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SPEECH AND LANGUAGE CHARACTERISTICS
OF SELECTIVELY MUTE CHILDREN:
A SPEECH PATHOLOGY PERSPECTIVE

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A thesis submitted in fulfillment
of the requirements for the degree of
Master of Applied Science
(Speech Pathology)

School of Communication Sciences and Disorders,
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University of Sydney.

1998
"No man can safely speak, unless he would gladly remain silent"

Thomas à Kempis (1380-1471)
ABSTRACT

Selective mutism is a perplexing and complex disorder. For over a century clinicians and researchers, usually operating from a mental health perspective, have sought to understand its nature. The issue of selective silence continues to intrigue and to challenge.

Speech pathologists have been involved only rarely in studies of selective mutism. This is surprising because a consistent finding in reports is that between 20% and 50% of selectively mute children also suffer from delayed or disordered speech and/or language. These communication disorders are rarely investigated or reported in any detail. As a result, the speech and language characteristics of selectively mute children are mostly unknown, and the relationship, if any, between an underlying communication disorder and selective mutism remains largely unexplored.

This study addresses the issue of communication disorders in selective mutism by describing in some detail the speech and language characteristics, along with some other more commonly reported features, of five selectively mute children from the Illawarra area of New South Wales, Australia. Four sources of evidence are examined: case notes and discussions with treating professionals, parent interviews, audio-taped samples of subjects' spontaneous conversations, and the results of a number of speech and language assessments, including analyses of the taped samples.

The study found that four of the five subjects had a communication disorder, the most frequently represented of which was a disorder of speech. There appeared to be no clear relationship between the communication disorder and the selective mutism for three of these subjects, but an association was found for the fourth subject. The study also found that the five subjects were very different from each other. However, they did have some common features and it is possible that these features may be factors in the development and maintenance of selective mutism. An underlying communication disorder is likely to be one of these factors in some cases.
The study’s findings extend current knowledge and understanding of the communication disorders that may accompany selective mutism. As well, they demonstrate that a comprehensive assessment of selectively mute children’s communication skills is possible if the assessment is conducted in the situation where the child usually speaks, i.e., the home. In addition, seeing the child at home may provide important clues for the treatment of these children. It is suggested that selectively mute children are best managed by a multidisciplinary team which includes a speech pathologist.
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As well, I would like to thank the clinicians who were involved in the study, and the professionals from the Illawarra area of New South Wales who assisted in the location of subjects. Thanks, too, are due to my daughters, Kirree and Pippa, for the role they played in data collection.

Most importantly of all, I would like to thank the study’s five selectively mute children and their families, particularly their mothers, who welcomed me into their homes, communicated so openly, and gave of their time so generously.

Hilary M. Cleator  
Kiama  
1998
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Dedicated to Jenko
PREFACE

Silence is a powerful means of communication. My interest in silence seems to stem from my childhood when, as a small child, I was disciplined through the use of silence by my mother. I remember my sister and I trying to work out strategies which would break my mother's silences. It is probably no accident that I chose speech pathology as a career with its primary objective of promoting communication.

Selective mutism is not a common condition. I first came across the disorder when, as a newly graduated speech pathologist, a girl aged five and a boy aged ten were referred to me by their teachers during a school visit. There was little information on selective mutism in the speech pathology literature so I had to rely mainly on my clinical intuition to implement treatment. My objective was to promote verbal communication. I treated the girl in a small group with other communication disordered children where there was no pressure for her to speak; I treated the boy in the headmaster's presence by playing card games such as Snap. Eventually both children talked. The girl was found to have delayed speech and language development; the boy had no communication disorder. I wasn't sure why the children had started speaking to me, nor whether they were communicating verbally in their classrooms. I started treating the girl for her speech and language delay, and I discharged the boy without further investigation. I did not come across any more selectively mute children during ten years as a practising speech pathologist. It was not until I became interested in research that I remembered these two children.

It appears that little progress has been made towards understanding selective mutism in the twenty intervening years. There is very little information about the disorder in the speech pathology literature; most of the information appears in the mental health literature. There also appear to be no reported research studies of selective mutism conducted by speech pathologists. This study is an attempt to address the issue by examining selective mutism from a speech pathology perspective.

H.M.C.
CHAPTER 1

INTRODUCTION

The primary manifestation of selective mutism is silence, so it is to silence we turn first. Someone who is selectively mute uses silence in a pathological way, because during social interaction when they are expected to speak, they do not say a word. Thus, a general perspective of silence sheds some light on the disorder of selective mutism itself, as well as the reactions of those who come across it.

1.1 A PERSPECTIVE OF SILENCE

1.1.1 Some Perceptions and Uses of Silence

Being silent sometimes may be perceived to be a virtue, as seen in the English proverbs “children should be seen and not heard” and “silence is golden”. The Bible, too, has references to the righteousness of silence over speech, such as “He that keepeth his mouth keepeth his life: But he that openeth wide his lips shall have destruction” (Proverbs 13:3). Silence is often associated with religion, for example, during prayer it is considered to enhance devotion. In everyday life, practices like meditation, yoga and Tai Chi often involve silence, and have become popular since they are thought to help combat the rigours of life in the late 20th century.

In literature, some authors use silence as a literary device. For example, in “Middlemarch” (published in 1872) George Eliot used temporary cessation of dialogue to mark the novel’s crisis. In drama, theatre companies like the Theatre de Complicite, and playwrights like Harold Pinter and Samuel Beckett, use silence to create dramatic effects. Actors, too, often make use of silence to create impact.

Silence has been associated with power and politics. Adolf Hitler used silence during his oratories to gain power and control over his audience, and Gandhi practised days of silence as part of a policy of non-violent non-cooperation during the struggle for Indian independence. Silence has also been associated with powerlessness, and the silencing of women politically, culturally, and socially throughout modern history can be viewed as indicative of their oppression.
Maintaining silence has been interpreted as evidence of guilt. The Gospels report that Jesus’ response to Pontius Pilate was to be silent (John 19,9; Luke 23,10; Mark 15, 5; Matthew, 27, 14). It appears that Jesus’ lack of defence through his use of silence contributed to his trial’s outcome. In more recent times, suspects who are silent during police questioning have been found to be more likely to be charged than suspects who do not exercise their right to silence (Moston, Stephenson & Williamson, 1993). There is an old legal Latin maxim, *qui tacet consentire videtur*, which means he who is silent is held to consent.

Silence may be a response to trauma. People who have experienced psychological trauma, such as holocaust and war victims, often respond to their painful memories with silence. As well, they may have marked difficulty expressing their emotions through words, a condition known as *alexithymia* which was first described by Sifneos in the 1960s (Sifneos, 1988). Likewise, in families where there is a history of alcoholism, and physical and/or sexual abuse, there is often silence surrounding these issues. Family members may suffer in silence for years (Macdonald & Blume, 1986).

Silence is frequently associated with death. Mourners may observe a moment of silence when someone dies, for example at the funeral of Diana, Princess of Wales in September, 1997. In some countries the tradition of observing a period of silence to remember the war dead is an annual event. Christina Rossetti (1830-1894) described death as “the silent land” in her poem “Remember”; and Hamlet’s dying words were “The rest is silence” (Hamlet, Act V, scene ii).

In psychotherapy, silence has created controversy (Paul, 1973). Silence during the psychotherapeutic process is usually complex and often ambiguous. The therapists’s silences may be interpreted in a number of ways. For example, they are providing the patient with opportunities for greater self-disclosure, or the therapist does not wish to comment. The patient’s silences are also open to interpretation and may indicate emotions such as anxiety and hostility.

Therefore, silence is potentially ambiguous as it can be interpreted in different ways. It can have a powerful impact and it may be associated with power,
control, and guilt. It can also be a way of responding to trauma and stress and as such is frequently associated with bereavement and death.

1.1.2 Silence and Culture
Silence can have positive value in both Eastern and Western cultures, although verbal expression tends to be more highly valued in the West than in the East. During social interaction in most western cultures, talk tends to be regarded as “warm” or “affiliative”, whereas less talk tends to be regarded as “cold” or “non-affiliative” (Scollon & Scollon, 1995, p. 39). Hymes wrote of the need for phatic communication, a term he borrowed from the anthropologist Bronislaw Malinowski (1884-1942), to signify “talk for the sake of something being said” (Hymes, 1986, p. 40). Rather than being perceived as rude or unfriendly, any discourse topic is often preferable to silence. Within this preference there may be different tolerance levels for silence. Those people who find silence difficult may find it embarrassing, frustrating, and irritating. Even among professionals in clinical situations, silence can be problematic at times.

In non-Western cultures, silence may be viewed and practised in a variety of ways. In some cultures silence is a mark of respect. For example, the Japanese, Koreans, and Kipsigis (western highlands of Kenya) socialise their children to listen in the presence of adults (Harkness, 1977); and in Burundi (Central Africa) females do not speak when strangers are present unless they are spoken to (Crystal, 1997). In some other cultures, silence is an integral part of social interaction. For example, the Western Apaches of East Central Arizona respond with silence to situations which they interpret as unpredictable, such as meeting a stranger or courtship (Basso, 1972); and it is considered normal for the Paliyans of Southern India to be reticent and almost silent by the age of 40 (Hymes, 1986). Even within Western cultures there are variations. For example, in the Southern Appalachian Mountains in Southern Kentucky, close family ties and limited social contacts are associated with a tradition of silence. It is interesting to note that an increased prevalence of disorders involving communication, such as selective mutism, has been found in children from this region (Looff, 1979).

As a result of different cultural expectations, silence is one of the practices often misinterpreted in cross-cultural communication. Australian Aboriginal
cultures have a long history of their silence being misinterpreted by Anglo authorities in courts of law, in education, and in negotiation (Eades, 1992). African-Americans, too, may use what has been termed a "silent" code, or reticence, with white Americans. As a result, they may be mistaken for being shy or having poor communication skills (Terrell & Terrell, 1993).

Therefore, the practice of silence is a culturally determined learned behaviour. The way it is interpreted is largely dependent on the nature of the social interaction and the context in which the interaction takes place. However, there are wide cultural variations so that misinterpretations may occur.

1.1.3 Silence during Conversation
The way silence is practised during conversational interaction tends to be culturally determined. Some linguistic research (e.g., Sacks, Schegloff, & Jefferson, 1974) has focused on the functional role of silence during conversation among English speakers. Issues that have been studied include signals for turn taking, pause length, repair, and a listener’s use of minimal responses, such as “uh huh”, which indicate that they are following the conversation.

Complete silence during conversation is unusual and often unexpected in the West (although not among certain indigenous cultures such as some Australian Aboriginal tribes (Christie, 1985)). It often signals to the speaker that something is amiss. The listener may have lost interest, they may have been daydreaming, or they may have fallen asleep. In these instances, repair strategies, such as requests for repetition or clarification, will often be initiated. However, in conversation with someone who is selectively mute these strategies do not occur. As such, a person who is selectively mute violates interpersonal, social, and conversational expectations.

1.1.4 Conclusion
Silence, therefore, rather than being an absence of something or a void, clearly says something. However, what it says is often ambiguous, and the way it is interpreted is usually subjective. It is against this background that we can now examine the disorder of selective mutism.
CHAPTER 2

SELECTIVE MUTISM

Selective mutism is a psychiatric disorder which presents as a disorder of communication. Disagreement exists about many aspects of selective mutism including its exact nature, its cause, and how it is best treated. This chapter gives a description of selective mutism. As well, it provides an outline of communication disorders in psychiatric disorders in general, and what is currently known about communication disorders in selective mutism, specifically.

2.1 A DESCRIPTION OF SELECTIVE MUTISM

2.1.1 Definition of Selective Mutism and Historical Perspective

Selective mutism is a disorder whose defining feature is selective silence. The fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1994), hereafter referred to as DSM-IV, defines it as:

"the persistent failure to speak in specific social situations (e.g., school, with playmates) where speaking is expected, despite speaking in other situations" (p. 114).

DSM-IV (1994) also states that some selectively mute children may occasionally respond verbally, covering their mouths as they speak, or whispering, a behaviour which has been called reluctant speech by some writers (e.g., Lebrun, 1990). As well, they may communicate “by gestures, nodding or shaking the head, or pulling or pushing, or, in some cases ..... in an altered voice” (DSM-IV, 1994, p. 114).

Selective mutism was first described in 1877 in the German literature by Kussmaul who referred to the condition as aphasia voluntaria. However, it was another German, Tramer, who in 1934 coined the term elektiver mutismus, or elective mutism. Other terms that have been used to describe the disorder include speech phobia (Mora, De Vault, & Schopler, 1962), and functional and psychogenic mutism (Lebrun, 1990). Until the 1990s the disorder was known as elective mutism. However, dissatisfaction arose with the term elective, particularly from The Foundation for Selective Mutism, Inc., an American organisation for parents of selectively mute children, because it
seemed to imply that the child had some control over the behaviour. Subsequently, the term selective has been adopted because it attempts to capture the behaviour's key feature, i.e., that speech does not occur in all situations where it is expected. With the publication of DSM-IV (1994), which used the term selective mutism, the term is now in widespread use.

2.1.2 The Classification, Nature, and Cause of Selective Mutism

DSM-IV (1994) classifies selective mutism as a distinct diagnostic category with Other Disorders of Infancy, Childhood and Adolescence such as separation anxiety disorder. However, how to classify selective mutism appropriately continues to be a matter for debate (Wright, Cuccaro, Leonhardt, Kendall, & Anderson, 1995). Perhaps the classification of selective mutism as a single diagnostic entity may not be feasible because it is a symptom, or a behaviour, which may arise from a variety of factors (see below).

Controversy exists about the exact nature of selective mutism. Although it is a psychiatric disorder which is commonly regarded as a heterogeneous condition (Cline & Baldwin, 1994; Ingram, 1975; Wright, 1968; Youngerman, 1979), it has been viewed in a variety of ways. These include: a disorder of motivation (Cantwell & Baker, 1985); a learned response (Friedman & Karagan, 1973; Griffith, Schnelle, McNees, Bissinger & Huff, 1975); a neurotic disorder (Bradley & Sloman, 1975; Chethik, 1973; Elson, Pearson, Jones, & Schumacher, 1965; Pustrom & Speers, 1964; Rutter 1972); and a symptom of an emotional disorder (Gemelli, 1983) which is different from other emotional disorders (Wilkins, 1985). In some cases it has been viewed as an antecedent of schizophrenia (Eldar, Bleich, Apter, & Tyano, 1985). More recently it has been perceived as a variant of social phobia (Black & Uhde, 1992; Crumley, 1993; Lang & Wheeler, 1994); and an anxiety spectrum disorder involving "anxiety and social and speech phobias" (Leszczyk, 1993). This latter view, which is proposed by the Foundation of Selective Mutism, Inc., has gained some support from clinicians (e.g., Boon, 1994). In a recent paper, Black and Uhde (1995) proposed that selective mutism may be "a symptom of social anxiety, rather than a distinct diagnostic syndrome" (p. 847). This proposal appears to be a departure from previous views and possibly represents a new direction in thinking.
The cause of selective mutism is not known. Some causes that have been
proposed include: a genetic predisposition (Land & Wheeler, 1994; Sluckin,
Foreman, & Herbert, 1991); a “genetic transmission of an unusual personality
pattern” (Kolvin & Fundudis, 1981, p. 230); a response to separation anxiety
(Lebrun, 1990; Lesser-Katz, 1986; Pustrom & Speers, 1964); family
psychopathology (Cline & Baldwin, 1994; Hooper & Linz, 1992; Kolvin &
Fundudis, 1981); and mouth injury and trauma during early speech and
language acquisition (Browne, Fuller, & Gericke, 1975; Laybourne, 1979;
Parker, Olsen, & Throckmorton, 1960). It is likely that none of these causes is
sufficient in itself to give rise to the disorder, and that the disorder is

Speech pathologists have not usually offered views in their published literature
on the nature of selective mutism, although some seem to regard it as a
pragmatic disorder of communication (e.g., Harris, personal communication,
June 22, 1997). As well, they usually have not to have expressed their opinions
on its cause. An exception is Smayling (1959) who described the treatment of
six selectively mute children and concluded that “speech defects, while not
demonstrably the sole etiological factors, were causally related to the mutism”
(p. 58). To some extent this view has been supported in the mental health
literature. For instance, some writers have noted that speech and language
problems may have contributed to the selective mutism (e.g., Lang &
Wheeler, 1994; Rutter & Lord, 1987; Silver, 1989; Wright, 1968), while others
(e.g., Bishop & Rosenbloom, 1987; Cline & Baldwin, 1994; Halpern, Hammond &
have suggested that selective mutism may develop as a reaction to the
experience of being teased, criticised or not understood because of a
speech and/or language disorder, or an accent (e.g., foreign). These views
appear not to have been explored in either the mental health or speech
pathology literature. However, there seems little evidence that selective
mutism is just a communication disorder or arises solely as a response to a
speech and/or language problem.

2.1.3 Subtypes of Selective Mutism
Some authors have attempted to categorise selective mutism into different
subtypes (e.g., Friedman & Karagan, 1973; Hayden, 1980; Reed, 1963).
Friedman and Karagan (1973) identified two groups in the thirteen selectively
mute children they studied. The first group comprised children who they interpreted were using their mutism to manipulate their environment, and the second group comprised children for whom speaking appeared to be anxiety provoking. Reed (1963), who studied four selectively mute children, also divided selective mutism into two categories on the basis of the function it had for the child. He saw the disorder as either, (a) a learned attention seeking device, or (b) a fear reducing device. Hayden (1980) who studied 68 selectively mute children divided their mutism into four types:

“a) symbiotic mutism, characterised by a symbiotic relationship with a caretaker and a submissive but manipulative relationship with others;
b) speech phobic mutism, characterised by fear of hearing one’s own voice and use of ritualistic behaviors;
c) reactive mutism, characterised by withdrawal and depression which apparently resulted from trauma; and
d) passive-aggressive mutism, characterised by hostile use of silence as a weapon” (p. 118).

Hayden's study is of particular interest because she excluded from her four types children who displayed signs of “speech impairment or retardation” (p. 19), although they “displayed behaviors characteristic of the 68 identified selective mutes” (pp. 119 and 121) and their responses to treatment were similar.

It is easy to see why categorising cases of selective mutism into different subtypes was appealing to these writers as they tried to make sense of the disorder. However, studies such as Hayden’s have been criticised for being over-inclusive of subjects because they used broad and loose diagnostic criteria. Recent studies have tended not to adopt categorisation as a method of inquiry.

There may be several reasons why professionals vary in their views on the nature of selective mutism. (a) Perceptions may be influenced by professional or theoretical orientations. For example, the categorisation of selective mutism into different subtypes, as outlined above, reflects a mental health perspective of the disorder. (b) The condition appears to be rare so that most studies reported in the literature involve single case studies (e.g., Afnan & Carr, 1989; Brown et al., 1975; Eldar et al., 1985; Harris, 1993; Hill & Scull, 1985;
Schacht & Siegel, 1995; Watson, 1995; Youngerman, 1979), or multiple case studies involving fewer than five subjects (e.g., Adams & Glasner, 1954; Boziger & Hansen, 1984; Hargreaves, 1992; Lang & Wheeler, 1994; Nash, Thorpe, Andrews, & Davis, 1979; Reed, 1963; Sluckin, 1977). Some larger studies have been conducted, but they have usually involved fewer than 25 subjects. (Hereafter, it will be noted if studies involve more than 25 subjects.) A recent exception is a study of 100 cases (Steinhausen & Juzi, 1996), but these authors focus on characteristics of the disorder and do not offer their views on the nature of selective mutism. The small number of subjects in most studies possibly indicates that many professionals come into contact with only a few selectively mute children during the course of their professional lives.

2.1.4 Differential Diagnosis and Prevalence

Most clinicians use DSM-IV (1994) to diagnose mental conditions such as selective mutism. DSM-IV provides five criteria for diagnosing selective mutism (see Table 2 - 1). In addition, it excludes individuals with severe mental retardation who have problems communicating in any social situation.

<table>
<thead>
<tr>
<th>TABLE 2 - 1: DIAGNOSTIC CRITERIA FOR SELECTIVE MUTISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Consistent failure to speak in specific social situations (in which there is an expectation for speaking, e.g., at school) despite speaking in other situations.</td>
</tr>
<tr>
<td>B. The disturbance interferes with educational or occupational achievement or with social communication.</td>
</tr>
<tr>
<td>C. The duration of the disturbance is at least 1 month (not limited to the first month of school).</td>
</tr>
<tr>
<td>D. The failure to speak is not due to a lack of knowledge of, or comfort with, the spoken language required in the social situation.</td>
</tr>
<tr>
<td>E. The disturbance is not better accounted for by a Communication Disorder (e.g., Stuttering) and does not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder.</td>
</tr>
</tbody>
</table>


Some clinicians also use the tenth revision of the International Statistical Classification of Diseases and Related Health Problems (World Health Organisation, 1992), hereafter referred to as ICD 10, for diagnostic purposes. In addition to the criteria outlined in DSM-IV (1994), ICD 10 (1992) recommends that a distinction be made between selective mutism and transient mutism, a condition sometimes seen in pre-school children (see Section 2.1.5, below).
Selective mutism is a rare disorder (Cline & Baldwin, 1994; DSM-IV, 1994; Steinhausen & Juzl, 1996; Wilkins, 1985). DSM-IV (1994) states that it occurs "in fewer than 1% of individuals seen in mental health settings" (p. 114); and Kolvin, Fundudis and Scanlon (1979) suggested that selective mutism occurred, at a minimum, in 0.8 per 1,000 seven-year-old children and seemed to be "as rare a syndrome as infantile autism" (p. 15). However, these researchers used a narrow definition of selective mutism in their epidemiological study because they attempted to distinguish between shyness, which can be a feature of some young children's behaviour, and pathological shyness, which they defined as "an inordinate and selective shyness of strangers severe enough to persist into the seventh year of life" (p. 15). Not all researchers would agree to exclude all of the former group.

Many writers have argued that cases of selective mutism are underreported (e.g., Brown & Lloyd, 1975; Hayden, 1980; Kopp & Gillberg, 1997; Lesser-Katz, 1986; Reed, 1963; Salfield, 1950). There seem to be a number of reasons why some selectively mute children do not become part of the clinical population. (a) The disorder has been found to occur more frequently in families who live in isolated rural communities (Cline & Baldwin, 1994; Looff, 1979), and among families who live in subcultures, or ghettos, and on the periphery of society (Goll, 1979). The areas where these families live are often under-serviced. (b) Some families may demonstrate a mistrust of society and government departments, such as the health department, with the result that they avoid becoming involved with health professionals. (c) Where there are resources to deal with the problem, the number of referrals tends to increase, especially where clinicians acquire a reputation for success in managing the disorder (Cline & Baldwin, 1994; Wright, 1968). (d) Selectively mute children may escape notice when they are in the lower school grades because they do not attract attention by behaving disruptively. Based on the overwhelming response from parents of selectively mute children to The Selective Mutism Foundation, Inc., the directors proposed that selective mutism is probably more prevalent than is generally accepted (Leszczyk & Miller, 1994).

2.1.5 Onset, Duration, and Sex Differences

Most studies indicate the onset of selective mutism occurs between the ages of three and five years (Cantwell & Baker, 1985; Eldar et al., 1985; Ingram, 1975; Salfield, 1950; Silver, 1989). Around the age of four many young children
are shy and reticent with strangers and in new situations. This behaviour, which is usually considered normal, is often associated with separation anxiety (Cantwell & Baker, 1985; Rutter, 1977; Wright, 1968) and diminishes as the child matures. Difficulty distinguishing between what is considered to be "normal" behaviour, as seen in transient mutism, and abnormal behaviour, as seen in selective mutism, may confound the early diagnosis of selective mutism. To date there is no consensus about when children can be diagnosed as selectively mute. DSM-IV (1994) states that "the duration of the disturbance is at least 1 month (not limited to the first month of school)" (p. 115), whereas Cline and Baldwin (1994) suggest that children between five and seven years who demonstrate a pattern of selective silence for six months or more can be diagnosed as selectively mute. After the age of seven they suggest that a shorter duration of selective silence may be used for diagnostic purposes (Cline & Baldwin, 1994). Disagreement about the duration of some children's silent behaviour continues to cause diagnostic problems for clinicians and researchers alike.

Although the onset of selective mutism generally begins during the pre-school years and may be associated with difficulties separating from the care-giver (Black & Uhde, 1992; Halpern et al., 1971; Hayden, 1980; Pustrom & Speers, 1964; Rutter, 1972; Wright, 1968), concern may not arise until the child goes to school. One reason for late identification of the disorder may be that some families accept their child's silence in social situations (Mora et al., 1962; Strait, 1958). In some cases, this acceptance may be a factor contributing to the disorders apparent resistance to treatment because the behaviour becomes firmly established before treatment is sought.

The onset of selective mutism during adolescence has occasionally been reported (Kaplan & Escoll, 1973; Laybourne, 1979; Wilkins, 1985). However, when selective mutism occurs in adolescents, it appears to constitute one symptom of a more general disturbance (Kaplan & Escoll, 1973), such as dissociative identity disorder (Jacobsen, 1995). Selective mutism has also been known to occur in adults (Lebrun, 1990), but adult studies have seldom been reported in the literature. Selective mutism when it occurs in adolescence and adulthood will not be discussed in this study.
In some instances selective mutism may resolve itself. In other cases the condition may last for years (DSM-IV, 1994; Ingram, 1975; Kaplan & Sadock, 1991) sometimes developing into, or fluctuating with, total mutism (Lebrun, 1990). The longer the disorder persists, the less chance there is that spontaneous remission will occur (Hayden, 1980). When selective mutism persists after the age of 10, it has been found to be more “intractable” (Kolvin & Fundudis, 1981, p. 229). However, there have been few follow up studies which have attempted to explore the reasons why.

ICD 10 (1992) states that selective mutism occurs with equal frequency in both sexes, although most other sources (e.g., Cline & Baldwin, 1994; DSM-IV, 1994; Kolvin & Fundudis, 1981; Steinhausen & Juzi, 1996; Wilkins, 1985) report that it is more common among females. Most childhood disorders, such as communication and psychiatric disorders, occur more frequently among males (Kaplan & Sadock, 1991; Kolvin & Fundudis, 1981; Silver, 1989). This interesting feature of selective mutism might eventually help shed some light on the nature of disorder. For example, some emotional disorders, such as anxiety disorder, are more commonly found among females (Hill, 1987; Rutter & Graham, 1970). Anxiety is also a prominent feature of selective mutism (Black & Uhde, 1995; Croghan & Craven, 1982; Rutter, 1972; Steinhausen & Juzi, 1996; Wright et al., 1995).

2.1.6 Early Development, Behaviour, Cognition, and Education
Much of the information on selectively mute children, including their early development, behaviour, cognition, and education, is derived from case studies and studies involving fewer than 25 subjects. However, some features do recur in the literature. For example, for most selectively mute children, hearing acuity is usually normal (e.g., Adams & Glasner, 1954; Cantwell & Baker, 1985; Kolvin & Fundudis, 1981; Laybourne, 1979), and developmental milestones, such as walking, are reported to be within normal limits (e.g., Rutter, 1977). However, enuresis and encopresis, i.e., poor bladder and bowel control, are frequently reported (Hill & Scull, 1985; Kopp & Gillberg, 1997; Pustrom & Speers, 1964; Steinhausen & Juzi, 1996), and speech and language development is often delayed (see Sections 2.4.1 and 2.4.2, below).

Occasionally, there are indications of abnormal social, or pragmatic development. For example, some selectively mute children may avoid eye
contact (Leszczyk & Miller, 1994; Scott, 1977); their affect is often described as flat (Hayden, 1980) and their faces as expressionless (Lebrun, 1990; Leszczyk & Miller, 1994; Scott, 1977; Strait, 1958). They may also have a history of sleeping difficulties (Pustrom & Speers, 1964; Sluckin, 1977; Wassing, 1973); disordered eating patterns (Goll, 1979; Lebrun, 1990; Pustrom & Speers, 1964; Steinhausen & Juzi, 1996; Youngerman, 1979); and unusual oral behaviour, such as tightly sealed lips (Salfield, 1950; Scott, 1977; Wassing, 1973), and a persistent refusal to open their mouth on request (Murray 1983; Salfield, 1950; Shaw, 1971; Strait, 1958).

Abnormal motor behaviour, such as clumsiness (Afnan & Carr, 1989), tremor (Hill & Scull, 1985), tics (Kovlin & Fundudis, 1981; Reed, 1963), rigidity (Kopp & Gillberg, 1997; Landgarten, 1975; Lesser-Katz, 1986; Pustrom & Speers, 1964; Wassing, 1973), and a strange gait (Hayden, 1980), has also been observed. In most cases there appears to be no organic basis for these unusual motor behaviours (Adams & Glasner, 1954; Cantwell & Baker, 1985; Lebrun, 1990; Reed, 1963; Rutter, 1977; Silver, 1989), although Kovlin & Fundudis (1981) found that six of the 20 cases in their study, whose electroencephalogram, or EEG, records were available, had abnormal or immature EEGs. This finding led these authors to suggest that there may be a maturational component to the disorder which gradually declines during childhood.

Most selectively mute children have been found to fall within the normal range of intelligence (e.g., Bozigar & Hansen, 1984; Cline & Baldwin, 1994; Laybourne, 1979; Wilkins, 1985). However, where studies have examined larger numbers of children, i.e., 24 subjects (e.g., Kovlin & Fundudis, 1981; Wright, 1968), their aggregate intelligence quotient distribution, which is usually measured using non-verbal skills, tends to be skewed towards the lower end of normal. In spite of this, the majority of selectively mute children appear to learn well at school (Cline & Baldwin, 1994) and often excel in areas that do not require verbalisation, such as writing and art (Elson et al., 1965; Laybourne, 1979; Lebrun, 1990; Strait, 1958). It is possible that the discrepancy between written and oral communication skills arises because written language is less socially interactive as it does not require the presence of a partner.

Assessing and plotting selectively mute children's progress at school in areas such as reading obviously presents problems for teachers, and school success
can largely be dependent on a teacher’s readiness to accommodate, as well as tolerate, the child’s silence. The development of interpersonal relationships and social skills is being valued increasingly in the school curriculum and, although some selectively mute children seem to be accepted by their peers (Cline & Baldwin, 1994; Croghan & Craven, 1982; Scott, 1977), many are socially isolated (Black & Uhde, 1992; Halpern et al., 1971; Rutter, 1972; Ruzicka & Sackin, 1974; Sluckin, 1977). In spite of this, most selectively mute children readily attend school, although school phobia has been reported (Elson et al., 1965; Halpern et al., 1971; Kaplan & Sadock, 1991; Parker et al., 1960; Pustrom & Speers, 1964; Wassing, 1973).

2.1.7 Personality Features
Most writers have used descriptive terms to depict the personality features of selectively mute children. The personality features which are most frequently reported in the literature are:

- Shyness: Cline & Baldwin, 1994; Steinhausen & Juzi, 1996
- Anxiety: Black & Uhde, 1995; Rutter, 1972; Wright et al., 1995
- Sensitivity: Adams & Glasner, 1954; Cline & Baldwin, 1994
- Immaturity: Attoynatan, 1986; Kolvin & Fundudis, 1981; Reed, 1963
- Controlling: Rosenberg & Lindblad, 1978; Shreeve, 1991
- Stubbornness: Black & Uhde, 1992; Cantwell & Baker, 1985

It seems unlikely that these personality features alone are factors in the development and maintenance of the disorder because they occur in the general population. However, recurring references throughout the selective mutism literature to the personality features noted above do seem to indicate that they play some role in selective mutism, although the precise nature of that role is yet to be identified.

2.1.8 Family Characteristics
Certain family characteristics have also been noted in selective mutism. However, the findings of many studies should be regarded with caution because the studies reveal methodological problems such as lack of clear definition of selective mutism. The family characteristics noted include a family history of shyness and reserve (Brown & Lloyd, 1975; Saltfield, 1950; Scott, 1977; Wergeland, 1979; Wright & Cuccaro, 1994); an increased risk of selective mutism among children from migrant families (Bradley & Sloman, 1975; Brown & Lloyd, 1975; Steinhausen & Juzi, 1996); and as already stated, a higher than
usual incidence of family geographical and/or social isolation (Brown & Lloyd, 1975; Cline & Baldwin, 1994; Looff, 1979). Family size, socioeconomic status, and selectively mute children’s birth order among siblings do not appear to be significant family characteristics.

Selective mutism can run in families (Black & Uhde, 1995; Laybourne, 1979; Salfield, 1950; Shaw, 1971; Wright, 1968), and it is more prevalent among twins than in the general population (Cline & Baldwin, 1994; Laybourne, 1979; Mora et al., 1962; Smayling, 1959). It is possible that when selective mutism occurs in families it may reflect a close bond between siblings who tend to reinforce the behaviour in each other (Laybourne, 1979).

A high prevalence of family psychopathology among families with a selectively mute child has been reported in the literature. This has led some authors (e.g., Cline & Baldwin, 1994; Hooper & Linz, 1992) to propose that factors within the family usually play an important role in selective mutism. For example, Black & Uhde (1995) found a high incidence (70%) of social phobia among members of the 30 families they studied. A higher than usual prevalence of mental illness, such as depression, particularly in the mother, has also been described (Bradley & Sloman, 1975; Hayden, 1980; Kaplan & Escoll, 1973; Kolvin & Fundudis, 1981; Rutter, 1975; Ruzicka & Sackin, 1974; Siuckin et al., 1991). As well, physical and sexual abuse has been reported in some cases (Adams & Glasner, 1954; Black & Uhde, 1995; Hayden, 1980; Lesser-Katz, 1986; Pustrom & Speers, 1964; Reed, 1963). A tendency for these issues to be treated as “secrets” which are not spoken about to anyone other than family members has led some writers, (e.g., Laybourne, 1979; Lesser-Katz, 1986; Pustrom & Speers, 1964; Silver, 1989) to propose that “secrets” may be a factor for developing and maintaining the silent behaviour in some children.

In most cases the parents’ marriage is intact, i.e. both parents are living at home, although marital disharmony is frequently reported (Cline & Baldwin, 1994; Shreeve, 1991; Wilkins, 1985). The family constellation often features a close mother-child relationship (Hayden, 1980; Kolvin & Fundudis, 1981; Pustrom & Speers, 1964; Rutter, 1975) where the father is described as being marginalised or detached from the family (Cline & Baldwin, 1994; Elson et al., 1965; Murray, 1983; Ruzicka & Sackin, 1974; Wergeland, 1979). It is not clear to what extent these features differ from those in the general population.
However, recurring references throughout the selective mutism literature to a close mother-child bond do seem to indicate that this is one of the features of the disorder.

Selective mutism is usually an extrafamilial problem, although cases of intrafamilial mutism have been reported (Laybourne, 1979; Pustrom & Speers, 1964; Ruzicka & Sackin, 1974; Saltfield, 1950; Scott, 1977; Wergeland, 1979). When this occurs the child usually speaks to the mother but not to the father. Total intrafamilial selective mutism has also been described, but when it occurs it appears to be associated with late onset of the disorder and/or to be a feature of adolescent selective mutism (Wallace, 1987; Wilkins, 1985).

2.1.9 Summary
Selective mutism is a psychiatric disorder which presents as a disorder of communication. Although the immediate behaviour of selective mutism is clear enough, there appears to be no one distinct pattern of characteristics to explain its nature. Its cause is unknown, although it seems likely that there are several factors which lead to its development. These factors are most likely to include combinations of family and personality characteristics. However, there appears to be no one set of conditions that is either necessary or sufficient to predict its occurrence. Prominent features of selective mutism cited by some authors are summarised in Table 2-2.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is rare</td>
<td>Cline &amp; Baldwin (1994); Steinhausen &amp; Juzi (1996)</td>
</tr>
<tr>
<td>Onset is usually between three and five years</td>
<td>Silver (1989)</td>
</tr>
<tr>
<td>It is more common among girls</td>
<td>Kolvin &amp; Funduuds (1981)</td>
</tr>
<tr>
<td>Hearing is usually normal</td>
<td>Kolvin &amp; Funduuds (1981); Laybourne (1979)</td>
</tr>
<tr>
<td>Developmental milestones are usually normal, apart from:</td>
<td></td>
</tr>
<tr>
<td>(a) toilet training,</td>
<td>Cantwell &amp; Baker (1985); Steinhausen &amp; Juzi (1996)</td>
</tr>
<tr>
<td>(b) speech and language development,</td>
<td>Steinhausen &amp; Juzi (1996); Wilkins (1985)</td>
</tr>
<tr>
<td>Pragmatic skills are often impaired</td>
<td>Lebrun (1990); Leszczyk &amp; Miller (1994);</td>
</tr>
<tr>
<td>Motor behaviour is often unusual</td>
<td>Afnan &amp; Carr (1989); Lesser-Katz (1986)</td>
</tr>
<tr>
<td>Certain personality features are common</td>
<td>Cline &amp; Baldwin (1994); Black &amp; Uhde (1992)</td>
</tr>
<tr>
<td>Parents are often shy and reserved</td>
<td>Wergeland (1979); Wright &amp; Cuccaro (1994)</td>
</tr>
<tr>
<td>High prevalence among migrant families</td>
<td>Bradley &amp; Sloman (1975); Brown &amp; Lloyd (1975)</td>
</tr>
<tr>
<td>Frequent occurrence of family psychopathology</td>
<td>Rutter (1978); Sluckin et al. (1991)</td>
</tr>
<tr>
<td>Close mother-child bond</td>
<td>Hayden (1980); Pustrom &amp; Speers (1964)</td>
</tr>
<tr>
<td>It can persist for years</td>
<td>DSM-IV (1994); Kaplan &amp; Sadock (1991)</td>
</tr>
</tbody>
</table>
2.2 MANAGEMENT OF SELECTIVELY MUTE CHILDREN

2.2.1 Reactions to Selectively Mute Children

Silence from children appears to present a challenge to many adults. In the selective mutism literature, strategies, such as coercion, corporal punishment, threats, bribery, entreaty, and tricks, have been used to try to persuade these children to speak (Friedman & Karagan, 1973; Murray, 1994; Reid, Hawkins, Keutzer, McNeal, Phelps, & Mees, 1967; Shaw, 1971; Wergeland, 1979). Such measures are usually ineffective. However, tolerating the silence may only act to reinforce the behaviour (Cline & Baldwin, 1994; Lebrun, 1990). The result appears to be a "no win" situation.

Clinicians, including speech pathologists, are not immune to this problem. Some clinicians appear to find these children's seemingly interminable silence difficult to tolerate, and feelings, such as helplessness, frustration and anger, have been reported (Chethik, 1973; Hill & Scull, 1985; Ruzicka & Sackin, 1974). In these circumstances, recognition of the effects of countertransference, i.e., the clinician's own personal reactions to the child's silence, has been emphasised (Laybourne, 1979; Mora et al., 1962; Ruzicka & Sackin, 1974; Shreeve, 1991; Youngerman, 1979). Add to these feelings the fact that the disorder is rare and poorly understood, it is hardly surprising that selective mutism is often regarded as a difficult disorder to treat (Brown et al., 1975; Cantwell & Baker, 1985; Kolvin & Fundudis, 1981; Reed, 1963; Steinhausen & Juzi, 1996).

2.2.2 Professional Treatment

Broadly speaking, treatment types fall into two categories: a psychodynamic model which focuses on the assumed underlying mechanism that produces the behaviour, and a behavioural model which focuses on the behaviour itself. Treatment duration reported in the literature has ranged from one day (Reid et al., 1967) to several years (Croghan & Craven, 1982), and has been known to involve one, or a combination, of the following therapies (in alphabetical order): art therapy (e.g., Landgarten, 1975); aversion therapy (e.g., Shaw, 1971); behaviour modification (e.g., Kratochwill, 1981); dance therapy (e.g., Eldar et al., 1985); drugs (e.g., Black & Uhde, 1992); family therapy (e.g., Rosenberg & Lindblad, 1978); hypnotherapy (e.g., Goll, 1979); milieu therapy (e.g., Sluckin 1977); occupational therapy (e.g., Afnan & Carr, 1989); play therapy (Barlow, Strother & Landreth, 1986); psychotherapy
(e.g., Steinhausen & Juzi, 1996); residential therapy (e.g., Murray, 1983); self-modelling (e.g., Dowrick, 1983); and speech pathology (e.g., Harris, 1993).

Some clinicians have emphasised the importance of family and/or school involvement in these children’s management (e.g., Boziger & Hansen, 1984; Harris, 1996; Nash et al., 1979; Sluckin et al., 1991), and recently a multidisciplinary team approach has been recommended (Cline & Baldwin, 1994; Giddan, Ross, Sechler, & Becker, 1997; Wright et al., 1995). Currently, the use of anti-depressant drugs, such as fluoxetine, is under investigation (Black & Uhde, 1992; Dummit, Klein, Tancer, Asche & Martin, 1996; Wright et al., 1995) and has been reported to be effective in some cases. To date, no universally effective treatment appears to have been found. This may indicate that there is no one treatment approach which suits every case.

There is little information in the literature about the treatment of selectively mute children by speech pathologists. The information that is available seems to indicate that most speech pathologists work with other professionals, such as teachers and psychologists, when treating these children (e.g., Giddan et al., 1997; Strait, 1958; Watson, 1995). Speech pathologists often appear puzzled and uncertain about how to treat the disorder (e.g., Schacht & Siegel, 1995). Usually, speech pathologists appear to focus on eliminating the silent behaviour so that the child’s speech and language can be assessed and treated (e.g., Davies & Winter, 1996; Giddan et al., 1997; Murray, 1994), although there are some speech pathologists who treat the selective mutism in the absence of a communication disorder (e.g., Johnson & Glassberg, 1992; Strait, 1958; Watson, 1995). Much of the published literature describes successful treatment cases and usually includes an outline of strategies which were helpful in promoting verbal communication in the clinical setting (e.g., Hargreaves, 1992; Giddan et al., 1997). However, there are descriptions of selectively mute children who never speak in the clinical setting (e.g., Harris, 1993). Thus, it appears that speech pathologists, like other clinicians, have mixed success in treating these children and are often puzzled by the condition. Currently, there seems to be no recognised management procedure to assist speech pathologists in their treatment of the disorder.

2.2.3 Prognosis

Prognosis appears to be related to the child’s age at onset of the mutism and
its duration, with earlier onset and shorter duration usually correlating with a more favourable treatment response (Hayden, 1980; Kolvin & Fundudis, 1981; Murray, 1983; Wright, 1968; Wright, Miller, Cook & Littmann, 1985). Therefore, early identification and intervention have been recommended (Cline & Baldwin, 1994; Lesser-Katz, 1986; Leszczyk & Miller, 1994; Nash et al., 1979; Silver, 1989; Sluckin, 1977; Wergeland, 1979). However, deciding when young children’s silent behaviour is indicative of selective mutism and when it is part of normal shyness behaviour continues to be a problem in early intervention.

Some selectively mute children eventually communicate normally, although others may never speak in the clinical setting (Black & Uhde, 1992; Chethik, 1973; Pustrom & Speers, 1964). Others may start to talk only when they move to a new environment such as a new school (Boziger & Hansen, 1984; Cline & Baldwin, 1994; Mora et al., 1962; Scott, 1977; Sluckin et al., 1991; Wergeland, 1979). However, the elimination or disappearance of the selectively mute behaviour is not necessarily indicative of the child’s future positive social adjustment (Lang & Wheeler, 1994; Wergeland, 1979). The reason for this is not clear, and more follow-up studies are required to explore the issue.

2.2.4 Summary

Many people find selectively mute children’s silence difficult to accept. For this and other reasons, selective mutism is usually regarded as a difficult disorder to treat. However, early identification and treatment have been found to be prognostically positive. Broadly speaking, treatment falls into two types: a psychodynamic model and a behavioural model. Speech pathology is just one of many interventions that has mixed results in the disorder’s treatment.

2.2.5 Conclusion

The features described to date concern known characteristics of children with selective mutism except for details of their communication itself. Given that it is a condition which manifests itself in communication, or lack of it in certain situations, it might be expected that such characteristics would have been widely examined. However, this is not the case. To understand why this might be, it is helpful to look at the issue of communication disorders and psychiatric disorders, in general. This provides a context in which to examine the issue of communication disorders and selective mutism, specifically.
2.3 COMMUNICATION DISORDERS AND PSYCHIATRIC DISORDERS

Since the 1960s, the co-occurrence of communication disorders and psychiatric disorders has become an area of increasing interest among mental health workers and some speech pathologists. Until recently, detailed descriptions of the communication disorders which co-occur with psychiatric disorder were generally not given. Speech pathologists were rarely involved with these populations. However, this situation is gradually changing as speech pathologists become more involved in the co-management of children with psychiatric disorders.

A psychiatric disorder may be defined as "a disorder of behaviour, emotions, or relationships that is sufficiently severe, and/or sufficiently prolonged, to cause disturbance in the child or disruption of his (sic) immediate environment" (Baker & Cantwell, 1987, p. 502). Given the effects that a communication disorder may have on all three of these areas, i.e., behaviour, emotions and relationships, it is hardly surprising that there is an increased prevalence of psychiatric disorders among children with a communication disorder. However, determining cause and effect is often problematic.

2.3.1 Psychiatric Disorders in Children with Communication Disorders

Some studies have demonstrated that children with a communication disorder may have an accompanying psychiatric disorder. For example, Stevenson and Richman (1978) reported that 59% of the 22 language delayed three-year-old English children they studied also had behaviour problems, such as a conduct disorder, or enuresis and encopresis; Beitchman, Nair, Clegg and Patel (1986), in their epidemiological study of 1,655 five-year-old Canadian children, found that 50% of the 180 speech and language disordered children also had a psychiatric disorder, such as an emotional disorder, a conduct disorder, or an attention deficit disorder; and Baker and Cantwell (1987) found that 50% of 600 American children attending a community speech clinic had a diagnosable psychiatric condition, such as an emotional disorder or a disruptive behavioural disorder. Thus, these studies found that around 50% of children with a communication disorder also had a diagnosable psychiatric disorder. This is a high proportion and such diagnoses are likely to have important implications for these children’s clinical management. However, awareness of the possibility of psychiatric disorders at all in children with communication disorders is rarely found in the speech pathology literature.
2.3.2 Communication Disorders in Children with Psychiatric Disorders

Conversely, an increased prevalence of communication disorders has been found among children with a primary diagnosis of psychiatric disorder. For example, Guattieri, Koriath, van Bourgondien and Saleeby (1983) found that at least 50% of 40 consecutive child and adolescent admissions to a child psychiatric inpatient department had “moderate to severe developmental language disorders” (p.165); Chess and Rosenberg (1974) found that 24% of the 563 children attending for psychiatric assessment over a three year period in their study had “some kind of language difficulty” (p. 100); and Camarata et al. (1988) found that 97% of the 38 mild to moderate behaviour-disordered eight to thirteen-year-old children they examined performed one or more than one standard deviations below the normative sample on the Test of Language Development - Intermediate (Hammill & Newcomer, 1982). Two of the 38 children in this latter study were known to speech pathology services, although not one of the 38 children had received a formal assessment of their communication skills by a speech pathologist.

 Baltaxe and Simmons (1990) suggested that their studies demonstrated an even more "extensive and pervasive presence of communication disorders in children and adolescents with psychiatric disorders " (p. 22) than these other studies. For example, Baltaxe (1988a) examined the speech and language of 362 children and adolescents who were admitted consecutively to the Neuropsychiatric Institute of UCLA over a one year period and found that around 70%, had a communication disorder. Therefore, there seems little doubt that communication disorders can co-occur with psychiatric disorders. However, whether or not there is a relationship between the two disorders remains to be seen.

2.3.3 Types of Communication Disorder Occurring with Psychiatric Disorders

There has been some investigation into the types of communication disorder that may accompany psychiatric conditions, although whether there is a tendency for specific communication disorders to align with certain psychiatric disorders is not clear. Baltaxe (1988b) examined 480 children and adolescents who had both a psychiatric and a communication disorder. She found that 75% demonstrated both expressive and receptive language deficits; 4% displayed receptive language problems only; 13% displayed expressive speech problems only; and 10% displayed problems of voice,
pragmatics, fluency, or prosody. (Baltaxe is one of the few psychiatrists who
has investigated the area of communication disorders in psychiatric disorders
in any depth.) Therefore, it appears from this study that most communication
disorders can co-occur with psychiatric disorders. However, more detailed
studies are required to examine the types of communication disorder that co-
occur with psychiatric disorders before any conclusions can be drawn.

Psychiatric disorders have been found to be more frequently associated with
language than speech disorders (Beitchman, 1985; Baker & Cantwell, 1982;
Paterson, Bauer, McDonald, & McDermott, 1997). For example, Baker and
Cantwell (1982) studied 291 children and adolescents aged between 1;11
years and 15;11 who were attending a community speech and hearing clinic.
They found that 95% of the older language disordered children and 45% of the
younger speech and language disordered children had a diagnosable
psychiatric disorder. Only 29% of children with normal language but disordered
speech had a diagnosable psychiatric disorder. These studies do not offer any
depth of analysis as to the nature of the communication disorders, and it is
likely that more finely-tuned investigations might be more insightful. However,
language disorders do appear to be significant in psychiatric disorders.

2.3.4 Types of Psychiatric Disorder Occurring with Communication Disorders
Baltaxe and Simmons (1990) found that communication disorders occurred in
children with a wide variety of psychiatric conditions, such as mood disorders
(e.g., bipolar disorder and depressive disorders); schizophrenia, psychoses,
and personality disorders (e.g., borderline personality disorder and schizoid
personality disorder); emotional disorders (e.g., anxiety disorders and
adjustment disorder); and disruptive behavioural disorders (e.g. attention
deficit disorder, conduct disorder, and oppositional disorder). However, other
studies have found that emotional and behavioural disorders appear to have
the strongest association with communication disorders (e.g., Beitchman, et
al., 1986; Cantwell & Baker, 1991; Prizant et al., 1990). Speech pathologists do
not usually have expertise in diagnosing psychiatric disorders, so it is not clear
what are the most frequently occurring psychiatric disorders in the majority of
speech pathology clinics. Research is required to investigate this issue.

