mahboob was identified as a result of the screening of a cohort of nursery children reported in Chapter Six and his parents were invited to attend a speech and language therapy clinic.

9.5.2 CLINICAL INFORMATION

Mahboob was the middle of three siblings. None of his siblings had been referred to speech and language therapy. Mahboob's father reported no history of concerns regarding his hearing and no history of prolonged feeding from a bottle. Mahboob did not use a dummy or suck his thumb.

9.5.2.1 Languages spoken

When seen at the nursery Mahboob's mother reported that the family spoke Urdu. Mahboob was brought to the clinic by his father who spoke some English in addition to his mother tongue, Mirpuri. In conversation with a bilingual speech and language therapy assistant in the clinic Mahboob's father agreed that the family actually spoke Mirpuri and not Urdu. Mahboob's mother did not speak English and did not accompany him to any clinic appointments. Mahboob spoke Mirpuri as his mother tongue and did not speak any English.

9.5.3 DETAILS OF ASSESSMENTS

9.5.3.1 Assessments in Mirpuri at age 3;11: Receptive skills

Mahboob's receptive skills in his mother tongue were screened using the DLS RST (Mirpuri adaptation, research edition, Pert and Stow).

On this assessment Mahboob could consistently follow instructions involving two key words and had some skills with instructions involving three key words:

e.g. Put the teddy in the box.
Put the car in the cup.
Where there was a choice available for each word underlined.

This indicated that Mahboob had receptive skills within the normal range.

9.5.3.2 Assessments in Mirpuri at age 3;11: Expressive language skills

Expressive skills in mother tongue were assessed using je zindegi: an early sentences expressive assessment for Mirpuri (Research edition: Pert and Stow). Mahboob used appropriate sentences in Mirpuri: an example is given in Table 9.13.

Table 9.13 Example of Mahboob's picture descriptions in Mirpuri at age 3;11

	Subject	**Object**	**Verb**
Target	*The girl*	*milk*	*is drinking*
Mahboob's utterance		milk	is drinking
English translation	(She) is drinking milk		

Notes

1. The words in brackets in the English translation do not have an exact equivalent in Mirpuri but are inserted into the English translation to indicate that Mahboob did not omit any words. In this example the gender was signalled with a correct inflection on the verb.

9.5.3.3 Assessments in Mirpuri at age 3;11: Expressive phonology

Mahboob's expressive phonology was assessed in Mirpuri using the RAMP. Four error patterns were identified in Mahboob's phonological output:

- Weak syllable deletion
- Stopping of fricatives and de-affrication
- Initial consonant deletion
- Errors with the r-family of phonemes

Examples of these error patterns and the PCC calculation are shown below in Table 9.14.

Table 9.14 Examples of Mahboob's production of single words in Mirpuri at age 3;11	
Weak syllable deletion	
/lə'fafa/ ➔ [fafa]	/pʰə'taŋg/ ➔ [dʌŋgəʰ]
Stopping of fricatives	
/kʊrsi/ ➔ [kʌti]	/sɑ:f/ ➔ [sbæpʰ]
/hʊʃ/➔ [kʊt]	
/dʒib/ ➔ [dib]	/dʒaz/ ➔ [dad]
Initial consonant deletion	
/hɔnt/ ➔ [ɔt]	
Errors with r- family of phonemes	
/ɻoʈi:/ ➔ [doʈi:]	/draxt/ ➔ [dæ]
/kʊrsi:/ ➔ [kʌti]	
Note 1. Some examples have more than one error pattern present.	
Percentage of consonants correct	
60.9%	
Note At age 3;11 Mahboob fell outside the range of normative data developed by Holm, Dodd, Stow and Pert (1999) for RAMP.	

Mahboob was also noted to make unusual sound substitutions and examples are shown in Table 9.15.

Table 9.15 Examples of Mahboob's production of single words in Mirpuri at age 3;11 showing unusual sound substitutions	
Metathesis	
/sæʰp/ ➔ [bæs]	/sɑ:bɪn/ ➔ [pæʰsən]
De-nasalization	
/næʰk/ ➔ [dæk]	

Mahboob was inconsistent in his production of single words on the RAMP: examples are shown in Table 9.16.

Table 9.16 Examples of Mahboob's inconsistent utterances on RAMP at age 3;11

Target	Realisations	
/stara/	[dara]	[dana]
/dʒaz/	[dad]	[dzæʰd]
/laʰt/	[dæŋg]	[dæt]

9.5.4 DIAGNOSIS

Following this full assessment, and in view of the unusual and inconsistent errors he was making, Mahboob was assigned a diagnosis of phonological disorder. Within the series of subtypes of speech disorder proposed by Dodd (1995) Mahboob was placed in the subgroup of children with 'inconsistent disorder'.

9.5.5 OUTCOME

As a result of the full assessment and diagnosis, clinic based therapy was offered. Mahboob's father requested that he be given 'a book' so he could carry out the work with Mahboob at home rather than attending clinic sessions. It was explained that Mahboob needed to see a therapist in clinic although work would also be given for the parents to practise at home. A further appointment was arranged. Mahboob failed to keep this appointment and his parents did not make any further contact with the service. Mahboob was therefore discharged.

9.6 DISCUSSION

9.6.1 AGE AT REFERRAL

Naveed, the only one of the three children identified and referred to the speech and language therapy department by a professional, was referred at age 5;10.

He was referred at the completion of his second year of full time compulsory education. Prior to this he had also spent one year in a part time nursery placement at the same school. Mustafa was referred by his mother at age 4;05. At this time he had started his first year of compulsory education, having spent the previous year attending a part time nursery placement at the same school. Mahboob was referred at the age of 3;07 as a result of the screening procedure described in Chapter Six. Thus, of these three children, all with speech disorders, the only child identified prior to commencement of compulsory education was identified as a result of the use of the speech screen. The only child identified by a professional was identified after three years in the education system, at a time when the education system had an expectation that he would speak adequate conversational English.

9.6.2 SOURCE OF REFERRAL

None of the children was referred by their health visitor, the professionals statistically most likely to make a referral to speech and language therapy services. All three had passed health visiting assessments carried out by health visitors experienced at working with bilingual families and who had interpreters speaking Pakistani heritage languages attached to their team.

Naveed was referred by a nursery nurse who worked at his school. This person did not work in his class but had previously undergone individual training in the speech and language therapy department, designed to build her skills to carry out programmes of work set by a speech and language therapist. She had subsequently routinely contacted and visited the local department over a period of several years (although this routine contact had ceased prior to the time of referral) and was regarded within the school as their 'expert' on children with communication difficulties. Staff at this school who had concerns about a child's communication difficulties therefore routinely asked her to see that child and make a referral if she felt it appropriate. This nursery nurse was a White monolingual speaker of English.

Mustafa was identified and referred to the department by his mother. Following his initial assessment and assignation of a clinical diagnosis he was placed on a waiting list and was not seen again for a year. Once he commenced treatment, at the beginning of his second year of compulsory education, his school Special Educational Needs Co-ordinator (SENCO) was contacted and she reported that he had not been identified to her as a child causing concern and she did not know him. When asked directly by the speech and language therapist, his class teacher reported that she had great concerns and felt he was beginning to withdraw from classroom activities because he was aware that people could not understand him. Although individual teachers can make direct referrals to speech and language therapy they rarely do so. Most schools channel all such referrals through the teacher designated as the school SENCO. As part of their role the SENCO administers a register of children identified as having 'special educational needs' as defined by government legislation. In this case the class teacher reported that although she had great concerns regarding Mustafa she had not felt she knew him well enough to identify him to the SENCO as a child with possible special educational needs. This statement 'did not know him well enough' indicates a lack of structured investigation and recording of a child's difficulties on the part of the school. In the absence of any formal school based assessments to identify and highlight his difficulties, and without any apparent liaison between his current and previous teachers, it is not clear how long Mustafa would have remained unidentified to the speech and language therapy service in the absence of his mother's identification of his difficulties.

Mahboob was in his first term attending a nursery school when identified by the speech screen. The nursery staff were blind to this identification and at the end of the school year had still not identified Mahboob as a source of concern. Both the schools attended by the three children had over 70% of their pupils registered as bilingual and had bilingual support staff who spoke the Pakistani heritage languages.