2.3.5 Some Implications Arising from these Studies
The co-occurrence of communication and psychiatric disorders seems to
suggest the possibility of an association, or a relationship, between the two disorders. For example, Cantwell, Baker and Mattison (1980) in examining 100 children aged between two and 13 who were attending a speech and hearing clinic, found that there was a stronger correlation between psychiatric disorders and speech and language impairment than with any of the other factors they examined (i.e., background and demographic factors, such as birth order and marital status; developmental factors, such as age of attaining milestones; biological factors, such as perinatal problems and hearing; and psychosocial factors, such as illness in family member and marital discord). However, these authors did not attempt to identify the nature of the association or relationship. In a later study involving 291 children attending a community speech and hearing clinic, Baker and Cantwell (1982) proposed that "the language disorder itself may be the most significant variable in determining psychiatric disturbance" (p. 124). These writers concluded that the presence of a communication disorder, particularly a language disorder, may be a risk factor for the development of a psychiatric disorder. This latter view has also been proposed and supported by others (e.g., Baltaxe & Simmons, 1988a; Rutter, Tizard, & Whitmore, 1970; Prizant et al., 1990). However, to date the relationship has not been proven. If these authors are correct then there are a number of implications arising from these findings. One implication may be that a communication disorder could be a risk factor for the development of a psychiatric disorder, such as selective mutism.

2.4 COMMUNICATION DISORDERS AND SELECTIVE MUTISM

Selective mutism is generally viewed as a disorder when children who can talk, do not talk, and who usually do not have a communication disorder. Most of the literature has been concerned with issues other than verbal skills. Thus, the communication skills of selectively mute children have rarely been investigated in any depth in the research and clinical literature. Where communication skills are reported there is some inconsistency, although there has been a trend to make superficial references to the presence of delay and/or disorder in communication skills in some cases.

2.4.1 Speech and Language Development and Communication Disorders in Selective Mutism Reported in the Mental Health Literature

In the mental health literature, most studies do not provide details of selectively mute children's speech and language development. However, some writers have reported that the speech and language development of
the selectively mute subjects was normal (e.g., Friedman & Karagan, 1973; Nash et al., 1979; Reed, 1963), while others have commented that disordered or delayed patterns of speech and language development were present (e.g., Kaplan & Sadock, 1991; Kolvin & Fundudis, 1981; Lebrun, 1990; Silver, 1989; Sluckin et al., 1991; Wilkins, 1985). Much of the information concerning speech and language development arises from parental accounts which may not always be accurate. For example, in a study conducted by Kolvin and Fundudis (1981) most parents proposed that their child’s speech and language development had been normal prior to the onset of the selective mutism. However, Kolvin and Fundudis (1981) considered that there was little evidence to support this proposal because of the high incidence of communication disorders in these children.

Where selectively mute children are reported to have communication disorders, they tend to be found in only a proportion of the subjects. For example, Wilkins (1985) found that 8 (or 33%) of the 24 selectively mute children in his study had “problems with speech” (p. 200); Wright (1968) reported that 5 (or 20%) of the 24 children in his study had “speech problems” (p. 607); and Steinhausen and Juzi (1996) found that 33 (or 33%) of the 100 cases of selective mutism in their study had “pre-morbid speech and language disorders” (p. 606). These psychiatrists do not appear to have explored further the nature of the communication disorders they found. In the only study in the mental health literature which appears to have involved the assistance of speech pathologists, Kolvin and Fundudis (1981) reported that 12 (or 50%) of their 24 subjects had “immaturities of speech, and/or other speech difficulties” (p. 224). Given that speech pathologists may detect more speech and language disorders among children than medical doctors or mental health specialists (Calnan & Richardson, 1976; Pronovost, 1951), it is hardly surprising that the study which included speech pathologists (i.e., Kolvin & Fundudis, 1981) found a higher incidence of speech and language impairment. However, it is important to note that half of this sample did not show evidence of communication disorders.

In the mental health literature there are references to the types of communication disorder that might accompany selective mutism. Broad statements are given, such as “baby talk” (Chethik, 1973, p. 488; Murray, 1983, p. 39); “unusual accents” (Wright, 1968, p. 614); “poor pronunciation” (Murray,
1983, p. 37); “functionally poor speech” (Wergeland, 1979, p. 225); and “immature and laboured speech which is difficult to follow” (Cline & Baldwin, 1994, p. 7). Other writers have commented on these children’s vocal quality when they do speak and have used adjectives such as “shaky” (Croghan and Craven, 1982, p. 89); “quiet” (Murray, 1983, p. 41); and “soft” (Silver, 1989, p. 1888; Wright, 1968, p. 610) to describe these children’s voices. These reports are tantalising at best. The absence of detail or focus on communication skills, along with the suggestion that communication disorders may predispose children to selective mutism, would seem to beg the question as to why communication skills are not analysed more closely in this population.

2.4.2 Speech and Language Development and Communication Disorders in Selectively Mute Children Reported in the Speech Pathology Literature

Much of the information on speech and language development and communication disorders in selective mutism springs from clinical populations and usually involves one case. However, there are some early studies which involved up to six cases (e.g., Adams & Giasner, 1954; Smayling, 1959). Some selectively mute children assessed by speech pathologists are reported to have normal speech and language (Hargreaves, 1992; Murray, 1994; Strait, 1958), while most others have been found to have a communication disorder. The communication disorders described include “severe delay in expressive language” (Davies & Winter, 1996, p. 8); “moderate-to-severe phonological disorder” (Harris, 1993, p. 78); and “syntactical and phonological error patterns” and “pragmatic deficits” (Giddan, Ross, Sechler, & Becker, 1997, p. 129). To date, no speech pathologist appears to have explored whether, or not, there was an association between the communication disorder and the selective mutism. Most of the communication disorders reported in the literature by speech pathologists are summarised in Table 2 - 3.

**TABLE 2 - 3: COMMUNICATION DISORDERS IN SELECTIVELY MUTE CHILDREN REPORTED BY SPEECH PATHOLOGISTS**

| Delayed Speech and Language Development | Adams & Giasner (1954) | 4 cases |
| Schacht & Siegel (1996) | 1 case |
| Smayling (1959) | 3 cases |
| Giddan, Ross, Sechler, & Becker (1997) | 1 case |
| Delayed Expressive and/or Receptive Language Development | Davies & Winter (1996) | 1 case |
| Hargreaves (1992) | 2 cases |
| Watson (1995) | 1 case |
| Delayed Speech, or Phonological Delay | Harris, 1993 | 1 case |
| Hill & Scull, 1985 | 1 case |
| Smayling, 1959 | 3 cases |
The fact that these diagnoses were made seems to indicate that some selectively mute children speak to speech pathologists, although a formal speech pathology assessment is usually regarded as difficult to conduct (Harris, 1993; Schacht & Siegel, 1995). Some of the speech and language tests reported in the literature which have been used by speech pathologists include: the Assessment of Phonological Processes (Hodson, 1980); the Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1969); the Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981); and the Clinical Evaluation of Language Fundamentals - Revised (Semel, Wiig, & Secord, 1987). Apart from identifying these tests, there is little information available to speech pathologists about how to assess these children. As well, a speech pathology assessment does not usually appear to include an examination of the selectively mute behaviour, itself.

2.4.3 A Speech Pathology Perspective of Selective Mutism

Overall, it would seem that a sizable proportion of children with selective mutism have a communication disorder. Therefore, speech pathologists have a role to play in the management of these children. However, there continues to be a dearth of information about selective mutism for speech pathologists. Books about the subject by authors such as Kratochwill (1981), a psychologist; Lebrun (1990), a professor of neurolinguistics; and Cline and Baldwin (1994), psychologists, make only brief references to the communication disorders which may accompany selective mutism. Occasionally, there are comments that speech pathologists have a limited role in the treatment of the disorder. However, the precise nature of that role has yet to be articulated.

There are occasional references to selective mutism in some speech pathology textbooks (e.g., Andrews, 1986; Bialystok & Simmons, 1988b; Darley & Spriestersbach, 1978; Fey, 1986; Haskell, 1968; Luchsinger & Arnold, 1965), but these are often brief and superficial. Curiously, journal articles written by speech pathologists were most common in the 1950s (e.g., Adams & Glasner, 1954; Smaeling, 1959; Strait, 1958), and again in the 1990s (e.g., Giddan et al., 1997; Hargreaves, 1992; Harris, 1993; 1996; Schacht & Siegel, 1995; Watson, 1995). The absence of journal articles in the intervening years is not easy to explain, especially as speech pathologists have had ongoing involvement in the treatment of selective mutism as indicated in the mental health literature (e.g., Matson, Esvedt-Dawson & O’Donnell, 1979; Rosenbaum & Kellman, 1973;
Scott, 1977). It may be that attitudes have fluctuated towards the appropriateness of speech pathology involvement in the management of selectively mute children, possibly with the changes in philosophy which have occurred during these time periods.

One of the reasons why speech pathologists seem to have played only a limited role in the assessment and treatment of selectively mute children may be the manifestation of the disorder: silence. There is little doubt that a silent child poses enormous obstacles for clinicians if they are trying to assess their communication skills. In spite of this, a cursory speech and language assessment has been recommended by some mental health writers (e.g., Bishop & Rosenbloom, 1987; Halpern et al., 1971; Hooper & Linz, 1992; Rutter, 1972; Williamson, Sanders, Sewell, Haney, & White, 1977). These writers recommend strategies such as observing the child through a one way mirror, audio-taping samples of the child’s speech at home, and obtaining parental accounts. However, a thorough assessment of the children’s communication skills appears to be regarded as a minor matter. This response may arise because selective mutism is generally viewed as a psychiatric disorder wherein the communication disorder, if it exists, remains a side issue.

Given the co-morbidity of speech and language pathology and selective mutism, it seems questionable whether the role of speech pathologists should be considered peripheral any longer. Mental health workers, who usually do not have expertise in the area of speech and language assessment, appear to have examined the issue of communication disorders in selective mutism in a fairly superficial way. It seems that no research study to date has specifically examined the speech and language characteristics of selectively mute children. As well, no study appears to have sought to identify the precise nature of the communication disorders that can accompany the condition, nor the contribution a communication disorder may make to the development and maintenance of the disorder. If current knowledge and understanding of selective mutism is to be expanded, a fuller description of the speech and language development of selectively mute children and the nature of the communication disorders that can accompany the condition is needed. Not only may this description hold important clues for the management of the disorder, but it may shed light on the disorder of selective mutism itself.
CHAPTER 3

METHOD

3.1 THE STUDY

3.1.1 Study’s Design

This was a multiple case study. It involved using as subjects all the selectively mute children the researcher could find within a specified area over a particular time period.

A study which attempted to describe the speech and language characteristics of children who were usually silent could be doomed to failure. To address this problem, part of the study took place in the situation where the subjects spoke, i.e., the home. By visiting the subjects at home the researcher was able to ensure, as much as possible, that an assessment of their speech and language characteristics was possible. Several visits to the home were made to establish the researcher’s role of guest/observer, and to build rapport. It was hoped that visiting the family over time would facilitate communication, as well as trust, and provide opportunities to observe changes, if any, in the behaviour of the subjects and other family members.

3.1.2 Rationale for Choosing Case Studies

There were several reasons for choosing case studies:

1. selective mutism is a rare disorder. Therefore, it was likely that some, but not many, cases of selective mutism would be available for study;
2. selective mutism is a complex disorder so that an in-depth description of the speech and language characteristics, as well as other aspects of the disorder, was desirable;
3. it was important to examine a variety of sources of evidence so that a comprehensive picture of each subject and their speech and language characteristics was drawn;
4. the association between the behaviour, not speaking, and the contexts, the situations in which the child does and does not speak, is unclear. Therefore, a more naturalistic research procedure which would retain the holistic and meaningful characteristics of real-life events was required;
many factors associated with selective mutism have been reported in the literature, but it is not clear whether these factors apply in the Australian context. Case studies would enable some of these factors to be explored.

3.1.3 Study’s Questions
The study asked the following questions.

1. What proportion of this group of selectively mute children had a communication disorder?
2. What was the exact nature of the communication disorder, if any, which accompanied the selective mutism?
3. Was there a relationship between the communication disorder and the selective mutism?
4. What contribution did the communication disorder make, if any, to the onset and maintenance of the selective mutism?
5. What are the assessment and treatment implications for speech pathologists in their management of selectively mute children?

3.1.4 Study’s Criteria
Subjects were chosen to fit diagnostic criteria A, B, D, and part of criterion E outlined in DSM-IV (1994) (see Table 3-1), as well as a certain age criterion.

<table>
<thead>
<tr>
<th>Diagnostic criteria for 313.23 Selective Mutism</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Consistent failure to speak in specific social situations (in which there is an expectation for speaking, e.g., at school) despite speaking in other situations.</td>
</tr>
<tr>
<td>B. The disturbance interferes with educational or occupational achievement or with social communication.</td>
</tr>
<tr>
<td>C. The duration of the disturbance is at least 1 month (not limited to the first month of school).</td>
</tr>
<tr>
<td>D. The failure to speak is not due to a lack of knowledge of, or comfort with, the spoken language required in the social situation.</td>
</tr>
<tr>
<td>E. The disturbance is not better accounted for by a Communication Disorder (e.g., Stuttering) and does not occur exclusively during the course of Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder</td>
</tr>
</tbody>
</table>

From DSM-IV, 1994, p. 115
Criterion A excluded from the study children who spoke occasionally or who had been given a diagnosis of reluctant speech. Criteria B and D included children for whom their selective mutism interfered with "social communication", and excluded children, such as migrant children, whose failure to speak was due to "lack of knowledge of, or comfort with, the spoken language" (DSM-IV, 1994, p. 115).

Criterion C was not used. The inclusion of subjects who have been silent for a short duration, e.g., one month, has received criticism in other studies because it is unlikely that a diagnosis of selective mutism can be made with any certainty in these cases (e.g., Hayden, 1980). Instead, the time-frame suggested by Cline and Baldwin (1994) was used. Cline and Baldwin (1994) suggest that a diagnosis of selective mutism can be made for children aged between five and seven who have demonstrated selectively mute behaviour for six months, or more. (In this study, children under the age of five were also included in this time-frame.) Cline and Baldwin (1994) suggest a shorter time-frame for children aged between eight and twelve.

Only part of criterion E was used. This meant that children with other psychiatric disorders, such as Autism, were excluded. However, children with a Communication Disorder were included because this was one of the study's areas of interest.

The subjects were under the age of 12. This age criterion was selected because the literature states that when selective mutism has its onset or occurs in adolescence, it is considered to be a different kind of disorder from selective mutism when it occurs in childhood (Eldar et al., 1985; Kaplan & Escoll, 1973; Laybourne, 1979; Rutter, 1972; Wilkins, 1985).

Special attention was given to adhering to the above criteria, because of criticisms which certain issues concerning criteria have received in other studies (e.g., Hayden, 1980; Wright, 1968). These issues include duration of the selectively mute behaviour and lack of clear definition of selective mutism.

3.1.5 Study's Location
The study took place in part of the Illawarra area of New South Wales which includes the regions of Kiama, Shellharbour, Shoalhaven, and Wollongong.
(The region of Wingecarribee was excluded because of dissimilarities between State Health and State Education boundaries.) According to figures available from the Illawarra Regional Information Service (1997), the estimated resident population of the Illawarra (excluding Wingecarribee) in 1995 was 332,140 (48,690 of the population was aged nine years and under). The 1991 census (The People of New South Wales, 1994) found that 22% of the population was born outside Australia. Of these, the largest groups were born in the United Kingdom (38%), Italy (7%), and countries of the former Yugoslavia (7%). The population includes 1.2% Aboriginal and Torres Strait Islanders. The area is approximately 5,784 square kilometres and extends from Helensburgh in the north to Durras Waters in the south (see Figure 3 - 1).

FIGURE 3 - 1: THE ILLAWARRA AREA OF NEW SOUTH WALES

The Illawarra has many geographic features, including a coastal plain along the eastern seaboard and a steep escarpment along the western border. The
coastal port of Wollongong, which is the most densely populated area, is strongly industrial (steel making and coal mining), while further south agricultural industries, such as dairy farming, predominate. There is also a flourishing tourist industry.

3.2 SAMPLING

Purposive sampling was used to locate as many subjects as possible. To do this three agencies were contacted. These agencies were: The Illawarra Area Health Service; the New South Wales Department of School Education (South Coast Region); and the Catholic Education Office (Diocese of Wollongong).

Telephone contact was made with departmental heads of Social Work, Psychology, Psychiatry, Speech Pathology, and Child and Family Health Services from the Illawarra Area Health Service; the Manager of Guidance and Student Welfare responsible for school counsellors in Illawarra schools; and the Coordinator of Special Education Services to Catholic schools. These professionals were asked to inform their staff about the study. Staff would then contact the researcher if they knew of potential subjects. To safeguard confidentiality, names and contact details of potential subjects were not forwarded to the researcher at this point in the procedure. Instead, staff sent a letter from the researcher to the subject's family inviting them to participate in the study. If the family was interested they would return a signed form in a stamped addressed envelope to the researcher (see Appendices A-1a and A-1b).

Those staff who were found to be most likely to come into contact with selectively mute children were recontacted half-way through the study to determine whether, or not, other potential subjects had come to their notice. This ensured that as many subjects as possible were recruited. Data collection took place over a twelve month period.

3.3 SOURCES OF EVIDENCE

Five different types of data were examined. These were: (a) case notes; (b) discussion with treating clinicians; (c) parent interviews; (d) observation and audio taped recordings of subjects when they were speaking; and (e) speech and language assessments. The information gathered from these different data sources permitted insights into the features of the subjects and their
speech and language characteristics in the following ways:

- **case notes from referring clinicians** provided background information about subjects, as well as assessment, particularly speech and language assessment, and treatment details. They also assisted in orientating the researcher and signalling aspects of the case notes which might be explored further;

- **discussions with clinicians who were currently treating the subjects** provided information on treatment choices and the responses of subjects to treatment. As well, they provided an opportunity to explore information arising from the case notes, especially if it related to speech and language of the subjects;

- **parent interviews** provided information about the family and details about development, particularly speech and language development, of the subjects. The interview helped establish rapport with the parent and provided ideas to facilitate the observation and audio-taped recording phase;

- **observation and audio-taped recordings of subjects when they were speaking at home** provided information about their speech and language characteristics;

- **speech and language assessments** provided quantitative information about speech and receptive language skills of the subjects, and supplemented information derived from their conversations.

### 3.4 Procedure

Several visits were made to the home of the subjects. The first visit was designed to orientate the families of the subjects, as well as the researcher, and to ascertain whether, or not, the child fitted the study's criteria. If they did, an outline of the study was given to the family (see Appendix A - 2). In addition, a signed consent form (see Appendix A - 3) and permission to release records (see Appendices A - 4a and A - 4b) were obtained. No specific data were gathered at this interview, apart from a summary of the selectively mute behaviour of the subjects across different settings which was collated on a grid (see Appendix A - 5). At the conclusion of the interview, arrangements were made to re-visit the family after attending the clinic where the child was currently being treated.
Following the initial interview, contact with the referring clinician was made so that a mutually convenient time could be arranged for the researcher to visit the clinic. On this visit, information from case notes was gathered (see Appendix A - 6 for the specific information sought), and discussion with the referring clinician took place. Particular emphasis was given to the type of treatment being received and the progress the subjects were making.

Following the visit to the clinic, a second visit was made to the family home to obtain parent interview data. (see Appendix A - 7 for the specific information sought). Attempts were made to ensure that parents were alone at this interview so that there were no interruptions.

Subsequent visits to the family home obtained, where possible, the audiotapes of the subjects speaking with their family members. If a subject did not speak, an audio-tape recorder was left with the family so that a recording could be made when the researcher was absent. During these visits the speech and language assessments were also administered, where possible.

3.5 DATA ANALYSIS
3.5.1 Introductory Interviews, Case Notes, Discussions with Clinicians, and Parent Interviews
Data from the introductory interviews, case notes, discussions with clinicians and parent interviews were tabulated onto a spreadsheet to form a variable by case matrix (de Vaus, 1990). Displaying the data in this way facilitated the identification of themes and trends, as well as contrasts in the data.

3.5.2 Audio-taped Recordings
Data from the audio-taped recordings were subjected to two analyses:
1. the Language, Assessment, Remediation and Screening Procedure (Crystal, Fletcher, & Garman, 1989), hereafter referred to as LARSP, to determine if any of the subjects were experiencing syntactical problems; and
2. a Social - Conversational analysis (Fey, 1986) to identify the patterns of conversational interaction of the subjects.
3.5.2.1 LARSP Analysis (Crystal, Fletcher, & Garman, 1989)
A LARSP Analysis is a "system of spontaneous language sample analysis of syntax based on normal development" (Hand, 1992, p. 2). It is a descriptive procedure which provides a comprehensive picture of the patterns of syntax during spontaneous conversation, as well as a hierarchical view of syntactical development. Each utterance is analysed at clause, phrase, and word level using a prescribed set of grammatical features. These are then transferred onto a profile. The profile is composed of four sections: section A categorises utterances where the syntax cannot not be further analysed; and sections B and C contain information concerning interaction between conversational participants. Section D was not used as it was irrelevant to the study. The remainder of the profile is concerned with syntactical analysis and comprises seven developmental stages extending from Stage I, which involves single word utterances, to Stage VII which involves complex clauses. Calculations showing the total number of utterances, the mean number of utterances per turn, and mean utterance length are entered at the bottom of the profile.

3.5.2.2 Social-Conversational analysis (Fey, 1986)
Fey's Social-Conversational analysis is a measure which provides general guidelines for indicating a person's level of social-conversational participation. The analysis involves coding each speech act and the contribution it makes to the topic of conversation. A calculation of a person's conversational "assertiveness" and "responsiveness" is then made. A normal speaker usually contributes around half the assertiveness acts of the conversation, i.e., the requestive acts, comments, topic initiations and extensions. However, an "assertiveness" score of between 20% and 50% is regarded as normal because conversational contribution is likely to vary according to the conversational partner (Fey, 1986). For example, where there is a role imbalance, e.g., a child talking with an adult, the normal proportion for the child may be closer to 20%. In Western societies it is normal to respond to all the questions posed by a conversational partner, i.e., 100% responsiveness. In practice, between 90% and 100% is usually regarded as normal.

The classification scheme involves two continua which cross to form quadrants. The assertiveness continuum measures conversational assertiveness which indicates a person's ability, and/or willingness, to take part in conversation; the responsiveness continuum indicates a person's
responsiveness to their conversational partner(s). Each quadrant represents a different pattern of conversational participation: (a) people who are active and responsive conversationalists are classified as Active Conversationalists; (b) people who are responsive but not active conversationalists are classified as Passive Conversationalists; (c) people who are neither responsive or assertive conversationalists are classified as Inactive Communicators; and (d) people who are assertive conversationalists but unresponsive to their conversational partner’s needs are classified as Verbal Non-Communicators. A figure outlining Fey’s Social-Conversational classification scheme is presented in Figure 3 - 2.

FIGURE 3 - 2: Fey’s Social-Conversational Classification Scheme for Profiling Levels of Social-Conversational Participation.

<table>
<thead>
<tr>
<th>Assertiveness</th>
<th>Active Conversationalist</th>
<th>Verbal Non-Communicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected</td>
<td>+ Assertiveness</td>
<td>+ Assertiveness</td>
</tr>
<tr>
<td></td>
<td>+ Responsiveness</td>
<td>- Responsiveness</td>
</tr>
<tr>
<td>Low</td>
<td>Passive Conversationalist</td>
<td>Inactive Communicator</td>
</tr>
<tr>
<td></td>
<td>- Assertiveness</td>
<td>- Assertiveness</td>
</tr>
<tr>
<td></td>
<td>+ Responsiveness</td>
<td>- Responsiveness</td>
</tr>
</tbody>
</table>

RESPONSIVENESS

Social-conversational analysis was used because it is specifically designed to see if a child is fitting the roles of an Active Conversationalist. Fey (1986) describes children with selective mutism as Inactive Communicators. It is not known if children with selective mutism are able to be Active Conversationalists in situations where they do speak, or whether this communication behaviour is an underlying problem. Social conversational analysis of samples taken from home was designed to investigate this.
3.5.3 Speech and Language Assessments

The standardised assessment procedures used were: the Peabody Picture Vocabulary Test - Revised (Dunn & Dunn, 1981); the Test of Auditory Comprehension of Language (Carrow-Woolfolk, 1985) for subjects over the age of five; and the Verbal Comprehension Section of the Reynell Developmental Scales - Revised (Reynell, 1977) for subjects under the age of five. A pilot version (1985) of The Smit-Hand Articulation and Phonology Evaluation (Smit & Hand, 1997), hereafter referred to as SHAPE, was used to assess the subjects’ speech.

3.5.3.1 Peabody Picture Vocabulary Test - Revised

The Peabody Picture Vocabulary Test - Revised (Dunn & Dunn, 1981) gives norm-referenced standard scores of receptive language for subjects aged between 2;6 and 40;0. The test consists of 175 test items, or pages, which are arranged in order of increasing difficulty and presented in booklet form. Subjects are required to select one drawing (from four black and white pen drawings) which best illustrates the meaning of a stimulus word presented orally by the examiner.

The rationale for using the Peabody Picture Vocabulary Test was threefold: (a) it is quick and easy to administer; (b) it is a non-intrusive assessment measure; and (c) it makes no verbal demands on a subject who can complete the test by pointing. The Peabody Picture Vocabulary Test - Revised (Dunn & Dunn, 1981) provided information on the subjects’ receptive vocabulary.

3.5.3.2 Test of Auditory Comprehension of Language - Revised

The Test of Auditory Comprehension of Language - Revised (Carrow-Woolfolk, 1985) gives norm referenced standard scores of receptive language for subjects aged between 3;0 and 9;11. The test is divided into three sub-tests: 1. Word classes and Relations, i.e. vocabulary; 2. Grammatical Morphemes; and 3. Elaborated Sentences. Each category consists of 40 test items. A subject is required to point to one drawing, out of three black and white pen drawings, which best illustrates the language form being tested after the stimulus has been read aloud by the examiner. Examples of stimulus questions include: “riding a little bicycle”; “show me the shortest man”; and “she takes the puppy to the boy”.

The Test of Auditory Comprehension of Language was chosen because it places no verbal demands on subjects and because it assesses the ability to comprehend more complex language than presented in the PPVT-R.

3.5.3.3 Reynell Developmental Language Scales - Revised
The Verbal Comprehension section (Scale A) of the Reynell Developmental Language Scales - Revised (Reynell, 1977) was used to assess the oral comprehension skills of subjects who were under the age of five. The Reynell gives norm-referenced standard scores of receptive language development for subjects aged between 1;6 and 7;0, and is considered to be most sensitive for children in the 2;0 and 5;06 age group. It has 67 test items which are arranged in 10 sections in order of increasing difficulty. The scale assesses the ability to comprehend simple objects, descriptions, concepts, e.g., colour and position, and commands by pointing or moving a number of toy models. A more complex gesturing response than the two previously described tests is required for this test.

The Verbal Comprehension section of the Reynell Developmental Language Scales was chosen because it places no verbal demands on a subject, and its presentation is attractive to young children.

3.5.3.4 Smit-Hand Articulation and Phonology Evaluation - pilot version
The SHAPE (Smit & Hand, 1997) was used to assess the speech of the subjects. This test is composed of 80 colour photographs of well-known objects, such as a "sock", and "chips", which are displayed two at a time in a photograph album. The test is used to assess a subject’s ability to produce the speech sounds of English in different combinations in words.

There were two reasons for using this test rather than other phonological assessment procedures. (a) It provides many opportunities for the production of different sounds in different word positions; and (b) as most children are familiar with looking through photograph albums, its more commonplace presentation provides a less threatening experience than some other phonological assessment procedures.

If a subject would not agree to participate with the administration of the SHAPE, other measures to assess their speech would be taken. These
measures included a profile of their speech from the audio-taped recordings of their spontaneously occurring conversation, or the administration of the SHAPE by a family member when the researcher was absent.

3.6 RELIABILITY AND VALIDITY
Inter-judge reliability of the results of the speech and language assessment procedures and the transcriptions from the audio-tapes and their analyses was measured in the following ways. The results of all speech and language assessments were reassessed blind by another qualified speech pathologist; 10% of the LARSP (Crystal, Fletcher, & Garman, 1989) and 10% of the Social and Conversational analyses (Fey, 1986) were subjected to inter-judge reliability by another speech pathologist; and 10% of the transcriptions of the audio-taped spontaneously occurring conversations were checked for accuracy by a trained assistant.

Parent interviews and spontaneously occurring conversations were audio-taped so that they could be subjected to ongoing and repeated evaluation. As well, threats to construct and content validity were averted by the examination of different types of data, i.e., case notes; discussion with treating clinicians; parent interviews; observation and audio taped recordings of subjects when they were speaking; and speech and language assessments.

3.7 ETHICS APPROVAL
Application for approval to conduct the study was obtained from the Human Ethics Committee of the University of Sydney (Ref. No. 94/10/30), and from three organisations within the Illawarra area of New South Wales that were identified as having responsibilities for service delivery to children. These were the Illawarra Area Health Service, the New South Wales Department of School Education (South Coast Region), and the Catholic Education Office (Diocese of Wollongong).
CHAPTER 4

RESULTS

Five families with a selectively mute child were contacted by their clinicians, and they all agreed to participate in the study. Subjects' referral sources are outlined in Table 4 - 1. (Each subject is identified by a letter of the alphabet.)

TABLE 4 - 1: REFERRAL SOURCES FOR SUBJECTS' INCLUSION IN THE STUDY

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech Pathologist (private)</td>
<td>School Counsellor</td>
<td>School Counsellor</td>
<td>School Counsellor</td>
<td>Speech Pathologist</td>
</tr>
</tbody>
</table>

Biographical profiles of the five subjects are to be found in Appendix B. These profiles give an impression of each subject which includes a brief description of their general development (especially their speech and language development), a history of their selective mutism, their treatment progress, their responses to the research process, and an outline of their family members. Some of the more salient features from these profiles are summarised below.

4.1 INTERVIEWS, CASE NOTES AND CLINICAL DISCUSSIONS

4.1.1 Subjects

There were two female and three male subjects who ranged in age between three and eight years. All the subjects were living with their natural parents and all the parents were married. There were two migrant families, but only one family where a language other than English was spoken at home. The subjects came from a range of socio-economic backgrounds. All the subjects spoke at home but not at school.

Throughout the research process the main contact person was the subject's mother; three fathers were met only in passing. Subjects A, C, and D were not present during the first interview but subjects B and E were. This was to have ramifications for later phases of the research process (see Discussion). A summary of the demographic information and selectively mute behaviour of the subjects can be found in Table 4 - 2 (overleaf).
TABLE 4 - 2: INFORMATION ABOUT THE SUBJECTS INCLUDING THEIR SELECTIVELY MUTE BEHAVIOUR

<table>
<thead>
<tr>
<th>SUBJECTS:</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male</td>
<td>Male</td>
<td>Female</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Age</td>
<td>5 : 3</td>
<td>8 : 4</td>
<td>7 : 6</td>
<td>7 : 5</td>
<td>3 : 6</td>
</tr>
<tr>
<td>Position in Family</td>
<td>3 / 4</td>
<td>3 / 4</td>
<td>2 / 2</td>
<td>2 / 3</td>
<td>2 / 3</td>
</tr>
<tr>
<td>PARENTS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>Married</td>
<td>Married</td>
<td>Married</td>
<td>Married</td>
<td>Australian</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Australian</td>
<td>Australian/ Croatian</td>
<td>Australian</td>
<td>Serbian/ Croatian</td>
<td>Australian</td>
</tr>
<tr>
<td>Language</td>
<td>English</td>
<td>English and Croatian</td>
<td>English</td>
<td>English</td>
<td>English</td>
</tr>
<tr>
<td>Spoken at Home</td>
<td>English</td>
<td>English and Croatian</td>
<td>English</td>
<td>English</td>
<td>English</td>
</tr>
<tr>
<td>Occupation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father</td>
<td>General Practitioner</td>
<td>Painter and Decorator</td>
<td>Salesman</td>
<td>Fitter</td>
<td>Salesman</td>
</tr>
<tr>
<td>Mother</td>
<td>Housewife</td>
<td>Housewife</td>
<td>Part-time Store packer</td>
<td>Part-time cleaner</td>
<td>Physio-therapist</td>
</tr>
<tr>
<td>Socio-economic Status (Daniel, 1983)</td>
<td>1.8</td>
<td>5.6</td>
<td>4.9</td>
<td>4.8</td>
<td>3.2</td>
</tr>
</tbody>
</table>

PATTERNS OF SELECTIVE MUTISM:
- Speaks at home: Yes, Yes, Yes, Yes, Yes
- Speaks at school: No, No, No, No, No

4.1.2 Information from Case Notes

It was possible to view case notes for all subjects. The case notes of subjects A and E had been compiled by speech pathologists, the case notes of subjects B and D by a social worker and a psychologist, and subject C had two sets of case notes compiled by a speech pathologist and a school counsellor. Information from the case notes was relevant because it revealed the type of information that had been compiled, how much the clinician had been able to assess the subject, the type of treatment the child was receiving, and the progress they had made. It also revealed whether, or not, a speech pathologist had been involved in the subject’s management.

The case notes showed considerable variety in the information that had been compiled. For example, demographic information and treatment notes were provided for all the subjects, but personal and family information had been recorded for three subjects only; four clinicians appeared to have conducted assessments but only two clinicians had made a diagnosis of selective mutism; and only three subjects’ case notes included school reports. The type of information covered in the case notes is summarised in Table 4 - 3 (overleaf).
<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPILED BY</td>
<td>SP</td>
<td>PSY</td>
<td>SC/SP</td>
<td>PSY</td>
<td>SP</td>
</tr>
</tbody>
</table>

**TYPE OF INFORMATION COLLECTED BY CLINICIAN:**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes/Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Personal</td>
<td>No</td>
<td>Yes</td>
<td>Yes/Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Family</td>
<td>No</td>
<td>Yes</td>
<td>Yes/Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**ASSESSMENTS CONDUCTED BY CLINICIAN:**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech and Language</td>
<td>No</td>
<td>Yes</td>
<td>Yes/No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Psychological</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes/N/A</td>
<td>Yes</td>
<td>N/A</td>
</tr>
<tr>
<td>Diagnosis of</td>
<td>Not</td>
<td>Made</td>
<td>Made/Not</td>
<td>Not</td>
<td>Not</td>
</tr>
<tr>
<td>selective mutism</td>
<td>Made</td>
<td>Made</td>
<td>Made</td>
<td>Made</td>
<td>Made</td>
</tr>
</tbody>
</table>

**REPORTS INCLUDED IN CASE NOTES:**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>School Report</td>
<td>No</td>
<td>Yes</td>
<td>Yes/Yes</td>
<td>Yes</td>
<td>N/A</td>
</tr>
<tr>
<td>Speech pathologist’s</td>
<td>N/A</td>
<td>No</td>
<td>Yes/N/A</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>e.g. Social Work</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

SP: Speech Pathologist  
PSY: Psychologist  
SC: School Counselor  
N/A: Not applicable

### 4.1.3 Information from Discussion with Clinicians

It was possible to discuss all the subjects with their current clinicians. The clinicians showed considerable variation in their perceptions of selective mutism and their treatment approaches. Only one subject was receiving treatment from two clinicians; all the other subjects were being treated by one clinician. Two subjects were receiving treatment in the form of home programmes for their communication disorders from speech pathologists, and two subjects were receiving an eclectic treatment approach for their selective mutism from a psychologist. The speech pathologist treating subjects A and C and the psychologist treating subject B expressed frustration and impatience at these subjects’ lack of progress. Treatment duration ranged from one month to 54 months. The diagnoses, treatment, and treatment duration of the subjects are summarised in Table 4 - 4 (overleaf).
TABLE 4 - 4: SUMMARY OF THE SUBJECTS' DIAGNOSES, TREATMENT AND TREATMENT DURATION

<table>
<thead>
<tr>
<th>Subject</th>
<th>Diagnosis</th>
<th>Treatment</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Moderate Articulation Disorder</td>
<td>Speech Pathology - Home Programme</td>
<td>5 months</td>
</tr>
<tr>
<td>B</td>
<td>Selective Mutism</td>
<td>Eclectic - play, cognitive, gestalt, behavioural and family therapy, Phonemic Awareness Group</td>
<td>21 months</td>
</tr>
<tr>
<td>C</td>
<td>Speech Pathology; Severe Verbal Dyspraxia School Counsellor; Selective Mutism</td>
<td>Speech Pathology - Phonemic Awareness Group</td>
<td>54 months</td>
</tr>
<tr>
<td>D</td>
<td>Emotional Problem</td>
<td>Emotional Counselling</td>
<td>1 month</td>
</tr>
<tr>
<td>E</td>
<td>Articulation Delay/Disorder</td>
<td>Eclectic - play, cognitive, gestalt, behavioural and family therapy, Speech Pathology - Home Programme</td>
<td>15 months</td>
</tr>
</tbody>
</table>

4.1.4 Information from Parent Interviews

The mothers of the subjects were interviewed alone, apart from subject E's mother, who was interviewed when subject E was present. However, subject D's older sister was at home on the day of the interview because she was unwell. This was to have ramifications for later phases of the research process (see Discussion). The data from the interviews showed much variety and few consistent features. Some of the more salient features are outlined below.

4.1.4.1 Family Features

Marital disharmony was found to exist in two of the families. Subject B's mother discussed the issue openly, but subject D's mother made no reference to the domestic violence she had experienced (nor to her post natal depression). In these families, it was observed that the fathers seemed to be marginal in the family structure and there appeared to be a close mother-child bond. These mothers also described themselves as shy and reticent about communicating with people other than family members.

All the mothers remarked that their families had limited social contacts outside the immediate family circle. A preference for a quiet lifestyle, i.e., not having many social contacts, was reported by three of the mothers. As well, the mothers of subjects A and C made statements during either the interview or conversation which indicated that they viewed the world outside the home as threatening. For example, subject C's mother remarked that it was worrying going for walks because of the threat of dog attacks. She also seemed to have a close bond with her children.
Three of the families had a known family history of communication disorders. Two of subject A's siblings had a history of speech problems (one of these children had also been selectively mute) and two of his cousins were reported to have had communication problems when they were young (stuttering and transient mutism); subject B's younger brother had a speech disorder and his mother appeared to be a clutterer; and subject C's paternal grandmother, aunt, and nephew were reported to have some "pronunciation problems" (mother). A number of siblings were reported to have other difficulties which included a history of limited social skills and shyness. However, these difficulties were not reported to be interfering to any extent with their social interactions at school. A summary of the subjects' family features is presented in Table 4 - 5.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Disharmony</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Psychiatric Illness</td>
<td></td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Family's Socialisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patterns</td>
<td>Limited</td>
<td>Limited</td>
<td>Limited</td>
<td>Limited</td>
<td>Limited</td>
</tr>
<tr>
<td>Quietness Valued at Home</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Mothers:</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Shy and Reticent</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Close Mother/Child</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Bond</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Threatened</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Fathers:</td>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Marginalised</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Family History of:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Communication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Not</td>
</tr>
<tr>
<td>Disorders</td>
<td>(siblings)</td>
<td>(mother, cousins)</td>
<td>(mother's brother)</td>
<td>family)</td>
<td>known</td>
</tr>
<tr>
<td>2. Limited Social Skills, and Shyness.</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Selective Mutism</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### 4.1.4.2 Subjects' General Development and Health

All the mothers were able to provide detailed accounts of the general development and health of the subjects. These accounts revealed some similarities but much variation between subjects. The mothers of subjects B and
C had been unwell during these subjects' pregnancies, and the mothers of subjects A and B had taken drugs which are contra-indicated during pregnancy. Subjects B and C had been born prematurely, and subject C had been delivered by caesarean section. Subject A had been born with a medical condition, and subjects B and C had histories of developmental delay and poor co-ordination. All the subjects had experienced some form of toilet training difficulties, but none of the subjects had experienced feeding problems when they were babies, nor later eating problems. However, subjects A and D had sleeping problems. Subject C was reported to have a history of poor health, and all the subjects, apart from subject A, had a history of at least one episode of ear infection. Currently, only subject E had a hearing loss. Thus, all the subjects had experienced some developmental delay or health problems, or both. These are summarised in Table 4 - 6.

**TABLE 4 - 6: SUBJECTS' GENERAL DEVELOPMENT AND HEALTH**

<table>
<thead>
<tr>
<th>GENERAL DEVELOPMENT:</th>
<th>A</th>
<th>B</th>
<th>SUBJECTS C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>Normal</td>
<td>Nausea</td>
<td>High blood Pressure</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Drugs</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Birth</td>
<td>Normal</td>
<td>Premature - 36 weeks</td>
<td>Normal</td>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td>Medical Conditions</td>
<td>Ventricular septal defect</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Motor Development</td>
<td>Normal</td>
<td>Slow</td>
<td>Slow</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Co-ordination</td>
<td>Good</td>
<td>Poor</td>
<td>Poor</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Feeding Problems</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Eating Problems</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sleeping Problems</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Toilet Training</td>
<td>Slow</td>
<td>Slow</td>
<td>Slow</td>
<td>Slow</td>
<td>Slow</td>
</tr>
<tr>
<td>HEALTH</td>
<td>Health Problems</td>
<td>Eczema, Asthma</td>
<td>Poor health (lots of colds)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Ear Infections</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Hearing</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Mild bi-lateral loss</td>
</tr>
</tbody>
</table>

4.1.4.3 Subjects' Personality Features

Each mother was asked for her opinion about her child’s personality and all mentioned at least two of the features associated with selective mutism that have been reported in the literature. The most commonly reported personality feature was stubbornness. The personality features of the subjects are outlined in Table 4 - 7 (overleaf).
TABLE 4 - 7: SUBJECTS' PERSONALITY FEATURES

<table>
<thead>
<tr>
<th>PERSONALITY</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlling</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Stubbornness</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Shyness</td>
<td>No</td>
<td>Unknown</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Immaturity</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Anxiety</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

4.1.4.4 Subjects' Speech and Language Development

The accounts of the subjects' speech and language development given by the mothers again showed variation. The early speech and language development of all the subjects was reported as normal, although subjects C and E were described as quiet babies when compared with their siblings. Only subject A was delayed in saying his first meaningful word. However, the speech and language development of subjects A, B, and C appeared to stop during the second year, and for subject C had never really recommenced. For subjects A and B progress has been gradual since its resumption. Currently, the speech of subjects A, C, and E was occasionally unintelligible. Only subject C appeared to have been teased by her peers about her speech. Thus, some factors regarding speech and language development appeared for four out of the five subjects. Salient features from the mothers' accounts of their children's speech and language development are summarised in Table 4 - 8.

TABLE 4 - 8: SUMMARY OF SUBJECTS' SPEECH AND LANGUAGE DEVELOPMENT

<table>
<thead>
<tr>
<th>Early Development</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of First Word</td>
<td>Normal</td>
<td>Normal</td>
<td>Quiet baby</td>
<td>Normal</td>
<td>Quiet baby</td>
</tr>
<tr>
<td></td>
<td>16 months</td>
<td>12 months</td>
<td>12 months</td>
<td>&quot;Average&quot;</td>
<td>12 months</td>
</tr>
<tr>
<td>Cessation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Resumption</td>
<td>30 months</td>
<td>48 months</td>
<td>Not really</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Progress since</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resumption</td>
<td>Gradual</td>
<td>Gradual</td>
<td>Limited</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Intelligibility</td>
<td>Poor</td>
<td>Normal</td>
<td>Poor</td>
<td>Good</td>
<td>Poor</td>
</tr>
<tr>
<td>Teased about</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Speech</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N/A: Not Applicable
4.1.4.5 History and Description of Selective Mutism and School Experience

All the mothers provided details of their child’s selective mutism which again showed few similarities and considerable variation. For example, the onset of subject E’s selective mutism had been associated with a precipitant, i.e., separating from his mother, while for the other subjects the onset had been gradual. The subjects demonstrated different selectively mute behaviour from one another. For example, two subjects appeared to “seal” their lips, and one subject avoided eye contact. Parents’ reactions to the selectively mute behaviour were also different. For instance, the parents of subjects A, B and D appeared to accept the selectively mute behaviour, whereas the parents of subjects C and E expressed concern.

The school experiences of the subjects were again different from one another, although there were some similarities among some subjects. For example, subjects A and D had experienced separation anxiety when they started pre-school. All the subjects, apart from subject C, had good school attendance records, and all the subjects, apart from subject D, were reported to have school friends. Subject D was described as isolated at school. Subjects A, B, and E were reported to have a positive attitude towards school while subjects C and D did not like school. A summary of the mothers’ accounts of the history and description of the subjects’ selective mutism and their school experience is presented in Table 4 - 9.

| TABLE 4 - 9: SUMMARY OF THE HISTORIES AND DESCRIPTIONS OF SUBJECTS’ SELECTIVE MUTISM AND SCHOOL EXPERIENCE |
|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| HISTORY OF SELECTIVE MUTISM:                     | SUBJENTS                                         |
| Onset                                             | Gradual                                         | Gradual                                         | Gradual                                         | Sudden                                         |
| Precipitant                                       | No                                              | No                                              | No                                              | Child care                                     |
| Reaction of Parents                              | Acceptance                                      | Acceptance                                      | Concern                                         | Acceptance                                     |
| DESCRIPTION OF SELECTIVE MUTISM:                 |                                                  |                                                  |                                                  |                                                |
| Pattern                                           | Unpredictable                                   | Consistent                                      | Consistent                                      | Consistent                                     |
| Eye Contact                                       | Yes                                             | Yes                                             | Yes                                             | No                                             |
| Affect                                            | Flat                                            | Normal                                          | Normal                                          | Flat                                           |
| Lips Sealed                                      | Yes                                             | Yes                                             | No                                              | No                                             |
| Use of Gesture                                   | Yes                                             | Yes                                             | No                                              | No                                             |
| SCHOOL EXPERIENCE:                               |                                                  |                                                  |                                                  |                                                |
| Spoke at Pre-School                              | Yes                                             | No                                              | Yes                                             | No                                             |
| Separation Anxiety                               | Yes                                             | No                                              | Yes                                             | Yes                                           |
| School Attendance                                | Good                                            | Good                                            | Poor                                            | Good                                           |
| School Friends                                   | Yes                                             | Yes                                             | Yes                                             | No                                             |
| Attitude towards School                          | Positive                                        | Positive                                        | Negative                                        | Negative                                       |
| School                                            |                                                  |                                                  |                                                  | Positive                                       |
4.1.4.6 Parents' and Subjects' Views on the Causes of Selective Mutism

When possible during the study, parents were asked for their views on the cause, or causes, of their child's selective mutism. Everyone who was asked gave a different reason. As well, subjects B and D had given their views to their parents which had been recorded in the case notes. The views of the parents and subjects are summarised in Table 4 - 10.

<table>
<thead>
<tr>
<th>TABLE 4 - 10: FAMILY MEMBERS' AND SUBJECTS' VIEWS ON CAUSES OF SELECTIVE MUTISM</th>
</tr>
</thead>
</table>
| **SUBJECT A:** MOTHER  
   Family's nuclear structure.  
   Social isolation  
   **FATHER:** Developmental stage  
   **SUBJECT:** Not known |
| **SUBJECT B:** "more than shyness";  
   contributing effects of drugs during pregnancy.  
   **FATHER:** Not known  
   **SUBJECT:** "my idiot brain" (Case notes) |
| **SUBJECT C:** Speech and language problems.  
   **FATHER:** Not known  
   **SUBJECT:** Not known |
| **SUBJECT D:** "I don't know"  
   Response to being told to be quiet at home.  
   **FATHER:** "not born to talk" (Case notes) |
| **SUBJECT E:** A feature of shyness behaviour.  
   **FATHER:** Not known  
   **SUBJECT:** Not known |

4.1.5 Parents' and Subjects' Responses to the Research Process

All the mothers appeared to respond favourably to the research process so that it was possible to establish a good rapport, almost from the outset. The mothers of subjects A, C and E were particularly helpful in creating an environment conducive to their child talking, and it is interesting to note that these were the subjects who spoke during language sampling (see Section 4.2.1, below).

Subjects B, C, D, and E seemed to become more relaxed during each visit. However, although subject A appeared relaxed and communicated and related normally on the first visit, his selectively mute behaviour appeared at the outset of the second visit and seemed to become progressively more established on subsequent visits. Thus, the research process appeared to have a positive effect on all but one of the subjects, and this was partly reflected in their increased verbal and/or non-verbal communication.
4.2 SPEECH AND LANGUAGE ASSESSMENTS

4.2.1 Language Sampling

It was possible to obtain an audio-taped sample of each subject’s spontaneously occurring conversations with members of their family at home. Subjects A, C and E spoke when the researcher was present; subjects B and D were audio-taped by their mothers when the researcher was absent. Once the audio-taped recordings of the subjects’ conversations had been collected, they were transcribed and transferred into a word processing package (Claris Works, 1993). The transcriptions, as well as some field notes, are to be found in Appendix C. The methods by which the subjects’ conversations were audio-taped and the identity of their conversational partners are summarised in Table 4.11.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio-taped by</td>
<td>Audio-taped by</td>
<td>Audio-taped by</td>
<td>Audio-taped by</td>
<td>Audio-taped by</td>
<td></td>
</tr>
<tr>
<td>Researcher</td>
<td>Researcher</td>
<td>Researcher</td>
<td>Researcher</td>
<td>Researcher</td>
<td></td>
</tr>
<tr>
<td>Knowledge of Recording</td>
<td>Ignorant</td>
<td>Ignorant</td>
<td>Ignorant</td>
<td>Aware</td>
<td>Aware</td>
</tr>
<tr>
<td>Conversational Partners</td>
<td>Mother, Researcher’s Daughter, Researcher</td>
<td>Mother, Brother</td>
<td>Mother, Sister, Researcher</td>
<td>Sister, Sister</td>
<td>Mother</td>
</tr>
</tbody>
</table>

4.2.2 LARSP Analysis and Observation

The transcriptions of the five samples from the audio-taped spontaneously occurring conversations were subjected to a Language, Assessment, Remediation Screening Procedure analysis (Crystal, Fletcher, & Garman, 1989), or LARSP analysis. As well, observations of the subjects’ use of semantics, prosody and fluency were made. Details of the LARSP analyses of the first 50 conversational turns (where possible) for each subject are to be found in Appendix D. The results of the LARSP analyses and observations of subjects’ use of semantics, prosody and fluency are described below.
4.2.2.1 Subject A

The 26 minute conversational interaction between subject A, his mother, the researcher, and the researcher’s daughter (aged 11) was somewhat structured as attempts were made to elicit conversation from subject A (see Appendix C - 1). This is reflected in the LARSP profile (see Figure 4 - 1, p. 51) which reveals that Stimulus Type was biased towards Questions which subject A almost always answered. He made only a limited number of initiating sentences, i.e., Commands and Questions, which was possibly a feature of the nature of the conversational interaction, as well as the age of the other participants. There were some Abnormal Responses (Structural) but these seemed to be related to his avoidance of certain words, such as “grandma”, rather than to a language problem.

Syntax Analysis

A LARSP analysis of subject A’s spontaneous language sample demonstrated that he was using a full range of syntactical structures for his age (see Figure 4 - 1, p. 51). The sample showed that most clause and phrase structures were represented up to, and including, Stage V. He was using syntactical features from all seven stages and had considerable use of clause complexing. There were some syntactical errors, such as the incorrect form of irregular verbs, e.g., “that’s cos I keep my eye on that six” (see Appendix C - 1, line 96, p. XLII); and some omissions of the auxiliary verb in verb phrases, e.g., “there you gone past it” (line 333, p. XLVII), and the determiner in noun phrases e.g., “sky train” (line 177, p. XLIV). However, overall, he did not seem to have a problem with syntax.

Observation of the lexicon

There were no errors in word usage, nor evidence of word finding difficulties.

Prosody

Subject A’s speech showed no prosodic anomalies.

Fluency

There was no evidence of any stuttering. Where hesitations occurred they appeared to be related to subject A’s difficulties producing certain sound combinations in specific words, e.g., “grown up” (lines 557-559, p. LII).

Summary

Analysis of subject A’s spontaneous language sample, plus observation, revealed that subject A’s only problem with oral language expression seemed to be his awareness of his speech problems which occasionally interfered with his readiness to say certain words.
### FIGURE 4.1: SUBJECT A’S LARSP PROFILE

#### A

<table>
<thead>
<tr>
<th>Unanalysed</th>
<th>Problematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Unintelligible</td>
<td>1 Incomplete</td>
</tr>
<tr>
<td>2 Symbolic</td>
<td>2 Ambiguous</td>
</tr>
<tr>
<td>Noise</td>
<td></td>
</tr>
<tr>
<td>3 Deviant</td>
<td>3 Stereotypes</td>
</tr>
</tbody>
</table>

#### B

**Responses**

<table>
<thead>
<tr>
<th>Stimulus Type</th>
<th>Totals</th>
<th>Normal Response</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>100</td>
<td>Repetitions</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>Elliptical</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduced</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Full</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Minor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3+</td>
<td>Structural</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Problems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>96</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### C

**Spontaneous**

<table>
<thead>
<tr>
<th>Minor Responses</th>
<th>Vocatives</th>
<th>Other Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Stage I

<table>
<thead>
<tr>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>X</td>
<td>DN</td>
<td>38</td>
</tr>
<tr>
<td>Q</td>
<td>X</td>
<td>VV</td>
<td>71</td>
</tr>
</tbody>
</table>

#### Stage II

<table>
<thead>
<tr>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Y</td>
<td>Adj N</td>
<td>3</td>
</tr>
<tr>
<td>Q</td>
<td>X</td>
<td>V part</td>
<td>14</td>
</tr>
</tbody>
</table>

#### Stage III

<table>
<thead>
<tr>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Y</td>
<td>NN</td>
<td>1</td>
</tr>
<tr>
<td>Q</td>
<td>X</td>
<td>Int X</td>
<td>8</td>
</tr>
</tbody>
</table>

#### Stage IV

<table>
<thead>
<tr>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Y</td>
<td>Pr N</td>
<td>14</td>
</tr>
<tr>
<td>Q</td>
<td>X</td>
<td>Pron</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Stage V

<table>
<thead>
<tr>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Y</td>
<td>Adj N</td>
<td>2</td>
</tr>
<tr>
<td>Q</td>
<td>X</td>
<td>Aux</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Stage VI

<table>
<thead>
<tr>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Y</td>
<td>NP Pr</td>
<td>2</td>
</tr>
<tr>
<td>Q</td>
<td>X</td>
<td>Neg V</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Stage VII

<table>
<thead>
<tr>
<th>Discourse</th>
<th>Syntactic Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ii</td>
</tr>
<tr>
<td>Comment Clause</td>
<td>there</td>
</tr>
<tr>
<td>Emphasis Order</td>
<td>Other</td>
</tr>
<tr>
<td>Total No. Sentences</td>
<td>211</td>
</tr>
<tr>
<td>Mean No. Sentences Per Turn</td>
<td>1.3</td>
</tr>
<tr>
<td>Mean Sentence Length</td>
<td>3.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Style</th>
<th>Ambiguous</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NP</th>
<th>VP</th>
<th>Clause</th>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiator Coord.</td>
<td>Complex</td>
<td>Passive</td>
<td>Complement.</td>
<td>and</td>
<td>NP</td>
<td>D</td>
</tr>
<tr>
<td>Coord.</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.2.2.2 Subject B

Subject B’s mother was able to audio-tape five short conversations between subject B and his younger brother (aged 6) lasting a total of 15 minutes (see Appendix C - 2). The quality of the recordings was poor which possibly accounts for the number of Unintelligible utterances in the LARSP profile (see Figure 4 - 2, p. 53). In three of the five conversations the boys were involved in playing a card game. This may partly explain their limited verbal interaction, as well as the high number of Stereotypes such as counting. There was little co-operative talk between the two boys; their conversational interaction was best described as a series of competitive monologues. Thus, it is likely that describing the Stimulus Type as Other in some of their conversational turns is inaccurate. Subject B often did not readily respond to his brother’s questions (see Appendix C - 2, line 172, p. LIX), and most of his utterances were Spontaneous. He was sometimes verbally aggressive towards his brother, e.g., calling him names and swearing at him, which also partly accounts for the large number of Stereotypes. The analysis was subject to error because of the poor quality of the recordings.

Syntax Analysis

A LARSP analysis of the five conversations revealed evidence of clear delay in subject B’s syntactical development (see Figure 4 - 2, p. 53). Most of his utterances were restricted to Stages III and IV, and there was little use of clause complexing. There was also little evidence of transitional structures, and there were several syntactical errors. For example, subject B frequently omitted auxiliary verbs in verb phrases, e.g., “you cheating” (see Appendix C - 2, line 142, p. LVIII), and when he was forming the interrogative, e.g., “you have another carnage?” (line 46, p. LVI). As well, there was evidence that he was omitting the determiner from noun phrases, e.g., “you went from back” (line 34, p. LVI).

Observation of the lexicon

There were no errors with word meaning or usage, nor evidence of any word finding difficulties.

Prosody

Subject B’s speech demonstrated some unusual prosodic features. His speech sometimes had limited pitch variation, and he frequently used falling pitch direction with the result that his speech occasionally sounded monotonous. He used both high and low pitch but usually not during the same linguistic unit. Thus, his intonation patterns were somewhat limited.
### FIGURE 4-2: SUBJECT B'S LARSP PROFILE

#### A

<table>
<thead>
<tr>
<th>Unanalysed</th>
<th>Problematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Unintelligible</td>
<td>1 Incomplete</td>
</tr>
<tr>
<td>2 Symbolic Noise</td>
<td>2 Ambiguous</td>
</tr>
<tr>
<td>3 Deviant</td>
<td>3 Stereotypes</td>
</tr>
</tbody>
</table>

#### B

<table>
<thead>
<tr>
<th>Stimulus Type</th>
<th>Totals</th>
<th>Normal Response</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Major</td>
<td>Structural</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elliptical</td>
<td>Reduced</td>
</tr>
<tr>
<td>Questions</td>
<td>17</td>
<td>11 2 2 2</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>45</td>
<td>22 2 3 -</td>
<td>-</td>
</tr>
</tbody>
</table>

#### C

| Spontaneous | 33 | - | 1 | - | 30 | 2 |

#### Stage I (0-9:1-6)

<table>
<thead>
<tr>
<th>Minor</th>
<th>Responses</th>
<th>Vocatives</th>
<th>Other</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>Comm.</td>
<td>Quest.</td>
<td>Statement</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>'V'</td>
<td>'Q'</td>
<td>'2'</td>
<td>'N'</td>
</tr>
<tr>
<td>Conn.</td>
<td>Clause</td>
<td>Statement</td>
<td>Phrase</td>
<td>Word</td>
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</table>

#### Stage II (1-6:2-0)

<table>
<thead>
<tr>
<th>X + S.NP</th>
<th>X + S.VP</th>
<th>X + C.NP</th>
<th>X + O.NP</th>
<th>X + A:AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>V + X</td>
<td>O + X</td>
<td>S + U</td>
<td>C + V</td>
<td>N + A</td>
</tr>
<tr>
<td>SVC</td>
<td>VCA</td>
<td>VOA</td>
<td>VOA</td>
<td>Pron</td>
</tr>
<tr>
<td>D Adj N</td>
<td>4</td>
<td>Cop</td>
<td>4</td>
<td>pr</td>
</tr>
<tr>
<td>Adj N</td>
<td>5</td>
<td>Aux</td>
<td>5</td>
<td>pr</td>
</tr>
<tr>
<td>NN</td>
<td>3</td>
<td>Int</td>
<td>3</td>
<td>pr</td>
</tr>
<tr>
<td>PrN</td>
<td>5</td>
<td>Other</td>
<td>5</td>
<td>pr</td>
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</tbody>
</table>

#### Stage III (2-9:2-6)

<table>
<thead>
<tr>
<th>X + S.NP</th>
<th>X + S.VP</th>
<th>X + C.NP</th>
<th>X + O.NP</th>
<th>X + A:AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>X + Y</td>
<td>O + Y</td>
<td>S + U</td>
<td>C + V</td>
<td>N + A</td>
</tr>
<tr>
<td>SVC</td>
<td>VCA</td>
<td>VOA</td>
<td>VOA</td>
<td>Pron</td>
</tr>
<tr>
<td>D Adj N</td>
<td>4</td>
<td>Cop</td>
<td>4</td>
<td>pr</td>
</tr>
<tr>
<td>Adj N</td>
<td>5</td>
<td>Aux</td>
<td>5</td>
<td>pr</td>
</tr>
<tr>
<td>NN</td>
<td>3</td>
<td>Int</td>
<td>3</td>
<td>pr</td>
</tr>
<tr>
<td>PrN</td>
<td>5</td>
<td>Other</td>
<td>5</td>
<td>pr</td>
</tr>
</tbody>
</table>

#### Stage IV (2-6:3-0)

<table>
<thead>
<tr>
<th>X + S.NP</th>
<th>X + S.VP</th>
<th>X + C.NP</th>
<th>X + O.NP</th>
<th>X + A:AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>X + Y</td>
<td>O + Y</td>
<td>S + U</td>
<td>C + V</td>
<td>N + A</td>
</tr>
<tr>
<td>SVC</td>
<td>VCA</td>
<td>VOA</td>
<td>VOA</td>
<td>Pron</td>
</tr>
<tr>
<td>D Adj N</td>
<td>4</td>
<td>Cop</td>
<td>4</td>
<td>pr</td>
</tr>
<tr>
<td>Adj N</td>
<td>5</td>
<td>Aux</td>
<td>5</td>
<td>pr</td>
</tr>
<tr>
<td>NN</td>
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<td>3</td>
<td>pr</td>
</tr>
<tr>
<td>PrN</td>
<td>5</td>
<td>Other</td>
<td>5</td>
<td>pr</td>
</tr>
</tbody>
</table>

#### Stage V (3-0:3-6)

<table>
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<tr>
<th>X + S.NP</th>
<th>X + S.VP</th>
<th>X + C.NP</th>
<th>X + O.NP</th>
<th>X + A:AP</th>
</tr>
</thead>
<tbody>
<tr>
<td>X + Y</td>
<td>O + Y</td>
<td>S + U</td>
<td>C + V</td>
<td>N + A</td>
</tr>
<tr>
<td>SVC</td>
<td>VCA</td>
<td>VOA</td>
<td>VOA</td>
<td>Pron</td>
</tr>
<tr>
<td>D Adj N</td>
<td>4</td>
<td>Cop</td>
<td>4</td>
<td>pr</td>
</tr>
<tr>
<td>Adj N</td>
<td>5</td>
<td>Aux</td>
<td>5</td>
<td>pr</td>
</tr>
<tr>
<td>NN</td>
<td>3</td>
<td>Int</td>
<td>3</td>
<td>pr</td>
</tr>
<tr>
<td>PrN</td>
<td>5</td>
<td>Other</td>
<td>5</td>
<td>pr</td>
</tr>
</tbody>
</table>

#### Stage VI (3-6:4-6)

<table>
<thead>
<tr>
<th>NP</th>
<th>VP</th>
<th>Clause</th>
<th>Conn.</th>
<th>Clause</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiator</td>
<td>Complex</td>
<td>Passive</td>
<td>and</td>
<td>Element</td>
<td>NP</td>
<td>VP</td>
</tr>
<tr>
<td>Coord.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Stage VII (4-6+)

### Discourse

- Style
- Syntactic Comprehension
- Ambiguous

### Total No. Sentences

66

### Mean No. Sentences Per Turn

1.1

### Mean Sentence Length

3.3
Fluency
There was no evidence of any stuttering.

Summary
Assessment of subject B’s spontaneous language sample revealed that he was experiencing some expressive language problems in the areas of syntax and prosody. However, because of the nature of the sample the findings should be interpreted with caution.

4.2.2.3 Subject C
The 28 minute conversation between subject C, her mother, her sister (aged 8), and the researcher, was specifically designed to promote speech from subject C (see Appendix C - 3). However, the recording revealed that her mother and elder sister were also keen to participate. Subject C’s mother frequently tried to engage the researcher in conversation and subject C’s sister often answered for her. This latter feature of the conversational interaction is reflected in the high number of zero responses in the LARSP profile (see Figure 4 - 3, p. 55). Subject C was often difficult to understand because of her severe speech disorder and this accounts for the Unintelligible utterances. Her mother and sister frequently interpreted for her but occasionally these interpretations appeared to be incorrect (see Appendix C - 3, lines 583-586, p. LXXI, and 630-635, p. LXXII). There was also a high incidence of Symbolic Noises, such as singing and shrieking, which seemed, in part, to reflect subject C’s emotional state which appeared tense and excitable. Subject C usually responded to Questions and Other types of conversational stimuli; she also produced a high number of Spontaneous utterances. However, she sometimes experienced word finding difficulties and this is reflected in the high number of Incomplete utterances.

Syntax Analysis
A LARSP analysis of subject C’s spontaneous conversation revealed clear syntactical delay (see Figure 4 - 3, p. 55). Although most clause and phrase structures were represented up to, and including, Stage VI, there was a concentration of structures at Stage III. Further analysis of subject C’s use of clause complexing revealed that most were coordinated, rather than subordinated, clauses. There was high use of determiner noun structures and personal pronouns, and the transitional line between Stages III and IV showed many verb phrase expansions.
**FIGURE 4 - 3: SUBJECT C’S LARSP PROFILE**

### A

<table>
<thead>
<tr>
<th>Unanalysed</th>
<th>Problematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Unintelligible</td>
<td>9 Incomplete</td>
</tr>
<tr>
<td>2 Symbolic Noise</td>
<td>2 Ambigous</td>
</tr>
<tr>
<td>3 Deviant</td>
<td>3 Stereotypes</td>
</tr>
</tbody>
</table>

### B

<table>
<thead>
<tr>
<th>Stimulus Type</th>
<th>Totals</th>
<th>Repetitions</th>
<th>Elliptical</th>
<th>Reduced</th>
<th>Full</th>
<th>Minor</th>
<th>Structural</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>85</td>
<td>60</td>
<td>1</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Others</td>
<td>62</td>
<td>52</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>28</td>
<td>21</td>
</tr>
</tbody>
</table>

| Spontaneous   | 92     | 4           | -          | -       | -    | -     | -          | 78       | 14      |         |         |

### C

<table>
<thead>
<tr>
<th>Minor Responses</th>
<th>Vocatives</th>
<th>Other</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>12</td>
<td>13</td>
<td>-</td>
</tr>
</tbody>
</table>

### Discourse

- **Syntactic Comprehension**
  - A Connectivity
  - Comment Clause
  - Emphatic Order

<table>
<thead>
<tr>
<th>Total No. Sentences</th>
<th>Mean No. Sentences Per Turn</th>
<th>Mean Sentence Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>1.4</td>
<td>3.2</td>
</tr>
</tbody>
</table>

### Overall

- **Phrase**
  - NP
  - VP
  - Clause
  - Conn.
  - Element
  - Phrase
  - Word

- **Meaning**
  - NP
  - VP
  - Clause
  - Conn.
  - Element
  - Phrase
  - Word

- **Syntax**
  - NP
  - VP
  - Clause
  - Conn.
  - Element
  - Phrase
  - Word

- **Meaning**
  - NP
  - VP
  - Clause
  - Conn.
  - Element
  - Phrase
  - Word

- **Syntactic Comprehension**
  - Discourse
  - A Connectivity
  - Comment Clause
  - Emphatic Order

- **Style**
  - Ambiguous
There were several inconsistencies in linguistic performance, such as use of both personal pronouns “I” and “me” to indicate the subject, and incorrect use of pronouns and auxiliaries, e.g., “her having a baby” (see Appendix C - 3, line 1, p. LX) and “we got the car” (line 244, p. LXV). As well, subject C often omitted the determiner in noun phrases, e.g., “he tying cat onto him” (line 194, p. LXIV); the preposition in prepositional phrases e.g., “climbing window” (line 531, p. LXX); and the copula e.g., “and this her, her playpen here” (line 138, p. LXIII). Some of her utterances were ambiguous, for example “I don’t know want to like you” (line 497, p. LXX). There was evidence of subject-verb discordance e.g., “her said her don’t like you” (line 504, p. LXX), and she demonstrated problems forming the interrogative, e.g., “then this is a suitable thing to wear to work?” (line 576, p. LXXI); and the plural e.g., “catties” (line 638, p. LXXII).

It is possible that subject C’s severe phonological disorder was interfering with her correct use of syntax. Her persistent use of “her” for “she” could have been influenced by the difficulty she experienced producing the fricative /ʃ/, although she did use “she” on one occasion (see Appendix C - 3, line 542, p. LXXI). Problems with syntax, such as correct pronoun usage, have been found to be common among children with developmental articulatory dyspraxia (Rosenthal & McLeod, 1991). As well, she demonstrated oral searching movements (also known as groping or trial and error behaviours) when she was trying to make a distinction between certain words, e.g., “told” and “taught” (line 587, p. LXXI). These movements have also been associated with developmental articulatory dyspraxia (Murdoch, Porter, Younger & Ozanne, 1984; Pollock & Hall, 1991; Rosenbek & Wertz, 1972; Williams, Packman, Ingham, & Rosenthal, 1980).

**Observation of the lexicon**

Subject C appeared to have some semantic problems such as word retrieval problems. For example, we never did find out the name of “what you wheel the baby in” (see Appendix C - 3, lines 26-53, p. LX-LXI). Often her utterances did not make sense (lines 442-468, p. LXIX, and 619-635, p. LXXII), and the conversational interaction frequently involved extended repair sequences (lines 458-470, p. LXIX). Sometimes it was difficult to determine whether her communication difficulties were due to her speech problems, her semantic problems, or a combination of both (line 587, p. LXXI). As well, attuning to her conversational topics, which often seemed bizarre, was occasionally challenging (see lines 585-603, p. LXXI-LXXII).
Prosody

Subject C was producing some unusual prosodic features. She used wide pitch variations, and her frequent use of high pitch made her vocal quality occasionally shrill and unpleasant to listen to. Occasionally, her intonation patterns were odd. For example, in the utterance /lˈdɔ ńıkə ˈyōu/ (see Appendix C - 3, line 499, p. LXX), she used a falling-rising pitch direction so that the linguistic unit appeared to have two nuclei instead of one, i.e., /lˈdɔ ńıkə yōu/. Prosodic disturbances are another feature of developmental articulatory dyspraxia (Adams, 1990; Rosenbek & Wertz, 1972).

Fluency

There was no evidence of stuttering. When hesitations did occur they seemed to be related to subject C’s problems producing certain sound combinations.

Summary

Assessment of subject C’s spontaneous language sample and observations over four visits revealed that she was experiencing problems in most areas of expressive language.

4.2.2.4 Subject D

The sample of subject D’s conversation with her older sister (aged 10) and her younger sister (aged 6) was limited to three minutes while they were playing a verbal ritual game (see Appendix C - 4). The quality of the recording was good and subject D’s speech was fully intelligible. The dialogue ran smoothly as subject D responded to all the Stimulus Types (see Figure 4 - 4, p. 58). However, only some superficial conclusions can be drawn because of the nature of the conversational interaction and the short duration of the sample.

Syntax Analysis

No clear conclusions can be drawn about subject D’s control of syntax. However, the entries were spread fairly evenly over the LARSP profile (see Figure 4 - 4, p. 58) indicating a varied use of syntax. There was no evidence at any point during the study that subject D was experiencing any syntactical problems.

Observation of the lexicon

Assessment of the conversation did not reveal any word meaning or usage problems.

Prosody

There appeared to be no prosodic anomalies, although subject D did speak with less volume than her sisters so that her voice sounded softer.
### FIGURE 4-4: SUBJECT D'S LARSP PROFILE

#### A

<table>
<thead>
<tr>
<th>Unanalysed</th>
<th>Problematic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Unintelligible</td>
<td>1 Incomplete</td>
</tr>
<tr>
<td>2 Symbolic Noise</td>
<td>2 Ambiguous</td>
</tr>
<tr>
<td>3 Deviant</td>
<td>3 Stereotypes</td>
</tr>
</tbody>
</table>

#### B

<table>
<thead>
<tr>
<th>Stimulus Type</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>8</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Normal Response</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>Elliptical</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### C

<table>
<thead>
<tr>
<th>Spontaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

#### Minor Responses

<table>
<thead>
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<th>Comm.</th>
<th>Quest.</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conn.</td>
<td>Clause</td>
<td>Phrase</td>
<td>Word</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Stage I (0-9.6)

<table>
<thead>
<tr>
<th>X + S.NP</th>
<th>X + V:VP</th>
</tr>
</thead>
<tbody>
<tr>
<td>VX</td>
<td>QX</td>
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</tbody>
</table>

#### Stage II (16-20.6)

<table>
<thead>
<tr>
<th>VXY</th>
<th>QXY</th>
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</table>

#### Stage III (20.6-26.8)

<table>
<thead>
<tr>
<th>X + C:NP</th>
<th>X + O:NP</th>
<th>X + A:AP</th>
</tr>
</thead>
<tbody>
<tr>
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<td>VCA</td>
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#### Stage IV (26.3-30.6)

<table>
<thead>
<tr>
<th>X + S.NP</th>
<th>X + V:VP</th>
<th>X + C:NP</th>
<th>X + O:NP</th>
<th>X + A:AP</th>
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</thead>
<tbody>
<tr>
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<td>QXY +</td>
<td>SVC</td>
<td>VSOA</td>
<td>SVC</td>
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#### Stage V (30.3-30.6)

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#### Stage VI (36.4-6)

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<th>Conn.</th>
<th>Clause</th>
<th>Element</th>
<th>Phrase</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Init.</td>
<td>Coord.</td>
<td>Complex</td>
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<td>Complement.</td>
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#### Stage VII (46+)

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<th>Syntactic Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comment</td>
<td>Style</td>
</tr>
<tr>
<td>Coord.</td>
<td>Total No. Sentences 21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Total No. Sentences Per Turn</th>
<th>Mean No. Sentences</th>
<th>Mean Sentence Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3</td>
<td>2.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Fluency

There was no evidence of stuttering.

Summary

Assessment of subject D’s language sample did not reveal any expressive language problems. This finding was supported by subject D’s mother.

4.2.2.5 Subject E

The 18 minute conversation between subject E and his mother revealed her expertise as a paediatric physiotherapist in relating to young children (see Appendix C - 5). The dialogue was balanced and tended to be structured, and it showed many characteristics of “scaffolded” talk, used by parents who aim to maximise their child’s language development (Lund & Duchan, 1988). For example, it is not certain whether subject E knew the function of an ambulance, so his mother reiterated the concept several times (see Appendix C - 5, lines 149-159, p. LXXX). Occasionally, subject E whispered so that it was difficult to hear what he was saying. This is partly reflected in the high number of unintelligible utterances in the LARSP profile (see Figure 4 - 5, p. 60). Sometimes, subject E’s mother did not understand what he had said. This led to conversational breakdown which she quickly repaired, e.g., by reiterating what she had said (e.g., lines 267-271, p. LXXXIII and lines 281-287, p. LXXXIII).

Indeed, she frequently repeated herself, possibly to ensure that the conversation proceeded smoothly (e.g., lines 76-78-80, p. LXXIX). There were also several Abnormal Structural responses, some of which may have been related to subject E’s mild hearing loss (e.g., lines 64-65, p. LXXIX). As well, there was high use of Symbolic Noises, such as “brmmm”, which is often a characteristic of young male play (Smith & Connolly, 1972), and which was appropriately associated with the game of cars and trucks. Subject E’s play was occasionally interpreted as rough by his mother (lines 213-216, p. LXXXII and 421, p. LXXXVI). So called “rough and tumble” play, i.e., running, chasing, and falling, has often been observed in young boys (diPietro, 1981).

Syntax Analysis

A LARSP analysis of subject E’s spontaneous language sample revealed that he appeared to have adequate control of syntax (see Figure 4 - 5, p. 60). The entries were distributed across the chart with the greatest concentration occurring at Stage III which is appropriate for his age. Both transitional lines revealed development of expansions, particularly Stage III verb phrase expansions.
### Figure 4.5: Subject E’s LARS Profile

**A. Unanalysed**
- 1 Unintelligible
- 2 Symbolic Noise
- 8 Deviant
- 4 Incomplete
- 2 Ambiguous
- 1 Stereotypes

**B. Responses**

<table>
<thead>
<tr>
<th>Stimulus Type</th>
<th>Totals</th>
<th>Repetitions</th>
<th>Elliptical</th>
<th>Reduced</th>
<th>Full</th>
<th>Minor</th>
<th>Structural</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions</td>
<td>58</td>
<td>10</td>
<td>8</td>
<td>1</td>
<td>8</td>
<td>20</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td>54</td>
<td>5</td>
<td>11</td>
<td>5</td>
<td>1</td>
<td>32</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**C. Spontaneous**
- 78
- 3
- 72

<table>
<thead>
<tr>
<th>Minor</th>
<th>Responses</th>
<th>Vocatives</th>
<th>Other</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>20</td>
<td>4</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Stage II</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stage III</td>
<td>7</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stage IV</td>
<td>9</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Syntactic Comprehension**
- Total No. Sentences: 190
- Mean No. Sentences Per Turn: 1.6
- Mean Sentence Length: 3.4
The LARSP analysis revealed that subject E was not yet controlling subordination, e.g., "it's a baddle have it" (see line 390, p. LXXXV), although there was evidence of clause complexing. Occasionally, he omitted the auxiliary verb in verb phrases, e.g., "I got this car" (line 173, p. LXXXI); and the determiner and copula, e.g., "where tractor?" (line 233, p. LXXXII). As well, he sometimes used the incorrect form of the copula, e.g., "isn't you?" (line 249, p. LXXXII).

There were some isolated syntactical errors, such as use of the nominative "water" for the adjective "wet" in "water sand" (line 42, p. LXXVIII), and confusion with preposition usage, e.g., "put them next in tween the truck" (line 364, p. LXXXIV). He used the incorrect plural form "peoples" (line 354, p. LXXXIV) for the irregular noun "people". He had used the correct form in an earlier utterance. However, his mother had subsequently used the incorrect form which he adopted. (Subject E's mother often appeared to use of pet forms for some words (see Section 4.2.5.5, below)). Overall the analysis showed that subject E's level of syntactical acquisition was appropriate for his age.

Observation of lexicon

There was no evidence of any word meaning or usage problems, nor any word finding difficulties.

Prosody

Subject E did not appear to have any prosodic problems.

Fluency

There was no evidence of stuttering. Some hesitations were observed, but they did not appear to disrupt the conversation nor cause subject E any concern.

Summary

Analysis of subject E's spontaneous conversation did not reveal any expressive language problems.

4.2.2.6 Conclusion

The LARSP analyses and observation revealed that three subjects were not experiencing any syntactical problems, but two subjects were. The results of the language sample analyses of the five subjects using LARSP and observations are summarised in Table 4 - 12 (overleaf).
### Table 4-12: Summary of Results of Language Sample Analysis Using LARSP, and Observations

<table>
<thead>
<tr>
<th>Subject</th>
<th>Syntax Analysis</th>
<th>Observation of Lexicon</th>
<th>Prosody</th>
<th>Fluency</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Normal use of syntax</td>
<td>Normal use of semantics</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>B</td>
<td>Syntactical problems</td>
<td>Normal use of semantics</td>
<td>Abnormal</td>
<td>Normal</td>
</tr>
<tr>
<td>C</td>
<td>Syntactical problems</td>
<td>Semantic problems</td>
<td>Abnormal</td>
<td>Normal</td>
</tr>
<tr>
<td>D</td>
<td>Normal use of syntax</td>
<td>Normal use of semantics</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>E</td>
<td>Normal use of syntax</td>
<td>Normal use of semantics</td>
<td>Normal</td>
<td>Normal</td>
</tr>
</tbody>
</table>

### 4.2.3 Social-Conversational Analysis (Fey, 1986) and Observation

Analysis of the social-conversational interaction between the subjects and their conversational partners was conducted for subjects A, B, C, and E. It was not possible to conduct a meaningful social-conversational analysis of subject D’s conversation because of the nature of the conversational interaction. However, the sample did demonstrate that subject D was as adept as her sisters (who had normal speech and language and who were not selectively mute) at participating in a ritual verbal game. Details of the Fey (1986) analyses on the first 50 conversational turns are to be found with the LARSP analyses in Appendix D. The results of the analyses of the social-conversational interaction between four of the subjects and their conversational partners are outlined below. The analysis pertains to one context only, i.e., the child’s home.

#### 4.2.3.1 Subject A

At an utterance level, i.e., speech act distribution, subject A contributed 32% of the conversation’s assertive acts and responded appropriately to 83% of the interactants’ requestive acts. At a discourse level, i.e., topic, he mostly maintained conversational topics. These figures are within normal limits for a child in conversation with an older child and two adults (Fey, 1986).

As already mentioned, the conversational interaction between subject A and his conversational partners was somewhat structured (see Appendix C - 1). Subject A’s mother often answered for him (e.g., lines 360-361, p. XLVIII; and 523-524, p. Li). However, he occasionally disagreed with the content of her answers (e.g., lines 45-58, p. XLI). He showed some expertise at cheating during the game when he made up rules to his advantage (lines 108-115, p. XLII). Frequently, he influenced the course of the conversation by ignoring
remarks and continuing with his own conversational topics, thereby appearing
to control the conversation (e.g., lines 329-330, p. XLVII; and 542-543, p. LI). Overall his social-conversational skills appeared normal.

4.2.3.2 Subject B
At an utterance level subject B contributed 52% of the conversation’s assertive acts and responded appropriately to 50% of the interactant’s requestive acts. At a discourse level he mostly maintained the conversational topic. Subject B’s normal assertiveness but low responsiveness scores indicate that he was a Verbal Non-Communicator in this particular context.

Subject B was the elder member of the conversational dyad. It was not possible to analyse the complete sample because of the poor quality of the audio-taped recording (see Appendix C - 2). Analysis of the social-conversational interaction of the incomplete sample revealed that subject B appeared to take an assertive role during the conversation. However, he did not seem to take conversational turns nor respond to his brother’s conversational needs. Rather, he and his brother tended to produce monologues when they were playing together, i.e., they tended to maintain their own conversational topics. Therefore, subject B’s brother’s social-conversational behaviour was similar in this pattern of interaction.

4.2.3.3 Subject C
At an utterance level subject C contributed 34% of the conversation’s assertive acts and responded appropriately to 89% of the interactants’ requestive acts. At a discourse level she mostly maintained topics. These results indicate that subject C was a normal conversation interactant, and that her severe communication disorder did not appear to affect her readiness to participate in conversational interaction in this context.

Subject C seemed to be aware that she was the focus of the visit and that the conversational interaction was intended to revolve around her (see Appendix C - 3). However, her mother and elder sister readily contributed to the conversational interaction. Her sister frequently answered for her (e.g., lines 12, p. LX; 16, p. LX; 260, p. LXV; 273, p. LXV; 304, p. LXVI; 419, p. LXVIII; and 428, p. LXVIII); and occasionally her mother made, what could be interpreted as, disparaging remarks about her imaginary play and her semantic difficulties.
(e.g., lines 72, p. LXI; 76, p. LXI; 123, p. LXII; 126, p. LXII; 140, p. LXIII; 316, p. LXVI; 458-461, p. LXIX; and 533, p. LXX). Occasionally both her mother and sister interrupted with tangential remarks which tended to disrupt the conversational flow (e.g., lines 15-21, p. LX; and 129-135, p. LXII-LXIII). Subject C appeared undeterred by these interruptions and continued her conversation while she played (e.g., lines 1-9-21, p. LX; and 413-423-432-435, p. LXVIII). She frequently sang and vocalised. Analysis of these vocalisations revealed that they often occurred when she had been interrupted, or in response to her mother’s disparaging remarks (e.g., lines 211-214, p. LXIV; 427-429, and p. LXVIII).

4.2.3.4 Subject E
At an utterance level subject E contributed 46% of the conversation’s assertive acts and responded appropriately to 97% of the interactants’ requestive acts. At a discourse level he mostly maintained conversational topics. These results are within normal limits for a child in conversation with two adults (Fey, 1986).

There was no evidence that subject E’s conversational skills were delayed, nor that his hearing impairment had any long standing detrimental effect on his conversational interaction with his mother. Subject E’s mother used many opportunities to elicit language from subject E (see Appendix C-5). She was adept at formulating his ongoing play which revealed a rich fantasy world. Occasionally, subject E’s mother seemed uncomfortable with his play. For example, during the baby/baddie sequence (lines 375-492, p. LXXXV-LXXXVII) she intervened with realistic remarks, e.g., about his preference for green (line 395, p. LXXXV) and his socks (line 453, p. LXXXVI); and she corrected him when he talked about fixing the dead (lines 306-322, p. LXXXIII-LXXXIV). His whispering during this play sequence may have been further evidence of his separation anxiety (see Discussion, Section 5.1.2.5). Towards the end of the visit he seemed to be enjoying the game and protested when it was time to finish.

Occasionally, there was evidence from subject E’s inappropriate linguistic responses of his hearing loss (e.g., lines 61-65, p. LXXIX; and 76-84, p. LXXIX). His mother spoke quickly, but she appeared to accommodate her utterances to his depressed hearing acuity by repeating what she was saying (e.g., lines 59-61-63-64, p. LXXIX). Sometimes, she found his speech difficult to understand and this led to conversational breakdown and repair sequences (e.g., lines
267-271, p. LXXXIII; and 281-285, p. LXXXIII). Overall, the breakdowns did not appear to have any adverse long standing effects on the conversational exchange.

### 4.2.3.5 Conclusion

The social-conversational analysis (Fey, 1986) revealed that in this context, i.e., the home, on this occasion, three subjects were normal conversation interactants, or Active Conversationalists, and one subject was a Verbal Non-Communicator. The results are summarised in Table 4 - 13.

**Table 4 - 13: Results of Social-Conversational Analysis (Fey, 1986)**

<table>
<thead>
<tr>
<th>UTERANCE LEVEL</th>
<th>SUBJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Assertiveness:</td>
<td></td>
</tr>
<tr>
<td>No. of A.A.</td>
<td>105</td>
</tr>
<tr>
<td>Total no. A.A.</td>
<td>326</td>
</tr>
<tr>
<td>Percentage of A.A.</td>
<td>32%</td>
</tr>
</tbody>
</table>

(An assertiveness score of between 20% - 50% is regarded as normal with adult conversational partners; an assertiveness score of between 40% - 60% is regarded as normal with peers).

| RESPONSIVENESS: |    |    |    |    |    |
| No. of Req. A.  | 126| 10 | 91 | -  | 65 |
| No. of R.A.     | 105| 5  | 81 | -  | 63 |
| Percentage of R.A. | 83% | 50% | 89% | -  | 97% |

(A responsiveness score of between 80% - 100% is regarded as normal)

A.A.: Assertive Acts
Req. A.: Requestive Acts by partner(s)
R. A.: Responsive Acts

<table>
<thead>
<tr>
<th>DISCOURSE LEVEL</th>
<th>SUBJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Utterances Analysed</td>
<td>215</td>
</tr>
</tbody>
</table>

| Topic Initiations | 21 | 13 | 35 | -  | 20 |
| Topic Maintenance | 155| 28 | 106| -  | 110|
| Topic Extensions  | 36 | 11 | 55 | -  | 44 |
| Topic Tangentials | 3  | 1  | 2  | -  | 4  |

**Type of Conversationalist**

Subject A: Active Conversationalist
Subject B: Verbal Non-Communicator
Subject C: Active Conversationalist
Subject D: No Result
Subject E: Active Conversationalist
4.2.4 RECEPTIVE LANGUAGE ASSESSMENTS

4.2.4.1 Peabody Picture Vocabulary Test - Revised (PPVT-R)

All the subjects, apart from subject C, scored within the average range of scores on the PPVT-R (Dunn & Dunn, 1981). Subject C scored below the average range, although this result may not be a true representation of her ability in this area of receptive language. She was distractible throughout the testing procedure so that three attempts were required before it was possible to complete the test (two attempts on one occasion and one attempt four weeks later). The results and responses of the subjects to the PPVT-R are summarised in Table 4-14.

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw score</td>
<td>68</td>
<td>87</td>
<td>69</td>
<td>80</td>
<td>23</td>
</tr>
<tr>
<td>SES</td>
<td>104</td>
<td>88</td>
<td>75</td>
<td>91</td>
<td>88</td>
</tr>
<tr>
<td>Percentile</td>
<td>61</td>
<td>22</td>
<td>5</td>
<td>28</td>
<td>22</td>
</tr>
<tr>
<td>Stanine</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>ABILITY</td>
<td>Within normal range</td>
<td>Within normal range</td>
<td>Below normal range</td>
<td>Within normal range</td>
<td>Within normal range</td>
</tr>
<tr>
<td>Behaviour during testing</td>
<td>Good</td>
<td>Good</td>
<td>Distractible</td>
<td>Anxious</td>
<td>Distractible</td>
</tr>
</tbody>
</table>

SES: Standard Score Equivalent

4.2.4.2 Test of Auditory Comprehension of Language - Revised (TACL-R)

The TACL-R (Carrow-Woolfolk, 1985) was used to assess the receptive language of subjects A, B, C, and D who were aged between five and eight years. Subjects A and D scored within the normal range of scores for their age groups. (Two sets of scores were obtained for subject A because he seemed to have a lapse in concentration during the administration of the Grammatical Morphemes section. He obtained three consecutive incorrect items at a lower level than was considered representative of his ability (Result 1). To correct this, testing continued until a new ceiling was established (Result 2).)

Subjects B and C were found to have some receptive language problems. Subject B scored in the upper normal range for Word Classes and Relations, but his scores for Grammatical Morphemes and Elaborated Sentences were below the normal range of scores for his age group. This result indicated that
subject B had some specific receptive language difficulties. For example, during testing, he demonstrated that he had difficulties understanding sentences where there was syntactical complexity, e.g., embedding and subordination of clauses.

(Once testing ceased, subject B's mother tried some of the items in the Elaborated Sentences section of the test. It had become apparent during conversation that she had some language problems. Subject B's mother failed some of the Elaborated Sentences items which lent support to this observation.)

Subject C scored in the low normal range for Word Classes and Relations, and her scores for Grammatical Morphemes and Elaborated Sentences were only just within the normal range of scores for children of her age group. She appeared to be experiencing problems understanding verb tense and syntactical complexity, e.g., embedding and subordination of clauses. A summary of the results of the performance of the subjects on the TACL-R, as well as their behaviour during testing, can be found in Table 4-15.

### TABLE 4-15: SUMMARY OF RESULTS OF TEST OF AUDITORY COMPREHENSION OF LANGUAGE - REVISED

<table>
<thead>
<tr>
<th>Subjects</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Classes and Relations</td>
<td>T score: 51</td>
<td>T score: 56</td>
<td>T score: 43</td>
<td>T score: 47</td>
</tr>
<tr>
<td>Grammatical Morphemes</td>
<td>Result 1: T score: 44</td>
<td></td>
<td>T score: 34†</td>
<td>T score: 37</td>
</tr>
<tr>
<td></td>
<td>Result 2: T score: 56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaborated Sentences</td>
<td>T score: 63</td>
<td>T score: 29†</td>
<td>T score: 37</td>
<td>T score: 52</td>
</tr>
<tr>
<td>Total Score</td>
<td>Result 1: T score: 56</td>
<td></td>
<td>T score: 31†</td>
<td>T score: 34†</td>
</tr>
<tr>
<td></td>
<td>Result 2: T score: 60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESULT</td>
<td>Normal Good</td>
<td>Abnormal Good</td>
<td>Abnormal Good</td>
<td>Normal Anxious</td>
</tr>
<tr>
<td>Behaviour during testing</td>
<td>Normal</td>
<td>Good</td>
<td>Abnormal</td>
<td>Good</td>
</tr>
</tbody>
</table>

* Indicates score below the norm

#### 4.2.4.3 Reynell Developmental Language Scales - Revised (RDLS-R)
The Verbal Comprehension section of the RDLS-R (Reynell, 1977) was used to assess subject E's receptive language because he was under the age of five. He achieved a raw score of 40 which indicated that his language comprehension, according to this test, was within the normal range of scores
for children of his age group. Subject E’s mother helped with the administration
of the test because subject E was occasionally distractible. Thus, there were
some deviations from the prescribed testing procedure as well as some
performance discrepancies. The result of subject E’s performance on the
RDLS-R is summarised in Table 4 - 16.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Chronological Age</th>
<th>Raw Score</th>
<th>Equivalent Age</th>
<th>Standard Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>3 : 6</td>
<td>40</td>
<td>3 . 01</td>
<td>- 0 . 5 S.D.</td>
</tr>
</tbody>
</table>

S.D.: Standard deviations from the mean

4.2.4.4 Summary
The results of the Peabody Picture Vocabulary Test - Revised, the Test of
Auditory Comprehension of Language - Revised, and the Verbal
Comprehension section of the Reynell Developmental Language Scales -
Revised indicated that the oral language comprehension skills of subjects A, D
and E were within normal limits for their age groups. However, subjects B and C
were below the normal range in some aspects of their oral language
comprehension.

4.2.5 SPEECH ASSESSMENTS
It was possible to administer the Smit-Hand Articulation and Phonology
Evaluation - pilot version (Smit & Hand, 1997), or SHAPE, to two subjects.
Subject C co-operated after some initial reluctance, and subject E responded
when his mother administered the test. Subject D agreed to being audio-
taped while her mother administered the test when the researcher was
absent, but subjects A and B would not agree to being audio-taped, even if
their mothers administered the test when they were alone. Profiles of the
speech of these two latter subjects were drawn from the audio-tapes of their
spontaneously occurring conversations.

4.2.5.1 Subject A
A sample consisting of 101 successive words was extracted from the middle
section of subject A’s audio-taped conversation and subjected to analysis
(see Appendix E - 1a). Using Shriberg and Kwiatkowski’s (1982) formula for
assessing percentage of consonants correct (PCC), a severity measure was
estimated. The PCC on this connected speech sample was 62%. This result indicated that subject A had a moderate-severe speech problem.

Observation also revealed that subject A’s speech was often unintelligible. Indeed, during the spontaneous language sample his mother frequently interpreted what he was saying (see Appendix C-1, e.g., lines 405-407 and 557-560). Subject A was using the following phonological processes (in order of frequency): Prevocalic voicing (syllable initial only) (94%); Cluster Reduction (syllable initial) (93%); Gliding of /l/ and /r/ (78%); Velar Fronting (syllable initial) (48%); and Stopping (syllable initial only) (29%). He was also using Fricative Simplification and there was some syllable final Cluster Reduction. As well, there were some unusual sound substitutions, e.g. /w/ and /s/ --> /f/. Subject A’s speech summary is to be found in Appendix E - 1b.

The audio-taped recording revealed that subject A was experiencing difficulty producing certain words and phrases where there was a complexity of sounds and syllables. For example, in response to questions posed by his mother, he appeared to avoid saying “Grandma” (see Appendix C - 1, lines 167; 211-213; 246; 491-501), although he appeared to have no difficulty saying it thereafter (line 507, p. LII). He also demonstrated obvious difficulty saying “grown up cameras” (lines 557-559, p. LII). Subject A’s awareness of his speech problems, e.g., producing /gr/, appeared to be influencing his readiness to say certain words and phrases (see Section 4.2.2.1, above).

4.2.5.2 Subject B

Information about subject B’s speech was extracted from the audio-tape of his spontaneously occurring conversations. The quality of the audio-tape was poor so the profile is subject to error. However, the audio-tape revealed that subject B’s speech appeared to be normal apart from some mild articulation errors. For example, he called his brother “dit-head” rather than “dick-head” (see Appendix C - 2, line 44, p. LVII); and he said [ppplula] instead of [ppplbala] (see line 128, p. LVI). It is possible that these errors were evidence of past phonological delay, e.g., Fronting (or Alveolar Assimilation) and Gliding.

(Subject B’s brother’s performance on the SHAPE revealed that he had a mild speech disorder (see Appendix E - 2a). For example, /s/ and /z/ were dentalised, and /r/ was de-rhotacised. Consonant clusters which contained
some of these sounds, e.g., /s/ and /t/, were also affected. As well, there was use of Fricative Simplification. Subject B’s brother’s speech summary is to be found in Appendix E - 2b.)

4.2.5.3 Subject C
After some initial apprehension, subject C participated in the administration of the SHAPE (see Appendix E - 3a). The PCC on the speech sample was 39% which indicated that subject C had a severe speech problem. This was substantiated by observation during conversation which revealed that she was often unintelligible, as well as discussion with subject C’s mother who indicated that she sometimes could not understand what subject C was saying. The main phonological processes subject C was using were (in order of frequency): Cluster Reduction (syllable initial) (100%); Velar Fronting (96%); Gilding of /t/ (67%); Palatal Fronting (/j/ only) (40%); Stopping (33%); and Final Consonant Devoicing (27%). There was also evidence of Weak Syllable Deletion, Prevocalic Voicing, and Fricative Simplification. As well, there were some unusual sound substitutions, e.g., /g/ --> [f] (/gʌm/ --> [fʌm]); and some evidence of Alveolar Assimilation, e.g. /kʌb/ --> [tʌdə], and /laɪnɪŋ/ --> [tʌtɪn]. Subject C’s speech summary is to be found in Appendix E - 3b.

During the administration of the SHAPE it was apparent that subject C was aware of her speech problems. For example, when she was confronted with a photograph of a word that was difficult for her to say she often tried to pass over it. Her speech was characterised by some features of developmental articulatory dyspraxia, such as inconsistent errors, difficulty sequencing phonemes, and difficulty with polysyllabic words (Ozanne, 1995) (see also Section 4.2.2.3, above). It was apparent that she had made only limited progress during five years of speech pathology, and it was likely that her current speech pathologist’s diagnosis of developmental articulatory dyspraxia was appropriate.

4.2.5.4 Subject D
Subject D’s mother audio-taped subject D reading and responding to the SHAPE when they were alone. Although subject D responded to the photographic cues in a quiet voice, the quality of the audio-tape was good. It was possible to determine that subject D had no speech problems. Evidence from the audio-tape of her reading and conversation substantiated this view.
4.2.5.5 Subject E

Subject E co-operated if his mother administered the SHAPE while the researcher feigned disinterest and avoided eye contact. During the administration of the SHAPE, subject E and his mother showed a preference for pet forms such as “puppydog”, “fishy”, “ducky”, and so on. Although subject E occasionally lapsed into a whisper during the test, it was possible to observe and audio-tape his performance (see Appendix E - 4a). Subject E was using three phonological processes (in order of frequency): Gliding of /r/ (100%); Stopping of /v/ (100%); Cluster Reduction (syllable initial only) (42%); and Cluster Simplification (or Gliding of /r/ and /l/ in Consonant Clusters) (40%). He was also using Fricative Simplification (which is normal at three years), and there was some Weak Syllable Deletion, as well as some Glottal Stop realisation of final consonants.