9.6.3 REASON FOR REFERRAL

Naveed's referral stated 'Unclear speech. Poor vocabulary.' indicating that the school had concerns about his language skills as well as his speech skills. Assessment showed that these concerns were unfounded. A screening assessment of English skills showed that Naveed was only using short utterances and these had features associated with children learning English as an additional language rather than features of delayed language acquisition (see Table 9.2). This could have been perceived by teaching staff as 'poor vocabulary' and may well have been the trigger for the referral. Data presented in Chapter Two clearly indicated that referral agents were more likely to refer due to concerns about language than for concerns regarding speech. Mustafa, Naveed's brother, was referred by his mother who specifically voiced concerns that Mustafa was worse than Naveed. This reflects the finding of Glascoe (2000), that parents tend to compare their children to other children and their concerns are based on these comparisons.

9.6.4 PARENTAL EDUCATION AND LANGUAGES SPOKEN

The parent questionnaires reported in Chapter Eight had indicated that Pakistani heritage children referred to speech and language therapy were more likely to have parents who had been educated in England and who spoke English. This was the case with the three cases reported here.

The mother of Naveed and Mustafa had been to school in England and spoke English in addition to Mirpuri. During clinic sessions she would listen to questions posed in English and respond immediately in Mirpuri, relying on the bilingual speech and language therapy assistants to translate her answers. When asked about her apparent reluctance to use her English skills she responded that because her husband only spoke Mirpuri she rarely used English and felt more confident speaking Mirpuri. Her husband had spent his childhood in Pakistan and had not attended school.

Mahboob's mother did not attend any clinic appointments, but she did routinely take him to, and collect him from, the nursery. At the nursery she completed a

parent questionnaire (see Chapter Eight) which showed that she had grown up in Pakistan and had not attended school. She spoke only Mirpuri. Mahboob's father had had some schooling in Pakistan and spoke some English which he had acquired informally as a result of residence in England. Mirpuri was clearly his stronger language.

9.6.5 REPORTING OF LANGUAGES SPOKEN

Both families misreported the language they spoke, reporting the higher status language, Urdu. The presence of a bilingual speech and language therapy assistant allowed this misreporting to be identified. When asked, both families agreed the language they actually spoke as their mother tongue was Mirpuri. It is interesting to note that Naveed's referral form, completed by a monolingual English speaker, did not identify him as speaking any language other than English.

9.6.6 OUTCOMES

9.6.6.1 Therapeutic outcomes

Having received a referral to the service, and carried out assessments to identify speech disorder, it is incumbent on the speech and language therapist to provide appropriate treatment for the child. There are currently a wide variety of treatment approaches used with speech disordered children (see Dodd 1995:13 for a summary) and although it is not yet clear which techniques are best suited to which disorders, evidence is emerging that techniques which target the specific underlying deficit in the speech processing chain may be suited to the remediation of particular disorders (Crosbie, Holm and Dodd 2005). There is evidence, for example, that a core vocabulary approach is particularly effective for children with inconsistent phonological disorder (Dodd and Bradford 2000).

Bilingual children offer a unique challenge to clinicians: there is a growing body of evidence (Holm, Dodd and Ozanne 1997, Holm *et al* 1999, Holm and Dodd 1999a, Holm and Dodd 1999b, Holm and Dodd 2001, Munro *et al* 2005) that

bilingual children develop language specific phonological systems. Evidence from case studies of bilingual children with speech disorder (see for example Holm *et al* 1996, Holm and Dodd 1999a, Holm and Dodd 1999b) indicates that such children display difficulties in all the languages they speak. Although the surface errors displayed by a child making phonological errors may be different in each language, these errors are symptomatic of the same type of disorder: there is no evidence in the literature of a child displaying symptoms of delay in one language and disorder in another (Holm *et al* 2005). A child making articulatory errors will make these errors across all the languages they speak (Holm *et al* 1996). A central underlying deficit in the speech processing chain may however result in different surface error patterns in all the languages a child speaks. Consequently, treatment targeting surface phonological errors rather than the underlying deficit will not carry over into the other language/s. Therapy aimed at articulatory errors (i.e. errors resulting from incorrect motor planning) and delivered in one language will transfer to the other language/s spoken by a child. Evidence of cross language generalisation patterns following therapeutic input to bilingual children diagnosed with phonological disorders may reflect the nature of the underlying deficit in the speech processing chain.

Naveed, diagnosed with delayed phonological acquisition, did make errors on velar plosives, fricatives and affricates in both Mirpuri and English. He received approximately five hours of clinic based therapy. This therapy was based on a drilled articulatory approach where the clinician demonstrated the correct motor patterns and gave Naveed repeated opportunities to practise production of the target sounds. This work was carried out in Mirpuri and was successful in enabling Naveed to achieve correct productions in Mirpuri. Production of velar plosives, fricatives and affricates was also noted to have moved to the target in English although at that time no direct work had been carried out in that language. It can be hypothesised that Naveed had difficulties with phonological assembly and the improvement observed in English production following therapy in Mirpuri suggests that the ability to assemble a phonological plan for word production is not language specific. This finding supports earlier evidence reported in a case study of therapeutic intervention for a Punjabi and English speaking child with speech disorder (Holm and Dodd 1999b). In that study,

therapy targeting the underlying phonological planning deficit in English resulted in increased accuracy and intelligibility in both English and Punjabi. Interestingly, following successful remediation in Mirpuri, Naveed's mother drew attention to the fact that he was still fronting the velar plosive in the English cluster /sk/, a cluster which does not exist in Mirpuri. Phonological awareness therapy in English which drew Naveed's attention to the individual sounds within the cluster, followed by drilled articulation work, also in English and targeting this particular cluster, was successful. At the end of this period of therapy reassessment of Naveed's skills, in both Mirpuri and English, indicated that he was no longer making any speech errors at single word level. The evidence that Naveed was producing /sk/ as [st] in English at a time when assessment of his Mirpuri skills showed no errors highlights the need for clinicians to assess all the languages a child speaks.

Mustafa, diagnosed with inconsistent phonological disorder, received approximately nine hours of clinic based therapy before he entered a regime of intensive therapeutic input at the Speech and Language Unit. This period of clinic based therapy aimed to offer weekly appointments, but due to a combination of factors such as client and clinician illness and client and clinician having other commitments, only eighteen sessions were delivered over a fifteen month period. The contrast between the amount of therapy the clinician aimed to deliver and the amount actually delivered closely mirrors the findings of a large randomised controlled trial of community based speech and language therapy undertaken by Glogowska, Roulstone, Enderby and Peters (2000). This trial, covering sixteen community clinics, reported an average of six hours therapy being delivered to individual clients over a twelve month period.

During his period of clinic based therapy Mustafa had input encompassing three different techniques. The initial twelve sessions, delivered over a period of twelve months, focussed on auditory discrimination and identification of individual phonemes. This was delivered in conjunction with an articulatory approach demonstrating the correct motor patterns and giving Mustafa an opportunity to practise production of the target phonemes. After this twelve

month period therapy was then changed to a core vocabulary approach. The case notes do not indicate why this change of approach occurred: it did not coincide with any re-assessment of Mustafa's abilities. Given the twelve month time period that had elapsed, and in the absence of any evidence to the contrary, it is possible to speculate that the clinician decided to try a different therapy approach in the hope of achieving more rapid results. Baker and McLeod (2004) highlighted the need for clinicians to monitor the efficacy of their intervention with children with speech disorders and, where necessary, to re-evaluate these interventions using their professional judgement with regard to the needs of an individual child. What the case notes do demonstrate beyond doubt is that in the nineteen months between ages 5;11 and 7;06 Mustafa achieved an improvement from 38.2% PCC to 67.6% PCC in Mirpuri. At this age typically developing children do not make such large improvements in their PCC scores: this improvement is likely to be the result of therapeutic intervention targeting phonological planning skills. As with Naveed, following therapeutic intervention in Mirpuri Mustafa also showed evidence of improvement in English, his PCC scores improving from 32.6% to 43.7%. This improvement is not as marked as the improvement achieved in his PCC score for Mirpuri over the same time period, but it does suggest that therapy targeting the central underlying deficit in the speech processing chain was having an effect on his output in English as well as in the targeted language, Mirpuri.

9.6.6.2 General outcomes

For Naveed and Mustafa the outcome of identification and referral to speech and language therapy was positive. Naveed was identified to the service at the relatively late age of 5;10. The data presented in Chapter Two indicates that fewer than 15% of bilingual children were identified to the service after this age. Following diagnosis Naveed had to wait on a waiting list but subsequently his delayed phonological acquisition resolved following a course of therapy.

Mustafa was referred because his mother reported neither she nor the immediate family could understand him. He commenced regular therapy at a point when his own awareness of this low level of intelligibility meant that his

class teacher felt he was beginning to withdraw from socialising with his peers. She also reported that her ability to monitor his developing reading skills was being affected as he would refuse to read aloud to her. Once therapy had commenced a Statement of Special Educational Needs was initiated by the speech and language therapist and Mustafa subsequently transferred from his existing school to a specialist Speech and Language Unit where he received intensive therapy input. Places at this specialist unit are limited and only available for the infant age range: the last date for admission is normally the September at the start of the school year in which a child is seven years old. There is a waiting list for places and early identification is therefore essential. Mustafa was admitted one term later than the usual cut off date for entry as a direct result of pressure applied by the supervising clinician who used the clinical data to argue that Mustafa had a severe disorder and had been disadvantaged by waiting on a long clinic waiting list which was specific to the bilingual caseload within the local speech and language therapy department.

For Mahboob the outcome of identification to the speech and language therapy service was less positive. Having been diagnosed with phonological disorder his parents exercised their right to decline therapeutic input. The reason for this decision is unknown, but it is possible to speculate that Mahboob's parents expect his speech difficulties to resolve spontaneously. Close examination of a parental questionnaire completed by Mahboob's mother and included in the nursery cohort of parental questionnaires reported in Chapter Eight, reveals that in response to the question 'Do you think your child's talking is as good as other children of his age?' she responded 'Yes' before spontaneously adding 'I can always understand everything he says'. It may be that in this case a more positive outcome for Mahboob would have been achieved if time had been spent examining parental expectations of speech development and matching these to the expectations of the speech and language therapist.

9.7 CONCLUSION

Closer examination of these three individual children again highlights that the identification of Pakistani heritage children with speech disorders is likely to

occur at a later age than in their monolingual peers. The three children were all within the education system and all had low PCC scores which must have had a detrimental effect on their levels of intelligibility, but only the oldest child was identified by a professional. The two children who received therapeutic input as a result of their referral both demonstrated that therapy techniques developed for monolingual speakers of English, and which target underlying deficits in the speech processing chain, can also be effective when delivered in Mirpuri. The evidence offers further support for the hypothesis that although bilingual children develop separate phonological systems for each language they speak, therapy targeting the central underlying deficit, rather than surface error patterns, will achieve improvements in both / all the languages spoken.

CHAPTER TEN

CONCLUSION

10.1 INTRODUCTION

Speech and language difficulties may be the most common pre-school impairment (Law 1992). Minority ethnic children form an increasing proportion of children in schools in England and the Pakistani heritage community is the most widely dispersed minority ethnic community in the country. Previous research had suggested that bilingual children were not present in appropriate numbers on the caseloads of speech and language therapists. Recognising these factors, this research investigated all aspects of the identification of Pakistani heritage children with speech disorders, encompassing both the identification to the speech and language therapy service of children who are at risk and the clinical identification of speech disorders in this population. In this concluding chapter the key findings of this research are summarised and consideration is given to the impact that the consequent additions to the knowledge base will have on clinical practice.

10.2 SUMMARY OF KEY FINDINGS

10.2.1 REFERRAL PATTERNS

A survey of referral patterns in the area at the centre of this research established that:

- Pakistani heritage children are referred to the speech and language therapy service but there are significant differences in their referral patterns when compared to their monolingual peers.

- The majority of Pakistani heritage children (34.56%) are referred due to concerns regarding their language skills.

- A statistically significant difference exists between the proportion of Pakistani heritage children referred due to concerns regarding speech (25.74%) when compared to their monolingual peers (58.43%).

- Only 11.32% of Pakistani heritage children referred to the speech and language service were diagnosed with speech disorder, compared to 25.72% of their monolingual peers. Pakistani heritage children with speech disorders will therefore be missing from the clinical caseload.

- The languages spoken by Pakistani heritage children are misreported by referral agents and by their parents.

- Pakistani heritage children are less likely to be identified to the speech and language therapy service by their parents than are their monolingual peers.

- First and second born children in a Pakistani heritage family are more likely to be referred than children ranked lower in the birth order.

- Pakistani heritage children may not be accessing audiology services at the same rate as their monolingual peers.

- There is prolonged use of bottle feeding in the Pakistani heritage community.

Factors influencing the referral decisions of referral agents were established as:

- Access to interpreting staff.

- Uncertainty regarding how long to monitor the progress of Pakistani heritage children prior to making a referral.

- Time constraints which limit the amount of time available for direct contact with individual children.

- The nationally imposed timing and nature of general developmental screening conducted by health visitors and school health practitioners.

- A reliance on parents to identify concerns regarding their own child's abilities.

- Lack of knowledge of normal speech and language acquisition patterns and uncertainty regarding the effect of acquiring English in addition to the mother tongue.

10.2.2 DEVELOPMENT OF A SPEECH SCREEN

The development of a speech screen facilitated:

- The development of associated normative data demonstrating the normal pattern of phonological acquisition for Pakistani heritage children acquiring Mirpuri, Punjabi and Urdu in England.

- The identification of phonological errors present in a typically developing population of Pakistani heritage children in England.

- Confirmation of the existence of children with speech disorders within the Pakistani heritage community. Monitoring of these children established that they were being overlooked by the professionals who could refer them to speech and language therapy.

Trials of the speech screen with health professionals confirmed that:

- Health visitors and school health practitioners did not find the speech screen a useful tool.

- The speech screen is a viable tool for speech and language therapists. Two SLTs who were experienced at working with Pakistani heritage children and had access to bilingual speech and language therapy assistants reported the tool to be a useful addition to their available battery of assessments. Two final year SLT students who assisted with data collection were able to use the screen effectively after a training

session and observation of a specialist administering the screen. Two non-specialist speech and language therapy staff with no access to bilingual assistants were also able to use the screen after spending a day observing its use by specialist therapists. These non-specialists did report that, possibly as a result of the pragmatics of the situation, children tried to use English and needed a great deal of encouragement to use mother tongue. They also generated two examples where children produced off-target utterances which were in fact semantically linked to the target rather than phonologically disordered. These factors would be negated if bilingual assistants were involved in sessions, as recommended by the RCSLT professional guidelines (1996: 151) 'it is essential that a bilingual professional, co-worker or translator in the client's home language is involved'.

Clinical use in two discreet areas in England confirmed that the speech screen is:

- Quick to administer.

- An effective screening measure which, within a small sample, did not give false negative results. Of eight children who had been randomly selected from a nursery cohort and whose performance on the speech screen did not give rise to any concerns, none were subsequently identified as having difficulties following a full phonological assessment. Conversely, the screen did generate some false positive results: of ten children identified with possible speech disorders following administration of the screen, only five were subsequently confirmed to have speech disorders following a full phonological assessment. Identification of false positives is preferable to identification of false negatives.

- Suitable for use with Pakistani heritage populations across England.

10.2.3 PARENT QUESTIONNAIRE

The use of a parent questionnaire was examined. For the first time such a questionnaire focussed on parental report of speech rather than language and was used exclusively with parents who:

- Lived in an area experiencing high levels of socio-economic deprivation.
- Were from a Pakistani heritage community.
- Did not read and needed a verbal translation of the questionnaire.

Findings highlighted that:

- Parents were not accurate at reporting their child's speech.
- The level of maternal education was higher in the caseload sample of children who had been referred, when compared to a sample of children who had not been referred to the speech and language therapy service.
- Parents in the community under examination reported their children to use sentences which included a high proportion (63.02%) of requests from the children for their basic needs to be met. There are no comparative data sets against which to measure these observations but it is possible to speculate that the data indicate a limited range of parent-child communicative interactions. The inability of one parent to report anything their child (a typically developing child of 3;07) could say and the very limited number (6.72%) of questions reported were cited in support of this speculation.

10.2.4 CASE STUDIES

Case studies of individual children were presented. These demonstrated:

- A detailed analysis of features of speech delay and disorder in Pakistani heritage children.