Some occurrence of Gliding, Stopping, Cluster Reduction, and Cluster Simplification is expected in children aged 3;6, although it is likely that subject E had mild phonological delay. As well, he was using a number of idiosyncratic processes which may have been associated with his hearing loss. For example, he seemed to be simplifying certain fricatives and affricates such as /ʃ/ and /dʒ/ by palatalising and/or lateralising them, and to be using the voiceless bilabial fricative /ɬ/ for some consonant clusters. Subject E’s speech summary is to be found in Appendix E - 4b.

4.2.5.6 Summary

The results of the speech assessments revealed that subject A had moderate-severe phonological delay; subject B had some mild articulation errors; subject C had a severe phonological disorder (with a possible diagnosis of developmental articulatory dyspraxia); subject D had normal speech; and subject E had mild phonological delay. The methods by which the speech assessment were obtained and the results are summarised in Table 4 - 17 (overleaf). Subject D is not included in the table because her speech was normal.
TABLE 4 - 17: SUMMARY OF METHODS OF SPEECH ASSESSMENT AND RESULTS

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of Assessment</td>
<td>Audiotaped Conversation and Observation</td>
<td>Audiotaped Conversation</td>
<td>Audiotaped SHAPE and Observation</td>
<td>Audiotaped SHAPE and Observation</td>
</tr>
<tr>
<td>Specific Sound Problems</td>
<td>/p/; /t/; /k/; /g/; /j/;</td>
<td>/k/; /g/; /j/; /l/;</td>
<td>/w/; /j/; /l/; /v/;</td>
<td>/w/; /j/; /l/; /v/;</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Moderate-severe phonological delay</td>
<td>Mild articulation errors</td>
<td>Severe phonological disorder</td>
<td>Mild phonological delay</td>
</tr>
</tbody>
</table>

N/A: Not Applicable

Cluster R.: Cluster Reduction
Cluster S.: Cluster Simplification
F.C.D.: Final Consonant Devoicing

4.2.6 Oromuscular Assessment

During the assessment process an oromuscular assessment was attempted with subjects A, B, C, and E, but not with subject D because of her timidity. Subjects A and B “sealed” their lips and would not co-operate with the assessment, and although subjects C and E would open their mouths they would not perform any of the tasks requested. Superficial observation of the oromusculature of subjects A, B, C and D did not reveal any abnormality. However, observation of subject E’s oromusculature revealed that he had an anterior open bite. He also dribbled, possibly because his mouth was habitually open and his tongue protruded.
4.2.7 CONCLUSION

The results of all the speech and language assessments and observations are summarised in Table 4-18.

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>OROMUSCULAR ASSESSMENT</td>
<td>N/R</td>
<td>N/R</td>
<td>N/R</td>
<td>N/R</td>
<td>N/R</td>
</tr>
<tr>
<td>EXPRESSIVE LANGUAGE:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syntax</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Semantics</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Prosody</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Fluency</td>
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<tr>
<td>RECEPTIVE LANGUAGE</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SPEECH</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>CONVERSATIONAL INTERACTION</td>
<td></td>
<td></td>
<td></td>
<td>N/R</td>
<td></td>
</tr>
<tr>
<td>AT HOME</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>N/R</td>
<td>-</td>
</tr>
</tbody>
</table>

+ Indicates a problem in this area
- Indicates no problem in this area
N/R Indicates no result

4.2.8 RELIABILITY

Two trained assistants checked at least 10% of the transcriptions against the audio-taped recordings of the spontaneously occurring conversations to see if they were correct. The complete LARSP analyses (Crystal, Fletcher, & Garman, 1989) and Social-Conversational analyses (Fey, 1986) were checked for accuracy by another speech pathologist. As well, at least 10% of the LARSP and Social-Conversational analyses were subjected to a point by point agreement check. On the LARSP and Social-Conversational analyses, an inter-judge reliability of 100% and 92%, respectively, was found. The speech samples and analyses were also subjected to a point by point agreement check, and an inter-judge reliability of 96% was found. The results of the standardised receptive language assessments were reassessed blind by another speech pathologist. The results were then compared and a consensus agreement of 100% was reached.
CHAPTER 5

DISCUSSION

This study set out to describe the speech and language characteristics of children with selective mutism. To do this, different sources of evidence were examined which described not only these characteristics but aspects of the selective mutism, as well. The perspective taken in this study was that there is a psychiatric disorder, selective mutism, for which the speech and language characteristics can be described.

In the discussion, features of the five families and the subjects will be discussed first. Then, the speech and language characteristics of the subjects and the co-occurrence of selective mutism and a communication disorder will be examined. Implications for the management of selectively mute children arising from the study’s findings, as well as suggestions for future research, will be explored.

5.1 FEATURES OF THE FIVE FAMILIES AND SUBJECTS

The five families and subjects had many features in common with other families that have been reported in the selective mutism literature. For example, the study revealed no particular patterns in their socio-economic status, the numbers of siblings, and subjects’ birth order. However, the families were quite different from one another. Some of the features of the families and subjects are discussed below.

5.1.1 FAMILY FEATURES

5.1.1.1 Migrant Families

Selective mutism is reported to have a higher incidence among migrant families (Bradley & Sloman, 1975; Brown & Lloyd, 1975; Steinhausen & Juizi, 1996) and, consistent with this, two of the subjects’ families were from non-dominant cultures, i.e., countries of the former Yugoslavia. These families tended to socialise within the Yugoslav community and the mothers, particularly, seemed to have restricted social networks. Neither of the subjects from these families spoke with an accent, and the issue of second language acquisition appeared to be a matter of concern for one subject only. Subject B’s father liked the family to speak Croatian at home which they resisted
doing. Although it seems unlikely that this had any effect on subject B’s ability to speak English, the issue was reported to create friction between his father and other family members, and it is possible that this factor was important for creating family tensions (see Section 5.1.1.3, below).

5.1.1.2 Family Socialisation
Social isolation and a preference for a quiet life-style have been found to be family features in selective mutism (Brown & Lloyd, 1975; Cline & Baldwin, 1994; Looff, 1979). The study also revealed this pattern. Indeed, subject A’s mother considered that the family’s social isolation might have contributed to the development of the selectively mute behaviour in the family, and subject D’s father queried whether subject D’s selective mutism was a response to his requests for quietness at home.

It is possible that parental models of behaviour, such as a lack of social interaction, and/or a preference for quietness, might influence the development of similar behaviour in children. Although it seems unlikely that this behaviour alone causes selective mutism, it is possible that it is a factor in the development of the disorder, particularly among children who have limited experiences of socialising and speaking with anyone, other than their immediate family members, prior to commencing pre-school or school.

5.1.1.3 Family Psychopathology
The study found evidence of family psychopathology. This included marital disharmony, child abuse, and psychiatric illness. Although all the marriages were intact, disharmony was a feature of two of the marriages, and in these families there appeared to be an unusually close bond between the mothers and their children and the fathers were observed to be marginalised. A close mother-child bond and the marginalised role of fathers have been previously reported in the selective mutism literature (Cline & Baldwin, 1994; Murray, 1983; Ruzicka & Sackin, 1974). There may be several reasons why the fathers of subjects B and D were marginalised. For example, subject B’s father held strong Croatian nationalist views which distinguished him from other family members; and subject D’s father had a past history of domestic violence and abuse towards his family (see below). It is possible that these factors may have contributed to the development of a close bond between these mothers and their children. However, it is beyond the scope of this study to explain how.
Psychiatric illness, especially in the mother, has also been associated with selective mutism (Bradley & Sloman, 1975; Elson et al., 1965; Hayden, 1980; Kaplan & Escoll, 1973; Kolvin & Fundudis, 1981; Rutter, 1975; Sluckin et al., 1991). It is likely that subject D’s mother’s postnatal depression contributed to the development of subject D’s selective mutism, and its maintenance may have been related to ongoing domestic disharmony. Although many opportunities were provided for subject D’s mother to discuss these subjects, she consistently avoided speaking about them. She must have been aware that they were mutual knowledge because she had given permission for subject D’s case notes to be examined. It is possible that she regarded them as “secrets” which were not spoken about. It is also possible that subject D’s selective mutism was partly a reflection of her mother’s silence on these issues. Zuckerman (1996) refers to children who witness domestic violence as “silent victims”, a description which aptly fitted subject D.

Family psychopathology, such as observed in this study, has been found to occur in children who have psychiatric disorders and/or communication disorders (Beitchman et al., 1986; Cantwell & Baker, 1991; Piacentini, 1987; Prizant et al., 1990). Thus, it may be that family psychopathology contributes to the development of both disorders. This means that factors such as marital disharmony, child abuse and maternal psychiatric illness may have contributed to the development of the selective mutism, communication disorder, or both. Empirical research has yet to identify the role family psychopathology plays in the development of disorders, such as communication disorders. However, it is likely that exposure to continuing disharmony, conflict and abuse, whether emotional, physical or sexual, has profound effects on most children. One manifestation of these effects may be impairment of their communication skills. Further studies are needed to explore this issue.

5.1.1.4 Family History of Communication Disorders and Other Problems
Although the study did not directly focus on the subjects’ siblings, it was possible to glean some information about them from a variety of sources. Out of the 11 siblings in the study, six appeared to have some form of problem, i.e. each subject had at least one sibling who was identified as experiencing, or having experienced, some problem. These problems included: a history of limited social skills, shyness, and distress. These problems often occur in children so that no firm conclusions can be drawn about their occurrence in this study.
However, it is possible that some of these problems were manifestations other than selective mutism but arising from similar sources.

Three of the five subjects had a family history of communication disorders, but only one subject had a family history of selective mutism. Current research indicates that there is a hereditary factor involved in the development of some communication disorders (Lewis, Ekelman & Aram, 1989; Tallal, Ross & Curtiss, 1989; Tomblin, 1989). However, whether there is a hereditary factor in the development of selective mutism, such as a “genetic transmission of an unusual personality pattern” as proposed by Kolvin and Fundudis (1981, p. 230), remains to be proven. Certainly, subject A’s family history of selective mutism might suggest this is the case. However, there may be other factors involved in families where there is more than one selectively mute child. For example, selective silence may be a learned behaviour pattern from family members. Of course, this latter factor, as well as a genetic explanation, may account for the increased prevalence of selective mutism amongst twins.

5.1.1.5 Conclusion
Cline & Baldwin (1994) proposed that family factors almost always play a role in selective mutism. This study revealed evidence of limited family social interaction, and family psychopathology such as marital disharmony and domestic violence. It is likely that these factors contributed to the development of the subjects’ selective mutism, whereas other factors, such as a family history of communication disorders, contributed to the development of the subjects’ communication disorders. An interaction of these factors is also possible.

5.1.2 SUBJECTS’ FEATURES
5.1.2.1 Health Issues
The study revealed some specific health issues among some of the mothers and subjects. For example, two subjects had a history of complications during pregnancy and birth, and two mothers reported that they had taken drugs during pregnancy. The effects of certain drugs on the foetus are unclear. Therefore, it is uncertain whether drug use could be implicated in the development of some of these subjects’ problems. However, subject B’s mother considered that some of her son’s problems, including his selective mutism, had arisen partly as a consequence of the medication she had taken.
Children who experience pre and peri-natal problems are considered to be "at risk" for a variety of disorders, including communication and psychiatric disorders (Rossetti, 1986; Rutter, Tizard, & Whitmore, 1970). These factors may have played a role in the development of these subjects' selective mutism and communication disorders, but it is beyond the scope of this study to specify exactly how.

All the subjects, apart from subject C (see Section 5.1.2.6, below), were reported to be healthy. However, four subjects had a history of at least one episode of ear infection, but only subject E currently had a hearing loss. Children who suffer from ear infections may experience transient periods of hearing loss (Northern & Downs, 1991; Teele, Klein, & Rosner, 1984) which may be associated with a history of delayed speech and language development (Shaw, 1994). As hearing loss does not appear to be a feature of selective mutism, it seems unlikely that the ear infections experienced by three of the subjects bear any relationship to the development of their selective mutism. However, they may have contributed to the development of subject B's and subject C's communication disorders. It is likely that subject E's hearing loss was an important factor in his communication disorder (see Section 5.2.4, below).

5.1.2.2 Subjects' Developmental Features

The study revealed delays in specific areas of subjects' development, such as toilet training. The failure to develop age appropriate independence behaviours has been observed in children with both a communication disorder and a psychiatric disorder (Baker & Cantwell, 1987; Chess & Rosenberg, 1974; France & Gravell, 1991; Prizant & Wetherby, 1990). This has led some authors to propose that delayed milestones are associated with neurodevelopmental immaturity (e.g., Beitchman, 1985; Bishop & Edmundson, 1987). Children with delayed milestones often appear immature (Beitchman 1985) and may make excessive demands on their parents to look after them (Prizant et al., 1990). Certainly this description applied to subject C who, at the age of seven, was still known to insist occasionally that her mother help her in the toilet. It may also have been why subject E's mother referred to subject E as her baby (even though she had a younger child than subject E), and her use of pet forms such as "fishy" and "ducky."
The finding that all five children experienced some form of “toilet training problems” is consistent with the previously reported high incidence of so called “toilet training problems” among children with selective mutism (Baltaxe & Simmons, 1990; Cantwell & Baker, 1985; Eldar et al., 1985; Hill & Scull, 1985; Kopp & Gillberg, 1997; Pustrom & Speers, 1964; Steinhausen & Juzi, 1996), and with a communication disorder (Baker & Cantwell, 1982; Cantwell & Baker, 1991; Griffiths, 1969; Piacentini, 1987; Stevenson & Richman, 1978). Although expectations regarding toilet training can be arbitrary, all the mothers in the study reported that their child, in comparison with their other children, had experienced delay or difficulties in this area. Toilet training problems on their own are not usually diagnostic. Broadly speaking, they can be primary (the child has never been toilet trained and the problem is mainly developmental), or secondary (occurring after a period of dryness and associated with psychosocial stress) (Hill, 1987). In this study, it is likely that the toilet training problems experienced by subjects A, B, C, and E were primary, but that subject D’s toilet training problems were secondary. It is not clear why “toilet training problems” are common among children who have a communication disorder, but an explanation of neurodevelopmental immaturity is appealing. This means that in the current study, the toilet training problems experienced by the four subjects with a communication disorder were possibly associated with neurodevelopmental immaturity, whereas subject D’s enuresis was likely to be associated with psychosocial stress.

Only subject A’s parents associated selective mutism with normal development. Subject A’s father proposed that selective mutism was a developmental stage. It is interesting to examine this proposal, because if selective mutism were a developmental stage, surely it would be more commonplace and he would be ideally placed, as a general practitioner, to validate this. How could subject A’s father explain the rarity of the disorder? It is likely that subject A’s father was defensive about the issue. (During discussion he appeared dismissive about the research study, remarking that selectively mute children outgrew the problem.) His reaction is not atypical. Parents of selectively mute children often appear unconcerned about their child’s selectively mute behaviour and fail to appreciate its possible negative social consequences (Elson et al., 1965; Lebrun, 1990; Mora et al., 1962). In some cases, lack of concern and viewing selective mutism as a developmental stage may influence parents not to seek treatment.
5.1.2.3 Subjects’ Personality Features

Adjectives, such as stubborn, shy, and sensitive have been used to describe some of the personality features of selectively mute children (Adams & Giasner, 1954; Bishop & Rosenbloom, 1987; Black & Udde, 1992; Cantwell & Baker, 1985; Cline & Baldwin, 1994; Rosenbaum & Kellman, 1973; Rosenberg & Lindblad, 1978; Sluckin et al., 1991; Steinhause & Juzl, 1996; Wergeland, 1979). In this study, four of the subjects were described by their mothers as stubborn, two were described as shy (subject B’s mother responded that she did not know if subject B was shy), and three were described as sensitive.

It may be possible to link some common personality features with some selectively mute children, however, it seems unlikely that there are personality features which are common to all. Indeed, the pursuit of identifying personality features is problematic in itself because of difficulties obtaining concept consensus. Thus, the search for a selectively mute personality profile, as some researchers have sought to do (e.g., Kolvin & Fundudis, 1981) may be fraught with difficulties. However, similar personality descriptions, such as shyness have also been applied to some family members (Brown & Lloyd, 1975; Salfield, 1950; Scott, 1977; Wergeland, 1979; Wright & Cuccaro, 1994). The personality characteristics of other family members were not explored in this study, although two of the mothers did remark that they were shy. Currently, the Selective Mutism Foundation, Inc. is exploring the possibility of a genetic vulnerability for the development of selective mutism because of recurring descriptions of certain personality traits, such as shyness, among some family members (Leszczyk & Miller, 1994).

It is possible that certain personality characteristics, such as a tendency to be shy, may affect children’s communication interaction. It may also be important in understanding selective mutism because this personality characteristic may manifest itself in reticence. As well, a tendency to be sensitive may predispose a child to react to teasing and ridicule of a problem, such as a communication disorder, by becoming silent. A tendency to be stubborn may also play a role in some selectively mute children’s unyielding responses to measures taken to encourage them to talk, i.e., the more people try to encourage them talk, the less likely they are to do so (Cline & Baldwin, 1994; Friedman & Karagan, 1973; Murray, 1994; Reid et al., 1967; Wergeland, 1979). Currently, no empirical studies appear to have explored these views.
5.1.2.4 Subjects' Speech and Language Development

There is little information in the literature about selectively mute children's speech and language development. Therefore, of particular interest in this study was the report by three mothers that, after a period of seemingly normal progress (up until around 18 months), their children's speech and language development appeared to stop for no apparent reason. Eventually it had resumed, but these children's speech and/or language had not been normal since its resumption. Indeed, the speech of three of these subjects was still occasionally unintelligible.

It is possible that temporary cessation of speech and language development may be a feature of normal development for some children, while for others, such as three of the subjects in this study, it may place them at risk for the development of a disorder, such as selective mutism. It is possible that during this period limited verbal interaction with people becomes an established pattern of social interaction. For example, it is likely that for subject C, speaking to anyone other than family members was not a positive experience because of the difficulty she encountered making herself understood. Indeed, subject C's mother proposed that her severe communication disorder had caused the selective mutism. What is clear from this study is that cessation of speech and language development can be a feature of the developmental history of some selectively mute children and may be important; therefore, not only for the early identification of children at risk for selective mutism, but for prophylactic intervention. This finding has implications for selective mutism research which usually does not include accounts of speech and language development.

5.1.2.5 Separation Anxiety

Three subjects experienced separation anxiety and two subjects did not. Some writers have proposed that separation anxiety may be one of the causes of selective mutism (Lebrun, 1990; Lesser-Katz, 1986; Pustrom & Speers, 1964). However, this study's findings indicate that it cannot be assumed that all selectively mute children will experience separation anxiety.

Many small children when confronted with a new situation, such as separating from their caregiver or being spoken to by a stranger, behave in what can be described as a shy manner, hiding behind their caregiver and becoming silent.
This behaviour, which may be viewed as a response to a threatening situation, has also been observed in animals (Black & Uhde, 1992; Friedman & Karagan, 1973; Lebrun, 1990; Lesser-Katz, 1986; Shreeve, 1991; Youngerman, 1979). It seems that being silent is protective and may be anxiety reducing. Although most children outgrow this behaviour, it is possible that for a small number of children it becomes an effective way of dealing with challenging situations. Thus, selectively mute behaviour may begin as an extension of what has been termed shyness behaviour, i.e. some children learn that when they find themselves in difficult circumstances, such as being separated from their caregiver, being silent reduces their anxiety. It is interesting to note that subject E’s mother viewed subject E’s selective mutism in this way.

5.1.2.6 Subjects’ School Experience
It is surprising that selectively mute children’s attitude towards school is often described as positive because this setting is usually the focus of the problem. In this study, four subjects had excellent school attendance records, and three of these subjects had a positive attitude towards school. As well, all the subjects, apart from subject D, were reported to have school friends, and two subjects even had a best friend. This finding is consistent with other reports which indicate that peers usually respond in a favourable way towards these children (Cline & Baldwin, 1994; Croghan & Craven, 1982; Scott, 1977). Unfortunately, acceptance of the selectively mute behaviour by peers may inadvertently reinforce it because other children may speak for the selectively mute child thereby obviating the need for them to talk.

Only subject C appeared to have a poor school attendance record (and speech pathology attendance record) because of health problems such as frequent colds. Her poor school attendance appeared to be contributing to some of her social problems, e.g., poor peer relationships, as well as her limited academic progress. As well, her limited speech pathology contacts were restricting opportunities for treatment of her severe communication disorder. It seems that subject C, her family, teacher, school counsellor, and speech pathologist were caught up in a negative cycle of poor attendance leading to limited progress in most areas.

Thus, it appears that although most selectively mute children are reported to have a positive attitude towards school, there are exceptions. For these
children, issues apart from their selective mutism may be involved. For example, in this study subject D’s reluctance to going to school may have been related to concerns she had about leaving her mother (and what might happen to her mother if she did); and subject C’s absenteeism may have been associated with her mother’s desire to keep her at home where she thought she would be safe.

5.1.2.7 Subjects’ Selectively Mute Behaviour
The histories and descriptions of the five subjects’ selective mute behaviour were all different. For example, for one subject the onset of the selectively mute behaviour was sudden while for four subjects it was gradual; two subjects had spoken at pre-school while three subjects had not; four subjects demonstrated predictable patterns of selectively mute behaviour, i.e., their parents could predict where and when they would and would not speak, while one subject did not; and four subjects maintained eye contact while one subject did not. Thus, the selectively mute behaviour, although common in one major feature, i.e., silence, encompassed a wide range of historical and descriptive features. An awareness that every selectively mute child presents with a wide range of features unique to that particular child may have important treatment implications (see Section 5.5.5, below).

5.1.2.8 Conclusion
The five subjects were distinguishable by their differences, particularly in their selectively mute behaviour. However, some important factors emerged including cessation of speech and language development during the second year, toilet training problems, and common personality features, such as stubbornness. The study also found that separation anxiety may be a factor in the development of selective mutism in some, but not all, selectively mute children.

5.2 SUBJECTS’ SPEECH AND LANGUAGE CHARACTERISTICS
5.2.1 Incidence of Communication Disorders
The study found that four of the five selectively mute children had a communication disorder. This finding supports the findings of other studies (e.g., Kolvin & Fundudis, 1981; Steinhausen & Juzi, 1996; Wilkins, 1985; Wright, 1968) that some, but not all, selectively mute children will have a communication disorder. Therefore, it appears that a communication disorder is not an
essential feature of selective mutism, although its occurrence in a high proportion of the subjects in this study indicates that it can be an important issue in these children.

5.2.2 Sex Ratio
The study involved three boys and two girls. Other studies have typically found a greater proportion of girls with selective mutism (Hayden, 1980; Kolvin & Fundudis, 1981; Steinhausen & Juzi, 1996; Wilkins, 1985). However, in other studies, sex ratio findings may have been influenced by the studies' criteria. For example, Hayden (1980) found a ratio of 6 girls to 1 boy after she had excluded all the children who had a communication disorder. As communication disorders are more common among boys, it is possible that many of the selectively mute children she excluded were boys.

It is likely that the larger number of boys in this study influenced one of the study's findings which revealed a higher than usual proportion of selectively mute children with a communication disorder, i.e., 80%, instead of the previously reported 20% to 50%. However, it could be that the actual incidence of communication disorders in other studies is higher than is reported because of the limited methods of speech and language assessment used. As well, the current researcher's professional orientation and the fact that three of the five subjects were nominated by speech pathologists may have influenced the type of selectively mute children, as well as the number of boys, who participated in the study (all three boys had a communication disorder). More studies involving larger numbers of subjects are needed to determine if the sex ratio is different when studies of selective mutism are conducted by, or involve, speech pathologists.

5.2.3 Oromusculature Factors
Selectively mute children are often reluctant to open their mouths (Murray 1983; Saltfield, 1950; Shaw, 1971; Strait, 1958). An oromuscular assessment was attempted with four of the five subjects, but it was impossible to conduct because these children would not co-operate. As well, eating seemed to play an important role for three of the subjects in the study. On several visits these subjects started eating. They appeared to be filling their mouths with food, possibly to avoid speaking. It is not known why selectively mute children occasionally display aberrant oral behaviour, but it seems likely that this
behaviour is in some way associated with the disorder because the same mechanism, i.e., the mouth, is involved. However, making assumptions such as this can be problematic because they may be simplistic. For example, subject A not only refused to open his mouth when he visited the dentist, but he also refused to open his eyes when he visited the optometrist. Lebrun (1990) posed a number of psychodynamic explanations, such as an unwillingness to expose oneself to the possibility of penetration, for behaviours like these. An examination of these explanations is beyond the scope of this study. However, these hypotheses do point to the likelihood of the intricate nature of some of the mechanisms underlying selective mutism, and the potential pitfalls in making simplistic assumptions about what appears to be a complex disorder.

5.2.4 Speech Disordered Subjects
One of the study’s most interesting findings was that four of the five subjects had a speech disorder. These ranged from mild to severe and were qualitatively different, i.e., each speech disorder comprised a number of different characteristics. However, only two subjects appeared to have a speech disorder severe enough to interfere with their ability to communicate satisfactorily. It is likely that the unintelligibility of subject A’s speech was associated with some of the phonological processes he was using, i.e., Prevocalic Voicing and Velar Fronting. These processes have been found to be detrimental to intelligibility (Hodson & Paden, 1983), particularly when they have a high occurrence, i.e., 40% or above. Likewise, the presence of certain phonological processes (e.g., Cluster Reduction and Velar Fronting) and their high occurrence may have contributed to the unintelligibility of subject C’s speech. Her mother, with whom she was reported to have a close relationship, remarked that subject C’s speech was often difficult to understand. Subject C’s speech disorder was so severe that it must have influenced her ability and readiness to communicate. This may have contributed to the development and maintenance of her selective mutism (see Section 5.3.2, below).

Subjects A and C were obviously aware of their speech problems and occasionally seemed to avoid saying words they found difficult to pronounce. For example, subject A appeared to avoid answering a question which involved the response “grandma” on at least 10 occasions. He seemed to be aware that the consonant cluster /gr/ was difficult for him to produce. This was
further illustrated when he hesitated before he said the phrase "grown-up cameras". It is also possible that subject C, who usually avoided saying "she", did so because she had difficulty producing the phoneme /ʃ/. Although there may be other reasons why these subjects omitted certain words, such as temporary loss of memory (subject A) and word finding difficulties (subject C), it is possible that in some instances these children were selecting what they would, and would not, say. It is even possible that this behaviour was related to the selectively mute behaviour itself.

Subject B’s mild speech problem did not appear to interfere with the intelligibility of his speech. It is likely that his mild articulation errors were evidence of past phonological delay (Fronting, Gliding or Alveolar Assimilation). He seemed unaware of his speech problems which did not appear to influence his readiness to speak to his brother. It seems unlikely that subject B’s mild articulation errors were related to his selective mutism, although his history of delayed speech development might have been.

Subject E also appeared unaware of his speech problems which did not noticeably affect the intelligibility of his speech. During the latter part of the visit, he spoke without reservation or self-consciousness. It is likely that subject E’s speech problems were partly related to his mild bi-lateral hearing loss because he was found to be experiencing difficulties with sounds, such as fricatives and affricates, that have been associated with hearing impairment (Shaw, 1994). He also tended to omit unstressed parts of speech, such as function words (articles), a further feature associated with hearing impairment (Shaw, 1994). Although children with mild hearing impairment usually develop normal speech and language, there is some evidence that even a mild hearing loss can adversely affect some children’s speech and language acquisition (Shaw, 1994). Some of these children, like subject E, have been found to experience speech problems but not language problems (Paul, Lynn, & Lohr-Flanders, 1993).

5.2.5 Language Disordered Subjects

Only two subjects were found to have language disorders in addition to their speech problems. Subjects B and C had receptive language problems which had not been fully acknowledged by either their families, teachers, or clinicians. It is likely that their receptive language problems were influencing
their ability to communicate effectively. For example, the spontaneous language samples revealed that subject B did not readily respond to his brother’s comments. His tendency to be unresponsive may have been part of a wider communication associated with his receptive language problems. Also, subject C often misinterpreted what was said, and her language content frequently seemed confused (see Appendix C - 3, line 587). It is interesting to note that both families of these subjects appeared to accommodate to these children’s receptive language problems.

It is likely that subject B could be described as language learning disabled. He showed marked syntactical delay and his expressive language abilities were limited. Subject B’s teacher had suspected from his written work that he had a language problem which seemed to be related to “structure” (teacher). However, this had never been fully investigated. It is possible that his selectively mute behaviour had blurred the issue of his language learning disability because it had made a full assessment of his language capabilities difficult to implement in the school and clinical settings.

There is not the space here to discuss fully subject C’s language sample, therefore, only the more salient linguistic features will be examined. Subject C had an expressive language disorder which included problems with syntax and semantics (word meaning and word retrieval difficulties). In spite of these problems and her severe speech disorder, she appeared to communicate readily at home. However, it is perhaps understandable why she was reluctant to communicate away from home. She obviously knew that she was the focus of interest during the visits, and she appeared keen to maintain that focus in spite of her linguistic disadvantage. Her semantic problems and word finding difficulties frequently led to conversational breakdown and confusion (see Appendix C - 3, e.g., lines 62-67; 458- 470; 630-635), but she continued the conversation undeterred. In some instances, her use of symbolic noises, e.g., shrieking and singing, could be interpreted as a device for maintaining her conversational involvement, i.e., drawing everyone’s attention back to her game (see Appendix C - 3, e.g. lines 104-110; 124-138). On other occasions, they could have been associated with her apparent frustration and anger when her sister answered for her (see Appendix, e.g., lines 81; 423-429). During the conversation, it was apparent that subject C was determined to hold her ground, and she did this in spite of her severe communication disorder.
Subject C's expressive language was characterised by some syntactical inconsistencies (e.g., inconsistent use of the personal pronoun "me" for "I"; and occasional omission of the copula, and auxiliary verbs). It is possible that some of these errors were partly associated with her level of emotional maturity. Subject C's mother described her as immature and dependent (her father was reported to call subject C his wife's wart because she appeared so attached to her mother). Subject C's mother remarked several times how difficult it was having a daughter like subject C. It is likely that she had some negative feelings about her daughter's problems and behaviour, and that these feelings occasionally gave rise to the disparaging remarks she made. It was apparent that subject C was aware of the negative quality of some of these remarks, and on one occasion she even voiced her hostility towards her mother (see Appendix C - 3, lines 488-489). On this occasion, there was a particularly creative moment when she disowned her hostility and projected it onto one of the dolls (see Appendix C - 3, lines 504-511).

As already mentioned, children with communication disorders have often been described as immature and dependent (Baltaxe & Simmons, 1988; Cantwell et al., 1980; Chess & Rosenberg, 1974). In view of subject C's severe communication disorder it is hardly surprising that she was demonstrating these behaviours. Furthermore, her occasional inconsistent use of syntax, e.g., "me" for "I", may have been a feature of her emotional immaturity as well as her communication disorder. This may indicate that factors other than linguistic factors were involved in her communication disorder. It may also indicate that her selective mutism and communication disorder were in some way related. More empirical research exploring the behavioural characteristics and their ramifications of children who have severe communication disorders is required to substantiate this view.

5.2.6 Social-Conversational Features

In the samples analysed, three of the four subjects were found to be Active Conversationalists and one was found to be a Verbal Non-Communicator. This means that in these samples, all four subjects achieved normal conversational assertiveness measures when they were speaking at home. This finding is in direct contrast to Fey's description of selectively mute children's social conversational behaviour as "low on both the assertiveness and the responsiveness continua" (Fey, 1986, p. 89). It seems that Fey's description
relates to contexts where selectively mute children are silent. The subjects in
this study were clearly competent in their social-conversational assertiveness
when they are speaking at home. This finding indicates that their performance
as Inactive Communicators, as proposed by Fey, is context dependent.

Although selectively mute children are silent in some contexts, some have
been reported to be verbally aggressive, bossy and loquacious in other
contexts, principally at home (Cline & Baldwin, 1994; Kopp & Gillberg, 1997;
Reed, 1963; Shreeve, 1991; Wright, 1968). These features are not necessarily
descriptions of normal social-conversational behaviours. In this study when the
subjects were speaking at home, subject A was reported by his mother to be
verbally competitive and controlling (it is interesting to note that he frequently
maintained control of the conversational interaction during the spontaneous
language sample); subject B used expletives (swearwords) and was verbally
aggressive towards his younger brother; subject C was highly talkative; subject
D was reported by her father to be noisy; and subject E’s mother remarked
that subject E was often “very loud”. In the light of previous research findings
and the results of this study, it seems misleading to presume that a description
of selectively mute children as Inactive Communicators is any more than a
superficial analysis of their communication behaviour.

Fey (1986) does not make any reference to speaking context when he
describes selectively mute children as Inactive Communicators. This is
surprising because a diagnosis of selective mutism depends on a discrepancy
in speaking between different contexts (DSM-IV, 1994; ICD 10, 1992). It would
seem important for an adequate description of the social-conversational
behaviour of selectively mute children to involve more than one speaking
context and, specifically, at least one context where they are known to speak.

5.2.7 Prosodic Features
Assessment and observation of prosodic features have rarely, if ever, been
included in studies of selective mutism. However, superficial references to the
vocal quality of some selectively mute children have been made, usually in the
mental health literature (e.g., Croghan & Craven, 1982; Murray, 1983;
Silver, 1989; Wright, 1968). In this study, the observation that subject D’s vocal
quality was “soft” does not appear important because she was reported by
both her parents to be often noisy at home. Although subject D spoke with low
volume when she was being audio-taped, there was no evidence of any pathology and therefore it is likely that this finding was context dependent.

The study revealed that subjects B and C were demonstrating some unusual prosodic features. The causes of these features were not clear and it is likely that they were different for each subject. For example, it is possible that subject B’s monotonous intonation patterns may have been associated with his limited linguistic skills. However, it is also interesting to note that monotonous intonation patterns can be a feature of autism (Sigman & Capps, 1997) and subject B’s mother had remarked that she thought he was “a touch autistic”. It seems unlikely that subject B was autistic. However, he had never been fully assessed by either a paediatrician or a child psychiatrist. Therefore, the possibility that subject B was suffering from a disorder similar to, but less severe than, autism, such as of Asperger’s Disorder, had not been eliminated. Asperger’s Disorder has been found to co-occur with selective mutism (Kopp & Gillberg, 1997).

It is likely that subject C’s unusual prosodic features were associated with her severe communication disorder. For example, she may have been using exaggerated intonation patterns to facilitate the intelligibility of her speech. However, they may also have been associated with her emotional state which often appeared tense and excitable. Sometimes, she used increased volume and a higher pitch. It is interesting to examine the occasions on which this occurred. For example, she screamed when her mother misunderstood her and she pretended to slam the door loudly (see Appendix C - 3, lines 146-150), and she appeared angered by her mother’s remark about her game and let out a loud roar (see Appendix C - 3, line 187-190). Therefore, it seems likely that her use of unusual prosodic features were related to both her communication disorder and her psychiatric disorder.

Prosody was not assessed formally as part of this study. However, the above observations reveal that descriptions of prosodic features may hold important information about psychiatric disorders, such as selective mutism, as well as communication disorders. It would seem that studies of prosody present a potential area of research for speech pathologists in psychiatric disorders in general, and in selective mutism, specifically.
5.2.8 Summary
Each subject presented with a unique speech and language profile. There appeared to be no single pattern of communication characteristics in these subjects which accompanied their selective mutism, although all the subjects who had a communication disorder had, as a part of it, a speech disorder. Thus, this study, like other studies (e.g., Kolvin & Fundudis, 1981; Wergeland, 1979; Wilkins, 1985; Wright, 1968) and some clinicians (e.g., Cline & Baldwin, 1994; Harris, 1993; Hill & Scull, 1985; Murray, 1983; Rutter 1972; Smayling, 1959) found that speech disorders, rather than other communication disorders such as stuttering, occur in selective mutism. It is, therefore, possible that selective mutism may be more closely associated with disorders of speech than with other disorders of communication. However, this possibility must be viewed with caution because most studies involve only small numbers of subjects, i.e., no more than 25 subjects, and the methods of speech and language assessment are usually limited.

5.2.9 Conclusion
The study found that four of the five subjects had a communication disorder in addition to their selective mutism. The frequently reported co-occurrence of communication disorders and psychiatric disorders, such as selective mutism, suggests that in some cases there may be a relationship, or an association, between the two disorders. This issue appears not to have been much explored in the past, particularly from a speech pathology perspective. In the light of this study's findings it will be explored next.

5.3 COMMUNICATION DISORDERS AND SELECTIVE MUTISM
5.3.1 Co-occurrence of Communication Disorders and Psychiatric Disorders
As already mentioned, up to 50% of children with a primary diagnosis of communication disorder have been found to have a diagnosable psychiatric disorder, and perhaps more than 50% of children with a primary diagnosis of psychiatric disorder have been found to have a communication disorder (Baker & Cantwell, 1987; Bartale & Simmons, 1990; Beitchman et al., 1986). The interface between the two disorders can be conceptualised in a figure comprising two overlapping spheres (see Figure 5 - 1, overleaf).
The co-occurrence of communication and psychiatric disorders does not point to a clear causal relationship, although there does seem to be some support for the notion that having a communication disorder places some children at risk for the development of a psychiatric disorder (Baker & Cantwell, 1982; Baltaxe & Simmons, 1988a; Cantwell & Baker, 1985; Prizant et al., 1990; Rutter, Tizard, & Whitmore, 1970). This means that the four children in this study who had a communication disorder may have been at risk, at some time, for the development of a psychiatric disorder such as selective mutism.

The idea that a communication disorder could have contributed to the development of the selective mutism is not new. As early as 1912, Gutzman (Gutzman, 1912, cited in Kratochwill, 1981) proposed that selective mutism may develop as a reaction to the experience of being teased, criticised, or not understood because of a speech and/or language disorder. Since then, others have supported this proposal (e.g., Adams & Glasner, 1954; Bishop & Rosenbloom, 1987; Cline & Baldwin, 1994; Halpern et al., 1971; Lebrun, 1990; Rutter, 1977; Steinhausen & Juzi, 1996). As well, some authors have suggested that a speech and language problem may be a factor in the development of selective mutism in some cases (e.g., Kaplan & Sadock, 1991; Prizant, 1990; Rutter & Lord, 1987; Smayling, 1959; Wergeland, 1979; Wright, 1968; Wright et al., 1985); while others have argued that selective mutism may develop as a response to a communication disorder (e.g., Rutter, 1972; Silver, 1989;
Steinhausen & Juzi, 1996; Wright, 1968); and still more have alleged that speech and language problems may have contributed to the problem (e.g., Lang & Wheeler, 1994; Rutter & Lord, 1987; Silver, 1989; Wright, 1968). Unfortunately, no one appears to have explored these views further.

5.3.2 A Communication Disorder as an Area of Vulnerability
A possible explanation for the development of selective mutism in some cases may be that speaking is an area of vulnerability for children with a communication disorder. Children who have a communication disorder may experience anxiety during social situations, particularly if they are self-conscious about their poor speech (Cline & Baldwin, 1994). The difficulties they experience in making themselves understood or expressing themselves adequately may lead to communication breakdown, as had happened with subjects A, C and E. Frequent experiences of communication failure may have negative consequences for a child socially, as well as affecting their self image and reducing their self confidence (Gath, 1987). As a result, they may respond by communicating less (Hadley & Rice, 1991; Morley, 1972).

In this study, the presence of a communication disorder did not fully explain the existence of the selective mutism for any of the subjects, with the possible exception of subject C. It seems likely that subject C’s selective mutism might have developed in response to her severe communication disorder because of the problems she had making herself understood, as well as the teasing she had encountered. (Compare Morley (1965) who described a six-and-a-half year old girl who had “articulatory dyspraxia” (p. 247) and who had reportedly stopped speaking because her speech was unintelligible. She started speaking once speech pathology treatment had been instigated.)

It was not possible to ascertain whether, or not, there was a relationship, past or present, between the communication disorder and the selective mutism for subjects A, B, and E who also had a communication disorder. Therefore, it seems likely that although the communication disorder may have provided an area of vulnerability for the development of selective mutism at one time, currently the selective mutism and the communication disorder were independent disorders. As most children with a communication disorder do not become selectively mute, clearly other factors are involved in the development of the disorder. Some of these factors are explored below.
5.4 CAUSES OF SELECTIVE MUTISM

5.4.1 Subjects' and Families' Views on the Causes of Selective Mutism

Only two subjects' views on the cause of their selective mutism were known. Both subjects appeared to regard the behaviour as outside their control. Subject B considered that it was due to his "idiot brain", and subject D had told her mother that she was "not born to talk". These views lend some support to the trend to change the term from elective mutism, which is suggestive of control, to selective mutism, which is not. However, the views of these subjects are not particularly helpful in identifying the cause, or causes, of the disorder. The views of the parents appear more helpful.

Subject A's mother viewed selective mutism as a response to the family's social isolation; his father viewed it as a developmental stage; subject B's mother linked it to the drugs she had taken during pregnancy; subject C's mother viewed it as a response to a communication disorder; subject D's father viewed it as a response to requests for quietness; and subject E's mother viewed it as a feature of shyness behaviour. Thus, there was no consensus amongst the parents on the cause of their child's selective mutism. Although all the parents' views have credibility when applied to the subjects concerned, it is likely that the cause identified by each parent was just one of a number of factors which led to the selective mutism in these children. To explore these factors a broad aetiological model is needed.

5.4.2 A Model for Exploring the Causes of Selective Mutism

The cause of selective mutism is unknown, but it is likely to be multifactorial (Cline & Baldwin, 1994; Hill & Scull, 1983; Hooper & Linz, 1992; Kolvin & Fundudis, 1981; Lang & Wheeler, 1994; Laybourne, 1979; Sluckin, 1977). One way of exploring a disorder's aetiology is to apply a biopsychosocial model (Engel, 1980). A biopsychosocial model involves examination of biological, psychological, and social factors. Using this approach it is possible to explore some of the factors which could have been important for the development of selective mutism in these five subjects. These factors are outlined in Table 5-1 (overleaf).
### TABLE 5-1: A BIOPSYCHOSOCIAL MODEL APPROACH FOR UNDERSTANDING CONDITIONS ASSOCIATED WITH THE CAUSE OF SELECTIVE MUTISM

<table>
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<th>C</th>
<th>D</th>
<th>E</th>
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<tr>
<td>Medication during Pregnancy</td>
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<tr>
<td>Problems during Pregnancy</td>
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<td>Prematurity</td>
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<td>Caesarean Delivery</td>
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<td>Health Problems</td>
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<td>Ear Infection(s)</td>
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<td>Hearing loss</td>
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<td>Slow Motor Development</td>
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<tr>
<td>Toilet Training Problems</td>
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<td>Family history of</td>
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<tr>
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<tr>
<td>Delayed Speech and/or</td>
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<td>Language Development</td>
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<td><strong>PSYCHOLOGICAL FACTORS:</strong></td>
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<tr>
<td>Marital disharmony</td>
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<td>Mother Shy and Reticent</td>
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<td>History of</td>
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<tr>
<td>Separation Anxiety</td>
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<tr>
<td>Shyness</td>
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<td>?</td>
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<tr>
<td>Sensitivity</td>
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<td>+</td>
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<tr>
<td>Fears/phobias</td>
<td>-</td>
<td>+</td>
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<tr>
<td>Stubbornness</td>
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<tr>
<td>Immaturity</td>
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<tr>
<td>Dependent</td>
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<td>Enuretic</td>
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<td>Teased about Speech</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Poor Attitude towards School</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
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<tr>
<td><strong>SOCIAL FACTORS:</strong></td>
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</tr>
<tr>
<td>Limited Family Social Contacts</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Quietness Valued at Home</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
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</tr>
<tr>
<td>No Friends to Play at Home</td>
<td>-</td>
<td>+</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>No School Friends</td>
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<td>-</td>
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<td>+</td>
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</tr>
</tbody>
</table>

+: Indicates feature present
-: Indicates feature absent

The subjects do not present clearly similar profiles. However, subject D’s profile stands out in the table because it is different from the other subjects’ profiles, i.e., it reveals only one biological factor and many psychological and social factors. Subject D was also the only subject who did not have a communication disorder. If a communication disorder is an area of vulnerability for the development of selective mutism in some children, then it is possible that there are at least two subtypes of children who have selective mutism. One where a communication disorder is present, in which case a greater number of biological factors may be found, and one where no
communication disorder is present, in which case a greater number of psychological factors may be found. This means that it is likely that subject D’s selective mutism was qualitatively different from that of the other subjects.

The biopsychosocial model also reveals that of the four subjects with a communication disorder, the profiles of subjects B and C contain more biological and psychological factors than subjects A and E. Subjects B and C had a speech and a language disorder, unlike subjects A and E who had just a speech disorder. It is possible that language disorders are associated with a greater number of so called biological factors. Studies are required to explore this issue. However, some studies have found that children who have language problems are more at risk for the development of psychiatric disorders than children with speech problems alone (e.g., Baker and Cantwell, 1982; Beitchman, 1985;). Therefore, it is possible that some of the psychological problems these children were experiencing, such as sensitivity and fears/phobias, developed secondary to their communication disorders.

5.4.3 Summary
It is clear that no one factor was either necessary or sufficient for the development of selective mutism among the subjects. Rather, there may have been a cumulative risk effect, i.e. several of these factors contributed to the development of the selective mutism. Using a biopsychosocial model, the factors which seem most likely to have contributed to the development of selective mutism in this study were: (a) delayed speech and/or language development; (b) personality features, which included a tendency to be stubborn; and (c) limited family social contacts.

5.4.4 Conclusion
So what is selective mutism? It is possible that rather than dealing with a specific psychiatric disorder, selective mutism is a behaviour, or a final common pathway, which arises in a number of ways as a result of a variety of conditions. One condition may be the different ways people, including children, respond to challenging situations such as not being understood because of a communication disorder. People’s different behavioural responses are usually associated with their personality structure (Leigh, Pare & Marks, 1982). For example, some people respond by withdrawing; these people are said to “internalise” their problems, while other people respond
openly and sometimes aggressively; these people are said to "externalise" their problems (Prizant et al., 1990). Children who "internalise" their problems often appear worried, shy and withdrawn (Achenbach, 1974). When these behaviours interfere with learning and forming satisfactory relationships, these children can be described as having an emotional disorder. Likewise, children who "externalise" their problems often behave in an overactive, disobedient and destructive way (Achenbach, 1974); these children can be described as having a behaviour disorder. Selectively mute children have been found to demonstrate more "internalising" than "externalising" symptoms (Steinhausen & Juzi, 1996). (It is interesting to note that internalising symptoms, like selective mutism, are more common among girls (Achenbach, 1974).) The occurrence of emotional and behavioural disorders is not mutually exclusive (Prizant et al., 1990), and occasionally both disorders are included under the one rubric of a behaviour disorder. Therefore, it seems likely that selective mutism can be viewed as an emotional/behavioural disorder.

The way selective mutism is viewed is likely to determine, in part, these children's clinical management. This study revealed much variation regarding referral, assessment and treatment procedures, as well as uncertainty about appropriate management strategies. These findings and their implications are discussed next.

5.5 Referral, Assessment and Treatment Findings and Their Implications

5.5.1 Referral Findings

One of the study's important findings was that there appeared to be no recognised referral procedure for selectively mute children in the Illawarra area of New South Wales. Subjects A and E had been referred to speech pathology for treatment of their communication disorders, but neither had been referred for treatment of their selective mutism. Subject B had been referred to speech pathology by his pre-school teacher and again by the school counsellor, but instead had been seen by a social worker and then by a psychologist, even though there were two speech pathologists working at the same clinic. Subject D had been referred, first to a social worker and then to a psychologist, but had never been referred for a speech pathology assessment. Subject C had been referred to speech pathology, but it was not until her second year at school that she had been referred by her teacher to the school counsellor. Thus, the children seemed to be referred according to
the referees' perceptions of the disorder, i.e., a psychiatric disorder or a communication disorder, and once referred were not usually referred to other professional disciplines for further assessment and treatment. This referral pattern may be related to the fact that many professionals have only limited knowledge of the disorder because they rarely come into contact with these children. When they do, they seem uncertain how to proceed, a situation which is hardly in the best interests of the child.

Most mental health clinicians use DSM-IV (1994) to assist them in the clinical diagnosis of disorders, such as communication disorders and selective mutism. It is possible that this is may be part of the problem. DSM-IV (1994) states that "Selective Mutism should be distinguished from speech disturbances that are better accounted for by a Communication Disorder, such as Phonological Disorder, Expressive Language Disorder, Mixed Receptive-Expressive Language Disorder, or Stuttering" (p. 115). The implication here is that selective mutism and communication disorders are mutually exclusive. This is problematic for several reasons:

1. it does not fully recognise that selective mutism and communication disorders can co-occur. (As demonstrated in this study, four of the five selectively mute children had a communication disorder. Using the DSM-IV (1994) guidelines it would be difficult to determine subject C’s diagnosis);

2. children with a diagnosis of selective mutism may never be referred for a speech pathology assessment so that their communication disorder may go undetected and, therefore, untreated. (The full extent of subject B’s expressive and receptive language problems had not been identified); and

3. where the child’s problem is viewed as a communication disorder, the speech pathologist may be the only clinician treating the disorder. (This was the case for subjects A and E). As selective mutism is a psychiatric disorder it seems questionable whether speech pathologists should be the only professionals treating these children.

To address some of these concerns, it would seem important for contributors to future editions of the Diagnostic and Statistical Manual of Mental Disorders to address the issue of communication disorders in selective mutism. Currently, DSM-IV (1994) appears to be advocating a policy of diagnosis by exclusion on the basis of the severity of the communication disorder. As the current study has demonstrated, this approach is potentially problematic for these children’s appropriate management.
5.5.2 Assessment Findings
Another of the study's important findings was that selectively mute children can receive a full speech and language assessment with the family's assistance. Obviously, the most likely place to conduct this assessment is the situation where the child speaks, i.e., the home. However, it is important to remember that not all selectively mute children speak at home when people other than family members are present. In these cases other strategies may be needed (see Section 5.5.4, below).