- Speech disorders in Pakistani heritage children do respond to clinical intervention and therapy targeting underlying deficits (rather than surface level features) which is conducted in one language will transfer to the child's other language.

10.3 RESEARCH FINDINGS: IMPACT ON THEORETICAL KNOWLEDGE BASE

10.3.1 THE PATTERN OF PHONOLOGICAL ACQUISITION IN PAKISTANI HERITAGE CHILDREN

The data presented in Chapter Five set out, for the first time, the order and age of phonological acquisition in Pakistani heritage children living in England. In broad terms the data confirm the general developmental pattern of phoneme acquisition observed in both English and other languages (see Grunwell 1987, Yavas 1998 and Dodd *et al* 2003 for useful summaries): thus nasals and plosives emerge earlier than fricatives, with affricates developing later than fricatives.

Jakobson (1941 / 1968) proposed that children develop their phonological repertoire using a system of binary divisions to develop distinctive features. While accepting that these distinctive features would be language specific, Jakobson suggested that the order of acquisition would be universal: 'rigid regularity in the order of [phonological] acquisitions' (quoted in Vihman 1996: 17). Ingram (1992) developed this theoretical viewpoint to one which he termed 'Neo-Jakobsonian': he argued that there are general patterns of acquisition across children but that the order of acquisition is determined by linguistic factors (or 'functional load') in addition to biological ones. Thus he suggested that a particular sound will develop later in a language if there are relatively few words in the language which utilise that sound. This notion had been previously outlined in terms of 'phonological relevance' by Cruttenden (1979) who remarked that , 'it is not the case that children cannot discriminate at all

between certain sounds, nor that they cannot produce certain sounds at all ..... the motivation of the child towards correct pronunciation may also play a part' (Cruttenden 1979: 32). Similarly Zhu Hua (2000) highlighted the concept of saliency: 'the saliency of the components in the language system determines the order of acquisition' (Zhu Hua 2000: 3).

While the pattern of phoneme acquisition reported here for Mirpuri, Punjabi and Urdu does conform in broad terms to patterns observed in other languages (i.e. supporting a Jakobsonian viewpoint on the universality of order of phonological acquisition), close examination of the data reveal an unusual observation: the early emergence of a dentalized alveolar plosive, established in 50% of the sample by age 2;05, making it the first phoneme to emerge for the majority of the normative population. This occurrence is probably explained by its elicitation in the high frequency word /d̪ʊd̪/ ('milk'). This observation provides support for Ingram's 'Neo-Jakobsonian' viewpoint that functional load will influence order of phoneme acquisition.

10.3.2 THE NATURE OF PHONOLOGICAL DISORDER IN PAKISTANI HERITAGE CHILDREN

Data presented in Chapter Five for the first time established the presence and frequency of occurrence of phonological errors in Pakistani heritage children between the ages of 1;04 and 7;11. A crucial theoretical question considered by several authors (for example Grunwell 1987, Leonard 1992 and Dodd 1995) is how children with speech disorders differ from those with typically developing phonological systems. While the different classification systems and models proposed have used different labels and different criteria a common central feature is the need to know the typical pattern of phonemic realisation at a given age. These data are now available for Pakistani heritage children.

A high incidence of voicing errors was observed in the normative population and this persisted up to the oldest age group at 7;06 – 7;11. When combined with the evidence presented in Chapter Four that adult speakers in this community have difficulty distinguishing voiced / voiceless contrasts in affricates this

observation may give an insight into the influence the written form has on the spoken form of a language. While the relationship between phonological disorder and literacy skills is the subject of much debate (see Dodd 1995 for an overview) authors interested in the nature and impact of phonological disorder have usually viewed the relationship from the perspective of what influence spoken language might have on written language rather than from a perspective of whether lack of a written language influences the phonemic representations in the spoken language. Martin, Colesby and Kaur Jhamat (1997) investigated the phonological awareness skills of four Indian heritage Panjabi (sic) speaking children, three of whom had a history of speech and language therapy intervention for speech disorders. All four children displayed difficulties with phonological awareness across both languages, the three children with a history of SLT intervention more so than the fourth child. Interestingly the authors reported: 'a hypothesis that phonological awareness would be more successful in the first language, Panjabi, because the phonological representations were longer established would find little support in these data' (1997: 70). It is accepted (Elmes 1999) that the emergence of technological advances such as the printing press, and more recently the advent of mobile phone text messaging, has had an impact on the spelling and written forms of languages and on the survival (or decline) of spoken dialectical forms. It seems likely that a language such as Mirpuri, which has never been written down, will be subject to phonological variation both between individuals and between groups within the community. It may be that voicing contrasts, particularly in affricates, are not viewed as distinct phonemes by some members of the community.

The individual case studies reported in Chapter Nine indicate that children from the Pakistani heritage community with speech disorder can be classified into the varying sub-groups of speech disorder proposed by Dodd (1995). In supporting earlier evidence from German speaking children (Fox, Dodd and Howard 2002) this suggests the classification system is also appropriate for use with children from different language backgrounds to those from a monolingual English speaking background with whom it was first developed. The case studies also provide evidence to support the theory that although bilingual children develop

language specific phonological systems (Holm and Dodd 1999a, Holm *et al* 1999), and bilingual children with speech disorder may have different surface level errors in the different languages they speak (Dodd *et al* 1997), therapeutic intervention which targets the underlying deficit in the speech processing chain rather than surface level errors, will have an effect across all the languages a child speaks (Holm and Dodd 1999b). Thus, for example, therapy delivered in Mirpuri which successfully targeted phonological planning and assembly also had an observed effect on Naveed's output in English. This supports the psycholinguistic notion of a central speech processing chain underlying output in all the languages spoken by a child.

10.3.3 THE RELATIONSHIP BETWEEN DOMINANT AND MINORITY LANGUAGES: THE CONTEXT OF LANGUAGE USE AND USE OF LANGUAGE LABELS

There is evidence in the data presented here of two different levels of interaction between dominant and minority languages: the dominance of English in educational and professional settings and the dominance of Urdu over other Pakistani heritage languages. The observed dominance of the majority language, English, among both health and education professionals and consequently in the settings where they work was unsurprising and has been previously highlighted by staff surveys conducted by several different organisations. What was surprising was the very low number of bilingual staff who were accessible to the researcher. Thus even where bilingual staff existed, such as the team of interpreters attached to the health visiting team, it proved difficult to access them to deliver training or to ascertain their views via questionnaires. The dominance of Urdu over other Pakistani heritage languages was perhaps best highlighted by a statement made to the researcher by a male Pakistani heritage teacher 'It has been decided that Urdu will be the language of the community'. The teacher, who had been educated in Pakistan and therefore in Urdu, was unable to explain who had made this reported decision.

The fact that the education system in England operates an unofficial system of immersion is accepted. The effect this has on Pakistani heritage children who

acquire English as an additional language on school entry has not been documented. Data reported in Chapter Five concerning the development of normative patterns show that up until the age band 4;06 – 4;11 there were still children who did not name any items in the speech screen. Children at this age are attending nursery and are therefore exposed to high levels of English in that setting. It is possible that this is having two effects: children may be going through the 'silent period' reported to occur when children are developing receptive skills in their new language prior to using that language expressively (Hall *et al* 2001). They may also have judged that White professionals cannot speak their language and have decided to remain silent in that situation (Grosjean 1982).

There is some limited evidence among the data reported to suggest that exposure to, and use of, English may be having a detrimental effect on mother tongue use. Older children in the normative data cohort were apparently becoming less confident in their naming abilities in mother tongue and therefore needed more prompts from the data collector. This suggests that while bilingual children's speech abilities should be assessed in all the languages they speak, where the child has only very limited abilities in one language the clinician needs to use their judgement to determine which is the child's dominant language at the time of assessment. If the child apparently has very restricted abilities in their other language, albeit that language may once have been their only language, assessment findings for that language should be treated with caution.

The effect of sequential language acquisition on the amount and phonological accuracy of output in the original language, where that language is both a minority language and a low status minority language, needs further investigation.