Of the three subjects who were being seen by speech pathologists, only subject E appeared to have had a speech and language assessment. (It is interesting to note that his mother had provided an audio-taped recording when he was speaking at home to assist in the assessment.) It is not clear why the speech pathologist who was treating subjects A and C was unable to conduct an assessment, at least of their receptive language skills. She seemed to find these children difficult to manage and expressed her frustration at their continuing silence. Clinicians, including speech pathologists, need to be aware of countertransference issues (see Section 5.5.6, below).

The current study focused on speech and language, although it would have been possible to conduct formal assessments of other aspects of three of the subjects' communication behaviour, such as vocal quality and pragmatic skills. As well, a sample analysis assessment would have been possible for the two subjects who were audio-taped. The two subjects who talked on the first visit were ignorant of the reason for the visit, unlike the three other subjects. Thus, it may be preferable for selectively mute children to be unaware that the visitor to the home is a speech pathologist until speaking is firmly established in the assessment setting.

Subject A who communicated normally during the first visit, but who was silent thereafter, provoked some reflection. This response was unexpected; there appears to be no mention in the literature that this can occur. His silence may have been triggered by the conspicuousness of the speech and language assessment procedures, because there was an implied message on the second visit that he was required to speak. His refusal to do so may have been a direct response to that message. After this experience, care was taken not to demonstrate either verbally, or non verbally, that the other subjects were
required to speak. However, assessing speech and language and intervening in any disorder can be potentially threatening situations to children. Clinicians, including speech pathologists, always need to be sensitive to children’s responses, especially if the child has a tendency to be shy and to withdraw when challenged.

5.5.3 Siblings’ Interference
There is little doubt that siblings can interfere with the assessment process. It is possible that subject A’s older brothers had ascertained the reasons for the visits from their parents’ conversations and had informed him; and it is known that subject D’s older sister informed her about the study’s nature. Subject D’s mother said she was certain subject D would have spoken if she had been unaware of the reason for the visits. Therefore, it seems important that siblings are also ignorant of the reason for the home visits made by the speech pathologist until speaking is firmly established.

5.5.4 Assessment Materials
Conducting the study provided important information on the types of speech and language assessment material that can be used. The selectively mute children in this study usually co-operated with the administration of receptive language assessment procedures. However, an oromuscular assessment, which focused on the children’s problem area, i.e., the mouth, was largely unsuccessful. Administration of the SHAPE (Smit & Hand, 1997) was also occasionally problematic. However, a speech assessment may be possible if certain measures are taken. For example, photographs of everyday objects could be used if they were used more spontaneously as part of a language sampling procedure. If the child is silent in the speech pathologist’s presence, the parent’s assistance could be engaged by audio-taping the child while they are looking through the photographs. This measure was effective with subject D.

5.5.5 Assessment of Selectively Mute Behaviour
None of the subjects had received an assessment of their selectively mute behaviour. This was surprising because aspects of their selectively mute behaviour held important treatment clues. For example, subject A’s selectively mute behaviour was unpredictable, although he usually spoke at home if there was an informal atmosphere. (If this fact had been more readily
appreciated on the first visit, precautions could have been taken and subject A might have spoken on subsequent visits; subject B’s selective mutism appeared to be strongly associated with anxiety; subject C usually spoke at home, even when people other than family members were present; subject D would read and speak when she was being audio-taped; and subject E was more likely to speak if eye contact was averted.

Insights into the selectively mute behaviour of the subjects not only seem to provide a starting point for the treatment of their selective mutism, they also appear to provide a basis on which to plan speech pathology intervention, where indicated. In this study, it seemed likely that subject A would require a more naturalistic and informal approach to therapy; it would be necessary to address subject B’s anxiety before commencing treatment; subject C could be treated at home rather than in a clinic; and subject E, could be treated if eye contact was averted, at least initially. Therefore, it seems important to conduct a full assessment, including a profile of the selectively mute behaviour, of every selectively mute child.

5.5.6 Treatment Findings

If this study is indicative of some other studies (e.g., Reed, 1963) and case reports (e.g., Chethik, 1973; Gemelli, 1983; Harris, 1993; Landgarten, 1975; Scott, 1977; Youngerman, 1979), it appears that there is a tendency for some clinicians to be the sole person treating the selectively mute child. Broadly speaking this means that speech pathologists usually treat the communication disorder, while mental health workers usually treat the selective mutism. There appears to be no recognised coordinated assessment and treatment approach to the management of these children. Rather, they seem to be managed according to the professional orientations of the clinicians involved.

In this study, no subject appeared to have received a full formulation of their problem. As a result, the clinicians appeared unsure how to treat them. The treatment received seemed to depend on the discipline of the clinician to which the child was referred. For example, subjects A and E were receiving treatment for their communication disorders; neither child had received intervention for their selective mutism. Indeed, a diagnosis of selective mutism had not been made. Subject B’s selective mutism was being treated but not
his communication disorder, and treatment, like for subject D, comprised what could best be described as a cocktail of therapies, i.e., "play and cognitive therapy, gestalt therapy, behaviour therapy and family therapy" (psychologist). Only subject C was receiving treatment for her communication disorder and selective mutism. However, the clinicians involved were not working co-operatively and they appeared to be frustrated (speech pathologist) and uncertain about which treatment approach to use (school counsellor). It would seem important to individualise the assessment of every selectively mute child and, using a biopsychosocial model approach, produce a formulation unique to each child. Included in the formulation would be implications for involvement, or not, of a speech pathologist.

In a modern western culture, silence from children towards adults can be a challenging behaviour. Many clinicians, including speech pathologists, find selectively mute children's silence frustrating to deal with (Cline & Baldwin, 1994; Friedman & Karagan, 1973; Wright, 1968). Clinicians need to be aware of countertransference issues because sustained silence can have a disconcerting effect on some people (Chethik, 1973; Hill & Scull, 1985; Ruzicka & Sackin, 1974). Certain clinicians, like the psychologist who was treating subjects B and D, seem to feel the need to act, i.e., they commence treatment without conducting a full assessment of the children’s problems. Others, like subject A’s speech pathologist, become frustrated and either give up treating the child, as in the case of subject A, or place the child in a group with other communication disordered children, as in the case of subject C. These are hardly positive management approaches. In some instances, it may be preferable for the clinician to re-refer the case to someone who is familiar with, and who has expertise in, treating the disorder (see Section 5.5.7, below).

5.5.7 Recommendations
It is likely that selectively mute children are best assessed and managed by a multidisciplinary team (Giddan et al., 1997; Harris, 1997; Thompson, 1988). As well as the child’s parents and teacher, members of the team might include a paediatrician, an audiologist, a psychologist or a psychiatrist, and a speech pathologist (Thompson, 1988). It would seem appropriate for the multidisciplinary team to be directed by someone who has knowledge of the disorder and its management. A multidisciplinary team approach would involve contact with other clinicians which might help address
countertransference issues and allay feelings of uncertainty and inexperience by providing support and opportunities for shared responsibility.

The speech pathologist’s role in the management of selective mutism is yet to be articulated. However, in view of the high incidence of communication disorders in selective mutism, a full speech pathology assessment would seem important for every selectively mute child. The most appropriate setting for the speech pathologist to assess and, where indicated, treat the child would seem to be the setting where they are known to talk, i.e., usually the home. All the subjects in this study had been assessed and were being treated, or reviewed, in a setting where they did not talk, i.e. the clinic. There seems little doubt that subjects B, C, and E could have been assessed and treated at home, at least initially. However, it is not clear where subject A could have been treated. This point underscores the complex nature of the assessment of these children.

In a multidisciplinary team approach, speech pathology assessment and, where indicated, speech pathology treatment, would be just one facet of a broader management programme. It seems unlikely that speech pathologists have a role to play in the elimination of the selective mutism, per se, unless they have particular expertise in this area. This view is shared by S. Newman (personal communication, November 19, 1996), a co-founder and director of the Selective Mutism Foundation, Inc.

To date, there is little information of the treatment effects of speech pathology on the progress of psychiatric disorders such as selective mutism. Certainly in this study, there was no evidence that speech pathology was having a positive effect on either the communication disorder or the selective mutism. Rather, attempts at providing speech pathology were being thwarted because the children were silent in the clinical setting. None of the treatments in this study appeared to be effective. Unfortunately, continuing attempts at treatment leading to failure have been found to render the selectively mute behaviour intractable (Cline & Baldwin, 1994). H. Harris (personal communication, June 22, 1997), an American speech pathologist, proposes that whoever is responsible for these children’s management should have knowledge of, and training in, treatment of the disorder. Research is needed to explore the speech pathologist’s role in the treatment of selective mutism.
5.6 SOME REACTIONS TO THE STUDY

5.6.1 Clinicians' Responses
Although most clinicians were co-operative in assisting with the location of subjects, there was one exception. The speech pathologist who was delegated to respond on behalf of other speech pathologists queried the wisdom of researching families who had a selectively mute child. This speech pathologist expressed "serious concerns" about subjecting these families to the "pressure" of the research process. One of her concerns appeared to arise from her knowledge of two families where there was a history of child abuse. Fortunately, the study's positive response indicated that her concerns appeared unfounded. However, it is possible that other clinicians assumed, what could be described as, a protective attitude towards the families they knew, and did not inform them about the study. This may have influenced the type of selectively mute child who was included in the study and, therefore, the study's internal validity.

5.6.2 Families' Responses
All the families who were asked whether they wished to participate in the study, agreed. There appeared to be several reasons for this unanimous positive response.

1. The selectively mute children in the study were receiving treatment where currently little, or no, improvement was occurring, i.e. the children were still selectively mute. The parents must have been aware of their child's apparent lack of progress in acquiring verbal communication outside the home and, it is possible, they recognised the clinical difficulties in treating their silent child. They may have considered that the research process might shed some light on their child's problems which would be useful to their child's therapist and, ultimately, beneficial to their child's progress.

2. Selective mutism is considered a rare disorder. At least three of the study's mothers expressed a wish that the disorder become more widely recognised and better understood by both the general and professional public. They may have seen participation in the study, and the prospect of publication of some of the study's findings, as assisting in this process.

3. Participation in the study was free of charge. Subject D's mother mentioned that she had not sought help for subject D earlier because of the financial cost this might incur.
5.7 STUDY'S STRENGTHS AND LIMITATIONS

5.7.1 Facilitating Factors and Study's Strengths
There were several factors which appeared to facilitate the research process. These were:

1. the study was a task orientated examination of selective mutism, i.e. the research focused on the subjects' speech and language characteristics. It is possible that parents found this approach less threatening because it did not directly address the selective mutism, itself;

2. the study was conducted in the subjects' homes where the families were in a position of authority and where their concerns were treated as important;

3. the researcher's professional background and maturity may have influenced the study's outcome. For example, it was possible to establish a positive rapport with all five mothers. Once the trust of the mothers had been engaged, they appeared to discuss their child and his/her selective mutism openly. The subjects must have been aware of this rapport, and it is possible it contributed to the positive response made by four of the subjects; and

4. the examination of different data sources enhanced the study's internal validity and reliability by providing a chain of evidence. This enabled a comprehensive profile of the speech and language characteristics of the subjects to be drawn.

5.7.2 Study's Limitations
There were several limitations to the study. These were:

1. the number of subjects involved in the study was small. It was difficult to address this issue because selective mutism is a rare disorder. However, although the study's findings could not be generalised to the wider population of selectively mute children (statistical generalisation), analytical generalisation about selective mutism was possible, i.e., inferences from the study could be drawn which would "expand and generalise theories" (Yin, 1989, p. 21);

2. it is likely that the study attracted subjects who were more likely to have speech and language pathology because of the researcher's professional orientation. It was not possible to shield the study from this threat to its internal validity. Although every attempt was made to attract all the selectively mute children who fitted the study's criteria, it is possible that some were missed, and that these children would not have had a communication disorder;
3. In language sampling and analysis there are many critical variables which cannot be controlled and accounted for. Analysis of some of the spontaneous language samples was occasionally difficult and open to interpretation because of the numbers of speakers and the complex nature of some of the conversational interaction. The LARSP (Crystal, Fletcher & Garman, 1989) tolerates at least a 10% margin of error without affecting its overall interpretation (Crystal, 1979). However, Fey (1986) cautions that his Social Conversational Analysis provides only “general guidelines” (Fey, 1986, p. 74) for describing a child's role in conversational interaction;

4. Because assessment of selectively mute children’s speech and language can be difficult, there were some missing data. For example, subjects A and B would not co-operate with the administration of the SHAPE (Smit & Hand, 1997), and the quality of the audio-taped data was occasionally poor, thereby restricting the analysis;

5. Some findings were inconclusive because they were dependent on parental reports. For example, subject B’s mother did not know whether subject B was shy. As well, there was no way of ensuring concept consensus among parents on issues such as personality traits like shyness because of the absence of standardised procedures for measuring these features;

6. No contact was made with the teachers of the subjects for information regarding the subjects’ behaviour at school, and for providing collateral details about their selectively mute behaviour.

Further studies conducted by speech pathologists involving larger numbers of selectively mute children are required to address some of these issues.

5.8

CONCLUSIONS

5.8.1 Some Answers

By describing the speech and language characteristics of selectively mute children when they were speaking at home, it was possible to provide some tentative answers to the questions posed at the beginning of the study. These answers and some of the study’s major findings are outlined below.

1. What proportion of this group of selectively mute children had a communication disorder?

Four of the five subjects in this study had a communication disorder. Although it is difficult to extrapolate from such a small number of subjects, it is likely that the number of selectively mute children who have a communication disorder
(between 20% to 50%) which is usually cited in the mental health literature is higher if the speech and language assessment is conducted by a speech pathologist.

2. What was the exact nature of the communication disorder which accompanied the selective mutism?

It appears that no one communication disorder occurs with selective mutism. However, in this study, as in other studies (e.g., Kolvin & Fundudis, 1981; Wilkins, 1985; Wright, 1968), speech disorders were found to occur more often. The speech disorders in the current study ranged from mild to severe. As well, language disorders and prosodic problems occurred. Surprisingly, four of the five subjects did not show social-conversational problems when speaking at home.

3. Was there a relationship between the communication disorder and the selective mutism?

Although this question is difficult to answer with any certainty, it is possible that for some children a communication disorder may provide an area of vulnerability for the development of selective mutism during speech and language development. For example, a child’s continuing experiences of communication failure due to the unintelligibility of their speech, may result in a reluctance to expose their communication deficiencies. This may lead to withdrawal and reticence and, ultimately, to selective mutism.

4. What contribution did the communication disorder make to the onset and maintenance of selective mutism?

This study was unable to provide a definitive answer to this question. Although cessation of speech and language development may have preceded the onset of the selective mutism for three of the subjects, its contribution to the development of the selective mutism was unclear. However, it is likely that a severe communication disorder will have a marked effect on a child’s ability to communicate and form social relationships. Where other predisposing factors exist, such as certain personality features and limited family social interaction, it may lead to selective mutism.

5. What are the assessment and treatment implications for speech pathologists in their management of selectively mute children?

It is important that all selectively mute children are assessed by a speech pathologist because of the likelihood of a communication disorder. The most obvious place to conduct this assessment is the situation where the child talks, i.e., usually the home. If the selectively mute child is found to have a
communication disorder, speech pathologists should be involved in its treatment, as part of a wider management programme. However, selective mutism is not a communication disorder in and of itself. Just as mental health clinicians should involve a speech pathologist at some point, even if only to eliminate the likelihood of a communication disorder, so, too, should speech pathologists refer selectively mute children for psychiatric and other clinical involvement, such as family therapy. Thus, it seems that selectively mute children are best assessed and managed by a multidisciplinary team which involves a speech pathologist. It is clear that this management procedure has not been followed with any consistency in the past.

5.8.2 The Future
The co-occurrence of psychiatric disorders, such as selective mutism, and communication disorders has not attracted much attention from the disciplines of either psychology, psychiatry, or speech pathology. Research studies, usually conducted by mental health workers, have noted the numbers of selectively mute children who have a communication disorder. Few, if any, have attempted to describe these communication disorders, and to explore their contribution, if any, to the selective mutism. There appears to have been a reluctance to cross professional boundaries. This study has been an attempt to address this issue. It is hoped that the study’s findings will promote further interest and research, particularly from a speech pathology perspective, in the area of selective mutism and communication disorders specifically, and psychiatric disorders and communication disorders generally. The interface between the disciplines of psychiatry and speech pathology presents a new and challenging frontier of research.
POSTSCRIPT

Ten months after data collection, subject C was referred to the researcher for speech pathology treatment lasting three months. She was seen at home on a weekly basis with her mother and sister. Treatment took place around the kitchen table while subject C’s sister completed her homework and her mother watched. Treatment focused on five areas (in order of priority): (1) phonology (Cluster Reduction, Velar Fronting, and Stopping); (2) syntax (personal pronouns); (3) story telling; (4) reading aloud; and (5) segmentation of words into syllables. Cued articulation (Passy, 1995) was used to facilitate correct speech production.

Subject C made remarkable progress during the three months. On completion of treatment, the following improvement had been made: Stopping of /s/ and /z/ was eliminated; all Consonant Clusters, with the exception of /sn/, were correct; Fronting was still causing some difficulties, particularly in syllable initial position, but was improving; personal pronouns, particularly “I”, were being used, and “she” was being used occasionally. Observation revealed that subject C had gained in confidence in story telling and reading aloud. A treatment spin-off was subject C’s mother’s observation of treatment strategies, such as segmenting multisyllabic words into syllables, which were especially helpful for subject C. She remarked that she now knew how to help her daughter.

Concurrently with speech pathology treatment, contact was made with subject C’s teacher and teacher’s aid. A case discussion was organised and a co-ordinated treatment approach was designed and implemented. Subject C was beginning to speak intermittently at school, partly due to the empathic approach of her teacher which included providing a relaxed non-coercive classroom atmosphere in which she could speak. Subject C was also referred for psychiatric assessment. The child psychiatrist is now involved in managing the case. Subject C’s response to treatment shows that successful treatment of a communication disorder in a selectively mute child is possible, if it is carried out under the right conditions.
GLOSSARY

Alexithymia - Difficulty expressing emotions through words.

Anxiety Spectrum Disorder - A broad term, adopted by the Foundation of Selective Mutism, Inc., to denote behaviours which can be described as anxious.

Aphasia Voluntaria - A term to describe children with selective mutism used by Kussmaul in 1877.

Asperger's Disorder - A disorder characterised by impairment of social interaction and the development of "restricted, repetitive patterns of behavior, interests, and activities" (DSM-IV, 1994, p. 75).

Behavioural Disorders - Disorders characterised by abnormality of behaviour, such as conduct disorder and oppositional defiant disorder.

Biopsychosocial Approach - A method of understanding the aetiology of a disorder by exploring biological, psychological and social factors.

Countertransference - "Conscious or unconscious emotional response of the therapist to the patient... determined by the therapist's inner needs rather than the patient" (Freedman, Kaplan & Sadock, 1976, p. 2581).

Diagnostic and Statistical Manual of Mental Disorders (4th edition), or DSM IV (1994) - A multiaxial, descriptive, and diagnostic framework for classifying mental disorders.

Dissociative Identity Disorder - "The presence of two or more distinct identities or personality states that recurrently take control of behavior" (DSM IV, 1994, p. 484).

Elektiver Mutismus - A German term to describe children with selective mutism used by Tramer in 1934.
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Emotional Disorders</td>
<td>Disorders characterised by abnormality of emotions, such as anxiety disorder and adjustment disorder.</td>
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<tr>
<td>Encopresis</td>
<td>Soiling.</td>
</tr>
<tr>
<td>Enuresis</td>
<td>Bed wetting.</td>
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<tr>
<td>Externalising Behaviours</td>
<td>Conflict with the world outside a person, such as disobedience, destructiveness, swearing and fire-setting.</td>
</tr>
<tr>
<td>Functional Mutism</td>
<td>A term for selective mutism used by Lebrun (1990).</td>
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<tr>
<td>International Classification of Diseases</td>
<td>A multiaxial coding system for the classification of diseases and related health problems, developed by the World Health Organisation.</td>
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<td>or ICD 10 (1992)</td>
<td></td>
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<tr>
<td>Internalising Behaviours</td>
<td>Conflict within a person, such as worrying, pains, stomach aches, shyness, fearfulness and withdrawal.</td>
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<tr>
<td>Mood Disorders</td>
<td>Disorders of mood, such as depressive disorder and bipolar (manic-depressive) disorder.</td>
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<tr>
<td>Neurosis</td>
<td>A mental disorder characterised by severe anxiety and/or depression.</td>
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<tr>
<td>Personality Disorders</td>
<td>Disorders of personality, such as borderline personality disorder and schizoid personality disorder.</td>
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<tr>
<td>Pervasive Developmental Disorders</td>
<td>&quot;Severe and pervasive impairment in several areas of development&quot;, such as &quot;reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests and activities&quot;. (DSM IV, 1994,p. 65).</td>
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<tr>
<td>Phatic Conversation</td>
<td>&quot;talk for the sake of something being said&quot; Hymes (1986,p. 40).</td>
</tr>
<tr>
<td>Psychogenic Mutism</td>
<td>Functional mutism (see above).</td>
</tr>
<tr>
<td>Psychosis</td>
<td>A mental disorder characterised by a disintegration of personality and an inability to relate to others.</td>
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<tr>
<td>Condition</td>
<td>Description</td>
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<td>------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>Reluctant Speech</td>
<td>Limited verbal interaction.</td>
</tr>
<tr>
<td>School Phobia</td>
<td>Fear of attending school.</td>
</tr>
<tr>
<td>Separation Anxiety Disorder</td>
<td>“Excessive anxiety concerning separation from the home or from those to whom the person is attached” (DSM-IV, 1994, p. 110).</td>
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<tr>
<td>Social Phobia</td>
<td>“A marked and persistent fear of social or performance situations in which embarrassment may occur” (DSM IV, 1994, p. 411).</td>
</tr>
<tr>
<td>Speech Phobia</td>
<td>A term for selective mutism used by Mora, De Vault, &amp; Schopler (1962).</td>
</tr>
<tr>
<td>Transient Mutism</td>
<td>Mutism which is temporary.</td>
</tr>
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</table>
REFERENCE LIST


Claris Works (1993). Santa Clara, California: Claris Corporation


APPENDICES
APPENDIX A - 1a

LETTER FROM CLINICIANS TO POTENTIAL SUBJECTS’ FAMILIES
INVITING THEM TO PARTICIPATE IN THE STUDY

Dear ____________________________.

A researcher is interested in looking at the speech and language of children who do not speak in certain situations, for example, at school. I wondered if you would be interested in helping in this research? The condition is rare and not well understood, so it would be very worthwhile if you could help. In addition, this could be an opportunity for you to find out more about your child’s speech and language, which could be useful.

There is no cost involved and your right to privacy at all times will be guaranteed. No one knows you have been sent this letter, except me, and you are under no obligation to participate in this study if you do not wish to. However, if you are willing to take part, please fill in your name, address and telephone number in the space provided below, and return this letter to the researcher in the stamped, addressed envelope provided. The researcher will contact you soon.

Returning this letter does not commit you to participate in the study and you may withdraw from it at any time. Thank you for considering this request.

Yours sincerely,

________________________________________

Name: ____________________________________

Address: __________________________________

________________________________________ Telephone: ________________________________

THANK YOU FOR YOUR CO-OPERATION!
APPENDIX A - 1b

LETTER FROM SCHOOL COUNSELLORS TO POTENTIAL SUBJECTS’ FAMILIES INVITING THEM TO PARTICIPATE IN THE STUDY

Dear ________________________,

A researcher is interested in looking at the speech and language of children who do not speak in certain situations, for example, at school. I wondered if you would be interested in helping in this research? The condition is rare and not well understood, so it would be very worthwhile if you could help. In addition, this could be an opportunity for you to find out more about your child’s speech and language, which could be useful.

There is no cost involved and your right to privacy at all times will be guaranteed. No one knows you have been sent this letter, except me, and you are under no obligation to participate in this study if you do not wish to. However, if you are willing to take part, please let me know and I will contact the researcher who will then get in touch with you.

Returning this letter does not commit you to take part in the study and you may withdraw from it at any time. Thank you for considering this request. If you want to talk to me about it please feel free to do so.

Yours sincerely,

__________________________

School Counsellor.

******************************************************************************

Name: ____________________________

Address: __________________________

________________________________________ Telephone: __________________

THANK YOU FOR YOUR CO-OPERATION
APPENDIX A - 2

INFORMATION SHEET FOR SUBJECTS’ FAMILIES

I am interested in looking at the speech and language of children, under the age of twelve, who speak at home but do not speak in some other situations, e.g. at school. The study will be conducted in the Illawarra area of New South Wales.

I would like to visit you in your home and listen to you and your child talking. While you are talking I would like to tape your conversation on an audio-cassette recorder, so that I can go over the conversation later and look at the words being used more carefully. The contents of this tape would be confidential.

I would also like to give your child some speech and language tests. If your child does not want to do them for me, it may be better for you to give the tests to your child while I watch. These tests will mostly be picture tests, and I will give you guidance as to how to do them. If you and your child do not want to do these tests, the observations will still be usable, although the tests are desirable.

It would be useful if I could look through your child’s records from the services you have dealt with in the past, such as health and education services, before I visit you at home. I would like to do this, because I am interested in seeing what treatment your child has received for their mutism, and whether there is any mention of their speech and language. If you do not want me to do this, but are happy to take part in the rest of the study, the study can still go ahead.

Participation in this study is voluntary. You do not have to take part in it if you do not want to, and you can withdraw from the study if you wish at any time, without penalty. The results from the tests that will be done will not be included in any records, and will be completely confidential at all times to the researchers only. The findings of this study may be published at a later date, but no information will be included that might identify any of the people who have taken part.

You may find the study interesting and useful and if you would like any information about your child’s speech and language after the study has been completed, I would be pleased to discuss it with you.

The study is completely harmless. However, if you or your child become tired or upset at any point during the procedure, it will stop immediately.

If there are any questions now or during the study, please do not hesitate to contact either of the researchers. Their names, addresses, and telephone numbers are at the end of this page. In addition, if you, or any person, has any concerns or complaints about the conduct of a research study, they can contact the secretary of the Human Ethics Committee of The University of Sydney, on (02) 692 4811.

THANK YOU FOR YOUR CO-OPERATION

Linda Hand, Lecturer, School of Communication Disorders, University of Sydney, P.O.Box 170, Lidcombe, N.S.W. 2141 Tel. (02) 646 6450 . Fax. (02) 646 4853

Hilary Cleator, 22, Kaleula Crescent, Kiama, N.S.W. 2533. Tel. (042) 323460.
APPENDIX A - 3

INFORMED CONSENT FORM

I, ___________________________________________ voluntarily agree for myself and my child, ___________________________________________, to participate in a research study into the speech and language of children who speak at home, but not in some other situations. I understand that observations by the researcher(s) will take place in my home.

I have been informed that the findings of the study may be published at a later date. However, I understand that no identifying details of myself or my child will be revealed, and that all identity details will be confidential to the researcher(s). I also understand that I will be asked to give Hilary Cleator permission to have access to my child’s medical/educational records, and that I have a choice whether or not to give this permission.

I know what this research study involves because I have read the Information Sheet and talked about the study with Hilary Cleator. I understand that my child’s and my participation in this research is voluntary and that we may withdraw from the study at any time if we wish.

Signature ___________________________________________ Date __________________________

Witness ___________________________________________ Date __________________________

(Name)  
Signature ___________________________________________
APPENDIX A - 4a

CONSENT TO RELEASE EDUCATIONAL RECORDS FORM

I, __________________________ give permission for __________________________ to release relevant records about my child __________________________ that may relate to their communication behaviour, to Hilary Cleator, for the purposes of research. I understand that every provision for my family's right to privacy and confidentiality will be guaranteed throughout the research process.

Signature________________________ Date________

*******************************************************************************

Witness________________________ Date________

(Name)

Signature________________________
APPENDIX A - 4b

CONSENT TO RELEASE MEDICAL RECORDS FORM

I, ______________________________ give permission for ______________________________ to release relevant records about my child ______________________________ that may relate to their communication behaviour, to Hilary Cleator, for the purposes of research. I understand that every provision for my family's right to privacy and confidentiality will be guaranteed throughout the research process.

Signature __________________________________________ Date __________

**********************************************************************************************************

Witness ______________________________________________ Date __________

(Name)

Signature __________________________________________
APPENDIX A - 5

GRID USED TO SUMMARISE CHARACTERISTICS OF SUBJECTS' SELECTIVELY MUTE BEHAVIOUR ACROSS SETTINGS
(From Cline & Baldwin, 1994, p. 159)

<table>
<thead>
<tr>
<th>Child's name: (code)</th>
<th>Own home</th>
<th>Relative's home</th>
<th>Community setting 1</th>
<th>Community setting 2</th>
<th>School setting 1</th>
<th>School setting 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
<td>&gt;</td>
</tr>
</tbody>
</table>

Mother

Father

Sibling 1

Sibling 2

Relative 1

Relative 2

Teacher

> >

> >

> >
# APPENDIX A - 6

CASE NOTES’ SCHEDULE
Guidelines for examining case notes

<table>
<thead>
<tr>
<th>Clinic:</th>
<th>Clinician:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEMOGRAPHIC INFORMATION</strong></td>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Name</td>
<td>Age</td>
</tr>
<tr>
<td>Address</td>
<td>Date of birth</td>
</tr>
<tr>
<td>Telephone number</td>
<td>Language spoken at home</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Rural or urban area</td>
</tr>
<tr>
<td>Duration of occupancy at current address</td>
<td></td>
</tr>
</tbody>
</table>

**REFERRAL DETAILS**
- Source of referral
- Date of referral
- Age at referral
- Chief complaint /reason for referral

**TREATMENT DETAILS**
- Date entered for treatment
- Nature of treatment
- Response to treatment
- Duration of treatment

**PERSONAL HISTORY**
- Birth
- Medical History
- Separations
- Developmental milestones
  - Eating habits
  - Toilet training
  - Fears
- Development of motor skills

**FAMILY HISTORY**
- Mother’s nationality
- Father’s nationality
- Mother’s occupation *
- Father’s occupation *
- Marital status
- Parents’ mental health
- Socioeconomic status

**SIBLINGS**
- Names of siblings
- Position in family

**EXTENDED FAMILY**
- Contact with extended family

**CLINICAL MANAGEMENT**
- Names of any assessments performed
- Names of any tests administered
- Results of assessments and tests
  - I.Q.
  - Verbal I.Q.
  - Non-Verbal I.Q.

**TREATMENT**
- Nature of any past treatment
- Nature of current treatment

**DISCUSSION WITH CLINICIAN**
- Clinician’s view of current treatment progress
- Clinician’s response to subject

**SCHOOL REPORT**
- Is there a school report

---

* Occupations are ranked according to Daniel’s (1983) rating order of occupations. This rating order ranks occupations from 1 to 7, with 1 having the highest prestige. The rating order reflects Australian perceptions of prestige according to occupation. However, it is an imperfect measure and its results should be interpreted with caution.
APPENDIX A - 7

INTERVIEW SCHEDULE
Guidelines for Semi-Structured Interview with Care-Giver

SUBJECT’S NAME: (code)  CLINIC:

LANGUAGE BACKGROUND
Language spoken at home
Any language other than English spoken by close relatives

HISTORY OF SPEECH AND LANGUAGE DEVELOPMENT
EARLY VOCAL DEVELOPMENT:
Crying
Vocalising
Quiet/noisy baby
Babbling

EARLY VERBAL DEVELOPMENT:
Age at first meaningful word
Progress acquiring words
Age acquiring intelligible phrases
Rate of development

Any problems acquiring speech and language
Did speech/language acquisition ever appear to stop
Course of intelligibility
Any communication problems e.g. stuttering, voice
Any family concerns about the child’s speech and language development.
Action taken and outcome
Has the child ever been teased about their speech
Motivation to speak

Hearing tested
Any cranio-facial and/or oro-musculature problems

HISTORY OF FAMILIAL SPEECH AND LANGUAGE PROBLEMS
Do any siblings have a similar problem
Did either parent or any relatives have a communication disorder.
Any familial history of mutism

HISTORY OF MUTISM
When noticed
Age when became concerned
Gradual or insidious onset
Association of onset with any event
Duration of elective mutism to date
What measures have been taken to treat the mutism
How does the family feel about the mute behaviour
Has the mutism had any impact on the family

continued
SUBJECT'S COMMUNICATION STRATEGIES IN NON-COMMUNICATING SETTINGS

Use of gesture
Eye contact
Whispering
Sign language
Preferred mode of communication

DESCRIPTION OF MUTISM
Who does the child talk to
Who doesn't the child talk to

In which situations is the child mute
Consistency of mute behaviour

PROBLEMS
Other problems apart from mutism
General health
Co-ordination
General behaviour
Dependent/independent behaviour
Any variations in behaviour

Shyness
Sensitivity
Fears/phobias
Any separations
Feeding/eating
Enuresis/encopresis
Sleeping

PATTERNS OF SOCIALISATION
Child:
Friends to play at home.
Favourite games and toys

Family:
Social network
Relatives/friends

School:
Attitude towards going to school
Attitude towards school
School friends and/or best friend
Does the child speak to anyone at school

SCHOOL HISTORY
Schools attended
Preschool:
Communication at preschool
Other children's response to mutism

Infant/Primary School:
Number of school terms mute
Teacher's response

SPEECH PATHOLOGY
Has the child ever seen a speech pathologist
Nature of speech pathology contact
Outcome of contact with speech pathologist

TREATMENT HISTORY
Referral source
Parental response
Nature of treatment received
Progress
APPENDIX B

SUBJECTS' BIOGRAPHICAL PROFILES
APPENDIX B - 1

SUBJECT A'S BIOGRAPHICAL PROFILE

Demographic Information
Subject A was a five-year-old boy who was the third son in a family of four children; he had two older brothers and a younger sister. Both his parents were Australian, and English was the only language spoken at home. His mother, who had been a nursing sister, had not worked since the birth of her first child 10 years earlier. His father was a general practitioner who practised in a surgery attached to the house. Subject A’s mother often assisted her husband in the surgery. The family home and work-place were situated on a main road in a predominantly low socioeconomic area of the Illawarra. (The house was protected from intrusion by barred windows and locked doors, so that several barriers had to be breached to gain access). Subject A’s mother remarked that she and her husband were “fairly quiet” and did not socialise a lot. The family seemed to be segregated from the surrounding neighbourhood.

General Development, Health, and Personality
Subject A’s mother was well during his pregnancy, apart from bronchitis and a recurring ear infection for which she was prescribed Amoxicil (penicillin). The delivery was normal. However, subject A was born with a heart abnormality (ventricular septal defect) which subsequently closed spontaneously. He had never had any feeding problems and had always been an independent, active, and well coordinated child. Subject A suffered from eczema and asthma. His hearing had been tested and, as far as his mother knew, had always been normal. Apart from his speech and language development, most of subject A’s milestones were normal, although he was still wearing a bedtime nappy and waking most nights.

Subject A had not experienced any major separations from his family, although he had suffered from separation anxiety when he first attended preschool. According to his mother he was neither sensitive nor shy. Rather, he was competitive, perfectionistic and stubborn (she reiterated that she considered he was stubborn on several occasions). As well, she reported that he liked to run things, and that he tended to be obsessional and would not
attempt anything unless he was sure he would succeed. Subject A was reportedly noisy and verbally competitive at home, and very talkative during car journeys. He liked running around, and playing with trains and bikes. According to his mother, he was not frightened of anything.

School History
Subject A had attended preschool prior to commencing school. He had made the transition from preschool to school without any apparent difficulty. He enjoyed school and his school attendance was excellent. Although he did not speak at school, he had a number of school friends who often came to play at his house. He would talk to them at home.

Speech and Language Development
Subject A’s early speech and language development appeared to be unremarkable. He vocalised and babbled normally, and said his first meaningful word around 16 months. At this point his speech and language development seemed to stop and did not appear to recommence until he was about two-and-a-half years old. Subject A’s mother considered that since then his speech and language development had been gradual. She had always found his speech intelligible, although she remarked that his father and his brothers often said they could not understand him. She did not know whether he had ever been teased about his speech problems, but she reckoned that if he had been he would not have been adversely affected by the experience because of his “strong personality” (mother).

Family History of Communication Disorders and Selective Mutism
There was a family history of communication disorders. Subject A’s oldest brother had a history of delayed speech development and had not really talked until he was around three-years-old when his younger brother started talking, and subject A’s maternal uncle had stuttered when he was young. Subject A’s older brother had also been selectively mute until he was eight-years-old. According to his mother, a forceful teacher, who would not tolerate his selective mutism in the classroom, had eventually succeeded in making him speak at school. However, she considered that this action had been at considerable emotional cost to the boy. Subject A’s younger sister was also beginning to show signs of selective mutism, as well as speech problems. For example, during the visits she often stared into space for long periods at a
time while she sat silently on her mother’s knee. Subject A’s mother described these two children as shy. As well, according to subject A’s mother, a nephew had almost become selectively mute, but this had been averted once he started attending a Montessori school.

History and Description of Selective Mutism
Subject A’s selective mutism had developed gradually and had not been associated with any specific event. As far as his mother could remember, he had always been selectively mute.

His patterns of selective mutism were inconsistent. For example, he talked quite normally during the first visit to his home, but not thereafter. Subject A’s mother remarked that whether he talked or not appeared to be determined within the first five minutes of the encounter, and was “the luck of the draw” i.e., it was unpredictable. However, he usually talked to all family members when they were alone at home, and to his school friends when they visited his house. Recently, his mother had noticed that he was beginning to use his selective mutism as a device for exercising control at home, i.e., to get what he wanted.

Subject A would not talk to anyone at school, even his close friends. According to his mother, his teacher perceived his selective mutism as a demonstration of his need for power and control in the classroom. Apparently, she was becoming irritated and frustrated by it. Subject A would not talk to his maternal grandfather, his paternal grandparents, strangers, adults, and speech pathologists in the clinical setting. In situations where he was mute, he would communicate through gesture and eye movements while keeping his lips tightly sealed except to laugh. As well, when he visited the dentist he would not open his mouth. However, he would not open his eyes when he visited the optometrist, either. Subject A appeared to have no problem establishing and maintaining eye contact during social interaction.

Family’s Views on Selective Mutism
Subject A’s parents did not consider his selective mutism a problem and had never sought help. Subject A’s mother proposed that her children’s selective mutism was caused by the family’s social isolation and nuclear structure. She agreed with her husband that it was a developmental stage of a familial
pattern which her children would eventually outgrow. Although she and her husband were unconcerned, she had been distressed by other people’s perceptions of the disorder. For example, when her oldest son had been selectively mute, the Catholic Education Department had investigated the family for evidence of child abuse.

Treatment History
Just before subject A was about to commence school, his pre school teacher had recommended referral to a speech pathologist because his speech was occasionally unintelligible, and she had noticed that he was having difficulty pronouncing certain sounds. (These observations indicate that he must have been talking at pre school.) Subject A’s parents took him to see a speech pathologist at a local hospital. The speech pathologist was unable to conduct a full assessment because subject A would not speak, but she suspected from what the pre school teacher had said that he had an “articulation disorder” (case notes). Following this appointment, he was referred for private speech pathology. He had not spoken to the private speech pathologist either, so that treatment was subsequently conducted at home by the parents under the speech pathologist’s direction. Recently, treatment had been discontinued because the speech pathologist considered she was not making any progress treating him. At the time of the study, subject A had been known to the private speech pathologist for five months.

Case Notes
Subject A’s case notes were brief. No personal and family history appeared to have been taken, and there were no speech and language assessment results. The case notes focused on subject A’s treatment progress which appeared to be minimal because he was silent in the clinic. There was no mention of his selective mutism, apart from a comment which had been made by his mother that he was unwilling to talk to strangers.

Discussion with Clinician
Subject A’s speech pathologist expressed her frustrations and the difficulties she experienced trying to treat him when he would not communicate verbally. She proposed that the only option open to her had been to implement a home treatment programme based on information gleaned from the parents.
Mother's Response to Research Process
A good rapport was established with subject A's mother almost from the outset. She was cooperative and helpful throughout the research process. For example, she suggested that members of the researcher's family should be involved during data collection to facilitate the research process.

Subject's Response to the Research Process
Although subject A responded favourably during the first visit and there was no evidence then that he was selectively mute, he was mute on all subsequent visits.
APPENDIX B - 2

SUBJECT B’S BIOGRAPHICAL PROFILE

Demographic Information
Subject B was an eight-year-old boy; the third of four children of Australian/Yugoslav parents. He had an older sister, and an older and younger brother. All the children had distinctive Yugoslav names. Subject B’s mother had been born in Australia to Yugoslav parents; his father had come to Australia from Croatia in the 1960s. Subject B’s father spoke with a pronounced Yugoslav accent and insisted that the family spoke Croatian at home. According to subject B’s mother, all the family members could understand Croatian but resisted speaking it. Apparently, this caused friction between her husband and the rest of the family. Subject B’s father was a painter and decorator; his mother had not worked since the birth of her oldest son, 17 years ago. Apparently, this boy, by contrast with subject B, was verbally confident and a promising actor.

The family lived in a free-standing rather dilapidated house in a middle-class suburb of the Illawarra. They did not have many social contacts with other families in the neighbourhood, and subject B did not have children around to play. His mother complained of being house-bound and isolated because her husband required the family car for work. As a result, she was dependent on an irregular public transport system and found it difficult to visit members of her extended family network who also lived in the area.

General Development, Health, and Personality
Subject B was conceived shortly after his mother miscarried a pregnancy. She commented that, of her four children, he was the baby she most wanted. When she was five weeks pregnant (and unaware that she was pregnant), she went on a coach trip to Canberra. During the journey she took aspirin and ventolin every two hours because she felt unwell. As well, she experienced nausea for the first six months of the pregnancy and found it difficult to walk because of leg pain.

Subject B’s delivery was normal at 36 weeks gestation. Most of his milestones
were normal. However, his mother reported that his coordination had never been good, he was slow to toilet train, and his speech and language development was slow (see below). He had always been overweight for his age and, although he had not had any feeding problems, he tended to be fussy about food. Subject B had his own bedroom and apparently always slept well. During his infancy he had a short history of nose bleeds and middle ear infection. However, his hearing had been assessed and was normal. He had never had any separations from his family and his mother considered that he was independent. She was not sure whether or not he was shy, but she considered that he was sensitive because he got upset when he was teased, and he hated people pulling faces at him. He was frightened of dogs, ghosts, and the dark. Subject B liked watching television programmes, such as “Where’s Wally?” and “Power Rangers”. He also liked playing computer games and riding on his skate-board.

School History
Subject B had attended pre school for three months prior to starting school. According to his mother, he had difficulties adjusting to pre school because he would not listen, nor behave in a manner congruent with what was expected. She reported that it was not until he was put in “detention” (mother) that he began to conform. It took subject B around six months to settle into school, but he now had a positive attitude towards school and an excellent attendance record. Apparently, subject B was doing well at school, so much so, that his mother did not feel the need to attend parent-teacher nights. Although he did not talk at school, he had a number of friends, including a best friend. His mother thought that when he was at school other children tended to answer for him.

Speech and Language Development
According to his mother, subject B’s speech and language development had been normal until he was 18 months: he vocalised and babbled normally, he said his first word around 12 months, and he appeared to be acquiring a repertoire of single words. When he was 18 months old, she noticed that he did not seem to be interested in talking. He also appeared to be reluctant to play with other children. She said, “he sort of held back”, and she described his behaviour as “a touch autistic”. His speech and language development did not appear to resume until his younger brother started talking when subject B
was four-years-old. At this time he started saying words, and when he was aged four-and-a-half he started putting words together to make short sentences. His mother remarked that the onset of subject B’s younger brother’s speech and language development seemed to act like a catalyst. She felt that if it had not been for this, subject B would not be talking today. She did not think he had ever been teased about his communication problems. The family had not been concerned, nor taken any action about his speech and language delay, because they thought he’d outgrow the problem.

**Family History of Communication Problems and Selective Mutism**

Two members of subject B’s immediate family had a communication disorder. His six year old brother had a speech disorder (see Appendix E - 2), and his mother showed symptoms of cluttering, i.e., she spoke very quickly, her speech was characterised by a number of articulation errors, particularly repetitions of the first syllable of many multi-syllabic words, and her conversational content was disorganised. She reported that she had left school as soon as possible because she found English difficult. She also remarked that she had been “selectively mute” (mother) when she was about ten-years-old, and still experienced occasional reticence in social situations. However, she considered that she usually talked too much nowadays, unlike her husband who liked to be quiet.

**History and Description of Selective Mutism**

Subject B’s selective mutism seemed to develop gradually after he was 18 months old. Its onset did not appear to be associated with any specific event. He had not spoken at either pre school or at school. When he started school, his kindergarten teacher had told subject B’s mother that she thought he was taking advantage of not talking, but she had been unsuccessful at encouraging him to talk. Subject B’s parents had not sought help for his selective mutism until he was in his third year at school when his teacher had suggested he needed treatment. His parents appeared to accept his selective mutism and considered that it would eventually disappear. Although the selective mutism had little impact on the family as subject B had always talked at home, his mother remarked that she disliked having to answer for him when they were out. However, his older siblings commented that they enjoyed social situations away from the home when he was quiet.
Subject B’s selective mutism appeared to follow a consistent pattern. At home he would talk to all family members, and he would also talk to family friends’ children, but not to any adults. He would not talk to anyone at school, including family members, and he would not talk at church. His selective mutism at church had become an issue because he was prevented from taking his first Holy Communion because he refused to say “Amen”. In situations where he was mute, he was accomplished at gesturing with his fingers, hands and shoulders. As well, he would maintain eye contact.

**Family’s Views on Selective Mutism**
Subject B’s mother remarked that she wondered whether the medications she had taken during his pregnancy had contributed to the development of his selective mutism, as well as his other problems. Subject B had told his mother that he thought his selective mutism was caused by his “idiot brain” (case notes).

**Treatment History**
Subject B’s pre school teacher had suggested that he should go to see a speech pathologist because she thought his long tongue was interfering with his ability to speak. However, his parents did not act on this suggestion as they considered that when he did talk “he was fine” (mother). It was not until he was seven-years-old that he was referred to the school counsellor by his teacher because he would not speak in school. The school counsellor referred him to a nearby community health clinic for a speech pathology assessment. However, for some reason which was not forthcoming, he was seen by a social worker for his “emotional and behavioural problems” (case notes). After several months of treatment, he was transferred to the psychologist at the same clinic with a diagnosis of selective mutism. At the time of the study, he was receiving once weekly treatment. During his treatment sessions, subject B communicated non-verbally with the psychologist through writing, painting and play. He had never spoken in the clinic, although he spoke to his mother in the waiting room. At the time of the study, he had been attending the clinic for around 21 months.

**Case Notes**
Subject B’s case notes provided personal and family histories, and extensive treatment notes. The case notes contained a school report in which subject
B's teacher commented that his school attendance was excellent, and that he was working at class level, although "there seems to be a speech problem - more in structure" (case notes).

A number of formal assessments had been administered, including an attempt to assess his receptive language. The tests used were: the Wechsler Preschool Primary Scale of Intelligence - Revised, (WPPSI-R); Peabody Picture Vocabulary Test - Revised, (PPVT-R); Piers Harris Children's Self-Concept Scale, (PHCS-CS); and the Children's Depression Scale, (CDS). Subject B's performance on the non-verbal section of the WPPSI-R was reported to be "adequate" (case notes). (The verbal section of the test had not been administered because he would not respond verbally.) His performance on the PPVT-R, as reported in the case notes, revealed that he had a mental age of 7.1 (chronological age 8.1). He achieved a "very low" (case notes) score on the PHCS-CS. On the CDS, he was found to have normal self-esteem, social problems, and a significant level of depression. A diagnosis of selective mutism had been made.

Discussion with Clinician
Discussion with subject B's psychologist focused on treatment. The psychologist described her treatment approach as eclectic because she was using a combination of "play and cognitive therapy, gestalt therapy, behaviour therapy and family therapy" (psychologist). She was concerned that treatment might go on indefinitely because subject B's mother did not seem to recognise the need to resolve her son's problems. Rather, she seemed to be enjoying attending the clinic and the attention subject B was receiving.

Mother's Response to Research Process
Subject B's mother appeared cooperative, and a good rapport was established, almost from the outset. However, deeper analysis of the contacts with subject B and his mother did seem to indicate that she was colluding with his selective mutism. For example, during the early period of the research process, subject B seemed absorbed in watching television. His mother resisted turning off the television until it became clear that it was impossible to proceed with it switched on, even with the sound muted. As well, she prepared substantial quantities of food for him to eat prior to the early visits. As
the research process progressed, she appeared to enjoy the visits and became more focused at creating an atmosphere in which subject B might speak. It seemed that she was deriving enjoyment from the attention subject B’s selective mutism was generating. She was noticeably disappointed when contact was concluded. She said that subject B would have talked if the contacts had continued.

**Subject’s Response to Research Process**
Subject B gradually became more relaxed over the visits and his communication behaviour reflected this. On the first visit, he appeared terrified (his lips were tightly sealed and he was sweating, particularly around his mouth). However, on the fourth and final visit he seemed relaxed. Although he did not talk, he laughed and vocalised easily during the games we played.
APPENDIX B - 3
SUBJECT C’S BIOGRAPHICAL PROFILE

Demographic Information
Subject C was a seven-year-old girl. She was the second daughter of Australian parents; her elder sister was eight-years-old. When subject C was four-years-old, the family moved from Sydney to the Illawarra to a pleasant free-standing house in a predominantly middle-class area. Subject C’s father was a sales representative; her mother worked several nights a week as a store-packer. Her mother remarked that the family did not have many social contacts because when she worked at night, she slept during the day, and this interfered with the family’s social life. Occasionally, subject C had friends around to play at her house.