10.3.3.1 LANGUAGE LABELS

Evidence was presented in Chapter Two that only 45.28% of Pakistani heritage children had their language correctly named on their referral forms. This

misreporting resulted both from parental misreporting of the languages they spoke and from professionals naming the wrong language. Further evidence of the misreporting of languages spoken by parents and children was presented in Chapters Three, Five, Seven and Nine. The tendency to name Urdu or Punjabi in preference to the actual language, Mirpuri, suggests evidence of a low social status accorded to Mirpuri and the consequent operation of a ranking system in line with Li Wei's (2000: 14) comment 'A lower place is given in the status ranking to minority languages which are small, regional and of less perceived value in the international marketplace'.

The operation of a status ranking system for Pakistani heritage languages could perhaps be predicted as a result of the official governmental status accorded to Urdu in Pakistan and to the fact that Mirpuri has no written form and therefore no literary tradition to add status to the language. The operation of such a system has however not been previously confirmed in the academic literature. Close examination of previously published academic papers shows some evidence that previous researchers have believed they were analysing Punjabi language samples when in fact they were analysing Mirpuri language samples. Mirpuri and Punjabi have differences of syntax and lexicon, differences which could influence conclusions drawn from the analysis of linguistic data. The findings presented here suggest future researchers should treat the language labels 'Punjabi' and 'Urdu' with caution when working with Pakistani heritage subjects.

10.3.4 CULTURAL AND SOCIO-ECONOMIC DIFFERENCES IN COMMUNICATION PATTERNS

Parental reports of their children's communication skills presented in Chapter Eight suggested that parent / child communicative interaction in the Pakistani heritage community is limited and may be largely restricted to the child directing requests to the parent for the meeting of their physical needs. There was little evidence of commentary or requests for information. This evidence offers some support to previous evidence of the restricted nature of parent-child communicative interaction in families living in conditions of socio-economic

deprivation (Whitehurst 1997, Battle and Anderson 1998, Hoff and Tian 2005). The evidence of the survey of children referred to the speech and language therapy service which was reported in Chapter Two indicated a trend for the child referred to be either the first or second born in the family. This may also be evidence that there is limited parent-child interaction within the Pakistani heritage community: first and second born children may be more at risk because of the limited nature of the language model provided by their parents whereas children with older siblings may receive language stimulation from these older siblings.

There is little previously published evidence of interaction patterns within the Pakistani heritage community. The evidence presented here, both in the language samples reported by parents in Chapter Eight and in the observation in Chapter Six that 17% of children would either not respond to any assessments or refused to accompany bilingual assistants into the room, suggests a marked reluctance on the part of children from this community to communicate with adults and marks the start of a data set of interaction patterns within the community.

10.4 RESEARCH FINDINGS: IMPLICATIONS FOR CLINICAL PRACTICE

10.4.1 NORMATIVE DATA

Speech and language therapists routinely administer assessments and compare a child's performance to normative data. In the absence of normative data for the Pakistani heritage community clinicians were making intuitive diagnostic decisions based on knowledge of monolingual English phonological acquisition. This was not acceptable. The establishment of the normal pattern of phonological acquisition for the Pakistani heritage languages Mirpuri, Punjabi and Urdu will allow clinicians to make informed decisions regarding speech delay and disorder in children from a Pakistani heritage background. It will also allow clinicians to monitor a child's progress during therapeutic intervention.

10.4.2 A SPEECH SCREENING TOOL

The development of a speech screening tool which is both quick to administer and effective at identifying speech disorder in Pakistani heritage children provides the speech and language therapy profession with a powerful tool. This will enable the profession to meet one of its professional standards for the first time with particular regard to Pakistani heritage children (RCSLT 1996: 151): 'Appropriate language assessment material should be available in the required languages. This will encompass phonology, vocabulary, syntax and fluency'. The previous absence of any such screening tool was highlighted in a review of screening tools conducted by Pickstone *et al* (2002:253) who remarked 'an instrument suitable for use with bilingual children is required.....no measure for this age group [age four and under] for any of the majority south Asian languages used in communities throughout the UK is available'.

The existence of such a screening tool should lead to reconsideration of the question whether to screen children for speech disorder as a matter of routine. Currently in England there is a movement away from the routine health screening (including speech and language) of children. However, Law, Boyle, Harris, Harkness and Nye (2000:197) remarked 'it may be particularly appropriate for populations of children from disadvantaged or culturally diverse populations'. Two years previously the same authors had stated 'an identification procedure with good predictive validity would make a considerable contribution to this field' (Law, Boyle, Harris, Harkness and Nye 1998: 49-51). The speech screen and associated normative data give the profession an opportunity to consider the efficacy of screening all Pakistani heritage children prior to the commencement of compulsory education.

10.4.3 THE USE OF PARENT QUESTIONNAIRES

Parent questionnaires have proved a powerful tool in previous research. Earlier researchers had, however, cautioned that the applicability of such questionnaires to minority ethnic groups and groups experiencing high levels of socio-economic deprivation was unproven. The research reported here contradicts earlier findings and confirms that these earlier researchers were

correct to counsel caution in the use of questionnaires with some groups. This does not mean that the use of parental questionnaires with this community should be abandoned, rather it means that caution should be exercised when examining data gathered via parental reports. It may well be that with further adjustment a viable identification tool can be developed and this is considered below in connection with areas for future research.

10.4.4 FACILITATING REFERRAL AGENTS TO REACH REFERRAL DECISIONS

10.4.4.1 CHECKLISTS

There is evidence that GPs and paediatricians make use of checklists when deciding which children to refer to speech and language therapy (Edwards, Cape, Foreman and Brown 1989, Anderson and van der Gaag 2000, Fierro-Cobas and Chan 2001, Busari and Weggelaar 2004). The 1999 Health Survey for England (Saxena, Eliahoo and Majeed 2002: 522) looked at the records of 6,648 children and young adults aged 2-20 and concluded 'After adjusting for age, social class and chronic health status, Indian and Pakistani children were more likely to have seen their general practitioner in the preceding fortnight than the general population.' Given this propensity for Pakistani heritage children to visit their GP the inclusion of norm-referenced information relating to speech sound acquisition into checklists used by GPs may help to facilitate referrals of Pakistani heritage children with speech disorders to speech and language therapy. GPs have neither the time nor the skills needed to conduct detailed assessments of a child's speech. Reflecting this, existing checklists use very general criteria, for example Sheridan's (1975) developmental milestones, which are still widely used by many GPs, state 'still shows many infantile phonetic substitutions at age three' (Sheridan 1975: 53). Similarly broad statements are included in checklists produced by the charities ICAN and Afasic which support work with children with communication impairments. Thus their checklist for children aged three to four years old states 'having a few difficulties with a small number of sounds – for example r/w/l, f/th and s/sh/ch/dz' (Talkingpoint 2005). It should now be possible for such checklists to highlight

that such broad statements also relate to Pakistani heritage children speaking Mirpuri, Punjabi and Urdu.

Letts and Hall (2003: 225) surveyed 'early years professionals' in the north-east of England regarding their knowledge of speech and language development and found 'respondents were least confident in their knowledge of speech sound development'. The development and dissemination of a checklist outlining speech acquisition in Pakistani heritage children should also help facilitate health visitors and education staff in making referral decisions.

10.4.4.2 TRAINING OF STAFF

The role of the interpreter emerged as crucial in facilitating referral agents to identify Pakistani heritage children at risk for speech disorder. Despite this, interpreters did not participate in a training session which was delivered regarding the speech screen and there was evidence that they were unaware of normal patterns of language and phonological acquisition for any language. Evidence was also reported which indicated that interpreting staff are either not asked to identify which language/s a child speaks or collude in the misreporting of these languages.

Training needs to be provided to ensure these shortcomings are addressed. Currently there is no national statutory system in place for the accreditation of interpreting staff employed in the National Health Service (NHS). Individual departments who either employ casual interpreting staff themselves, or work alongside referral agents who make use of such staff, need to emphasise the need for appropriate training of these staff and encourage the development and acquisition of formal interpreting qualifications.

The RCSLT is actively engaged in an information gathering exercise prior to revising its existing guidelines for speech and language therapists working with bilingual clients. It is also developing new guidelines concerning the role and training of bilingual speech and language therapy assistants. This will present an opportunity for the profession to develop systems both for the interviewing

and the training of such assistants. This research highlights the need to ensure the possession of appropriate language skills by bilingual assistants and to teach them an appropriate knowledge regarding bilingual speech and language acquisition.

10.4.4.3 DEVELOPING THE ROLE OF PARENTS

Previous research has provided evidence that parents can identify concerns regarding the language development of their children. The evidence reported here does not support this conclusion for the Pakistani heritage community. Parental questionnaires did not identify children at risk for speech disorders. Pakistani heritage parents were also shown to be less likely than their monolingual English speaking peers to refer their own children to the service. There was evidence though, that referral agents are placing more responsibility on to parents to identify children causing concern. This gap needs to be addressed.

It is likely that there are two crucial areas influencing parental reporting of their child's speech and language abilities:

- Parents in this community do not share the same expectations as health and education professionals in England regarding speech and language acquisition.

- Adults in the Pakistani heritage community rarely engage in communicative interaction with children.

Speech and language therapists, particularly those working under the auspices of Sure Start funding, are increasingly adopting a preventative role with regard to speech and language disorders. There is a clear need to develop education programmes to explain to parents from this community what should be regarded as normal milestones for speech acquisition. Such sessions could also address the lack of awareness within the community regarding the role adults play in facilitating speech and language development. This lack of knowledge,

exemplified by the parental comment: 'We're going on holiday to Pakistan soon so he'll be alright then because I think they learn from other children don't they?' is not unique to the Pakistani heritage community. While it would be naïve to believe that culturally based patterns of child care and child / adult interaction can be changed as a result of education sessions, previous research (Campbell, Dollaghan, Rockette, Paradise, Feldman, Shriberg, Sabo and Kurs-Lasky 2003), supported by the current research, suggests that levels of parental education and therefore expectations, are influential in child language development and the identification of 'at risk' children. Many families in this community have close ties to their extended families. There is previous research evidence suggesting that grandparents play a pivotal role in the development of child care behaviours: Pachter and Dworkin (1997: 1147) 'When asked who or what has been the most helpful in teaching about child rearing, the most common response among all groups was the respondent's mother or parents'. It seems appropriate to suggest that education sessions should aim to include grandparents as well as parents.

10.4.4.4 LANGUAGE REPORTING

The misreporting of the languages spoken by children and their families emerged as a recurrent theme throughout the different strands of the research reported here. Two separate factors are at work: the community themselves frequently name higher status languages rather than the correct language and monolingual English speaking staff either do not have access to interpreters who could give them the correct information or have access to interpreters who themselves misreport language names. While community attitudes, influenced by the relative prestige of different languages, cannot be altered, speech and language therapists can be encouraged to develop short information sheets for other professionals who work within the same geographic area. These documents could give an outline of the main characteristics of the languages spoken in an area coupled with information explaining the need for correct identification of which language an individual can speak.

Language misreporting is of particular significance for departmental managers and policy makers who are charged with providing appropriate education and health support services and interpreting staff to this community. In claiming they speak a higher status language, community members are, ironically, causing service providers to offer a less appropriate service than they could by virtue of providing information and services in what is in fact the wrong language. The evidence presented here supports the need to check and clarify the language spoken by anyone from the Pakistani heritage community who self reports as a speaker of Punjabi or Urdu.

10.5 EVALUATION

Research activity often generates unexpected findings and sees the emergence of limitations in the design of the project. It is therefore appropriate to reflect on areas within the current research which, with the benefit of hindsight, could have been investigated either differently or in more depth.

- *Chapter Five: the development of normative data*

Using the speech screen to develop normative data meant the use of a low threshold of only one elicitation of a target. Ideally the threshold would be higher. It is hoped that the numbers of children from whom the normative data was developed has helped to mediate this issue.

- *Chapter Seven: assessing the wider application of the speech screen*

The screen was tested in one geographic area in addition to the area from which the normative sample was derived. The Pakistani heritage populations in the UK are predominantly clustered around old industrial towns in the north of England but it would be interesting to use the screen in a further area, perhaps with the Pakistani heritage populations known to live around London or Edinburgh.

- *Chapter Eight: use of a parent questionnaire*

The two samples, of caseload children and children attending a nursery who had not been referred to SLT, were not matched for age. Matching for age would yield data which could be more closely compared.

- *Chapter Nine: case studies*

The children reported in the case studies were treated in a routine clinic environment with no attempt made to control either the type of therapy offered or the intervals at which re-assessment occurred. Placing controls on to the therapeutic regime would have allowed more detailed measurement of treatment efficacy.

- An overall factor which could not have been altered in the current research was the fact that the researcher was a White, monolingual English speaking member of the majority community, as was the other specialist speech and language therapist who was involved in data collection. This obvious mismatch of ethnicity and language may have influenced the research participants' response to the situation. However, this mismatch does reflect the current reality of SLT service provision in England.

Nevertheless, despite these limitations, the research reported here provides important novel information about:

- The pattern of phonological acquisition in Pakistani heritage languages in England.

- The pattern of phonological errors present in Pakistani heritage languages in England.

- Referral patterns for Pakistani heritage children and the factors which may be influencing these patterns.

- The ability of Pakistani heritage parents to identify speech disorder in their children.

- The viability of non-SLT staff identifying Pakistani heritage children at risk for speech disorder.

10.6 FUTURE RESEARCH

There has been very little previous research investigating any aspect of speech and language acquisition in the Pakistani heritage community in England. The research reported here offers some preliminary evidence which will contribute towards answering some of the initial key questions regarding the identification of speech disorders in this community. Inevitably such research raises further issues and points the way for future research. Some areas which need to be addressed in the future are outlined below.

10.6.1 USE OF THE SPEECH SCREEN BY TEACHERS

The current research demonstrated that health visitors and school health practitioners could not use the speech screen. Apart from issues concerning time constraints and timing of contact it appeared that they did not have either the necessary auditory perceptual skills to identify word initial phonemes nor the ability to make a confident decision that the child's realisation matched the target. Teachers may well have such skills as they routinely use phonemic skills when teaching children to read. The evidence presented in Chapter Two indicates that teaching staff are making referrals of children to speech and language therapy. Teachers are used to assessing children and current central government regulations mean that they have to conduct baseline assessments of children on school entry at age five. Research is needed to investigate whether the speech screen has potential as an effective tool for use by teachers.

10.6.2 PARENT QUESTIONNAIRE

Parent questionnaires have previously proved to be a potent tool for identifying children at risk for referral to speech and language therapy. The current research provides evidence to confirm the suspicions of earlier researchers that such questionnaires would be less effective with minority ethnic communities and those living in conditions of socio-economic deprivation. This does not mean that questionnaires should never be used in such circumstances. The existing questionnaire could be modified to focus on those questions which appear to be most useful in facilitating identification i.e. those establishing levels of parental education and those encouraging the respondent to consider whether other family members can understand the child. Questions which encourage comparison of the child to others appear to be powerful identifiers, but the fundamental problem is that parents in this community do not know what the comparison should be. It might be useful to give parents specific examples of words children should be able to say clearly at different ages and ask them to monitor whether their child can do so.

10.6.3 NATURAL HISTORY OF SPEECH DISORDER IN THE PAKISTANI HERITAGE COMMUNITY

Researchers within the speech and language therapy profession are increasingly considering the natural history of specific language impairment (Bishop 2002). The existence of a quick, effective speech screen and the associated normative data which could be used to measure speech development during longitudinal studies raises the possibility of conducting such studies on a large scale with a non-English speaking community.

10.6.4 TREATMENT EFFICACY

The issue of treatment efficacy is currently the subject of a great deal of research. A recent review of speech and language therapy interventions for children with primary speech and language delay or disorder did find evidence of the positive effect of therapeutic intervention for expressive phonological difficulties (Law, Garrett and Nye 2003). The studies included in that review did

not include any information about whether the participants were from a Pakistani heritage background. There have been some studies published which looked at treatment efficacy for Pakistani heritage, Punjabi / English speaking children (Holm and Dodd 1999, Holm and Dodd 2001). These have focussed on whether there is any carry-over of therapy from one language to another. The case studies presented in Chapter Nine demonstrated that treatment techniques developed with monolingual English speakers can be effective when delivered in another language. These were essentially clinical case studies, examining clinical practice, rather than methodically catalogued, research led case studies. These case studies did indicate that therapy techniques are sometimes altered by clinicians for no apparent reason. Now that a standardized tool is available to measure progress during therapy, further research is necessary to measure in detail the efficacy of different therapy techniques for speech disordered children who speak Mirpuri, Punjabi and Urdu.