General Development, Health and Personality
After what appeared to be a normal pregnancy, subject C was delivered by caesarean section at 36 weeks gestation because her mother was suffering from high blood pressure. She was reportedly a good baby who ate and slept well. Subject C’s mother remarked that it wasn’t like having a baby in the house because she was so quiet. However, subject C’s general health had always been poor. She had a history of measles, asthma, frequent colds, tonsillitis, bladder and kidney problems, and a series of middle-ear infections. Her hearing had been tested and the result was normal. Most milestones were normal. However, her speech and language development had been slow (see below), she was not well coordinated, and she had been slow to toilet train. She still occasionally wet herself when she was playing. However, subject C slept well and had never had any feeding problems, although she was reported to be a messy eater.

Subject C’s mother remarked that subject C’s behaviour was unpredictable: some days she would be happy and cooperative; other days she would be difficult to manage. Subject C’s mother frequently referred to the frustrations she experienced dealing with subject C’s behaviour and communication problems, and remarked how difficult it was having a child like subject C. During data collection, subject C’s behaviour was suggestive of some
emotional disturbance because she frequently emitted high pitched screams, and tended to cling to her mother. Her mother had recently submitted an application for financial assistance to the Department of Social Security to help her in her management of subject C.

According to her mother, subject C was not shy, but she was a sensitive child who was very dependent on her mother (her father referred to her as her mother’s wart). She had experienced two periods of separation from her mother when her mother had to go into hospital, and from both parents when they went away on holiday. On these occasions, subject C and her sister had been looked after by their maternal grandmother. They were reportedly unaffected by their parents’ absence. Subject C was frightened of most animals.

School History
Subject C had attended pre school prior to going to school. According to her mother, subject C did not enjoy going to school and had a high level of school absenteeism. Subject C’s mother said she was worried about sending her to school because she would be unable to tell the teacher if something was wrong. She remarked that, if she were like subject C, she would “just want to stay at home and not worry about the world” (mother). A possible contributing factor to subject C’s mother’s protective behaviour was the near death of subject C’s elder sister because of a zinc deficiency.
Subject C had friends and a best friend at school. However, she was not achieving academically, and recently the school counsellor and the headmaster had requested “Integration Support” in the form of “teacher relief” and “teacher’s aide support” because subject C’s teacher was concerned about her lack of “progress in all areas” (case notes).

Speech and Language Development
During her first year, subject C did not cry or vocalise much, and her babbling was also limited. She said her first words around 12 months, after which time her speech and language development appeared to stop. Her speech and language had never been normal, and she had always been difficult to understand. Her mother remarked that she could see subject C thinking about how to say words before she said them. Subject C’s mother said that her communication disorder had had a major impact on the family.
According to her mother, subject C had been teased about her speech and language problems, and had been ostracised by some children because they could not understand what she was saying. Her mother knew that she was distressed by these experiences because subject C often gave up trying to communicate, and her mother had heard her say, "it doesn’t matter". The family had sought help for subject C’s communication disorder from a variety of agencies but with only limited positive results.

**Family History of Communication Disorders and Selective Mutism**

Subject C’s paternal grandmother, aunt, and nephew were reported to have “speech problems” (mother). As far as subject C’s mother knew, there was no history of selective mutism in the family. However, subject C’s elder sister appeared to be experiencing problems. A brief anecdote is used to illustrate this:

> The researcher’s daughter arrived home from school one afternoon in a state of excitement. She was in Year Six and had organised her first Peer Support Group that morning. She reported: “There’s an electric (sic) mute in my group”. When asked to explain what she meant, she described a girl in her group who was “so shy”, and who would not speak to anyone. The girl was subject C’s sister.

Later inquiries about subject C’s sister revealed that, although she was not selectively mute at school, in the Peer Support Group she showed signs of being so.

**History and Description of Selective Mutism**

The onset of subject C’s selective mutism was gradual and had not been associated with any specific event. Her mother had first noticed that there was something wrong when she was two-years-old because she did not appear to be interested in talking. Subject C’s mother suspected that she had probably “mumbled” at pre school but, as far as she knew, she had never spoken in school.

Subject C’s patterns of selective mutism were consistent. She usually talked at home, and her mother proposed that she compensated for not talking away from home by talking too much when she was home. Subject C would talk to the school counsellor and her best friend when she was at school, but would
not talk to teachers and other children. She would not talk to anyone when
she went shopping, and she would not talk to her current speech pathologist.
In situations where subject C was selectively mute, she was able to establish
and maintain eye contact. However, she did not appear to make any attempt
to use gesture or sign language. Her mother considered that subject C
avoided social contact at school because she wanted to be left alone.

Family's Views on Selective Mutism
Subject C's parents had always been concerned about her communication
disorder, but not about her selective mutism. Her mother considered that
subject C's selective mutism was caused by her severe communication
disorder and experiences of communication failure.

Treatment History
Subject C's mother had first sought help for subject C's communication
disorder when she was two-years-old from her general practitioner. However,
he dismissed the problem. When subject C was three-years-old, her mother
took her to a nearby speech pathology clinic where she received treatment.
Subject C must have spoken because the student clinician reported that she
showed "a significant delay in the areas of articulation, and receptive and
expressive language" (case notes). Subject C received treatment from two
speech pathology students under supervision during the succeeding year until
the family moved to the Illawarra. She was then transferred to the speech
pathologist at a nearby hospital clinic. According to subject C's mother,
subject C and the speech pathologist did not get on; they appeared to have
"a personality clash" (mother).

Subject C's communication disorder had become more apparent as she
matured, so her mother had sought additional help from other agencies,
apart from speech pathology. These agencies included an Early Childhood
Support Unit, a Childhood Assessment Centre, a paediatrician, and an
occupational therapist. Currently, subject C was attending a Phonemic
Awareness Training Group at the speech pathology clinic with other children
who had a communication disorder. She had been receiving treatment from
the current speech pathologist for 43 months.
Subject C had also been receiving "emotional counselling" (school counsellor) from the school counsellor for one month. Prior to this, she had not received any treatment for her selective mutism from the professionals with whom she had contact. The school counsellor appeared to be the first professional to diagnose selective mutism.

**Case Notes**

Subject C had two sets of case notes. The speech pathology case notes revealed subject C's extensive speech pathology treatment, and included a parent questionnaire which provided cursory information about her personal and family histories. At the time of referral to the current speech pathologist when subject C was almost four, her mother had written, "says only a few words, sometimes we have to prompt her to speak" (case notes). Although no standardised speech and language assessments appeared to have been conducted, a diagnosis of "severely delayed articulation and language" (case notes) had been made, as well as a diagnosis of severe articulatory dyspraxia. The speech pathologist commented that subject C was "self conscious about her speech and is reluctant to expose the deficiencies......she reportedly talks readily at home but not in the clinic or at school" (case notes). The speech pathologist had not made a diagnosis of selective mutism.

The school counsellor's case notes provided details of her personal and family histories. There were no treatment notes. As well, the case notes contained a school report in which subject C's teacher described her as a child who was "withdrawn, unhappy" (case notes), and lacking in confidence with few friends. She remarked that subject C was often absent from school. There was a report from the speech pathologist which outlined that subject C had "severe verbal dyspraxia", was "very self-conscious about her speech" (case notes), and would only talk at home. The school counsellor described subject C's problem as "selective mutism in the school environment and the other behavioural characteristics associated with that disorder i.e. poor socialisation, anxiety, attention problems" (case notes).

Two formal assessments had been administered. Subject C scored in the normal range on the non-verbal section of the WPPSI-R, and in the "intellectually mild range" (case notes) on the verbal section of the test. Her performance on the Kendall Wilcox Self-Control Rating Scale revealed that
she had problems with “anxiety, socialisation, attention” (case notes), and that she was isolated from her peers.

**Discussion with Clinicians**

Discussion with subject C’s speech pathologist (the same speech pathologist as for subject A) revealed that she had been frustrated in her treatment of subject C, who frequently did not attend the clinic and was silent when she did. The speech pathologist explained that she had included subject C in a group of other communication disordered children in an effort to resolve these issues.

Discussion with subject C’s school counsellor focused on her treatment and management. The school counsellor remarked that she was uncertain how best to treat the selective mutism, and asked for advice. She expressed frustration at subject C’s frequent absenteeism, and considered that subject C’s mother used any excuse to keep her at home. During discussion, the school counsellor also disclosed that she was concerned that subject C was being sexually abused when her mother was at work at night. She had no evidence to support this view, apart from similarities in subject C’s behaviour which she had observed in sexually abused children, such as recoil from physical contact. (The issue was not explored further as part of the study.)

**Mother’s Response to Research Process**

Subject C’s mother was keen to cooperate during the research process. During visits to see the family at home, it was possible to establish a positive rapport with both subject C, her mother, and her sister. Although it was made clear from the outset that the research process was not treatment orientated, by the end it seemed that subject C’s mother was disappointed that it had been just one more intervention that had failed to help her daughter.

**Subject’s Response to the Research Process**

Subject C spoke spontaneously and unreservedly on all visits. She gradually became more relaxed and, by the end of the research process, she was interacting easily and gaining confidence in speaking. For example, initially she was afraid to listen to the audio-tape of her speech, but eventually she wanted to listen to herself repeatedly.
APPENDIX B - 4
SUBJECT D’S BIOGRAPHICAL PROFILE

Demographic Information
Subject D was a seven-year-old girl, the second of three daughters of Yugoslav parents. The family lived in a large house which they had built in a new housing development in a middle-class area of the Illawarra. The house looked almost brand new from the outside, and inside there was very little furniture. Subject D’s father, who worked as a fitter, was from Croatia; her mother, who worked as a part-time cleaner, was from Serbia. Both parents had migrated to Australia with their families when they were teenagers. They spoke with Yugoslav accents. At home, they had tried to teach their oldest daughter Yugoslav and Australian, but they had abandoned the idea when she showed confusion with the two languages.

The family did not socialise much. Subject D’s mother remarked that subject D had not had a friend to play for at least 18 months and seemed to prefer to play at home with her sisters. Subject D’s parents appeared to have an extended family network with strong connections to the Yugoslav community. Both parents seemed to come from traditional Yugoslav families. Subject D’s mother remarked that she had been unable to socialise without a chaperone before she had married. She had met subject D’s father at a family function when she was in her late teens, and they had married shortly afterwards.

General Development, Health, and Personality
Subject D had a normal birth after an uneventful pregnancy. Her mother commented that she was a nice, sturdy baby, and much easier to manage than her older child. Subject D’s early development had been uneventful and all her milestones were normal, including her speech and language. When she was at pre school she had complained that she could not hear the teacher and had been treated for a middle ear infection by her family doctor. Currently, her hearing was normal. She was well coordinated, her physical health had always been good, and she ate well. She had her own bedroom, but was often frightened to go to bed at night because she did not like being alone. She had a history of enuresis. According to her mother, subject D was
shy and sensitive. As well, she was timid and would rather ask her older sister, or her mother, to do something for her, than attempt it herself. Subject D was reportedly an affectionate child, particularly towards her mother, to whom she tended to cling. Her mother remarked that all three girls clung to her. As well, she commented that subject D had a lovely laugh, but that she had not laughed for a long time. Subject D liked reading, drawing, and playing with puppets. She also enjoyed creative activities, such as cutting out and pasting.

**School History**

Subject D attended pre school for one year prior to commencing school. She had always suffered from separation anxiety when she attended school, and had not spoken at either pre school or school. Apparently, she did not like going to school, and her mother had to take her to the classroom each morning. Subject D was not keen on her current teacher who was exerting pressure on her to speak by not allowing other children to answer for her. Subject D’s mother thought that she had a number of girl friends but no best friend. At school, she tended to depend on her older sister rather than play with her peers. According to her mother, she was doing well academically.

**Speech and Language Development**

Subject D’s speech and language development had been normal and unremarkable, and the family had never had any concerns about it. She had vocalised and babbled normally; she had acquired words and phrases gradually; and her speech had always been intelligible. However, her mother had observed that, compared with her sisters, subject D appeared to listen more than she spoke when she was learning to put words together.

**Family History of Communication Problems and Selective Mutism**

There appeared to be no family history of either communication disorders or selective mutism. However, subject D’s younger sister demonstrated marked shyness behaviour during the first visit, i.e., she hid her face in her mother’s arms. As well, her mother reported that sometimes this child seemed to “cry all day”. By contrast, subject D’s older sister appeared confident and self assured. Subject D’s mother reported that she, herself, had been a shy, quiet child like subject D, and had found the transition from Serbia to Australia difficult. She remarked that she still had problems communicating with certain people.
There was no evidence of subject D’s mother’s reported communication problems during the six visits to see the family.

**History and Description of Selective Mutism**

Subject D’s selective mutism became apparent when she started pre school when she was four-years-old. She had never been separated from her mother for any significant period before this, and she cried every day that she had to go. Prior to this, her parents had noticed that she was shy and reticent when people visited the house but, as the family did not socialise much, they had not considered it a problem. The family had not sought help because they thought subject D would outgrow the behaviour. As well, they were concerned that treatment might be costly. It was only when subject D’s kindergarten teacher recommended that she needed treatment that the family accepted help.

Subject D’s patterns of selective mutism were consistent. She talked to all her family members, including her grandparents. In addition, she talked to the people whose houses she and her mother visited when they went door-knocking to raise money. She also talked to the ophthalmologist who assessed her vision. At school, she talked to the canteen staff when she wanted to buy something. In situations where subject D spoke, she would often become anxious and speak quietly if she thought others might hear her.

Subject D would not talk to the teachers and children at school. Apart from the settings noted above, she was silent away from home, and at home when visitors called, or when there were lots of people around. Subject D tended to be shy on initial contact when she would bow her head and look away. However, once she was comfortable with the situation, she would communicate by gesture and sign language, and she would maintain eye contact.

**Family’s Views of Selective Mutism**

Subject D’s mother said she did not know what had caused the selective mutism. However, subject D’s father asked if his frequent requests for her to be quiet had caused the problem. Subject D had told her mother that she was “not born to talk”.
Treatment History
Subject D had been referred to the school counsellor by her teacher when she was six-years-old because she was not talking in school. The teacher reported that, although her written work was satisfactory, she would not participate verbally in class. The school counsellor had diagnosed subject D as having an “emotional problem”, and had referred her for treatment to a nearby health clinic. At first, she had been seen by a social worker, but after some months she had been transferred for treatment to the psychologist at the centre (the same psychologist as for subject B). She had never been referred for a speech and language assessment. At the time of the study, subject D had been receiving treatment for 15 months.

Case Notes
Subject D’s case notes provided demographic information and details of her personal and family histories. There was a school report in which subject D’s teacher remarked that subject D was socially isolated at school because she would not speak to anyone apart from her older sister. As well, the teacher reported that she would not participate verbally in class, although her written work was satisfactory. Her school attendance was excellent.

There were extensive progress notes which tended to focus on domestic violence. The period of domestic violence, which appeared to occur following the birth of subject D’s youngest sister when subject D was 18 months old, seemed to be associated with subject D’s mother’s post-natal depression. As a consequence, subject D’s mother and the three girls had moved to live with the maternal grandparents. The family had since reunited. There still appeared to be family tensions. For example, subject D’s father preferred the home to be quiet and became angry when the children were noisy. According to the case notes, he tended to victimise subject D. (Subject D’s mother had also remarked that her husband was particularly aggressive towards subject D)

A number of formal assessments had been administered, including an attempt to assess her receptive language. Subject D achieved a “normal” score on the the non-verbal section of the WPPSI-R. (The verbal section had not been administered.) She achieved in the “low average” range of scores for her age group on the PPVT-R. She was found to have a “significant level of
depression” and a “preoccupation with (sic) own sickness and death” on the CDS. No diagnosis of selective mutism had been made.

Discussion with Clinician
Discussion with the psychologist who was treating subject D confirmed the long history of adverse family circumstances, including domestic violence and emotional abuse described in the case notes. Subject D was receiving weekly treatment from the psychologist. The psychologist reported that the treatment approach was the same as for subject B, i.e., eclectic involving a combination of “play and cognitive therapy, gestalt therapy, behaviour therapy and family therapy” (psychologist). Subject D had not spoken in the clinical setting, although in the last month, she had started to give a whispered commentary when she was playing with the dolls in the doll’s house.

Mother’s Response to Research Process
It was possible to establish a good rapport with subject D’s mother, almost from the outset. She appeared cooperative and keen to assist. Although she made no reference to the period of estrangement nor to the domestic violence, she talked a lot about herself. She spoke about her low self esteem, her lack of freedom before she was married, and her passivity. She mentioned that she was concerned her daughters would allow themselves to be “pushed around” (mother) like she had been. She spoke positively about her husband.

Subject’s Response to the Research Process
Subject D gradually became relaxed during the series of visits and, although she did not speak directly, she spoke very softly into the audio-cassette recorder while she was playing. During the administration of the oral language comprehension assessments, subject D’s father arrived home from work. He began watching over the process and appeared to become impatient with subject D when she hesitated before attempting the more difficult items. He told her that she must have confidence. Subject D’s face became flushed and she seemed increasingly uncomfortable and anxious. The assessment process, which had hitherto been relaxed, appeared to become an ordeal. Subject D was noticeably relieved when it was over.
APPENDIX B - 5

SUBJECT E’S BIOGRAPHICAL PROFILE

Demographic Information
Subject E was a three-year-old boy. He was the second child of Australian parents; he had an older and a younger sister. According to his mother, his older sister was an organising, self-assured girl, who had spoken early. She was verbally confident at home, and would often speak for subject E when they were together. Apparently, subject E had responded positively to the birth of his younger sister who was still a baby. The family lived in a pleasant detached house in a middle-class suburb in the Illawarra. They tended not to socialise much. Subject E’s father worked as a sales representative; his mother worked as a part-time physiotherapist. Subject E had attended child care since he was twelve-months-old when his mother returned to part-time employment.

General Development, Health, and Personality
Subject E had a normal birth after an uneventful pregnancy. He was reportedly a placid baby who ate and slept well, and who rarely cried. All his milestones were normal apart from his speech and language development (see below). He had a history of middle ear infections and had been under the supervision of an Ear Nose and Throat specialist since he was two-years-old. According to his mother, his gross motor development had been excellent, and he could throw a ball accurately at nine-months of age. Subject E enjoyed “rough and tumble” play, e.g., wrestling and chasing, and was physically very active. When he was engrossed in play he still wet himself, occasionally. As well, he wore a night time nappy. He slept well and had a good appetite. He had never had any major separations from his family and was not unduly afraid of anything, although he didn’t like heights. He was an affectionate child who enjoyed routine and was good at entertaining himself. However, he tended to be shy, so that sometimes he would hide his face when people other than family members were present. He enjoyed fishing with his father, and he was particularly fond of sharks. He also liked playing computer games.
School History
Subject E had been attending pre school on a twice weekly basis since he was two-and-a-half years. Apparently, he liked going to pre school where he had a number of friends.

Speech and Language Development
According to his mother, subject E was a quiet baby, although he “cooed and gooed and babbled” (mother). He started putting two words together at about 12 months, but after that his speech and language development did not seem to progress very much, although it had never actually stopped. He had not spoken a lot during this period, and his mother remarked that it was difficult to have a conversation with him until he was about two-and-a-half years. At around 18 months, he started to have temper tantrums, which his mother considered was related to his frustration at not being able to express himself verbally. Although subject E’s mother had never been concerned about his language development, she had always been concerned about his speech which had never been fully intelligible. She remarked that he seemed to “swallow words” (mother). Subject E spoke very quickly, like his mother, who he frequently asked to speak louder. Subject E’s mother did not think that he had ever been teased about his speech.

Family History of Communication Problems and Selective Mutism
There appeared to be no family history of communication disorders. (Subject E’s father was adopted so the incidence of communication disorder on the family’s paternal side was unknown.) However, subject E’s older sister had been a shy child who had lacked social skills when she was away from the home. As a result, her mother postponed her school entry by 12 months. As far as subject E’s mother knew, there was no family history of selective mutism.

History and Description of Selective Mutism
Subject E’s mother was unaware that he was selectively mute until his child care minder commented that he had not spoken to her in the nine months that she had looked after him. This had surprised subject E’s mother, because he had talked to people when she took him out shopping before she returned to work. Subject E was still not talking to the child care minder two years later. His mother associated the onset of the selective mutism with her returning to work when he was twelve months. However, she had never sought treatment
for it. Recently, she had become concerned that it was becoming an established behaviour pattern, and had requested that the child care minder and pre school teachers encourage him to speak. She remarked that she was worried about how he would cope with school entry in 18 months time.

Subject E’s patterns of selective mutism were consistent. He always spoke to members of his family when they were home together. Indeed, his mother described him as “very loud” at home. However, when other people were around, he would either be silent, or whisper, occasionally, to members of his family. He would talk to both his maternal and paternal grandparents.

Subject E was selectively mute with his child care minder and with the children and staff at his pre school. He used gesture to communicate in situations where he was mute. According to his mother, he would hang his head if he was feeling shy. Once he had overcome his shyness, he would establish eye contact and whisper, occasionally, to his mother, if she was there.

**Family’s Views on Selective Mutism**
Subject E’s mother considered that his selective mutism was a feature of his shyness. His father’s view was not known.

**Treatment History**
Subject E had been referred by his mother to the speech pathologist at the health centre where she worked when he was two-years-old. She was concerned about his “slow development of speech” (case notes). The speech pathologist had assessed subject E with the assistance of an audio-taped recording of his speech at home. This had been provided by his mother. As a result of the assessment, he had been given a home treatment programme. At the time of the study, subject E had been under review for his speech problems for around 12 months.

**Case Notes**
Subject E’s case notes contained demographic information, but no personal and family histories. A number of standardised speech and language assessments had been administered. These were: the Reynell Developmental Language Scales-Revised (RDLS-R); and the Goldman-Fristoe Test of Articulation. Subject E scored “within normal limits” (case notes) on the Verbal
Comprehension (Scale A) section of the RDLS-R; and was using 2 - 3 word utterances on the Expressive Language Scale. The Goldman-Fristoe Test of Articulation revealed that he had “an articulation delay/disorder” (case notes). The speech pathologist had observed that subject E had an anterior open bite, his tongue protruded, and that he dribbled. As well, she found that he was “query normally non-fluent” (case notes). She had referred him for an audiological assessment which revealed that he had a mild bilateral hearing loss suggestive of “middle ear pathology” (case notes). As a result, he had been referred to an Ear, Nose and Throat specialist. As well, the speech pathologist had noted that subject E was verbally uncooperative in the clinic, and on the last visit had been “reticent” (case notes). No diagnosis of selective mutism had been made.

**Discussion with Clinician**
Subject E’s speech pathologist did not appear to wish to discuss his treatment progress in any depth. It seemed that he was receiving a more informal treatment approach, possibly because his mother was a colleague.

**Mother’s Response to Research Process**
It was more difficult to establish rapport with subject E’s mother than with the other mothers in the study. She seemed defensive and embarrassed about his selectively mute behaviour which she described as “weird”. However, she appeared to have a positive attitude towards him which was abundantly demonstrated during the spontaneous language sample.

**Subject’s Response to the Research Process**
Subject E gradually relaxed during the series of visits. At the end of the last visit, he was speaking freely and appeared to be actively showing off.
APPENDIX C

TRANSCRIPTIONS OF SUBJECTS' SPONTANEOUSLY OCCURRING CONVERSATIONS (AND SOME FIELD-NOTES)
A sample of subject A's spontaneously occurring conversations with his mother, the researcher, and the researcher's daughter was audio-taped one afternoon. Subject A's mother was keen to create as normal a situation as possible, so she had informed subject A that she was having visitors. (Subject A's mother requested that I bring my daughter along to facilitate the normalisation of the process.) On this visit, subject A interacted verbally and showed no sign of being selectively mute. He welcomed us without hesitation and proceeded to play a board game called Monkey Splash with my daughter. After this, he showed us some photographs of his recent trip to Canada. It was possible to audio-tape 26 minutes of conversation (without his knowledge) during the middle part of the visit.

PARTICIPANTS:  
J - Subject A  
M - Mother  
P - Pippa (Researcher's daughter)  
R - Researcher

<table>
<thead>
<tr>
<th>LINE</th>
<th>J</th>
<th>P</th>
<th>M</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Who wants start here and who wants to start there?</td>
<td></td>
<td>(everyone sitting on floor)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Okay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Do you want to start there?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Okay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>You start there</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>There, there you are</td>
<td>(J gives Pippa a counter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Take a card.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>You can't throw the dice today</td>
<td>(J takes a card)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I threw a one</td>
<td>(J moves 1 square)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>A one. It's not very far up the tree is it?</td>
<td></td>
<td>(Pippa takes a card)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>A six. No. That's a six isn't it?</td>
<td></td>
<td>(Pippa moves 6 squares)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Yes 1,2,3....</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>She's doing very well</td>
<td></td>
<td>(J manipulates the cards)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Yes</td>
<td></td>
<td>(Everyone laughs)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Now what happens?</td>
<td></td>
<td></td>
<td>(J laughs and puts the cards back)</td>
</tr>
<tr>
<td>17</td>
<td>Pippa's got to make her way across the bridge.</td>
<td></td>
<td></td>
<td>(J laughs and puts the cards back)</td>
</tr>
<tr>
<td>18</td>
<td>Hey, you're cheating again.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Put that one back.</td>
<td></td>
<td></td>
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<tr>
<td>20</td>
<td>I forgot about you and your cheating. There. You're a dreadful cheat J.</td>
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</table>
21 R What have you got?  
(Pippa picks a card)

22 P Three

23 M Can you count three?  
(J giggles)

24 J Yes
(Pippa moves 3 squares)

25 M Where were you before?

26 R That's right

27 M Oh there, there, sorry
(J laughs)

28 P Do I have to go down?
(Pippa moves down vine)

29 M Yes
(J giggles)

30 J Yes, and you have to go down

31 R Oh dear, so how do get you win?

32 P You don't
(Everyone laughs)

33 J Yes

34 J You can, whoever gets to the other side first wins

35 P So I have to go down the tree?

36 J Yes

37 R Oh I see right that's very difficult isn't it?

38 M Ok Carry on

39 J Yes

40 M It is quite difficult

41 J Yes

42 P But you can swim across...

43 M Eventually it's possible

44 J Yes

45 P If you land there do you have to go back up there?  
(Pippa points to board)

46 M You can go up or you can go down

47 J No, but you go down.........

48 P No but if I went across then I'd have to go back up again, wouldn't I?

49 M Yes, sorry

50 J No, but if you get there you go down there
(J points to vine)

51 R Do you?

52 J but you're not down right at the bottom?

53 J No

54 R Okay

55 J Only if you, you get...... there... you go down to here

56 R Do you?

57 J I think I'd rather do that than go in the water
(J giggles)

58 J Yes

59 M You get wet don't you.
(J picks a card)

60 M Ok. Choose a card

61 J Six

62 M Six. Oh, you finally got to six
(J moves 6 squares)

63 J 1,2,3,4,5,6.
(J laughs)

64 M Ah monkey splash

65 M monkey splash
(Pippa chooses a card)

66 P 10

67 M Wow

68 R Ah
69  M  Well done
70  R  Another 10
71  M  Three
72  R  Count them, Pippa, as you go
73  R  Oh. That’s not right is it?
74  P  Yes.
75  R  Oh it is right
76  P  He counts them before and then moves.
77  R  Ah right
78  P  Ah well I’m going to die now.
79  J  Ten
80  M  Well done
81  R  Now does she have to get a one?
82  P  No do you have to get after that, don’t I?
83  M  Oh here we have to get a one
84  R  And then you have to go back
85  J  Ten
86  R  Well done
87  J  1,2,3,4,5,6,7,8,9,10.
88  M  Oh, back to the other side again
89  P  6
90  J  6
91  P  1,2,3,4,5,6
92  M  Okay what is it?
93  J  I’m keeping my eye on that.
94  J  Six
95  R  You knew what that was before you picked it up
96  J  That’s cos I keep my eye on that six
97  M  Kept your eye on that six, did you?
98  P  Well it didn’t do you so much good. Not going so well
99  R  Yes with this go it doesn’t matter so much
100 J  Three
101  P  I knew that was going to happen, that’s why I asked before
102  M  Okay
103  J  Three.
104  J  I wanted to get that
105  M  Splash
106  R  Oh you have to go for a swim
107  P  Okay.
108  M  Oh, Pippa’s close
109  J  Yes
110  J  (Pippa and J land on the same square)
111  M  No, but, if I’m there you can’t be there
112  M  Can’t she. Why not?
113  J  There’s room for two of you. Look, see.
114  J  No, but you be in the middle. You always be in the middle
115  R  Oh right
116  J  And then there’s no room for you.
117  J  Three - 1,2,3
Now Pippa you only have to get a two
Six.
Whenever I get there I always get a six
Yes
Okay J.
Eight
That's a big one -
1,2,3,4,5,6,7,8
Oh that was lucky
Yes
You want to stay there?
Okay
Oh she won. Again
She won. She's doing well isn't she?
It's your lucky day
Beginner's luck
Yes. You're doing well
Now, what about the next one? What have we got here? What's this J?
I don't know how to play with this one
You don't know how to play that one?
No
I think that looks like ludo a bit
I know how to play this one
Do you?
Well, you start here when you, well then you run, then you have to go all the way round
It's a horse race?
Yes and you have to get on these dots to win
Right
Instead of playing that would you like to show Mrs Cleator and Pippa some photos?
Ohhh
Of, of where you went last year?
Would you?
Where did he go?
Actually I think I know
Do you know?
I think you went on a big aeroplane
Did you?
You didn't did you? A big jumbo jet?
It was an enormous jumbo jet
Yes
Oh, now let me see if I can guess where you went.
Did you go to America?
No
Ummm. Did you go to India?
No
Did you go to Canada?
Yes
Oh, you lucky boy. (J giggles)
What did you do there?
What did you do in Canada?
Did you see someone?
These are the ( ? ) (Shows Researcher the photos)
Ah
I'll show you a picture of what, what I did in Canada
You'll show me a bit of what you did in Canada
I went on that (Shows Researcher the first photo)
You went on a train?
No, that's not a train
Isn't it?
What is it?
Sky train
A sky train
A sky train? I've never heard of sky trains
It's like a monorail isn't it?
Yes
How exciting
What else did you go on?
There's something else you went on
There's a picture of inside it (J shows Researcher another photo)
That's inside the sky train
I don't understand sky trains. At all. I've never.
What you go up into the sky?
No (J giggles)
You tell me what you do then. What do you do? (Researcher laughs)
It's a train up in the air
It's a train up in the air
Yes
I see and what what can you see from the train up in the air?
What can you see? Did you see mountains?
No, when you look down you see cars
When you look down you see cars
Yes, and they look like little tiny dots
They look like tiny dots
Yes
They looked like matchbox cars, did they?
So you must be up really high, are you? Very, very high.
Yes
Have you been on the monorail in Sydney?
Yes, a long time ago
Is it, is it higher than that?
Probably not
I've never been on the monorail. I've always wanted to go.
Have you been on the monorail with Nana? (Addressing Pippa)
Nana said she'd take us next time
And who did you see in Canada?
Who did you stay with?
Who did you stay with?
look on the photo
Did only you go or did Emily, or Sam, or?
Only me and Daddy
That must have been lovely. So you had him all, all to yourself?
It's really nice splitting up the family like that? (Addressing Mother)
Look at this (J shows Researcher another photo)
Yes it was really pleasant at home too
What's happening here?
That's the whale
Oh
That's the whale going up.
And do you know what happened when we was in that?
No
The people on the other side that were watching, the dolphin came and squirted all the water....
What the dolphin?
Out
The whale?
Whales
Yes
From his spout?
Yes
Yes, you don't sit in the front row, unless you're wearing a raincoat
I like whales.
We've seen some whales going up the coast from Kiama
I've seen, I've seen real whales
These are real whales. Yes very exciting.
They're very big, aren't they?
Yes
Did you see dolphins as well, or just whales?
Just whales
Just whales
I think
Tell me who, show me who you stayed with? (Shows Researcher another photo)
This is you again (J giggles)
What are you doing there? (J giggles)
Do you play the piano?
Can you play the piano or a keyboard is it?
What's this one J.? Tell Mrs Cleator what that one is.
Is it a piano?
You step on it
You step on it?
Yes
That's clever.
I've never seen anything like that, have you?
258 Or perhaps we have at the Powerhouse Museum.
259 Did they have something like that there?
260 P No they haven't
261 R Did you, were you able to play a tune or not really?
262 J Yes when you step on... on it, you make, it makes sounds
263 R Does it?
264 And where did you stay in Canada?
265 J Do you remember the name of the place?
266 R Was it in a city or?
267 M Big place or little place or?
268 J Can you remember?
269 M Can you remember? (J shows Researcher another photo)
270 J Look
271 M Vancouver
272 R Oh yes I'd love to go to Vancouver.
273 A train as well
274 J I went on that train (J shows another photo)
275 R You went on that train?
276 J There I am again on the train
277 R There you are again on the train.
278 It's going over some water that train
279 J Yes
280 R Is it in the jungle or something?
281 J No (J shows another photo)
282 R Look what I did
283 J What did you do there?
284 J Made big bubbles
285 R Made big bubbles.
286 J Let's have a look
287 R How did you make big bubbles?
288 J You just poke that into the water and it makes big bubbles
289 R Does it? I've never seen anything like that (J shows another photo)
290 J Oooh Indians
291 J Yes.
292 R How exciting
293 J That's, they're not Indians
294 R What are they then?
295 R I know they're not Indians, but they go with Indians.
296 J What are they?
297 J Totem poles
298 R Good boy, they're totem poles, that's right
299 J I didn't know that
300 R Didn't you? (Addressing mother)
301 R I'd love to go and see some Indians.
302 Boys don't play cowboys and Indians so much any more do they?
303 M No, no (J shows another photo)
304 J There's a
305 R So this is....
More pictures of totem poles
Do you have any cousins in that picture?
See if you can find a photo of your best friend.
He's got a best friend in Canada.
Is he there?
Yes. There
There. Let's have a look at him.
Is he big like you?
Yes but he, yes, you have to look very closely
Very closely
You have to look very closely
Yes
Right
He's only very small
That's because he's a long way away.
You're right, he's a long way away.
He's very small
See if you can find another photo of him
Yes I can't really. You know my eyesight
You'll have to find a bigger photo
What's his name, J?
David
David.
And is he, is he your cousin or just your friend?
Another photo of a totem pole
Another totem pole
He's your cousin isn't he?
There you gone past it
Oh sorry. There he is. There's David
Mmm It's a pity he lives so far away, isn't it?
Yes
Do you write to him?
Do you write letters to him or send him pictures?
Well we started to write a letter at the weekend didn't we?
But we didn't get very far
Maybe he'd like a picture for his wall, do you think, his bedroom wall.
We sent him one of these, didn't we?
Oh look at that photo. Lovely.
Where are you there, do you remember?.
That's, that's still in Canada
That's still in Canada
Yes,
and just around there there's a park
Is that near their house?
Yes.
You just go a..around there and just a little bit, bit more there and
around there and you're there
Walk around that way do you, J?
And here’s a picture of the wing
Is this on the aeroplane?
Yes,
That, I took that picture in the aeroplane
You took this picture?
Yes
That’s very grown up.
And is this Vancouver below here? (Researcher points to photo)
No I think that’s part of the wing actually
Oh right
Yes that’s the wing and that’s the, one of the engines
Goodness me
Did you like going on a plane?
Yes
It’s very exciting, isn’t it?
It must have been a long journey to Canada. You must....
And you don’t get hungry
You don’t get hungry.
They keep bringing you food don’t they?
Yes
Lots and lots of food
Yes
Do you remember what they brought you?
Did you like?
No
You don’t remember Lots and lots of food though.
Oh, what’s this? (Researcher points to another photo)
That’s ducks and that’s chickens
Ducks and chickens
Mmmmmm
I don’t know where you took those.
J. took all the ones in this book (Mother gives J a book of photos)
Yes
Oh right. (Researcher opens book of photos)
Look at this. Ohhh
That’s Emily’s birthday cake
Did your mum make that?
Yes
She’s clever isn’t she?
Isn’t that lovely
Now, it is a rabbit, it’s not a cat. It’s a rabbit.
 Somebody thought it was a cat
No it is. It’s definitely a rabbit, that one
What have we here? (Researcher turns over page)
Oh, you took this one as well?
Yes, I took that
That’s a very good photo isn’t it? (J shows Researcher another photo)
And there’s David again (J shows Researcher another photo)
That's a whale
How many whales were there?
Don't know
Were there lots of whales or one or two?
I think there was one
You think there were some?
One
One, just one whale?
Yes, I think there was only one
He must have been lonely
Right
That's some fish
Do you go fishing?
No
You don't go fishing?
That's just a fish tank
Oh, I beg your pardon.
A fish tank
They'd get cross with me wouldn't they, if I went fishing in their fish tank?
Yes
What's going on here?
That's the whale underwater
Are those birds?
That's at, at the ana...(sniffs) animal park
Animal park?
You did lots of different things didn't you?
Yes
and there's the park again, there's the park again
And there's David too isn't it?
Yes, and that's David
Do you think David will come over here to see you?
No I don't think he will come here
I bet you he does
He might one day.
Yes
His brother came once, didn't he, remember?
No
Don't you remember?
oh no, you were only 18 months old.
Remember Brian came and stayed. Remember?
I bet David will want to come and see you and where you live
Yes but I re..., I remember when, Brian came
You remember Brian came?
That's Brian
That's Brian
He's bigger, isn't he?
Yes
448 M Brian’s nearly 12
449 J Yes, nearly
450 M Sorry
451 J That’s his caravan
452 R That’s his caravan?
453 J Did you stay in the caravan?
454 R No. We just went in to have a look in there
455 J You just went to have a look in it?
456 R Yes
457 J Right, okay
458 R That’s the bedroom
459 J Mmmm.
460 M I thought you might have gone touring or something.
461 J You didn’t go looking round Canada?
462 M That’s, that’s Vicky
463 J They only went for a week
464 M That’s Vicky in there, again.
465 J That’s Vicky
466 R Who’s Vicky?
467 J I will show you a picture of her
468 R Is she your cousin as well?
469 J Yes
470 R So you’ve got Brian, Vicky, David
471 M Who else have you got over there?
472 J That’s Vicky
473 M That’s Vicky
474 M Let’s have a look
475 J And that’s in the caravan, too
476 R That’s in the caravan, too?
477 J And that’s Vicky
478 R Mmmm
479 J And that’s Vicky, too
480 R Oh, She must be in bed there
481 J Yes
482 R Was it bedtime?
483 J No
484 J And there’s Brian
485 R That’s Brian?
486 M Who’s your other cousins over there J?
487 J You’ve got Brian and Vicky and David.
488 M Who else?
489 J And that’s a picture of the back of the caravan
490 J And that’s David laying down there
491 M And whose house is where the caravan is?
492 J That’s the garage and whose house is over here?
493 M Whose house is that?
494 J Is that where you stayed?
495 M Who did you stay with in Canada?
I don't know
Ahhh. Don’t tell me you can’t remember.
Have a quick think.
Who did you go to visit?
Who did you go and see?
Who was it?
Grandma!
Oh my goodness she’d be horrified if she thought you ‘d.....
forgotten grandma.
Do you call her grandma, or nana or?
What do you call her?
Grandma
Grandma.
That’s a bit of a mouthful isn’t it, Grandma.
She’d be most upset if you forget her
Yes
Yes
What are these? (Researcher points to another photo)
I’ve never seen anything like those before
Remember I told what, I told you what they’re called
Totem poles?
Yes
And one’s got a bear on top
They’re beautiful.
What?
One’s got a bear on top
It’s got a bear on top.
Those must be real totem poles
No these, these ones are Japanese totem poles
Yes
How interesting.
In amongst the Canadian totem poles.
I’ve never seen totem poles like that before.
I knew the other ones, but I’ve never seen those before.
They’re a bit different, aren’t they J?
Yes
And that’s a picture of grandma’s house (J points to another photo)
Oh good, good.
It’s a big house isn’t it
And that’s a picture of me in the sky train (J points to another photo)
The sky train?
Yes
and now we, and now that’s the bridge
That’s the bridge
Where’s a picture of the whole family?
Have you got one of the whole family there?
And I, and, I went on a boat.. (J points to another photo)
And that's the driver of the boat.

That's, there where the driver sits

That's where the driver sits

So you went on the boat, and the sky train, and an old train?

Yes.

And that's a picture of the water

You went on a lot of things didn't you?

You packed a lot into a week, didn't you?

And that's a picture of the water

J., who took these photos?

Me

Well I think you're a very good photographer, aren't you?

It's very clever

But I didn't do it with real. I didn't do it with, with grown-up cameras

You didn't do it with?

grown

grown up

grown-up.

Did your dad help you?

No

Well, I think these are very good, I really do

I took, I took 'em with, with a camera about this big

A small, small camera?

Yes

Yes

A disposable camera

That's a really good idea. Very good

And that's a picture of the water

That's a picture of the water

And that's on the sky train again

The sky train is, is something you liked a lot, I think.

Is that right?

Yes

And that's, and that's a picture of the other train, train on the other track

Mmmm

And where's the whole family, one of the whole family?

There might be one here, I think

And guess what that is?

Guess what?

Guess what that is

I don't know J., I've forgotten

Is it part of a boat?

The sky train?

No

I don't know what that is.

What is it?
591 J Sling shot
592 M Oh a sling shot
593 R A sling shot?
594 M Somebody I think hangs......somewhere
595 J Yes, and
596 R What happens with a sling shot?
597 J do you know?
598 J There's a dip in the middle and two grown-ups when they're sitting there on side of it and they went up very high, very low and get down and up again.
599 J And they went up and down, up and down, and up and down, and up and down
600 R I've never heard of anything like that before.
601 R I'd like to see that
602 J Well you know what to do,
603 J you'll have to go to Canada
604 R I'll have to go to Canada
605 J Yes
606 R I wouldn't mind going to Canada.
607 J They have some interesting things there, don't they?
608 J Yes
Four attempts were made over four visits to elicit conversation from subject B. On the first visit, subject B (and his younger brother) were watching television and eating their evening meal (it was 4 p.m.). Subject B’s mother seemed reluctant to turn off the television and to set up a game of Monopoly, as arranged. However, when this was organised, subject B appeared terrified. He hid beside a cupboard and seemed to be trying to climb up the wall. It appeared he was having a panic attack. His jaw was clenched, his lips were tightly sealed, and he was sweating. Subject B’s brother also seemed frightened and was silent throughout the visit. Subject B eventually escaped to his bedroom where he could be heard crying. His mother tried to persuade him to come back, but he evaded her by slipping into the garden where it was raining. After a short time, subject B could be heard singing while he played on his skate board. As I left, he smiled as he went into the house.

On the second visit, subject B was sitting on the curb outside his house when I arrived, apparently waiting for me. He grinned when he saw me and went into the house. I had brought a “Where’s Wally?” game which I knew he liked. Subject B, his mother, younger brother, and I sat on the floor and played the game. During the game, subject B vocalised and giggled. He was particularly pleased when he succeeded in winning. He revealed little anxiety during the visit.

On the third visit, an attempt was made to administer the speech and language assessments. When subject B would not cooperate with the administration of the SHAPE (Smit & Hand, 1997), it was administered to his brother in an effort to dispel any anxieties he might have. Eventually, the test and an audio-tape recorder were left with the family while I went out to the car. His mother joined me a few minutes later. Subject B would not attempt the SHAPE, even in my absence. When I replayed the audio-tape later, subject B and his brother had recorded noises, such as burping, snorting, heavy breathing, and coughing, after their mother had joined me. Before I left, we all
sat around the kitchen table and played a card game. Subject B was relaxed and calm. He laughed and vocalised, although he did not speak.

On the fourth and final visit, subject B appeared relaxed and comfortable. This time we played Snap, but he would rather lose than say the word “snap”. He communicated by using gestures and a series of short vocalisations, such as /a/. Language sampling was discontinued at this point because it seemed that the visits were becoming treatment, rather than research, orientated. An audio-tape recorder was left with subject B’s mother who audio-taped him (without his knowledge) when he was talking with his younger brother on five occasions; a total of 15 minutes conversational interaction. Eventually, subject B discovered the audio-tape recorder and refused to allow any more recordings to be made.

PARTICIPANTS: A Subject B M Mother
N Nicky (brother aged 6) F Father

SAMPLE 1 (A and N playing a Spiderman card game)

LINE
1 A Look
2 N Ah
3 A That’s you
4 N Shut up
5 A Bloody hell!
6 How much carnage!
7 I better count ‘em
8 N 1, 2
9 A 1
10 N Oh oh! Spiderman vs Octopus; spiderman vs carnage
11 A You always look.... (A starts coughing)
12 N spiderman vs carnage. spiderman vs octopus,
13 A you’re looking
14 N and spiderman vs scorpion
15 A You said all of them.
16 One carnage already.
17 Now 2. Now two carnage
18 N Spiderman vs Ironman
19 A shut up
20 N spiderman vs
21 A 3 carnage I see, mmm.
22 3 carnages, er, 4 carnage, 5 carnage, 6 carnage, 7 carnage, 8 carnage, 9 carnage, 10 carnage, 11 carnage, 12 carnage, 13 carnage, er
23 Ready for more carnage,
24 N You wanna count how many cards?
25 M  Who cut this?
26 A  Who cut your hair Nicky?
27 N  What?
28 A  Who cut your hair off?
29 N  Not me
30 N  Carnage, carnage
31 A  But you have to look from the beginning
32 A  Start from the beginning
33 N  no
34 A  You went from back
35 N  You only got 2 carnage?
36 A  You (?)
37 N  More carnage
38 A  Bullshit
39 N  Carnage
40 A  You have to count ’em
41 N  2 Carnage
42 A  You have to count
43 N  1 carnage 2, 1,2,3,4,5,6,7,8,9,
44 A  10, 11, 12 “dit” head, 11
45 N  10,11...
46 A  You have another carnage?
47 N  I got 10. I mean 11 carnage.
48 A  Wait a minute, 2
49 A  You’re looking, you’re still looking at my spiderman cards
50 N  I’m not
51 A  Yes you are, that’s why.....
52 A  I’m (?)
53 N  That’s why
54 A  Aahh Fuck you
55 N  You’re looking at mine
56 N  You’re still looking at my spiderman cards.

SAMPLE 2
57 N  I want to do two
58 A  This was these two in the front
59 N  I’m not going to do it.
60 N  Not fair
61 A  ( ? ) you’re my brother
62 N  ( ? )
63 A  ( ? )
64 N  Look.
65 A  Yah, yah, yah
66 A  Try the other one
67 N  Oh, this works
68 A  I think it’s more I think its
69 N  You do it that side again
70 A  15 ( ? )
71 N  A. if you do it this way
72 A  ( ? )
73 N  A. if you do it this way you go here
74 A  Two hundred, two hundred

(A singing)
75  N   1,2,3
76  A   1,2,3,4,5,6,7,8,9,10
77  M   One more time.
78  N   Hurry up
79  (     ?     )

SAMPLE 3
80  M   Well this isn’t doing much longer
81  N   Where that (     ?     ) in spite of you, in spite of you.
82  A   Bull shit
83  N   A. if you want to do this
84  A   A. you don’t have to
85  A   Come on Nicky
86  N   I’ll make you into a baddie
87  A   Boofie head
88  (     )

SAMPLE 4
89  N   Let me count
90  M   Let me see you count
91  N   1,2,
92  A   Yeh
93  N   3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,21
94  M   Is that all?
95  N   Yes
96  N   21,22,
97  N   That’s not fair
98  (     )
99  M   It’s the right thing
100  N   Let’s do it together
101  (     )
102  N   Do you want to?
103  (     )
104  M   That’s more like it
105  N   (     )
106  (     )
107  M   Got it all?
108  N   Yes
109  M   A.’s turn now
110  N   (     )
111  N   Do you want to?
112  A   What?
113  N   I don’t want to read it
114  N   Ohhh
115  F   (     )
116  M   I’ll read it with you
117  A   (Reading) Pirate Gold. Throughout this 8 page pull-out is hidden pirate gold called pieces of eight. Your job is to hunt for the treasure and see how many pieces of eight have been stolen by Polly, Brownbeard’s parrot (see the story on page 32).
118  N   Can I have a go?
119  M   It’s not your turn now
Match the pictures below into pairs. Here’s a clue to get you started. The flag on the mast of a pirate ship usually has a picture of a skull and crossbones. Happy hunting. Turn to pages 54 to 57 for the...

Each one belongs (?)
What does?
The skull and crossbones
Can I have a go?

SAMPLE 5 (Playing with Power Ranger models)
I like him
What?
I’ll swap you one which is not so popular
I’ll swap you one
which one?
Not now.
Not till we reach up to 40
I don’t like this one
I get the last one
(A starts laughing)
You don’t.
This one?
No
Why?
You want swap all of them?
because you don’t want that
(A)
You cheating
(A singing then clearing throat)
I haven’t got my cards from you
Red red rail, red red rail, red red
Don’t look at mine
(A clearing throat)
No
I think it has something in it,
S’not in there
That order?
That’s spiderman
What that?
I hate him
What is it?
He’s (?)
Don’t swap (?)
Why?
When I, when I first (?) the first one (?)
I’m gonna, ummm
Do you want this?
What is it?
What’s that?
And I try to,
I’ll do my best.
But I better do it last
But I just saw (?)
What’s (?)
167 M Where (?)
168 N Who put (?)
169 A There
170 N Looks like (?)
171 N I don't like my programme, boring.
172 N Play cards? Want play cards? Play cards?
173 A No
174 N There, is the winner.
175 N Me first.
176 N No let me
177 N I'm the winner, thank you.
178 N Okay
179 A No Nicky you cheated
180 N You just moved the pink ranger and it got moved there
181 A I wish you was, (A clearing throat)
182 N Ah, 15, 100!
183 A I just, I just saw you move there
184 N I want to play cards now
185 A I can play again
186 A I can play cards again
187 A This one
188 A yeh, yeh, yeh
189 N You looked, you looked
190 A Yeh, yeh, yeh
191 N You looked
192 A I looked
193 A No you looked (A pretends to cry)
194 A What? (A continues to pretend to cry)
195 F Ohhhh. Zzzzz. (Father pretends to cry too)

N.B. (?) indicates inaudible
Subject C spoke spontaneously and readily on all visits. When she was at home with her mother and elder sister, there was no sign of her selective mutism. During the middle part of the first visit, it was possible to audio-tape (without her knowledge) 28 minutes of her conversation with her mother, her sister, and the researcher while she was playing with some toys (e.g., Barbie dolls, Barbie car, Barbie clothes, furry toy cat, and trolls).