10.6.5 ANAEMIA

The evidence presented here demonstrated that a high proportion (48.11%) of Pakistani heritage children attending for initial assessment of speech and language skills are still drinking bottles of unmodified cows' milk. Previous research (Warrington and Storey 1989) and anecdotal evidence has indicated the presence of anaemia in this population and this has been linked to prolonged bottle feeding. One study was noted (Stoltzus, Kvalsig, Chwaya, Montresor, Albonico, Tielsch, Savioli, and Pollitt 2001) which demonstrated a link between childhood anaemia and language delay in children in Africa. Research needs to be conducted to investigate this possible link further, with particular regard to the Pakistani heritage community in England.

10.7 CONCLUDING COMMENT

This research has implications both for the theoretical knowledge base and for clinical practice with respect to Pakistani heritage children living in England who have speech disorder. Bilingual children from minority ethnic populations pose inevitable challenges to the monolingual practitioner who is a member of the

majority community. The evidence presented here, and the many conclusions drawn from that evidence, will facilitate the profession in developing appropriate, evidence based services for this growing section of the clinical population.

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APPENDIX 1

The screening assessments used with both monolingual and bilingual children

Assessments used at initial screening appointment

Verbal comprehension	
Pakistani heritage languages	**Derbyshire Language Scheme Rapid Screening Test Research adaptations for Mirpuri, Punjabi and Urdu**
English	**Derbyshire Language Scheme Rapid Screening Test** MASIDLOVER, M., and KNOWLES, W., Derbyshire County Council, Amber Valley and Erewash Area, Market House, Market Place, Ripley, Derbyshire DE5 3BR
Expressive language	
Pakistani heritage languages	**je zindegi**: An early sentences expressive assessment for Mirpuri, Punjabi and Urdu, Research Edition.
English	**Renfrew Action Picture Test** RENFREW, C., Speechmark, Telford Road, Bicester, Oxon, OX26 4LQ.
Speech sounds	
Pakistani heritage languages	**Bilingual Speech Sounds Screen for Pakistani Heritage Languages**, Research Edition (BiSSS)
English	**South Tyneside Assessment of Phonology** ARMSTRONG, S., and AINLEY, M., STASS Publications, 44 North Road, Ponteland, Northumberland NE20 9UR

APPENDIX 2

Questionnaire administered to teachers and nursery nurse staff in schools

I am a	Teacher	Classroom assistant	Bilingual classroom assistant
	Other: (please state)		

1.	What are the main languages spoken in [name of town] schools?
	1.
	2.
	3.
	4.
	5.

2.	Should mother tongue be encouraged at home?	
	YES	NO
Comments:		

3.	Should mother tongue be encouraged at school?	
	YES	NO
Comments:		

4.	Do you feel that only English should be encouraged at school?	
	YES	NO
Comments:		

5.	Mother tongue usage slows down the learning of English.	
	YES	NO
Comments:		

6.	In the last year have you been concerned about ANY bilingual child's speech or language skills?	
	YES	NO
If 'YES' how many children:		
If 'YES' how many of these children did you refer to the Speech and Language Therapy service?		

7.	How long should you monitor a child before referring to the Speech and Language Therapy service?	
	Immediate referral	6 months
	12 months	2 years
Comments:		

Thank you for filling in this questionnaire.

APPENDIX 3

Questionnaire administered to bilingual teachers and nursery nurse staff in schools

Bilingual teacher	Bilingual nursery nurse	Bilingual classroom assistant

Please state all the languages you speak:

1.	When you were interviewed for this job were you asked to provide any practical evidence of your language skills in languages other than English? (For example were you asked to talk to someone else who could speak that language?)	
	YES	NO
2.	Have you ever used any of the languages you speak (apart from English) with PARENTS / CARERS?	
	YES	NO
	If YES how often:	
	Rarely	Once a term
	Once a week	Daily
3.	Have you ever used any of the languages you speak (apart from English) with CHILDREN?	
	YES	NO
	If YES how often:	
	Rarely	Once a term
	Once a week	Daily
	If YES which of the following have you done (tick all that apply)	
	Instructions (eg. explaining what a child is being asked to do)	Taught a complete topic or activity
	Caring activities (eg. comforting a child who is upset)	Translate a complete story which has been told in English
	Disciplining messages (eg. telling a child off for being naughty or hurting another child)	Chatted informally to a child
	Which (if any) of these have you done TODAY?	
	Instructions (eg. explaining what a child is being asked to do)	Taught a complete topic or activity
	Caring activities (eg. comforting a child who is upset, helping a child use the toilet)	Translate a complete story which has been told in English.
	Disciplining messages (eg. telling a child off for being naughty or hurting another child)	Chatted informally to a child
4.	Schools often keep a record of which languages a child speaks. In connection with such records have you ever been asked which language you think a child speaks?	
	YES	NO

Thank you for completing this questionnaire

APPENDIX 4

Questions for interviews with referral agents

Questions for interviews with referral agents

1. Could you tell me your job title and explain how long you have been doing this job.

2. I believe you work with bilingual children as well as monolingual English speaking children. Could you give me an idea which are the languages most frequently spoken by these children?

3. Could you outline what access you have to interpreters / assistants who speak these languages?

4. You refer children to me. How do you decide which children to refer?

5. Do you feel there is any difference in the way you make decisions about referring monolingual English speaking children compared to bilingual children?

6. Do you feel as confident when assessing the speech and language skills of bilingual versus monolingual children?

7. Broadly speaking the children you refer to speech and language therapists either have difficulties with their ability to use language or their ability to produce the correct sounds. I would like to focus now on children who have difficulties with speech sounds. What impact do you feel such difficulties have on a child's everyday life?

8. Do you feel that you can identify such difficulties in bilingual children?

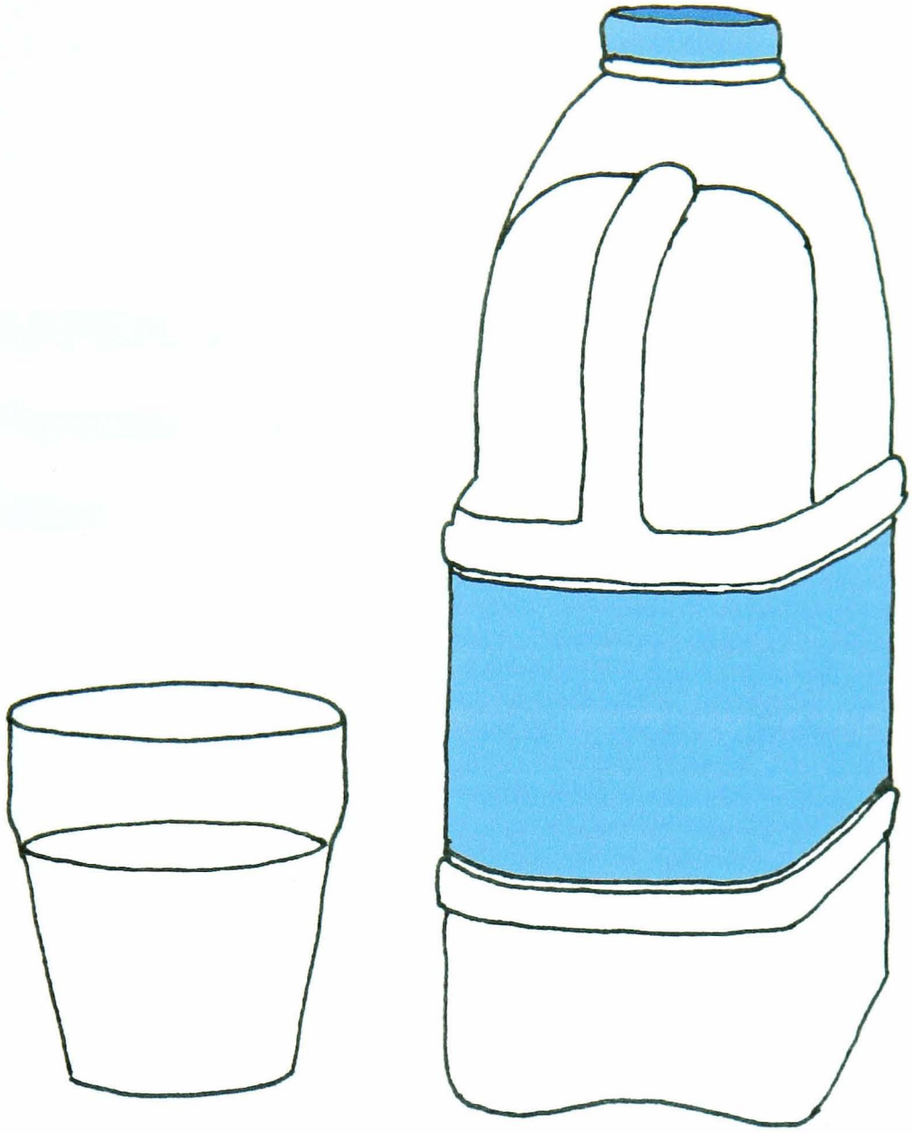
9. Would you use a screening tool if one was available to help you identify such difficulties?