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1</td>
</tr>
<tr>
<td>Subject C</td>
<td>2</td>
</tr>
<tr>
<td>M</td>
<td>3</td>
</tr>
<tr>
<td>Mother</td>
<td>4</td>
</tr>
<tr>
<td>K</td>
<td>5</td>
</tr>
<tr>
<td>Sister, aged 9</td>
<td>6</td>
</tr>
<tr>
<td>R</td>
<td>7</td>
</tr>
<tr>
<td>Researcher</td>
<td>8</td>
</tr>
</tbody>
</table>

1. B Her having a baby (everyone sitting on the floor with the toys)
2. R She's having a baby
3. B See,
4. B Pop
5. B Pop goes, pop goes the weasel
6. M I wish it was as easy as that
7. R Pop goes the weasel?
8. M Yes. The world would be overpopulated, wouldn't it?
9. B Her catch cold (B tries to put a dress on the Barbie)
10. R Ah, Yes that's a bit small, I think.
11. M Have you got any Barbies or?
13. R Have you?
14. K Barbies, Barbies, heaps of Barbies
15. R What about you B?
16. K We share the Barbies
17. M How old are your children?
18. R 11 and 13,
19. B I've got 2 girls, like you
20. M You're just starting with the fun, aren't you with a 13 year old?
21. B Put them under the blanket (B puts the Barbie to bed)
22. R Could you repeat that?
23. M Ah, sorry put them under the blanket
24. R Put them under the blanket, keep them warm
25. B Yes.
26. B Put the baby in her pink
27. R Put the baby in her?
28. B um...One of them (B points to the cats)
29. R Put the baby in the pink
30. R In the pink?
31. B Put the baby in the...ummm...
What's it called?
In the bassinet?
No, no
What are those?
Oh the blanket?
No um....
What you wheel the baby in
The cot?
Pram
Pram
No
The cot?
No
The thing that you?
Trolley, trolley
No um
The thing at the hospital?
Yes.
What's that?
That's a cot
A trolley
That's a cot
Yes that's a cot
That actually B. is a ball dress
and this Barbie had a beautiful dress,
This is just a sort of a top dress to go with it.
That's all that's left of it, and I'm really sorry about it
Yes
There, is she cosy?
Yes
Are you cold B because you sound like you're sniffing?
Go and put your jumper back on, please. (B doesn't take any notice)
I am so cold baby
I'm going home baby
Without you baby
Yes, with my baby
Put her in the basket
And (speak to her)
And lay her down
And put her in the stroller
Good. Just make sure she doesn't get run over lying on the ground there
No her in the car
Oh sorry
Her put her seat belt on
Little babies in seat belts
The capsule perhaps
Have you seen those capsules?
Yes
Yes, I think they put them in capsules now
Yes
Mmm Back to front seats.
I think they've got these new ones out again.
They put the baby round the other way, laying down.
I think they're a little bit more expensive now.
They grow with the child,
As the child grows you bring them round.

B: Come on baby

M: They grow

B: There

K: The queen

R: She looks like a queen doesn't she?

B: Hi

R: That's actually a stole to go round her shoulders to keep her warm

K: What the Barbie or the stole?

R: Yes that's a Barbie

M: God you're beautiful, B.

R: Do you like babies, B?

B: No

K: She used to

B: Yes

R: Yes you do, you do

B: I like Jessie

M: Her cousin Jessie who's nearly 2.

And she's just lovely.

She loves B. to death, you know.

She won't have anything to do with K. or the other niece, but, B., doesn't she?

She loves B.

They just follow, they follow each other around, actually.

B: La, la, la

(B singing)

R: This is her little cot

B bobs Barbie up and down in the cot

R: That's her little cot.

K: What are you going to do?

R: Can I put this dress on a Barbie?

K: Of course, that's why I brought them.

Yes, you can.

I'm, I'm sorry I haven't got more things really, but of course you can

B: There

(B shows Researcher the Barbie)

M: Did you dress her B?

B: I put the baby in the cot

M: Did you feed her first?

B: Yes

M: I didn't see you, I didn't see you feed her

B: There is her little playpen

(B starts to make a playpen)

R: That's her little playpen

M: I thought she was just born a minute ago and now she's playing in a playpen

R: Growing up quickly

M: I know time goes, but I didn't think it went that quick


(B continues playing with the playpen)

When, they heard how, um they had a, they wanted a baby,

they wanted to invite a to a party and then they adopted a child
and the girl what had the party said "a minute ago they didn’t have a baby, now they’ve got a 7 year old".

Her hold the baby. Hold baby, hold baby, hold baby.

That’s a bit silly isn’t it

Yes, He is a problem child

lalala (B starts singing)

This is her bed (B makes a "bedroom" with the toys, cloths etc.)

This is her bed and this her, her play-pen here

Right

No but she shouldn’t have them in the same room,

She might get out of bed and just play.

The mother’s in the playpen

That’s what I do with my um blocks.

I put the playpen next to the clock

And this is the bath for his washing. (B puts toy bath in the playpen)

For who? (B goes wowwww)

Brother

The brother

Sorry, I thought you said buffer

Slam the door: slam, slam, slam, slam! (B starts yelling as she pretends to slam the door)

He slams the door.

Why does he slam the door?

I don’t know

Grumpy old clown

He’s cross perhaps is he?

Why do you slam the door?

Oh gosh

He’s gone

Is this the brother. (Researcher points to "male" Barbie)

Yes

All right,

Well I’ll put him back there

And you don’t slam the door on your baby sister. (B shakes her finger at the Barbie as she tells him off)

Sorry baby

Did mummy kiss him?

Ready, open the door, (B walks the Barbie into the playpen)

Walk in,

Then he sees the baby,

Then o-pen the door

And then sleep in your cot

Who the mother or the brother?

The brother

The mother just went in the cot

Her just sleeps in the same house.

There knock, knock, knock, knock, knock knock knock knock

It’s a giant pussycat (B starts singing)

Then her see,

Oh, oh everybody at home (B starts moving the soft toy cat)

There’s a giant pussycat.

I am going to see the giant pussycat.

Hello.

Get out
I am going to see?

The giant pussycat

The giant pussycat, right (B moves the cat in one hand and the troll in the other)

There is the giant pussycat

What the little tiny troll scared the giant pussycat away?

Sure

Yes

He kisses her (B roars)

Be a bit careful with him.

He looks like a very much loved cat

He’s a good friend

Her, he tying cat onto him (B starts kissing the cat)

Lovely imagination

Mmmmm.

Rich (B continues kissing the cat)

Oh, smooshing now

No

Why d’ you go up to my sister?

Sister

Take this (B starts hitting the cat)

That looks very cosy over there.

Mmm

What’s the giant pussycat doing?

Hugging them (B is making the cat kiss the Barbies)

He’s hugging them?

Yes

Why d’ you come (?) and hug the baby more?

Hug the baby

It’s amazing what some cats do to babies, B. (M laughs)

That looks very cosy over there. (B starts singing)

We love you, you love us, we are happy, lucky family, with a big hug I’ll send a kiss from me to you (B makes kissing noises)

Do you listen to that song at school, have you?

No I think it’s from last year when it was on...

It’s from Barney (B continues singing)

I love you, you love me we are happy family, I’ll send a kiss from me to you

The words?

Yes (B goes into her bedroom)

I know, I know

Is that how you put it on her? (K shows Barbie to Researcher)

I don’t know how to put it on

That’s right. K., that’s right

Like that?

Yes, but the top part I haven’t got.

It was a beautiful ball gown

Actually what happened to her hair?

That was what I was about to say

All of them, ruined

Mmm. We used to ask, but I said no

Mmm. Has she gone to get her Barbies

I think so
Yes, oh God (B comes out of her bedroom carrying a large box)

These are Barbies, these Barbies
Where's Barbies, where are your Barbies?
These ones
A big box of Barbies
Mmmmmm
Yes, that big box of Barbies
You might have to pack Mrs Cleator's away
Ah right, well we might take these away (Researcher starts to put her toys in a bag)
You can show me your Barbies (B shows Researcher a Barbie car)
We got the car
Do you want to tip it all out?
You've got a car
Car
If you want to. (Researcher laughs)
You don't have to tip it all out, do you?
Just, whatever you want to do, as long as that's all right with mum
it's fine
it's all right with me because my husband's got some plastic bags so we can pack them up. (B tips up the box)
See, see (B shows Researcher a Barbie)
Oh I haven't seen, I haven't seen one like that before.
What's that?
Um my new (?)
Tell me about this one, B..
I haven't seen one like that before.
Is that her heart? (Researcher opens Barbie's tummy)
No
I think you put special things inside, don't you?
No you put, a person in there.
I put a man in there and I said um "her rather strange" I think I said Ah! Look at her hair. (Researcher points to Barbie's crimped hair)
Do you know what that hair's called.
What's it called when you do that to your hair?
No, um what's it called?
Crimping
That's right.
Crimp
Have you ever had your hair crimped?
Do you remember?
Yes.
When did you have your hair crimped, do you remember?
I know
Sentain's birthday
Sentain's birthday party she went to.
Ah
Yes, I've got a crimping machine.
Oh have you?
Yes, I know how to do hair in rags too, but you need someone else to help you to do it, so.
Yes.
283  B  See
284  R  Oh that’s pretty
285  B  It’s my (favourite)
286  R  What colour’s that one?
287  B  Pink, only pink
288  R  What’s your favourite colour?
289  B  Um, yellow, pink, purple... and blue, and......
290  R  You’ve got a few favourite colours then, haven’t you?
291  B  That’s all,
292  M  Um, oh, I didn’t say purple
293  M  Yes you said purple, pink, yellow, blue
294  K  Yellow, blue
295  B  There
296  R  What about you K?
297  R  What are what are your favourite colours?
298  K  Blue, blue, blue, blue, orange and orange
299  R  Blue and orange.
300  K  Yes
301  R  I can see your room. That’s your bedroom, K
302  R  Where’s your room B?
303  K  That’s your room? (Researcher points towards B’s bedroom)
304  K  My room’s a complete mess
305  R  Is it?
306  M  Yes. Every now and again I put them in the room together then I separate them.
307  R  So we’re half way through separating them at the moment.
308  K  ‘s bed’s in there. That’s about all.
309  R  And her clothes, aren’t they?
310  K  Yes
311  B  There (B has put a Barbie in the car)
312  R  What’s happening?
313  B  Her driving her car to the ball
314  R  Mmm
315  B  Now her get out of the car
316  M  Excuse me I don’t know that you’re dressed yet for going to the ball (Barbie is only half dressed)
317  B  Going to the ball
318  K  You needn’t take that off because they’re costumes.
319  R  sorry, sorry.
320  M  Don’t take your clothes off in front of everybody
321  B  Leave the costume on, on them.
322  R  Where did he come up to them?
323  R  See!
324  K  Where did Ken’s heads go?
325  M  I don’t know
326  R  I’m interested in her tummy.
327  R  What happens in there?
328  R  You tell me about it. Gosh
329  B  He put them in there (B points to Ken)
330  R  Is that Ken?
331  B  Yes
332  R  Oh I see
And that’s all
What else went in there?
Something else went in there?
What else went in there?
That’s all
And that’s all
Wasn’t there lipstick or something?
Yes, lipsticks came with it
Yes
And what else
Blush
No.
Open it up
What this? (Mother holds up a box with a mirror)
You want to open it up like this?
Yes
Something jumps out and hits you in the face does it?
Yes (B and K start laughing)
See
Yes you’re right it does (Mother joins in laughing)
She looks as if she’s in love with Ken there, with a big heart.
Yes
And she’s got a ring too, hasn’t she?
Her kissing Ken,
The wife is missing (B starts making Ken and the Barbie kiss)
She wants to smoocher?
No
She’s kissing Ken, she’s kissing Ken
Her in her top too and her coming out of her car
Coming out of the car (B walks Ken and the Barbie out of the car)
Hello boss, I love..... (B and K start laughing)
You don’t go to work like that. You do not go to work like that.
I know these things. (Barbie has nothing on)
Next thing you’ll want to go to work in.....
Yes, this is the family work
Oh a family word
It’s a family word
Come on baby
She’s had a baby.
What else have you got B?
Nor, nor.
Oh my gosh
Barbie bit his head off (Ken’s head falls off)
Oh this is Ken.
I haven’t seen Ken (B blows a raspberry)
Oh my goodness gracious, Ken’s a bit rude.
See
Oh dear.
That one’s got clothes on, but it hasn’t got a head.....
Some of the heads fit the dolls really well and others once they’re
385  R  Yes that’s right  (Mother tries to repair Ken)
386  B  See. Ohhh  (B shows Researcher another Barbie)
387  R  Now she’s got long hair.
388  B  Yes  (B gives Researcher the Barbie)
389  R  Let’s have a look at her  (Mother holds up another Barbie)
390  B  Umm. That is umm, see mmmm
391  M  What was that one?
392  R  Tell me about this one.
393  K  Oh I know
394  R  What does she do?
395  M  Gymnastics
396  B  Yes
397  M  Well say it
398  B  Gymnastics
399  M  Thank you
400  B  See  (B makes Barbie do the splits)
401  R  Gosh she’s good at gymnastics  (B tries to dress Barbie again)
402  B  Her got (home)
403  K  This Barbie....
404  M  She busted right out of the clothes did she B.?
405  B  Yes  (K does the splits with her Barbie)
406  R  She’s good at doing the splits
407  K  This one isn’t
408  M  This is mine but umm  (B starts saying wee wee wee)
409  M  Is that the same sort of doll that B.’s got there?
410  K  You can’t put any clothes on  (B says wee wee as she demonstrates with the Barbie)
411  R  What sort of gymnastics can she do?
412  M  Can she do head stands, or...what can she do?
413  B  Her can do this  (B says wee wee as she demonstrates with the Barbie)
414  R  It’s the splits
415  M  Can she touch her umm toes with her hands?
416  K  No
417  M  I didn’t mean like that, I meant bend over  (Mother laughs)
418  R  Do you do gymnastics?
419  K  No
420  R  You don’t.
421  M  What about ballet, or anything like that?
422  K  No
423  B  See  (B has put the Barbie in a contorted position)
424  R  Wow wee
425  B  How me doing this?
426  R  You do that.
427  M  Where do you do that?
428  K  No it’s not really good it’s just people do it at school  (B goes woo woowo wooco)
429  K  People do it at school?  (B has put Barbie into another position)
430  R  Oh right
431  M  They do dancing at school, don’t you, with Mrs B?
432  B  Look at that
433  K  But they don’t do the splits
434  M  No you don’t do
435  B  Ohh, hello boss, hello boss um, this my ( ? )
436 M Excuse me you’ll have to go home and change. (Barbie is half-dressed)
437 That is not appropriate clothes for work. (B starts laughing)
438 Off you go
439 R Are you the boss?
440 M I must be.
441 The head of the family business
442 B Her name’s boss
443 M Is the business going well, or is it going downhill?
444 B Hey boss (B shows the half-dressed Barbie to her mother)
445 K Going downhill, mate
446 M Oh yes. I’m the boss.
447 B This is a (bar) family boss
448 R This is a?
449 M Family
450 B Give me back my family (B is re-arranging the Barbies)
451 K Mum this person’s had an accident (K shows one of the Barbies to her mother)
452 Fall down the stairs.
453 It’s twisted its head
454 B Boss, hey boss, take off your clothes,
455 Hey boss hey boss (B holds a Barbie up to her mother)
456 M Yes
457 B Umm, I don’t have to wear these things to work
458 M But what sort of work do you do?
459 B Um just ice-cream
460 M Ice cream?
461 B What swimming in it?
462 B No (B laughs)
463 M Selling ice-cream
464 B Selling it?
465 M Well, I still don’t think that’s the right clothes to wear
466 B Yes
467 M Well don’t lose them
468 B Her is swimming in it
469 M Yes, but does she go swimming in the ice cream or is she selling it
470 B Selling it
471 M Well, still not the right clothes for selling ice cream.
472 What are they doing? (B makes the Barbies whisper to each other)
473 M Are they whispering?
474 B I don’t like whispering
475 B Her whispering about the boss
476 M Whispering, wow,
477 B I don’t like whispering.
478 Stop your whispering or you’re sacked
479 R Do you whisper at school, B?
480 M Do you whisper at school?
481 B?
482 M That must have been funny.
483 B Do you whisper at school, B?
484 R Mmm no
485 K I do, I do
486 M Do you whisper with your friends?
487 B Yes,
I want to tell you what she said to you
Um, she said um I hate you (B laughs)

491 M Right, you’re sacked. You’re sacked.
492 Freedom of speech just went out the window.
493 Y’re sacked
494 B Ahhh
495 M Take your hat off
496 B No,
497 I don’t know want to like you
498 M You do or you don’t?
499 B I, I do like you
500 M Oh you’re just like....
501 R I do like you
502 B I um I like you
503 M Good
504 B Her said her don’t like you (Points to Barbie)
505 M Well, she’s sacked.
506 She can’t even wear the right clothes for work
507 B Hey,
508 M What?
509 B Hey, I not sacked, I,
510 Her did it. (B points to another Barbie)
511 Sack her
512 M Sack her?
513 Why because she said it?
514 B Yes, her did say it
515 M All right you’re both sacked.
516 Come on go and get on the dole
517 B All right
518 K Come on (B makes the Barbies whisper again)
519 M Whispering again
520 K I thought they were kissing
521 R What are they saying this time, B?
522 Oh B., you call her B..
523 M I call her B.
524 R What are they saying? (B lets out a shriek)
525 M I can’t hear what they’re saying
526 B Let, um, let your deeds shine, um let, um let, um (singing school song)
527 (Two) climbing out the window
528 M That’s not going to get you a job (Barbies start climbing up the wall)
529 She’s climbing out of the window
530 K Let’s climb out of the window
531 B Climbing window
532 M You’ll jump off the building now.
533 Well just don’t land near me cos I don’t want to clean up
534 R Mum saved her
535 B Ahhhhh. Ahhhh. Her (B screeches as the Barbie jumps)
536 M You’re a nut case B.
537 R That was a big jump (Barbie lands in a heap)
538 B Her bumped her head and see the doctor
539 M I’m not a doctor.
540 I'm not going to fix her.
541 If you broke your head that's your problem
542 B She be the doctor (B points to Researcher)
543 R Oh yes I'll be the doctor.
544 Now, just right, lay your head down there. (B does not respond)
545 R Oh dear
546 B Now, now, her fine now (B seems to go off the idea quickly)
547 R She's fine now
548 M I think she might
549 B I am a
550 M You're weird
551 B I am a monster (B makes the Barbie start to scare the other Barbies)
552 R I am a model?
553 M A monster
554 R Oh right (B goes whooooo)
555 K Monster-witch (B continues whooooooo)
556 I will change her clothes into.
557 B Her is changing her clothes (B starts to change Barbie's clothes)
558 M Beg your pardon?
559 She's changing her clothes?
560 K Yes
561 B Yes
562 R She's changing her clothes.
563 I'm getting getting the hang of it
564 B This is a lovely (B holds up a pink doll's ball gown)
565 R Ohhh
566 M So much for these lovely dollies. (Mother picks up a doll)
567 Do you know Nana went everywhere looking for these dollies for you girls?
568 R They're beautiful, aren't they?
569 M They're only to take to bed with you
570 K They stick you in your nose, I think
571 M Beg yours?
572 K I think they stick you up the nose with their hands (Researcher laughs)
573 R That would be a bit uncomfortable.
574 K Yes (B holds up a doll wearing the ball gown)
575 R She's beautiful, isn't she?
576 B Then this is a suitable thing to wear to work?
577 M Well tell me what work she's doing and it might be suitable
578 R This is a suitable thing, yes, good
579 B Then her leave,
580 Get in her car (B puts doll in car)
581 M Yes as long as it doesn't rain
582 It'll get all wet
583 B No, her will quickly run over
584 M What?
585 B Her doctor told her
586 K She said "I'll quickly run outside"
587 B Her, her doctor told her, her doctor taught her um acrobat
588 M What, in the shelter?
589 K The shelter
590 B No. Um, Her put her on (B puts cloth over Barbie)
She's got the shelter
What?
She's got the shelter on her back
Oh right
Kenny boy, you stay (B puts Ken in the car)
Kenny boy?
Hello. Hello Ken.
Or I got a (black) picture of you in my heart all the night
He's dead! (Ken's head falls off again)
No
He's headless!
Yes, yes.
This is my boyfriend (B tries to fix Ken's head on)
That's the best one to have
This is his head
Did you say "This is your boyfriend"?
Yes
This is his head (B shows Researcher Ken's head)
There's his head
Dear oh dear
And this is his body
At least he's got clothes on.
Do you want me to put his head back on?
Yes (B hands Ken's head and body to mother)
I don't know whether I can or not (Mother fixes Ken)
He's (?) around
I don't know whether that's straight or not.
There you go; pull yourself together, Ken (Mother gives Ken back to B)
Yes, once he in the car (B puts Ken back in the car)
He's a drunk Ken
Who's going to drive?
If he's a drunk why is he driving?
Oh he's a drunk Ken
Yes, he looks like it (B moves car along)
Well if he's drunk he'd better be very careful if he's drunk.
Perhaps he ought to have a sleep
He's not drunk
It looks like it is
He's not drunk?
He's just snoring
He's just naughty?
Snoring
Snoring
Oh snoring, right
No, he's not snoring
He shouldn't be asleep, he shouldn't be asleep and driving
There you go pussy. (Laughter)
Mummy hates catties (B picks up the soft toy cat)
Mummy?
Hates cats
Do you?
Yes
Yes, and I love them, and I love them
And you love them
I’m allergic to some, so
B.’s scared of dogs and Mummy’s allergic to cats, so I’m going to get a duck or a dog
So you’ve got a fish
We did have a fish
I’m not scared of anything and I’m not allergic to cats or dogs, or scared of them
Well you’re very lucky, aren’t you?
B.’s scared of dogs, aren’t you B.?
I hate them
You hate dogs?
Are there any dogs around here?
Yes. One lives up there, and......
Does he come out when you go past?
Yes
Because, that’s that’s really scary when they come out, isn’t it?
Well, when we walk past sometimes
When we go up to our friend’s house, we go to the beach, we can go that way or the other way
When we’re coming back from the beach
When we, when we had Chris with us, the dogs started to scare us
So I don’t think the dog was there, they were probably on holiday.
Come on dolly,
Let’s go to work
Yes we were just going for a walk around here one day.
One dog came out at us so I abused the woman.
Not far down and around the corner and another dog come run out.
I had to grab B. before she ran across the road.
It’s not worth going for a walk
This is her dog
What’s happening now B. in the car?
Well, they’re just smooching and the dolly’s head fell off
Yes.
Um her’s going to work next
She’s going?
Oh, she’s going to work
I thought she said
Oh, she’s cracked all her knees.
She’s not as young as she used to be.
Now she’s appropriately dressed.
Hello
What’s your job going to be today?
I’m selling ice-cream
Well you’re dressed a little bit better for selling ice cream
You’re what?
But you haven’t got any shoes on
Oops
689 M You're going to walk and get your feet cold
690 B I haven't got any shoes, honey people
691 M Hey honey
692 R What?
693 M She said "Hey honey, driving the people"
694 B Hey honey (B puts Barbie back in the car)
695 K It's like "Hey honey"
696 B Ken and her holding the basket
697 B Putting it under the table
698 R Oh she's getting changed now in the driving seat
699 B And he loves watching her
700 K And he's still driving
701 B He not driving
702 R I'm glad he isn't driving like that
703 B He'd crash into something.

N.B. (?) indicates unintelligible
APPENDIX C - 4

FIELD NOTES AND TRANSCRIPTION OF SUBJECT D’S SPONTANEOUSLY OCCURRING CONVERSATION

Subject D did not speak on any of the three visits to see her. During the first visit she appeared shy and watchful, as did her six-year-old sister. When we all moved to another room to play, subject D started eating (she also started eating when I arrived on subsequent visits). Subject D was aware of the audio-tape recorder which was placed on a table. As she was silent, the audio-tape recorder was left running while her mother and I went into the kitchen leaving subject D to play with her older sister. Later examination of the audio-taped recording revealed that subject D had whispered to her sister, but it was not possible to hear what she was saying.

Subject D’s mother was surprised that subject D had not spoken and inquired why. Apparently, subject D’s older sister, who had been in the house during the parent interview, had ascertained the reason for the visits. She had told subject D that I was going to listen to her speak.

Subject D’s mother agreed to make a recording of subject D speaking with her family in my absence. An audio-tape recorder was left with subject D’s parents who recorded her while she was reading, responding to the SHAPE (Smit & Hand, 1997), and speaking with her sisters. The duration of the conversation was short (3 minutes) and comprised a verbal ritual game. Subject D was aware that she was being audio-taped.

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Subject D</td>
<td>1</td>
</tr>
<tr>
<td>M Sister, aged 6</td>
<td>2</td>
</tr>
<tr>
<td>M Sister, aged 6</td>
<td>3</td>
</tr>
<tr>
<td>M Sister, aged 6</td>
<td>4</td>
</tr>
<tr>
<td>M Sister, aged 6</td>
<td>5</td>
</tr>
<tr>
<td>M Sister, aged 6</td>
<td>6</td>
</tr>
<tr>
<td>K Sister, aged 10</td>
<td>7</td>
</tr>
<tr>
<td>K Sister, aged 10</td>
<td>8</td>
</tr>
<tr>
<td>K Sister, aged 10</td>
<td>9</td>
</tr>
<tr>
<td>M Sister, aged 6</td>
<td>10</td>
</tr>
</tbody>
</table>
Bear who?
Bear burn
(Father can be heard laughing)
Why did Lucy go out with her purse open?
Because she was expecting some change in the weather
Knock Knock
Who’s there?
Rain
Rain who?
You don’t know the rain’s pouring down when it’s raining?
Who’s there?
Me who?
Knock knock
Who’s there?
Rain
Rain who?
It’s raining cats and dogs
Knock knock
Who’s there?
Me
Me who?
You mean you don’t know who you are
Knock knock
Who’s there?
Cook
Cook who?
I don’t talk to anyone who’s cuckoo
Knock knock
Who’s there?
I
I who?
Oh sorry, I am
I am who?
You mean you don’t know who you are
I might, my you and my family,
(Michelle can be heard singing)
Hello goodbye.
I’m turning off the radio
Hello my name is A.
Hello my name’s K.
Hello my name’s M.
The big blabber mouth
Bye bye M.,
Bye bye everyone
(laughter)
Then, then,
One two three test
Hello
APPENDIX C - 5

FIELD NOTES AND TRANSCRIPTION OF SUBJECT E'S SPONTANEOUSLY OCCurring CONVERSATION

It took three visits before it was possible to audio-tape a sample of subject E's conversation with his mother. On the first visit, subject E's younger sister was at home and, although he would whisper, no audible speech was forthcoming. Subject E's mother recommended that I visit during the school holidays when subject E's older sister was at home. Apparently, he usually spoke when she was around. Unfortunately, he did not speak on that occasion either. On the last visit, he was aware why I was there because his mother had told him that he would have a treat if he co-operated by speaking. When the assessment commenced, he decided he was hungry. He ate a bowl of custard, a bowl of cereal, a mandarin, and half an apple before his mother stopped him so that we could continue the assessment (it was 10.00 a.m. and he had already eaten breakfast). It seemed that he was eating to avoid speaking. Once he and his mother started to play a game (and he had his back to me) he started to speak.

During the visits to see subject E, I had observed that eye contact appeared to be a factor in his selective mutism. If eye contact was established, he would remain either silent, or whisper. Therefore, on the final visit, I ensured that he had his back to me while he was sitting on the floor playing a game with his mother. He soon forgot that I was in the room, and he talked freely with his mother while they played with cars and trucks. Although he sometimes lapsed into whispering, it was possible to audio-tape 18 minutes of the middle part of the conversation, most of which was audible. Occasionally, he looked at the audio-tape recorder. He appeared to be aware that he was being audio-taped. By the end of the visit, he was talking freely to his mother and to me.

<table>
<thead>
<tr>
<th>PARTICIPANTS</th>
<th>J</th>
<th>Subject E</th>
<th>R</th>
<th>Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td>Mother</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LINE
1   M   You pack the cars up into the little blue box (Mother and J on floor
2   J   You put some sand in the truck with backs to Researcher on chair)
3   M   You want me to put some sand in the truck
4   J   You watch
M  Me?
J  Where’s our sand? (J gestures to imaginary sand)
M  Over there
J  Oh all rightie.
M  Where’s the other truck so I can put some sand in it?
J  You play this (J draws mother’s attention to his game)
M  Oh right. Never mind. Here we go. Chhhh. There you go. It’s full of sand.
J  Brrmmmm
M  What are we going to do with the sand now we’ve got it?
J  Are you going to dump it onto there? (J shows mother where to put sand)
M  There.
J  What do you want me to do with it now?
M  Get some more, get some more
J  Fill it up.
M  Brrmmm
J  Brrmm. Here we go. Oh!
M  It’s filled up now.
J  Yep
M  Better go and empty it somewhere. (Mother drives truck around floor)
J  Take it to work. There we are.
M  What do we do now?
J  Where’s that little truck; oh, there it is, look, over there. (Mother gets another truck)
M  Put the trailer on. There we go.
J  Put some sand in
M  Put some?
J  Put some sand in, back it off, start again (Truck comes apart)
M  Ooops Start again. There we go. Fill it up. Shhhh.
J  Full now. There we go. (Mother pretends to fill truck with sand)
M  Are you ready?
J  Ooops empty it in. Finished now
M  Nope, not yet (J is loading up his truck)
J  Not yet. Do you need some more?
M  Nope. Get some dirty sand
J  Some dirty sand this time.
M  I’d better go on this side (Mother moves truck along floor to sand)
J  Some water sand
M  Some wet sand?
J  Yes some wet sand, with some water on.
M  Over here. (J points to a spot on the carpet)
J  OK here we come. Shhhh. (Mother drives her truck to the spot)
M  Okay, here we come. There we go
J  Shhhhh There
M  Where’s the work?
J  Here
M  Would you like me to fix it?
J  Play a game
M  Yes we are playing a game.
J  Shall I fix it?
M  Yes you fix it (J gives truck to mother?)
J  (Mother tries to mend the truck)
It's a bit hard. We need to get this little bit.

That's the, that's the other sand (J points to another spot on the carpet)

That's the other sand.

Now what do I need to pick up next?

Oops (Truck comes apart again)

What do I need to pick up next?

What?

What do I get next?

What do you want me to pick up next?

Yes

Do you want to get some dirt, or some bricks?

Some bricks next.

Then build up the house

Yep, then build up the house.

Where's the bricks?

Um here (J points to imaginary pile of bricks)

Where do you want me to pick them up from?

Shhhh, oh, lots of bricks. There you go. (J loads his truck with bricks)

Be careful, they're very heavy.

Are you ready?

Got enough or do we need more?

Shhhh

Do you need any more bricks to build up the house?

I'll take that one (J takes one of mother's trucks)

Do you need some more bricks?

You can take that one (J points to one of the trucks)

Yes I'll take that one and you take that one.

All right, I'll get some more bricks

I'll get some bricks

You'll get some more bricks

You can share mine.

Ready (J and mother both go to site to collect imaginary bricks)

Set.

Ready

Set.

Terrific

Terrific.

Okay, Take them to the work site

Yes (J and mother drive their trucks to the work site on the carpet)

To build our house.

Okay. Here we go. Shhhh. (Mother empties bricks onto floor)

We need some more bricks.

I love their imagination (Mother turns to talk to Researcher; J carries on playing)

Yes. B. used to drive me crazy.

She used to tell me what to say and do

Oh yes, I've got one like that

It was terribly hard to do

Yes, very bossy

It was terribly hard to

Mmmm (Mother returns to game)

Are you ready?

Yes
Oops
Turn around
Turn around
Just "tending"
Just pretending.
Thank you.
Do you have some bricks?
Is that enough?
Not yet
Was that "just pretending"
Have
Yes "just tending"
Do I have a tractor?
Oh that's a special car isn't it.
That's an old car
You have the other car and I have this car
Okay. Brrrrrrrr. Let's go for a drive brrrrrrrrrr
There's a big brrrrrrmmmm, chhh
Your turn with this one now
This one now
And your turn... with this one
OK thank you.
I don't think this one goes very fast.
This one just goes pppp
Brrrrrrmmm Crash
Oh no
(Crash noise) again
Oh dear. Don't you hit it too hard, J.-mite
Oh dear what happened to the people?
All broken in the pool again
What would happen to the people if they crashed?
What would happen to the people?
All broken in the (picture)
What would happen to our people if they had crashed?
Um
They're dead
Um fall in the water.
Oh, they fell in the water
Raining
All rightie. Are they all right?
I'll pick it up
I'll pick 'em up
Do you need an ambulance to come and get them?
Do you need an ambulance to come and get them.
Eeaw, eeaw, eeaw.
I, I want this one
All right
This one ( ? ) car
I thought you were going to save them.
Take them to the hospital.
Put them in the ambulance.
Hospital (J ignores mother's idea and continues playing with the trucks)
(Mother's truck gets stuck)
(Mother shows J her truck)
(j finds a vintage car)
(Mother moves car)
(Mother and J swap cars)
(Mother sees that the vintage car goes slowly)
(J crashes the faster car)
(J crashes it again)
(Car is upside down)
(Mother pretends that one of the trucks is an ambulance)
Take them to the hospital
More interested in the bricks (Mother laughs)

Fraid so.
Taking care of the bricks to fix up the car, I think
Did you fix up the car?

These bricks (J whispers)

He got the people did he? (Mother repairs the "carnage")

Is it fixed now? (J nods)

OK. Now you can drive along there.

Oooops. (Mother does not seem to be able to repair one of the trucks)

What?

Ooops, we're in trouble - wah! (Car comes apart)

Wah, wah

I got this car

Here we go, it's fixed now.

(J starts zooming a police car along the carpet)

There's a police car: eeaw, eeaw, eeaw;

You're speeding, speeding, speeding

You have the little car (J gives mother the smaller car)

OK

You have the little car (J continues zooming police car)

Eeaw, eeaw, eeaw

Eeaw, eeaw, eeaw

Where's the hospital? Eeaw, eeaw....

You, and you're, and you're having the little car

Yes (J does not seem to want Mother playing on his area of the carpet)

Not here

Not here

You're (wallet)

Okay, Oooops I'd rather be (Mother moves away from J's patch

Not your

and starts playing in another spot)

No it doesn't go down there very well

It doesn't go like that (J laughs)

Don't crash it (Mother nearly crashes into another car)

Don't crash it

Don't crash the, don't let it go.

Don't put it inside.

You don't want (Mother points to an area where there are no cars)

Do I let it go over there?

We don't want to crash it though do we?

Ready, set (Mother drives car over to free area)

Go (J zooms his fast car over to mother's car)

Go.

You don't want to crash my car, J.-mite

Ready set (J laughs)

Ready set

Yeah

Yeah. I'm not yeah. (J zooms another car over to mother's cars)
Yaow. That one goes really well.
You're a bit rough.
Just a bit more gently
(J zooms close to mother's cars again)
You're very rough, Mr J
And you, and you're having this, that car  (J points to a smaller car)
All right.  (J crashes into one of mother's cars)
Ooops crashed
And this truck it, it crashed  (J points to the crash)
It looks like a june buggy
What?
A june buggy
June buggy
Mmm
What's in the, what's the, what's in there?  (J points to an upturned box)
I think it's a racing car
Ohhhh
Sorry  (Mother accidentally takes one of J's cars)
My car, that's my car.
What's what's its name
It's a commodore
Where tractor?  (J starts looking under chair for the tractor)
Tractor?
There's no tractor here
Yes, gone.  (J continues looking)
I done it
can't see.
There's a bar truck, but no tractor.  (Mother notices J is sitting on something)
Oh look you're sitting...oh no that's a truck
Truck
Can't see any tractors.
It's a bar truck.  (Mother examines the truck)
(whispering)
It's a little bit broken.
Mmmmm. Need to stick it  (Mother fixes truck)
That did it
I've fixed it. It was coming undone
You're giving me a treat, isn't you?
What?
You giving me a treat?
A choc...
Ah yes, I'm giving you a treat, a choc...., because you were such a....
Good boy
Yes, you were such a good boy
Can't open this  (J tries to open one of the truck's doors)
Can't you.
I don't think that one opens,
Ah that one does.  (Mother opens the doors on the car she is holding)
Look at all the car doors open
People coming out now
Peoples coming out or are they going in?
Going out

You can't drive when the peoples out

No, can they?

They feel sad

What did you say?

They feel sad

What did Daddy do?

Feel sad

Why did he feel sad?

Because he crashed it? (Mother starts to repair another truck)

Nothing fragile lasts long in our place, that's for sure

You're rough. (J crashes two trucks into each other)

That's a good truck, isn't it. J? ahhh!

Sorry

Mmmmmm. Gently, thank you

I'm going a pick you up mum

What are you going to do?

Pick you up

Stick me up?

You too big for the truck.

I'm too big for the truck

Just 'tending (Mother pretends to get into truck)

Just 'tending me in the truck. Ahhh

You stay in the truck

I'm in the truck now.

Oh no look I fell out, (Mother pretends to fall onto the carpet)

Getting dragged down the road.

Put me back in; stick me on the truck.

Oh look I fell out again. (Mother rolls around on the floor)

I feel all squashed (J laughs)

All fall out again (J wants mother to do it again)

Oh that's better.

I'm not feeling as squashed now.

We don't want squashy mummies do we?

Yes

Yes?

All fall out.

Fail out

I fell out.

You're dead. You're dead (whispered)

I'm what? (whispered)

You're dead

Am I? All dead. Oh no

Fix it (whispered)

Fix me?

You can't fix the dead, J.

Can. Can (whispered)

Must be nearly dead then
J  Yes
316 M  I see.  (whispered)
317 M  Am I fixed?
318 J  Help you up again.
319 M  Put back in truck
320 M  Put me back in  (Mother pretends to get back into the truck)
321 J  Not dead any more
322 M  Thanks. Not dead any more
323 J  Thank you. Much better?  (Mother knocks over the small car)
324 M  ( ? )
325 J  You dropped the little one
326 M  What did I do?
327 J  I dropped the little one?
328 J  Just the little one.
329 M  Shhhh
330 J  Carry it  (J wants mother to pretend to get back into the car)
331 M  Get back, get back
332 J  Here's a ladder  (J holds up a small ladder from the fire-engine)
333 M  Ah, Ahhh
334 J  What?
335 M  Where did that come from?  (J laughs)
336 M  Ah, ahhhh, what happened?
337 J  Fall off
338 M  It did fall off
339 J  Fall off
340 M  Mmmm.
341 J  Do you want me to fix it?  (J zooms the fire-engine over to mother)
342 M  Gently, gently, gently.
343 M  Let's have a look.
344 J  Fix it
345 M  See these little things here.  (Mother shows J the fire-engine)
346 J  Yes  (J whispers)
347 M  Yes. See these little...
348 J  Eh!
349 M  See these little holes here?  (J stops and laughs)
350 J  Eh!
351 M  Eh! You're a wretch.  (Mother laughs)
352 J  Look, they go in there.  (Mother shows J where the ladder fits)
353 M  These little bits go in the little holes
354 J  And there peoples in there.
355 M  There some peoples in here.
356 J  There, there your baby.  (J points to imaginary baby)
357 M  I'll get Captain...Plan, Captain... baby ring Captain Planet
358 M  Captain Planet, eh?
359 J  Yes. Yes ( ? ),
360 J  In the ( ? ), in the cake
361 M  You want sing me the song
362 J  No.
363 M  Oh
364 J  Put them next in 'tween the truck  (J points to mother's cars)
365 M  In between the truck.
366 M  You're not going to sing the song?
367  J  ( ? )  (J starts singing)
368  M  Truck there.  (J takes fire-engine)
369  J  It's fixed
370  J  See, I fixed it mum  (J points to ladder on fire-engine)
371  M  Nearly
372  J  Ohh. Broke again  (Ladder falls off fire-engine again)
373  M  Oh, well shall I fix it again?
374  J  Yes
375  M  There's your baby.  (J points to one of the trucks and starts moving it)
376  J  There's the baby carrying a baby.
377  M  Look he carrying your baby
378  M  Baby's in the truck.
379  J  Oh don't spill my baby  (J goes too fast and the truck tips over)
380  J  Get it. You get it down
381  M  Got the baby.
382  J  Oh, ohhh. I'm stuck  (Mother laughs as she gets wedged by the truck)
383  J  You got a ba, you got a baby?
384  M  You're dribbling  (J is dribbling a little - he's very excited)
385  J  You got a baby?
386  M  I've got a baby.
387  J  I'm gonna to kill it.
388  J  I'm baddie, I'm baddie  (J starts chasing after mother's truck)
389  M  Ahhhhh. It's gone
390  J  It's a baddie have it.  (Truck disappears under the chair)
391  J  Scuse mummy. I'll get it.
392  J  I'll get a green one
393  M  A green one.
394  J  Yes
395  M  J. really likes green ones.  (Mother starts talking to Researcher)
396  J  Green anything
397  M  It's, it's a green one  (J finds a green truck under the chair)
398  J  It's a green what?
399  J  You dropped it  (Mother laughs)
400  M  What is?
401  J  A green baby?
402  M  You've got a green baby
403  J  It's asleep  (J wraps pretend baby in the truck)
404  M  It's asleep. Shhhh.
405  J  Put it to bed.
406  J  Where's the bedroom?
407  M  Where the, where's the baby
408  J  Are you the baby
409  J  No, I'm not a baby, I'm a baddie
410  M  A baddie?
411  J  You can't have my baby
412  J  I've got the baby as well  (J keeps the green truck away from Mother)
413  M  No, no no.
414  J  Where's my car so I can come and get it?
415  R  J.'s a baddie?  (Mother looks for truck that J has hidden)
416  J  Yes
417  R  J.'s a baddie
418  M  Yes.  (J is laughing and very excited)
M Give me my baby.
20
M Give me my baby back.  (J screams)
21
M Oh don’t be rough.  (Mother tries to get a truck away from J but he
22 resists)
J I’ve got the baby.
23
M Go away and hide  (J runs off holding the green truck)
J I’ve got a green baby
25
M You’ve got a green baby?
26
J I got there
27
M Is it my baby, my green baby?
28
J No, it’s the baddie’s baby
29
M It’s the baddie’s baby.
30
J Well you can have your baby’s bed. Or...
31
J That...
32
M Do I have to come and save it?
33
J That, that black car’s gonna get the baby  (J points to a black car)
34
M Which, this black car?  (Mother points to the wrong car)
J No, that’s not black car, that’s, that’s red
36
M Well which black car?
37
J There ahind you  (J shows Mother where the car is)
38
M Oh, there it is.
39
J What have we got to do?
40
M Come and get the baby
41
J Yes  (J wants Mother to chase him)
42
M Give me the green baby, give me the green baby.
43
J Yes  (Mother pretends to chase J)
44
M Nearly, I’ll catch you, I’ll catch you  (J screams)
45
M I’ve got the  (Mother laughs)
46
J Hey, less squealing.  (J screams again and runs away)
47
M Ooops You’ve got the green baby.
48
J I got it, I got it  (Mother catches J and tries to take the green truck away)
49
M Keep J. away. Keep J. away
50
J No no no
51
M Oh dear  (Mother laughs)
52
J There he got it now  (J grabs the green truck again)
53
M Like your socks J  (Mother obviously uncomfortable with the
54 degree of excitement tries to end the game)
R Mmm I like them too
55
J And, and that, and that, that car gonna get it.
56
M He’s, he got that.
57
M Here I come, here I come  (Mother pretends to chase J again)
58
J I’ve got it now
59
M Oh no put the baby back in
60
M There....and that car gonna get it  (J points to the black car)
61
M Here I come, here I come  (Mother pretends to chase J again)
62
J You can’t get the baby, can’t get the baby  (J runs away)
63
M Here I come, here I come, here I come
64
J Oh you’re funny  (J runs away, screaming)
65
J You got the baby
66
J That black car’s gonna get the baby
67
M Come over here it’s cold  (Mother asks J to come away from the
68 door opening into the garden)
69
R That’s lots of lovely language.
70
M There’s no shortage there, is there?
71
M Oh no
471  J  That, that black car gonna get the baby now
472  M  It's got black on  (J is still preoccupied with the game)
473  M  OK. Come and get the baby. Get the baby.
474  M  Save the baby.  (Mother beckons J to come back into the room)
475  M  Off we go
476  J  And, gimme.....  (J wants the black car back)
477  J  And I, and I'm the baddie
478  M  You're the baddie.
479  M  Oh dear.  (Mother seems weary of the game)
480  J  Where you put... back..... you put it back again?
481  M  Oh no the baddie keeps stealing the baby.
482  M  Should we?  (Mother wants to start packing up)
483  J  And, and that black cars gonna get it
484  M  Is he?
485  J  Yes
486  M  Should we pick up all these little cars?
487  R  And that black, black?
488  M  In Hilary's little blue box, thank you  (Mother starts putting the cars away)
489  J  Gonna get it  (J whispers)
490  R  That's a fast one  (J zooms the black car towards the green truck)
491  J  I'm sad for the baddie
492  M  You're sad for the baby, not the baddie  (Mother drops a truck)
493  J  Ooops ooops  (Mother laughs)
494  M  How about?
495  J  Apple  (J finds his half eaten apple)
496  M  How about?
497  J  I don't want my apple any more
498  M  No I know you don't want your apple
499  R  Is that your apple?  (Researcher points to an orange toy on the floor)
500  M  No it's a carrot isn't it?
501  M  How about?  (J wants to continue playing and not pack away)
502  J  You're going to try and you're going to get the baddie
503  R  Is that a carrot?
504  M  It's a snake
505  R  Ah I was going to say it's the longest carrot I've ever seen,
506  R  Look at the carrot,
507  R  I thought it was a carrot there, but it's not, it's a snake,
508  J  Show me, can you show me, J?
509  M  Can I see the snake,
510  M  Is it your snake or B's?  (Mother answers for J as J has left the room)
511  M  B's
512  R  I thought it was a carrot.
513  J  Oh  (J re-appears holding the snake)
514  M  Oh J. M.
515  R  Oh wow look at him
516  M  Rrrrr  (Mother laughs)
517  R  Very sensible, very sensible  (Researcher laughs)
518  J  It's a sussy snake  (First time J has spoken directly to researcher)
519  M  A sussy snake?
520  J  And I'm going to stand on it
521  R  You're going to stand on it
522  M  Sssss shhhhh  (Mother pretends that she has a snake, too)
523  J  Do it again                      (J laughs)
524  M  Ssssssss
525  J  Ahhh                        (J laughs)
526  M  Do it again
527  M  Jakie go and get a box      (Mother wants to pack up)
528  M  We'll put the cars in before we play with the snake again
529  J  Ahhhh I'm not finished      (J refuses to help to pack away)
530  M  All the cars
531  J  I'm not finished
532  R  Oh I think it's lunch time, I think it's lunch time
533  J  I'm not finished mum.       (J doesn't want the session to end and is talking quite freely now)

N.B. ( ? ) indicates inaudible or unintelligible
APPENDIX D

DETAILS OF LARSP AND FEY ANALYSES

OF FIRST 50

CONVERSATIONAL TURNS

(where possible)
### DETAILS OF THE LARSP AND FEY ANALYSES OF THE FIRST 50 CONVERSATIONAL TURNS OF SUBJECT A’S SPONTANEOUSLY OCCURRING CONVERSATION

<table>
<thead>
<tr>
<th>Conversational Turns</th>
<th>LARSP ANALYSIS</th>
<th>FEY ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 J</td>
<td>who wants start here and who wants to start there?</td>
<td>ROAC - initiate</td>
</tr>
<tr>
<td></td>
<td>C : Full</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coord.:StV; (QXYx2:StIll); conn.and; Aux.dm2:StIll; 3sx2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stage VI error : Element 0</td>
<td></td>
</tr>
<tr>
<td>2 P</td>
<td>okay</td>
<td>RSAC</td>
</tr>
<tr>
<td></td>
<td>B : Other</td>
<td></td>
</tr>
<tr>
<td>3 J</td>
<td>do you want to start there?</td>
<td>RQIN - maintain</td>
</tr>
<tr>
<td></td>
<td>C : Full</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VS(X+):StV; (SVA:StIll); 2 Aux m:StV; pron.p:StIll.</td>
<td></td>
</tr>
<tr>
<td>4 P</td>
<td>okay</td>
<td>RSIN</td>
</tr>
<tr>
<td></td>
<td>B : Other</td>
<td></td>
</tr>
<tr>
<td>5 M</td>
<td>you start there</td>
<td>ASST</td>
</tr>
<tr>
<td>6 J</td>
<td>there, (there) you are</td>
<td>PERF - maintain</td>
</tr>
<tr>
<td></td>
<td>C : Full</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASV:StIll; pron.p:StIll; cop:StIll.</td>
<td></td>
</tr>
<tr>
<td>7 M</td>
<td>take a card.</td>
<td>RCAC</td>
</tr>
<tr>
<td></td>
<td>you can’t throw the dice today</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B : Other</td>
<td></td>
</tr>
<tr>
<td>8 J</td>
<td>I threw a one</td>
<td>ASCO - extend</td>
</tr>
<tr>
<td></td>
<td>B : Other : Full!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SVO:StIll; pron.p:StIll; DN:StIll.</td>
<td></td>
</tr>
<tr>
<td>9 M</td>
<td>a one. It’s not very far up the tree is it?</td>
<td>RCIN</td>
</tr>
<tr>
<td></td>
<td>B : Question</td>
<td></td>
</tr>
<tr>
<td>10 J</td>
<td>no</td>
<td>RSIN - maintain</td>
</tr>
<tr>
<td></td>
<td>B : Question : Minor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minor response</td>
<td></td>
</tr>
<tr>
<td>11 P</td>
<td>a six. no. that’s a six isn’t it?</td>
<td>ROIN</td>
</tr>
<tr>
<td>12 R</td>
<td>yes 1,2,3</td>
<td>RSAS</td>
</tr>
<tr>
<td>13 M</td>
<td>she’s doing very well</td>
<td>ASST</td>
</tr>
<tr>
<td></td>
<td>B : Other</td>
<td></td>
</tr>
<tr>
<td>14 J</td>
<td>yes</td>
<td>RSAS-maintain</td>
</tr>
<tr>
<td></td>
<td>B : Other : Minor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minor response</td>
<td></td>
</tr>
<tr>
<td>15 R</td>
<td>now what happens?</td>
<td>ROIN</td>
</tr>
<tr>
<td>16 M</td>
<td>Pippa’s got to make her way across the bridge. hey you’re cheating again. put that one back I forgot about you and your cheating. there.</td>
<td>RSIN</td>
</tr>
</tbody>
</table>
you're a dreadful cheat J.
what have you got? RQIN
three RSIN
RSIN
I can you count three? RQIN
B : Question
20 J yes RSIN - maintain
B : Question : Minor
Minor response
where were you before? RQIN
that's right ASST
oh there there sorry PERF
do I have to go down? RQIN
B : Question
25 M yes RSIN
26 J yes RSIN-maintain
B : Question : Minor
Minor response
and you have to go down ASST - extend
C : Full
SVA:Still; XY+V:VP; conn.and; pron.p:Still; aux.o:Still.
oh dear, so how do you win? RQIN
you don't RSIN
B : Other
29 J yes ASST - maintain
B : Other : Minor
Minor response
you can C : Full
SV:Still; pron.p:Still; Aux.m:Still
whoever gets to the other side first wins
so I have to go down the tree? RQIN
B : Question
31 J yes RSIN-maintain
B : Question : Minor
Minor response
oh I see right that's very difficult isn't it? ASST
B : Question
ok carry on
33 J yes RSAS - maintain
B : Question : Minor
Minor response
it is quite difficult ASST
B : Other
35 J yes RSAS - maintain
B : Other : Minor
Minor response
but you can swim across?

eventually it's possible

B : Other

yes

B : Other : Minor

Minor response

if you land there do you have to go back up there?

you can go up or you can go down

B : Other

no

B : Other : Minor

Minor response

but you go down

C : Elliptical 2

SVA:Still; conn.c:StV; pron.p:Still; V part:Still.

no but if I went across

then I'd have to go back up again wouldn't I?

yes sorry

B : Other

no

B : Other : Minor

Minor response

but if you get there you go down there

C : Full

Subord.A1: StV; (SVAx2:Still); conn.c; conn.s; pron.px2:Still; V part:Still.

do you?

but you're not down right at the bottom?