10. Do you have any further comments you would like to make about the issues around bilingual children accessing speech and language therapy?

APPENDIX 5

Speech screen (BiSSS) score sheet and example of stimulus picture

Target Word		Mirpuri Target	Punjabi Target	Urdu Target	Transcription
1	*chicken*	kʊkəˈɾi	kʊkəˈɾi	ˈmʊrgi	
2	*boy*	mʊɾa	ˈmʊnɖa	ˈlɜɾka	
3	*nose*	næk	næk	naːkʰ	
4	*water*	ˈpãɳĩ	ˈpãɳĩ	ˈpãɳĩ	
5	*flower*	pʰʊl	pʰʊl	pʰʊl	
6	*hat*	ˈʈopi	ˈʈopi	ˈʈopi	
7	*milk*	ɖʊɖ	ɖʊɖ	ɖʊɖ	
8	*ear*	kæn	kæn	kɑn	
9	*clothes*	kʌpəˈɾ̥ẽ	kʌpəˈɾ̥ẽ	kʌpˈɾ̥ẽ	
10	*banana*	kela	kela	kela	
11	*floor*	ˈfɛɾɪʃ	ˈfɛɾɪʃ	faɻʃ	
12	*clean*	sɑːf	sɑːf	sɑːf	
13	*lion*	ʃeːɾ	ʃeɾ	ʃeɾ	
14	*key*	ˈdʒabi	ˈdʒabi	ˈdʒabi	
15	*dish / pot / meal*	ˈʌɳɖi	ˈhʌɳɖi	ˈhʌɳɖi	
16	*crying*	ˈɾona	ˈɾʊnɖa	ˈɾʊ ɾəha hɛ	
S1	*egg*	ʌnˈda	ʌnˈda	ʌnˈda	
S2	*eye / eyes*	æk / ækˈĩa	ɑkʰ / ɑˈkã	ẽŋk / ẽŋˈke	
S3	*elephant*	ˈɑʈʰi	ˈɑʈʰi	ˈhɑʈʰi	
S4	*flour*	ˈaʈa	ˈaʈa	ˈaʈa	
S5	*glasses*	ˈẽnka	ˈẽnka	ˈẽnək	



Target 7 milk = dood /d̪ʊd̪/	**BISSS** **BILINGUAL SPEECH SOUND SCREEN** Trial Version 1.01

APPENDIX 6

Parental consent forms and parent information letter

The Development of Speech Sounds in Bilingual Children

Parental Consent Form

Re : _____ (name of child)

I,_____(parent/guardian)
confirm that I understand the nature of the study * and I consent to my son / daughter being assessed using the task described.

My child's date of birth is_____/_____/_____

I realise that I may attend the assessment session and that if my child becomes distressed, or does not wish to continue, assessment will cease.
I also understand that I can withdraw from this study at any time. My participation or decision not to participate in no way affects my child's future access to speech and language therapy if this should be needed.

*** Either**

I have read the explanation attached

or

I have given a verbal translation of the patient consent form and I believe that this person has understood it.

Signed_____

Speech and Language Therapist_____

Bilingual Co-Worker_____

Date_____/_____/_____

The Development of Speech Sounds in Bilingual Children

Parent Information

Dear Parent / Guardian,

We are conducting a study investigating the development of speech sounds in bilingual children who hear two languages in their early years. The study will describe the way speech sounds develop in children who first learn Mirpuri / Punjabi / Urdu and then English.

We currently understand the development of speech sounds in English speaking children and this helps us to identify children who require speech therapy. We now need to describe the development of speech sounds in children who hear and speak Mirpuri / Punjabi / Urdu and English. This knowledge will then help us to offer more effective help to bilingual children.

We would like your child to take part in this study. She /he will be asked to name some pictures. If your child becomes unhappy we will stop.

The information we gather about your child will be used anonymously. This means that nobody looking at the information could identify your child.

The Speech and Language Therapist and Bilingual Co-Worker will be happy to discuss the study further and answer any questions you may have. You may withdraw from this study at any time. Your participation or decision not to participate in no way affects your child's future access to speech and language therapy if this should be needed.

Speech and Language Therapist

APPENDIX 7

Parental questionnaire

[Town] Primary Care Trust SPEECH & LANGUAGE THERAPY DEPARTMENT *"Committed to Communication"*	**Parent questionnaire**

NAME OF CHILD:		
DATE OF BIRTH:		DATE:

Please answer as many of the following questions as possible. If there is a question you would prefer not to answer you may leave it blank and continue to the next question.

Mother's name:	**Father's name:**
Date of birth:	Date of birth:
In what country did you go to school?	In what country did you go to school?
How old were you when you left school?	How old were you when you left school?
What is your occupation: Which describes you best: *(please tick)* Not working ☐ Working part-time ☐ Working full time ☐	What is your occupation: Which describes you best: *(please tick)* Not working ☐ Working part-time ☐ Working full time ☐

If you have any other children please tell us how old they are and whether they are boys or girls:

Age	Boy / Girl

Which languages are spoken in your home? Please tick ALL that apply.	
Language	**Who speaks this language?**
Mirpuri ☐	
Punjabi ☐	
Urdu ☐	
English ☐	
Other: *(Please tell us about any other languages spoken)*	

Has anyone else in your family ever had any difficulties with talking?

Yes ☐ No ☐

If you answered yes please tell us who:

Was your child born prematurely?

Yes ☐ No ☐

If you answered yes, by how many weeks?

How many ear infections has your child had? *(How many times has your child had earache?)*

Does your child go to any of the following on a regular basis?

Creche ☐ Private nursery ☐
Childminder ☐

If yes – how many hours a week?

Are you worried about your child's talking?

Yes ☐ No ☐

If you answered yes please tell us what exactly you are worried about:

Please tell us THREE of your child's longest and best sentences:

When your child talks does he / she use the same sounds as an adult would or does he / she use incorrect sounds?

Same sounds as an adult ☐ Uses incorrect sounds ☐

Do you think your child's talking is as good as other children of his / her age?

Which of the following best describes how you feel about your child's talking:

I can always understand what my child says ☐

I can always understand what my child says but sometimes I think he uses the wrong sounds ☐

I can sometimes understand what my child says ☐

I find it very difficult to understand what my child says ☐

Do you ever have to explain to other people what your child has just said?

Yes ☐ No ☐

Can the following people always understand what your child has said?	
Your child's father (mother if father answering questionnaire)	Yes ☐ No ☐
Your child's grandparents	Yes ☐ No ☐
Your child's aunts and uncles	Yes ☐ No ☐
Your child's cousins	Yes ☐ No ☐
Your child's brothers and sisters	Yes ☐ No ☐

Have you ever noticed your child mispronouncing any family names?

Yes ☐ No ☐

If yes please tell us which ones:

Have you noticed your child mispronouncing any of the following words:

Correct Word:	**Or would your child say:**
Dood (milk) Yes ☐ No ☐	**doodoo** Yes ☐ No ☐
jaabi (key) Yes ☐ No ☐	**daabi** Yes ☐ No ☐
saaf (clean /wash) Yes ☐ No ☐	**taaf or taap** Yes ☐ No ☐
kaylah (banana) Yes ☐ No ☐	**taylah** Yes ☐ No ☐
kaan (ear) Yes ☐ No ☐	**taan** Yes ☐ No ☐
rowna (cry) Yes ☐ No ☐	**lowna** Yes ☐ No ☐

Are there any other things you would like to tell us about your child's talking?

Thank you for completing this questionnaire