B : Question

no

B : Question : Minor

Minor response

okay

only if you, you get...... there... you go down to here

C : Full

Subord A1: StV; (SVAx2:Still); conn.s; pron.px2:Still; V part : Still; Pr N : Still.

do you?

I think I'd rather do that than go in the water

B : Other

yes

B : Other : Minor

Minor response
# Details of the LarSP and Fey Analyses of the Conversational Turns of Subject B's Spontaneously Occurring Conversation During Sample 1

<table>
<thead>
<tr>
<th>Conversational Turns</th>
<th>LarSP Analysis</th>
<th>Fey Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 A</td>
<td><strong>look</strong></td>
<td><strong>RQAT - Initiate</strong></td>
</tr>
<tr>
<td>C: Minor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor: Vocative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 N</td>
<td><strong>ah!</strong></td>
<td><strong>RSAT</strong></td>
</tr>
<tr>
<td>B: Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 A</td>
<td><strong>that's you</strong></td>
<td><strong>ASST - Maintain</strong></td>
</tr>
<tr>
<td>C: Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVC/Still: pron.o:Still; pron.p:Still; cop:Still; 'cop:3s.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 N</td>
<td><strong>shut up</strong></td>
<td><strong>RGAC</strong></td>
</tr>
<tr>
<td>B: Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 A</td>
<td><strong>bloody hell</strong></td>
<td><strong>PERF</strong></td>
</tr>
<tr>
<td>A. Stereotype</td>
<td></td>
<td></td>
</tr>
<tr>
<td>how much carnage!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>'N': St1; pron.o:Still; IntX:Still.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I better count 'em</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVO:Still: pron.px2:Still; Aux.m:Still.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage VI: Auxiliary o omitted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 N</td>
<td><strong>1, 2</strong></td>
<td><strong>PERF</strong></td>
</tr>
<tr>
<td>B: Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 A</td>
<td><strong>1</strong></td>
<td><strong>ASCO - Maintain</strong></td>
</tr>
<tr>
<td>A. Incomplete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 N</td>
<td><strong>oh oh spiderman vs octopus; spiderman vs carnage</strong></td>
<td><strong>ASCO</strong></td>
</tr>
<tr>
<td>B: Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 A</td>
<td><strong>you always look (starts coughing)</strong></td>
<td><strong>ASCO - Initiate</strong></td>
</tr>
<tr>
<td>A. Incomplete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 N</td>
<td><strong>spiderman vs carnage spiderman vs octopus</strong></td>
<td><strong>ASCO</strong></td>
</tr>
<tr>
<td>B: Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 A</td>
<td><strong>you're looking</strong></td>
<td><strong>ASCO - Maintain</strong></td>
</tr>
<tr>
<td>C: Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVC:Still; Exp:X+V:VP; pron.p:Still; Aux.o:Still; 'aux:_ing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 N</td>
<td><strong>and spiderman vs scorpion</strong></td>
<td><strong>ASCO</strong></td>
</tr>
<tr>
<td>B: Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 A</td>
<td><strong>you said all of them.</strong></td>
<td><strong>ASCO - Extend</strong></td>
</tr>
<tr>
<td>B: Other: Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>one carnage already</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: Full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AX:Still; DN:Still</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
now 2
C : Full
AX: Still; Other: Still.

now two carnage
C : Full
AX: Still; DN: Still

14 N spiderman vs ironman
B : Other
ASCO

15 A shut up
A. Stereotype
RQAC

16 N spiderman vs
B : Other
ASCO

17 A 3 carnage I see mmm.
C : Full
ASCO - maintain
OSV: Still; DN: Still; pron.p: Still
3 carnage er 4 carnage 5 carnage 6 carnage 7 carnage 8 carnage 9 carnage 10 carnage 11 carnage 12 carnage 13 carnage er A. Stereotype
ready for more carnage,
C : Full
ASST - extend
AX: Still; Exp.:X+O; NP; DN: Still

18 N you wanna count how many cards?
B : Question
RQAC

19 M who cut this?
B : Question
RQIN

20 A who cut your hair
B : Question : Full
RQIN - maintain
QXY: Still; pron.ax: Still; DN: Still.
Nicky?
B : Question : Minor
Minor: Vocative.

21 N what?
B : Question
RQCL

22 A who cut your hair off?
B : Question : Full
RQIN - maintain
QXY+: Still; V Part: Still; DN: Still; pron.ax2: Still; _ ed.

23 N not me
B : Other
RSIN

24 A but you have to look from the beginning
B : Other : Full
ASST - extend
Conn.c: Still; (SVA: Still); pron.p: Still; aux.m: Still; PrDN: Still.
start from the beginning
C : Full
RQAC - maintain
VX: Still; Exp:X+V; VP; PrDN: Still.

25 N no
B : Other
RSAC

26 A you went from back
B : Other : Full
ASST - maintain
SVA: Still; pron.p: Still; PrN: Still; _ed.
Stage VI : Determiner omitted

27 N you only got 2 carnage?
B : Question
RQIN

28 A you ( )
A. Unintelligible.
ASST - maintain
29 N more carnage
   B: Other
   ASCO
30 A bullshit
   A: Stereotype.
   ASDA - maintain
31 N carnage
   B: Other
   ASCO
32 A you have to count 'em
   B: Other: Full
   SVO: Still; Exp:XY+V: VP; pron.p:Still; aux.m: Still.
   ASST - extend
33 N 2 carnage
   B: Other
   ASCO
34 A you have to count
   B: Other: Full
   SVO: Still; Exp:XY+V: VP; pron.p:Still; aux.m: Still.
   RGAC
35 N 1 carnage 2 1 2 3 4 5 6 7 8 9
   B: Other
   ASCO
36 A 10 11 12
   A: Stereotype
   "dit" head
   B: Other: Minor
   Minor: Vocative
   11
   ASST - maintain
  筇
37 N 10 11
   B: Other
   ASCO
38 A you have another carnage?
   C: Full
   QXY: Still; pron.p: Still; DN: Still.
   Stage VI: Auxiliary omitted
   RGIN - extend
39 N I got 10 I mean 11 carnage
   B: Other
   wait a minute 2
   you're looking,
   you're still looking at my spiderman cards
   PERF
40 A I'm not
   B: Other: Elliptical 2
   SVO: Still; pron.p: Still; Neg. V: Still; "cop
   ASDA - maintain
41 N yes you are that's why
   B: Other
   ASST
42 A I'm (? )
   A: Unintelligible
   ASDA - maintain
43 N that's why
   B: Other
   ASST
44 A ahhh
   A: Symbolic noise
   fuck you
   PERF - maintain
45 N you're looking at mine
   you're still looking at my spiderman cards
   B: Other
   ASST

(End of sample 1)
# Details of the LARSP and FEY Analyses of the First 50 Conversational Turns of Subject C’s Spontaneously Occurring Conversation

**Participants:**
- B: Subject C
- K: Sister, aged 9
- M: Mother
- R: Researcher

<table>
<thead>
<tr>
<th>LARSP Analysis</th>
<th>FEY Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conversational Turns</strong></td>
<td><strong>Initiate</strong></td>
</tr>
<tr>
<td>1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>R</td>
</tr>
<tr>
<td>3</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>M</td>
</tr>
<tr>
<td>5</td>
<td>R</td>
</tr>
<tr>
<td>6</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>B</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>8</td>
<td>R</td>
</tr>
<tr>
<td></td>
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</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>K</td>
</tr>
<tr>
<td>10</td>
<td>R</td>
</tr>
<tr>
<td>11</td>
<td>K</td>
</tr>
<tr>
<td>12</td>
<td>R</td>
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<td>13</td>
<td>K</td>
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<tr>
<td>14</td>
<td>M</td>
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<tr>
<td>15</td>
<td>R</td>
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<td></td>
</tr>
<tr>
<td>16</td>
<td>M</td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>B</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td>18</td>
<td>R</td>
</tr>
<tr>
<td>19</td>
<td>M</td>
</tr>
<tr>
<td>20</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
yes.
B: Other: Minor
Minor:Response
put the baby in her pink
C: Full

22 R put the baby in her?
B: Question

23 B um one of them.
B: Question: Elliptical
put the baby in the pink
C: Full
VOA:Still; Exp:XY+A:AP; DN:Still; PrDN:Still.

24 R in the pink?
B: Question

25 B put the baby in the ummm
A: Incomplete
what's it called?
B: Question: Full
QXY:Still; Exp:XY+V:VP; pron.p:Still; aux.o:Still; 3s; ‘cop; _ed.

26 M in the bassinet?
B: Question

27 B no no
B: Question: Minor
Minor:Response
what are those?
C: Full
QXY:Still; cop:Still; pron.o x 2:Still

28 M oh the blanket?
B: Question

29 B no um
B: Question: Minor
Minor:Response
what you wheel the baby in
C: Full
Subord.S:STV; pron.p:Still; PrDN:Still.

30 M the cot?
B: Question

31 K pram?

32 R pram?
B: Question

33 B no
B: Question: Minor
Minor:Response

34 R the cot?
B: Question

35 B no
B: Question: Minor
Minor:Response

36 M the thing that you?

37 K trolley trolley?
B: Question

38 B no um
B: Question: Minor
Minor:Response
39 M the thing at the hospital?
   B : Question
   RSIN
40 B yes
   B : Question ; Minor
   Minor response
   RSIN - maintain
41 K what's that?
   B : Question
   RQIN
42 R that's a cot
   A trolley
   RSIN
43 M that's a cot
   yes that's a cot
   RSIN
44 R that actually B is a ball dress
   and this barbie had a beautiful dress
   this is just a sort of a top dress to go with it
   that's all that's left of it
   and I'm really sorry about it
   B : Other
   ASCO
45 B yes
   B : Other ; Minor
   Minor response
   RSAS - maintain
46 R there, is she cosy?
   B : Question
   RQIN
47 B yes
   B : Minor
   RSAS - maintain
   Minor response
48 M are you cold B because you sound like you're
   sniffing? go and put your jumper back on please
   B : Question
   RQAC
49 B I am so cold
   B : Question ; Problems
   SVC : Still pron.p:Still; cop : Still; Int X : Still,
   baby
   Minor : Vocative
   RSAC - tangential
50 R I'm going home baby
   B : Other
   RSAS
DETAILS OF THE LARSP AND FEY ANALYSES OF THE CONVERSATIONAL TURNS OF SUBJECT D’S SPONTANEOUSLY OCCURRING CONVERSATION

PARTICIPANTS:  
A  Subject D  
M  Sister, aged 6  
K  Sister, aged 10

<table>
<thead>
<tr>
<th>Conversational Turns</th>
<th>LARSP ANALYSIS</th>
<th>FEY ANALYSIS</th>
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<tbody>
<tr>
<td>1  M  knock knock A</td>
<td>B: Other</td>
<td>PERF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  A  who’s there?</td>
<td>B: Other: Full</td>
<td>PERF - maintain</td>
</tr>
<tr>
<td></td>
<td>QXY: Still; pron.o:Still; cop:Still; 3s: ‘cop.</td>
<td></td>
</tr>
<tr>
<td>3  M  lolly</td>
<td>B: Other</td>
<td>PERF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4  A  lolly who?</td>
<td>B: Other: Full</td>
<td>PERF - maintain</td>
</tr>
<tr>
<td></td>
<td>QXY: Still; pron.o:Still.</td>
<td></td>
</tr>
<tr>
<td>5  M  you mean you haven’t got a lolly in your mouth?</td>
<td>B: Question</td>
<td>PERF</td>
</tr>
<tr>
<td>6  A  yes</td>
<td>B: Question: Minor</td>
<td>PERF - maintain</td>
</tr>
<tr>
<td></td>
<td>Minor:Response</td>
<td></td>
</tr>
<tr>
<td></td>
<td>l do</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C: Elliptical 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SV: Still; pron.p: Still; aux.o: Still.</td>
<td></td>
</tr>
<tr>
<td>7  K  take away its credit card</td>
<td>B: Other</td>
<td>ASCO</td>
</tr>
<tr>
<td>8  A  knock knock</td>
<td>C: Full</td>
<td>PERF - initiate</td>
</tr>
<tr>
<td></td>
<td>Verb: Statement: Still</td>
<td></td>
</tr>
<tr>
<td>9  K  who’s there?</td>
<td>B: Question</td>
<td>PERF</td>
</tr>
<tr>
<td>10 A  bear</td>
<td>B: Question: Elliptical 1</td>
<td>PERF - maintain</td>
</tr>
<tr>
<td></td>
<td>Noun: Still.</td>
<td></td>
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<tr>
<td>11 K  bear who?</td>
<td>B: Question</td>
<td>PERF</td>
</tr>
<tr>
<td>12 A  bare bum</td>
<td>B: Question: Full</td>
<td>PERF - extend</td>
</tr>
<tr>
<td>13 K  why did Lucy go out with her purse open?</td>
<td>B: Question</td>
<td>PERF</td>
</tr>
<tr>
<td>14 A  because she was expecting some change in the weather</td>
<td>B: Question: Elliptical 3</td>
<td>PERF - extend</td>
</tr>
<tr>
<td></td>
<td>Conn.S: Still; (AAXY: Still); Int.X: Still; PrDN: Still; aux.o: Still; 3s: ed_; ing.</td>
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<tr>
<td>15 M  knock knock</td>
<td></td>
<td>PERF</td>
</tr>
<tr>
<td>16 K  who’s there?</td>
<td></td>
<td>PERF</td>
</tr>
<tr>
<td>17 M  rain</td>
<td></td>
<td>PERF</td>
</tr>
</tbody>
</table>
18 K rain who? 
19 M you don't know the rain's pouring down 
    when it's raining?
20 K who's there? 
    me who? 
21 A knock knock 
    C: Full 
    Verbs:Statement:Sttl. 
22 K who's there? 
    B: Question 
23 A rain 
    B: Question: Elliptical 1 
    Noun:Statement:Sttl. 
24 K rain who? 
    B: Question 
25 A it's raining cats and dogs 
    B: Question: Full 
    SVC:Sttl; Exp:XY+V:VP; Exp:XY+C:Np; Xc:X:Sttl; pron.p:Sttl; aux.a:Sttl; 'cap':_ing; 3s; plx2. 
26 A knock knock 
    C: Full 
    Verbs:Statement:Sttl. 
27 K who's there? 
    B: Question 
28 A me 
    B: Question: Elliptical 1 
29 K me who? 
    B: Question 
30 A you mean you don't know who you are 
    B: Question: Full 
    Comment Clause:Sttl; Conn:s:Sttl; (Subord.A1+:Sttv); Postmod.clause 1:Sttv; 
    Neg:V:Sttv; pron.px3:Sttl; cop:Sttl; aux.a:Sttl; n't. 
31 K knock knock 
    B: Other 
32 A who's there? 
    B: Other: Elliptical 2 
    QXY:Sttl; pron.p:Sttl; cop:Sttl; 3s; 'cap. 
33 K cook 
    B: Other 
34 A cook who? 
    B: Other: Full 
    QX:Sttl; pron.a:Sttl. 
35 K I don't talk to anyone who's cuckoo 
    knock knock 
    B: Other 
36 A who's there? 
    B: Other: Elliptical 2 
    QXY:Sttl; pron.p:Sttl; cop:Sttl; 3s; 'cap. 
37 K I 
    B: Other 
38 A I who? 
    B: Other: Full 
    QX:Sttl; pron.a:Sttl; pron.p:Sttl.
39 K oh sorry, I am
   B : Other
40 A I am who?
   B : Other : Full
   QXY:Still; pron.o:Still; pron.p:Still; cop:Still.
41 K you mean you don’t know who you are
42 M I might I my you and my family,
   hello goodbye.
   I’m turning off the radio
43 A hello
   C : Minor
   Minor:Other
   my name is A
   C : Full
   SVC:Still; DN:Still; cop:Still; 3s.
44 K hello my name’s K
45 M hello my name’s M
46 K the big blabbermouth

(End of sample)
## DETAILS OF THE LARSP AND FEY ANALYSES OF THE FIRST 50 CONVERSATIONAL TURNS OF SUBJECT E'S SPONTANEOUSLY OCCURRING CONVERSATION

<table>
<thead>
<tr>
<th>Conversational Turns</th>
<th>LARSP ANALYSIS</th>
<th>FEY ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M you pack the cars up into the little blue box</td>
<td>RQAC</td>
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<tr>
<td></td>
<td>B: Other</td>
<td>RQAC - initiate</td>
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<tr>
<td></td>
<td>C: Full</td>
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<tr>
<td></td>
<td>SVOA:Stl; pron.p:Stll; Adj.n:Stll; PrDN:Stll</td>
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<td>2</td>
<td>J you put some sand in the truck</td>
<td>RQAC</td>
</tr>
<tr>
<td></td>
<td>B: Other</td>
<td>RQAC - maintain</td>
</tr>
<tr>
<td></td>
<td>C: Full</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SV:Stll; pron.p:Stll</td>
<td></td>
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<tr>
<td>3</td>
<td>M you want me to put some sand in the truck</td>
<td>RSAC</td>
</tr>
<tr>
<td></td>
<td>B: Other</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>J you watch</td>
<td>RQAC</td>
</tr>
<tr>
<td></td>
<td>C: Full</td>
<td>RQAC - maintain</td>
</tr>
<tr>
<td></td>
<td>SV:Stll; pron.p:Stll</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>M me? where's our sand?</td>
<td>RQIN</td>
</tr>
<tr>
<td></td>
<td>B: Question</td>
<td></td>
</tr>
<tr>
<td></td>
<td>where's our sand?</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>J over there</td>
<td>RSIN</td>
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<td>B: Question : Elliptical 1</td>
<td>RSIN - maintain</td>
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<tr>
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<td>AX:Stll; Other:Stll</td>
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<tr>
<td>7</td>
<td>M oh all rightie. Where's the other truck</td>
<td>RQIN</td>
</tr>
<tr>
<td></td>
<td>so I can put some sand in it?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B: Question</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>J you play this</td>
<td>RQAC</td>
</tr>
<tr>
<td></td>
<td>C: Full</td>
<td>RQAC - initiate</td>
</tr>
<tr>
<td></td>
<td>SVO:Stll; pron.p:Stll</td>
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</tr>
<tr>
<td>9</td>
<td>M oh right never mind here we go chhhh. there you go it's full of sand</td>
<td>ASCO</td>
</tr>
<tr>
<td></td>
<td>B: Other</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>J brrrrrrrr</td>
<td>OTHER</td>
</tr>
<tr>
<td></td>
<td>A. Symbolic noise</td>
<td>OTHER - maintain</td>
</tr>
<tr>
<td>11</td>
<td>M what are we going to do with the sand now we've got it?</td>
<td>RQIN</td>
</tr>
<tr>
<td></td>
<td>are you going to dump it onto there?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B: Question</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>J there</td>
<td>RSIN</td>
</tr>
<tr>
<td></td>
<td>B: Question : Elliptical 1</td>
<td>RSIN - maintain</td>
</tr>
<tr>
<td></td>
<td>Other:Stll</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>M there, what do you want me to do with it now?</td>
<td>RQIN</td>
</tr>
<tr>
<td></td>
<td>B: Question</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>J get some more (get some more)</td>
<td>RSIN</td>
</tr>
<tr>
<td></td>
<td>B: Question : Elliptical 2</td>
<td>RSIN - maintain</td>
</tr>
<tr>
<td></td>
<td>VO:Stll; Exp:X+O:NP; DN:Stll</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>M get some more shhhhh</td>
<td>ASCO</td>
</tr>
<tr>
<td></td>
<td>fill it up</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B: Other</td>
<td></td>
</tr>
</tbody>
</table>
16  J  brmmm  
A. Symbolic noise.

17  M  brmmm here we go oh  
it’s filled up now  
B. : Other

18  J  yep  
B. : Other : Minor
Minors: response

19  M  better go and empty it somewhere  
take it to work there we are  
what do we do now?  
B. : Question
where’s that little truck oh there it is look over there  
put the trailer on there we go

20  J  put some sand in  
B. : Question : Elliptical 2

21  M  put some?  
B. : Question

22  J  put some sand in  
B. : Question : Full
back it off  
C : Full
VO:Still; DN:Still; V.part:Still
start again  
C : Full
V:Still

23  M  oops start again there we go fill it up shhhhh  
full now there we go  
are you ready?  
B. : Question
ooops empty it in finished now

24  J  nope  
B. : Question : Minor
Minors: response
not yet
C : Elliptical 2
Neg:X:Still.

25  M  not yet do you need some more?  
B. : Question

26  J  nope  
B. : Question : Minor
Minors: response
get some dirty sand  
C : Full
VO:Still; Exp:X+O:NP; D.Adj;N:Still.

27  M  some dirty sand this time  
B. : Other
I’d better go on this side

28  J  some water sand  
B. : Other : Full
Noun:Still; D.Adj;N:Still
Stage VI: adjective -> noun
29 M some wet sand?
   B : Question
   yes
   B : Question : Minor
   Minor response.
   some wet sand with some water on
   C : Full
   SC : Still Postmod Phrase 1 + :StV ; D . Adj . N : Still ; Pr . DN : Still
   over here
   C : Full
   Other : Stt .

31 M ok here we come shhhh.
   okay here we come there we go
   B : Other
   shhhhh
   A . Symbolic noise.
   there
   C : Full
   Other : Stt .

33 M where's the work?
   B : Question
34 J here
   B : Question : Elliptical 1
   Other : Stt .

35 M would you like me to fix it?
   B : Question
36 J play a game
   C : Full
   VO : Still ( Exp . X + O : NP ) ; DN : Still
37 M yes we are playing a game
   shall I fix it?
   B : Question
38 J yes
   B : Question : minor
   Minor response
   you fix it
   RSIN
   SVO : Still ; Pron PX2 : Still
39 M it's a bit hard we need to got this little bit
   B : Other
40 J that's the that's the other sand
   C : Full
   SVC : Still ( Exp . XY + C : NP ) ; Pron O : Still ; Cop : Still ; D Adj N : Still ; 3s : ' cop
41 M that's the other sand
   now what do I need to pick up next?
   B : Question
42 J oooops
   A : Symbolic noise
43 M what do I need to pick up next?
   B : Question
44 J what?
   B : Question : Full
45 M what do I get next? what do you want me to pick up next? RSCL RQIN
   B : Question

46 J yes RSAS-maintain
   B : Question : Structural
   Response : Stl.

47 M do you want to get some dirt or some bricks? RQIN
   B : Question

48 J some bricks next RSIN-maintain
   B : Question : Elliptical 2
   OA : Stl (Exp. X + O : NP); DN : Stl; Pl.
   then build up the house ASCO-extend
   C : Full
   VO : Stl (Exp. X + O : NP); conn. s : StV; V. Part : Stl; DN : Stl

49 M yep then build up the house RQIN
   where's the bricks?
   B : Question

50 J um here RSIN-maintain
   B : Question : Elliptical 1
   "V" : Stl
APPENDIX E

SUBJECTS’ SPEECH PROFILES
<table>
<thead>
<tr>
<th></th>
<th>Word</th>
<th>Phrase</th>
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<th>Word</th>
<th>Phrase</th>
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<tr>
<td>1</td>
<td>you</td>
<td>+</td>
<td>39</td>
<td>David</td>
<td>+</td>
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<td>2</td>
<td>step</td>
<td>['dɛp]</td>
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<td>photo</td>
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<td>+</td>
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<td>['ðeə]</td>
<td>50</td>
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<td>+</td>
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<td>+</td>
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<td>Emily's</td>
<td>[ˈemɪjɪz]</td>
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<td>poke</td>
<td>[ˈpʊk]</td>
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<td>[ˈbɜrdɪ]</td>
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<td>['ɪndu]</td>
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<td>cake</td>
<td>['keɪk]</td>
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<td>26</td>
<td>water</td>
<td>['wɔrdə]</td>
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<td>27</td>
<td>indians</td>
<td>+</td>
<td>65</td>
<td>what</td>
<td>+</td>
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<td>['θæts]</td>
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<td>+</td>
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<td>['sʌm]</td>
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<td>+</td>
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<td>['hi]</td>
<td>70</td>
<td>tank</td>
<td>['tæŋk]</td>
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<td>have</td>
<td>+</td>
<td>71</td>
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<td>to</td>
<td>['tu]</td>
<td>72</td>
<td>animal</td>
<td>+</td>
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<tr>
<td>35</td>
<td>very</td>
<td>['vɛrɪ]</td>
<td>73</td>
<td>will</td>
<td>+</td>
</tr>
<tr>
<td>36</td>
<td>closely</td>
<td>['kəlsoʊ]</td>
<td>74</td>
<td>come</td>
<td>['kʌm]</td>
</tr>
<tr>
<td>37</td>
<td>only</td>
<td>['əʊnli]</td>
<td>75</td>
<td>here</td>
<td>+</td>
</tr>
<tr>
<td>38</td>
<td>small</td>
<td>['smaʊl]</td>
<td>76</td>
<td>remember</td>
<td>[ˈrɛmərbi]</td>
</tr>
</tbody>
</table>

continued
77. when +
78. Brian ['braɪn]
79. came ['deɪm]
80. caravan ['dæwəvæn]
81. bedroom ['bedwəm]
82. Vicky ['vɪki]
83. show ['ʃəʊ]
84. her +
85. back +
86. laying ['leɪɪŋ]
87. down +
88. Grandma ['ɡræmdmə]
89. told ['tɔld]
90. bear +
91. top ['tɒp]
92. house +
93. me +
94. sky train ['skai'treɪn]
95. bridge ['brɪdʒ]
96. boat +
97. driver ['draɪvə]
98. sits ['sɪts]
99. real ['riːl]
100. grown up ['ɡroʊnʌp]
101. cameras ['kæmərəz]

+ : Correct production
### APPENDIX E - 1b

**SUBJECT A: SPEECH SUMMARY**

#### PHONETIC INVENTORY

<table>
<thead>
<tr>
<th>Syllable Initial</th>
<th>Syllable Final</th>
<th>Clusters S.I.</th>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>/p/</td>
<td><a href="5">b</a></td>
<td>+ (3)</td>
<td>/srn/ <a href="1">v</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>/st/ <a href="1">d</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/m/</td>
<td>+ (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/t/</td>
<td><a href="11">d</a></td>
<td>+ (8)</td>
<td>/sk/ <a href="1">d</a></td>
</tr>
<tr>
<td>/d/</td>
<td>+ (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/n/</td>
<td>+ (4)</td>
<td>+ (18)</td>
<td>/tr/ <a href="2">d</a></td>
</tr>
<tr>
<td>/k/</td>
<td>+ (1): <a href="6">d</a>; <a href="1">g</a></td>
<td>+ (7)</td>
<td>/dr/ <a href="1">d</a></td>
</tr>
<tr>
<td>/g/</td>
<td><a href="4">d</a></td>
<td>+ (1)</td>
<td></td>
</tr>
<tr>
<td>/ŋ/</td>
<td></td>
<td>+ (2): <a href="1">n</a></td>
<td></td>
</tr>
<tr>
<td>/h/</td>
<td>+ (5): Φ(1)</td>
<td></td>
<td>/gr/ <a href="2">d</a></td>
</tr>
<tr>
<td>/w/</td>
<td>+ (8); <a href="1">b</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/j/</td>
<td>+ (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/l/</td>
<td><a href="4">j</a>; <a href="1">w</a></td>
<td>+ (4): <a href="1">w</a></td>
<td></td>
</tr>
<tr>
<td>/l/</td>
<td>/w/(7); <a href="1">j</a></td>
<td>-</td>
<td>/ks/ + (2)</td>
</tr>
<tr>
<td>/f/</td>
<td><a href="2">v</a></td>
<td>-</td>
<td>/nz/ + (4)</td>
</tr>
<tr>
<td>/v/</td>
<td>+ (5)</td>
<td></td>
<td>/nt/ + (1)</td>
</tr>
<tr>
<td>/s/</td>
<td>+ (1): <a href="1">j</a>; <a href="1">d</a></td>
<td>+ (2)</td>
<td><a href="1">n</a></td>
</tr>
<tr>
<td>/z/</td>
<td>-</td>
<td>+ (3)</td>
<td>/lz/ + (2)</td>
</tr>
<tr>
<td>/ʃ/</td>
<td><a href="1">d</a></td>
<td>+ (1)</td>
<td>/st/ <a href="2">s</a></td>
</tr>
<tr>
<td>/θ/</td>
<td>+ (1): <a href="1">d</a></td>
<td>-</td>
<td>/ŋk/ + (2)</td>
</tr>
<tr>
<td>/ð/</td>
<td><a href="4">d</a>; <a href="1">v</a></td>
<td></td>
<td>/tʃ/ + (2)</td>
</tr>
</tbody>
</table>

#### SUMMARY

Specific sound problems:
/p/; /t/; /k/; /g/; /l/; /r/; /l/; /s/; /ʃ/; /θ/; /ð/; /u/; /i/; and /dʒ/.

/θ/ --- [ʃ] and /ð/ --- [v], or Fricative Simplification.

#### MAIN PROCESSES EVIDENT (in order of frequency)

- Prevocalic Voicing (syllable initial only) - 94%
- Cluster Reduction (syllable initial) - 93%
- Gliding of /l/ and /r/ - 78%
- Velar Fronting (syllable initial mainly) - 48%
- Stopping (syllable initial only) - 29%

#### CONCLUSION

Phonological delay
## APPENDIX E - 2a

**PHONETIC TRANSCRIPTION OF SUBJECT B’S BROTHER’S PERFORMANCE ON THE SHAPE (Smit & Hand, 1997)**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>dog</td>
<td>+</td>
</tr>
<tr>
<td>2.</td>
<td>snake</td>
<td>[ˈθneɪk]</td>
</tr>
<tr>
<td>3.</td>
<td>cat</td>
<td>+</td>
</tr>
<tr>
<td>4.</td>
<td>spider</td>
<td>[ˈθpɑɪdə]</td>
</tr>
<tr>
<td>5.</td>
<td>fish</td>
<td>[ˈgoʊldfɪʃ]</td>
</tr>
<tr>
<td>6.</td>
<td>duck</td>
<td>+</td>
</tr>
<tr>
<td>7.</td>
<td>sheep</td>
<td>+</td>
</tr>
<tr>
<td>8.</td>
<td>mouse</td>
<td>[ˈmaʊθ]</td>
</tr>
<tr>
<td>9.</td>
<td>deer</td>
<td>+</td>
</tr>
<tr>
<td>10.</td>
<td>goat</td>
<td>+</td>
</tr>
<tr>
<td>11.</td>
<td>wing</td>
<td>[ˈwɪŋ]</td>
</tr>
<tr>
<td>12.</td>
<td>cage</td>
<td>+</td>
</tr>
<tr>
<td>13.</td>
<td>twins</td>
<td>[ˈfɪn]</td>
</tr>
<tr>
<td>14.</td>
<td>yawn</td>
<td>+</td>
</tr>
<tr>
<td>15.</td>
<td>teeth</td>
<td>[ˈtɪf]</td>
</tr>
<tr>
<td>16.</td>
<td>beard</td>
<td>+</td>
</tr>
<tr>
<td>17.</td>
<td>nose</td>
<td>[ˈnɔʊz]</td>
</tr>
<tr>
<td>18.</td>
<td>thumb</td>
<td>[ˈθʌm]</td>
</tr>
<tr>
<td>19.</td>
<td>queen</td>
<td>+</td>
</tr>
<tr>
<td>20.</td>
<td>dress</td>
<td>[ˈdrɛθ]</td>
</tr>
<tr>
<td>21.</td>
<td>bib</td>
<td>+</td>
</tr>
<tr>
<td>22.</td>
<td>zip</td>
<td>[ˈdɪp]</td>
</tr>
<tr>
<td>23.</td>
<td>shoe</td>
<td>+</td>
</tr>
<tr>
<td>24.</td>
<td>sock</td>
<td>[ˈθɒk]</td>
</tr>
<tr>
<td>25.</td>
<td>glove</td>
<td>+</td>
</tr>
<tr>
<td>26.</td>
<td>hat</td>
<td>+</td>
</tr>
<tr>
<td>27.</td>
<td>bag</td>
<td>+</td>
</tr>
<tr>
<td>28.</td>
<td>watch</td>
<td>[ˈwɒtʃ]</td>
</tr>
<tr>
<td>29.</td>
<td>earring</td>
<td>[ˈɪərɪŋ]</td>
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<tr>
<td>30.</td>
<td>pipe</td>
<td>+</td>
</tr>
<tr>
<td>31.</td>
<td>spoon</td>
<td>[ˈθɒpun]</td>
</tr>
<tr>
<td>32.</td>
<td>cup</td>
<td>+</td>
</tr>
<tr>
<td>33.</td>
<td>glass</td>
<td>[ˈglaθ]</td>
</tr>
<tr>
<td>34.</td>
<td>straw</td>
<td>[ˈθrɔʊθ]</td>
</tr>
<tr>
<td>35.</td>
<td>plate</td>
<td>+</td>
</tr>
<tr>
<td>36.</td>
<td>bread</td>
<td>[ˈbruːd]</td>
</tr>
<tr>
<td>37.</td>
<td>jam</td>
<td>+</td>
</tr>
<tr>
<td>38.</td>
<td>cake</td>
<td>+</td>
</tr>
<tr>
<td>39.</td>
<td>chips</td>
<td>[ˈtʃɪps]</td>
</tr>
<tr>
<td>40.</td>
<td>gum</td>
<td>+</td>
</tr>
<tr>
<td>41.</td>
<td>apple</td>
<td>+</td>
</tr>
<tr>
<td>42.</td>
<td>tomato</td>
<td>[ˈtomətəʊ]</td>
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<tr>
<td>43.</td>
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<td>[ˈwɔtərˌmɛlən]</td>
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<tr>
<td>44.</td>
<td>bed</td>
<td>+</td>
</tr>
<tr>
<td>45.</td>
<td>clock</td>
<td>+</td>
</tr>
<tr>
<td>46.</td>
<td>chair</td>
<td>+</td>
</tr>
<tr>
<td>47.</td>
<td>screen</td>
<td>[ˈkriːn]</td>
</tr>
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<td>48.</td>
<td>hose</td>
<td>[ˈhouz]</td>
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<tr>
<td>49.</td>
<td>rope</td>
<td>[ˈrɒp]</td>
</tr>
<tr>
<td>50.</td>
<td>spray</td>
<td>[ˈspreɪ]</td>
</tr>
<tr>
<td>51.</td>
<td>bell</td>
<td>+</td>
</tr>
<tr>
<td>52.</td>
<td>block</td>
<td>+</td>
</tr>
<tr>
<td>53.</td>
<td>there</td>
<td>+</td>
</tr>
<tr>
<td>54.</td>
<td>skate</td>
<td>[ˈskweɪt]</td>
</tr>
<tr>
<td>55.</td>
<td>clown</td>
<td>+</td>
</tr>
<tr>
<td>56.</td>
<td>snail</td>
<td>[ˈsneɪl]</td>
</tr>
<tr>
<td>57.</td>
<td>frog</td>
<td>+</td>
</tr>
<tr>
<td>58.</td>
<td>crayon</td>
<td>+</td>
</tr>
<tr>
<td>59.</td>
<td>colour</td>
<td>+</td>
</tr>
<tr>
<td>60.</td>
<td>present</td>
<td>[ˈprɛzənt]</td>
</tr>
<tr>
<td>61.</td>
<td>three</td>
<td>[ˈθrei]</td>
</tr>
<tr>
<td>62.</td>
<td>star</td>
<td>[ˈstɑːr]</td>
</tr>
<tr>
<td>63.</td>
<td>square</td>
<td>[ˈskeɪr]</td>
</tr>
<tr>
<td>64.</td>
<td>rainbow</td>
<td>[ˈreɪnbəʊ]</td>
</tr>
<tr>
<td>65.</td>
<td>sun</td>
<td>[ˈsʌn]</td>
</tr>
<tr>
<td>66.</td>
<td>swing</td>
<td>[ˈswɪŋ]</td>
</tr>
<tr>
<td>67.</td>
<td>flag</td>
<td>+</td>
</tr>
<tr>
<td>68.</td>
<td>grass</td>
<td>[ɡrɑθ]</td>
</tr>
<tr>
<td>69.</td>
<td>slide</td>
<td>[ˈsləd]</td>
</tr>
<tr>
<td>70.</td>
<td>leaf</td>
<td>+</td>
</tr>
<tr>
<td>71.</td>
<td>bridge</td>
<td>[ˈbrɪdʒ]</td>
</tr>
<tr>
<td>72.</td>
<td>splash</td>
<td>[ˈsplæʃ]</td>
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<td>smoke</td>
<td>[ˈsmɔʊk]</td>
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<tr>
<td>74.</td>
<td>lightning</td>
<td>+</td>
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<tr>
<td>75.</td>
<td>thunder</td>
<td>[ˈθʌndər]</td>
</tr>
<tr>
<td>76.</td>
<td>car</td>
<td>+</td>
</tr>
<tr>
<td>77.</td>
<td>train</td>
<td>+</td>
</tr>
<tr>
<td>78.</td>
<td>bus</td>
<td>[ˈbʌs]</td>
</tr>
<tr>
<td>79.</td>
<td>van</td>
<td>+</td>
</tr>
<tr>
<td>80.</td>
<td>canoe</td>
<td>+</td>
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</tbody>
</table>

+ : Correct production
### APPENDIX E - 2b

**SUBJECT B'S BROTHER (aged 6): SHAPE SUMMARY (Smit & Hand, 1997)**

<table>
<thead>
<tr>
<th>PHONETIC INVENTORY</th>
<th>Processes</th>
</tr>
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<tbody>
<tr>
<td><strong>Syllable Initial</strong></td>
<td><strong>Clusters S.I.</strong></td>
</tr>
<tr>
<td>/p/</td>
<td>+(3)</td>
</tr>
<tr>
<td>/b/</td>
<td>+(7)</td>
</tr>
<tr>
<td>/m/</td>
<td>+(3)</td>
</tr>
<tr>
<td>/t/</td>
<td>+(4); [θ] (1)</td>
</tr>
<tr>
<td>/d/</td>
<td>+(5)</td>
</tr>
<tr>
<td>/n/</td>
<td>+(3)</td>
</tr>
<tr>
<td>/k/</td>
<td>+(8)</td>
</tr>
<tr>
<td>/g/</td>
<td>+(3)</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>-</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>+(2); [θ] (1)</td>
</tr>
<tr>
<td>/w/</td>
<td>+(2); [u] (1)</td>
</tr>
<tr>
<td>/l/</td>
<td>+(4); [l] (1)</td>
</tr>
<tr>
<td>/r/</td>
<td>[u] (4)</td>
</tr>
<tr>
<td>/f/</td>
<td>+(1)</td>
</tr>
<tr>
<td>/v/</td>
<td>+(1)</td>
</tr>
<tr>
<td>/s/</td>
<td>[θ] (2)</td>
</tr>
<tr>
<td>/s/</td>
<td>[θ] (2)</td>
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<td>/l/</td>
<td>+(2)</td>
</tr>
<tr>
<td>/f/</td>
<td>+(2)</td>
</tr>
<tr>
<td>/z/</td>
<td>+(1)</td>
</tr>
<tr>
<td>/θ/</td>
<td>[f] (2)</td>
</tr>
<tr>
<td>/ʊ/</td>
<td>+(1)</td>
</tr>
<tr>
<td>/ŋ/</td>
<td>[n] (1)</td>
</tr>
<tr>
<td>/ps/</td>
<td>[pθ] (1)</td>
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<tr>
<td>/nt/</td>
<td>+(1)</td>
</tr>
<tr>
<td>/ld/</td>
<td>+(1)</td>
</tr>
</tbody>
</table>

**SUMMARY**

Specific sound problems:
- /s/ and /z/ are dentalised (singletons and consonant clusters)
- /r/ is de-rhotacised (singletons and consonant clusters)
- /θ/ ---+ [f], or Fricative Simplification

**CONCLUSION**

Mild speech disorder.
| 1. dog   | ['dɒt] | 42. tomato | ['matəʊ] |
| 2. snake | ['neɪt] | 43. watermelon | ['wɔːtər'melən] |
| 3. cat   | ['tæt] | 44. bed      | + |
| 4. spider| ['spɑːdə] | 45. clock    | ['tɒk] |
| 5. fish  | ['fɪʃ] | 46. chair    | ['teɪ] |
| 6. duck  | ['dʌt] | 47. screen   | ['tɪn] |
| 7. sheep | ['sɪp] | 48. hose     | + |
| 8. mouse | +      | 49. rope     | ['wʊp] |
| 9. deer  | +      | 50. spray    | ['pet] |
| 10. goat | ['dɒt] | 51. bell      | ['bɛl] |
| 11. wing | ['wɪn] | 52. block     | ['bɒk] |
| 12. cage | ['teɪd] | 53. there     | ['ðeə] |
| 13. twins| ['tʌn] | 54. skate     | ['teɪt] |
| 14. yawn | ['naʊn] | 55. clown    | ['taʊn] |
| 15. teeth| ['tɪf] | 56. snail    | ['neɪl] |
| 16. beard| ['bɛət] | 57. frog      | ['fɒd] |
| 17. nose | ['nɒt] | 58. crayon   | ['teɪʒən] |
| 18. thumb| ['fæm] | 59. colour   | ['tʌðə] |
| 19. queen| ['tɪn] | 60. present  | ['pɛrənt] |
| 20. dress| ['dɛs] | 61. three    | ['fɪt] |
| 21. bib  | +      | 62. star     | ['sɑː] |
| 22. zip  | ['zɪp] | 63. square   | ['teɪ] |
| 23. shoe | ['ʃuː] | 64. rainbow  | ['raɪnbəʊ] |
| 24. sock | ['sɒk] | 65. sun       | + |
| 25. glove| ['dʌv] | 66. swing    | ['wɪn] |
| 26. hat  | +      | 67. flag      | ['fæd] |
| 27. bag  | ['bæd] | 68. grass    | ['dɑːs] |
| 28. watch| ['wɔt] | 69. slide    | ['lɑːt] |
| 29. earring| ['eədɪŋ] | 70. leaf     | + |
| 30. pipe | +      | 71. bridge   | ['bɪd] |
| 31. spoon| ['pʌn] | 72. splash   | ['fæs] |
| 32. cup  | ['kʌp] | 73. smoke    | ['mɔʊt] |
| 33. glass| ['ɡlɑːs] | 74. lightning| ['lɑːtɪn] |
| 34. straw| ['strɔː] | 75. thunder  | ['θʌnə] |
| 35. plate| ['pleɪt] | 76. car      | ['teɪ] |
| 36. bread| ['bred] | 77. train    | ['teɪn] |
| 37. jam  | ['dæm] | 78. bus      | + |
| 38. cake | ['keɪk] | 79. van      | ['bæn] |
| 39. chips| ['tʃɪp] | 80. helicopter| ['helɪkɒptə] |
| 40. gum  | ['ɡʌm] |            | ['tɔn] |

+ : Correct production
**APPENDIX E - 3b**

**SUBJECT C : SHAPE SUMMARY (Smit & Hand, 1997)**

<table>
<thead>
<tr>
<th>Syllable Initial</th>
<th>Syllable Final</th>
<th>Clusters S.I.</th>
<th>Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>/p/</td>
<td></td>
<td>+ (5)</td>
<td>Cluster Reduction:</td>
</tr>
<tr>
<td>/b/</td>
<td></td>
<td>+ (1)</td>
<td>Syllable initial 32 / 32</td>
</tr>
<tr>
<td>/m/</td>
<td></td>
<td>+ (3)</td>
<td>Syllable final 1 / 2</td>
</tr>
<tr>
<td>/t/</td>
<td></td>
<td>+ (3); <a href="1">d</a></td>
<td>Weak Syllable Deletion 1 / 3</td>
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<tr>
<td>/d/</td>
<td></td>
<td>+ (4); <a href="1">l</a></td>
<td>Final Consonant Devoicing 4 / 15</td>
</tr>
<tr>
<td>/n/</td>
<td></td>
<td>+ (2); <a href="1">l</a></td>
<td>Assimilation</td>
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<td></td>
<td><a href="3">d</a>; <a href="1">l</a>; + (1)</td>
<td>Manner</td>
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<td><a href="2">ʃ</a></td>
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<tr>
<td>/nt/</td>
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**SUMMARY**

Specific sound problems:

/kl/: /gl/: /ʃ/: /l/: /ʃ/: /ʃ:/ /ʃ:/ and /dʒ /

/θ/ --> [ʃ], or Fricative Simplification

**MAIN PROCESSES EVIDENT (in order of frequency)**

Cluster Reduction (syllable initial) - 100%

Velar Fronting - 96%

Gliding of /r/ - 67%

Palatal Fronting (/ʃ/ only) - 40%

Stopping - 33%

Final Consonant Devoicing - 27%

**CONCLUSION**

Severe phonological disorder.
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<td>[ˈsɔsɪsnɛɪk]</td>
</tr>
<tr>
<td>3</td>
<td>cat</td>
<td>+</td>
</tr>
<tr>
<td>4</td>
<td>spider</td>
<td>+</td>
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<td>5</td>
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<td>[ˈdʌki]</td>
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<td>[ˈʃɛp]</td>
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<td>8</td>
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<td>[ˈmaʊθ]</td>
</tr>
<tr>
<td>9</td>
<td>deer</td>
<td>+</td>
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<td>[ˈtifs]</td>
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<td>[ˈdʒiːn] (imit.)</td>
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<td>44</td>
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<td>45</td>
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<td>[ˈskriːn]</td>
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<td>48</td>
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<td>[ˈkləʊn]</td>
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<td>80</td>
<td>canoe</td>
<td>+</td>
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(Imit.) : Imitated mother's speech after prompt.
+ : Correct production
## APPENDIX E - 4b
### SUBJECT E : SHAPE SUMMARY (Smit & Hand, 1997)

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<tr>
<th>PHONETIC INVENTORY</th>
<th>Syllable Initial</th>
<th>Syllable Final</th>
<th>Clusters S.I.</th>
<th>PROCESSES</th>
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<td>/p/</td>
<td>+(5)</td>
<td>+(7)</td>
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<td>+(8)</td>
<td>+(1)</td>
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<td>+(3)</td>
<td>/sm/ <a href="1">m</a></td>
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<tr>
<td>/t/</td>
<td>+(4)</td>
<td>+(6)</td>
<td>/sp/ +(2)</td>
<td>8 / 20</td>
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<td>/d/</td>
<td>+(6)</td>
<td>+(3)</td>
<td>/st/ +(1)</td>
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<td>+(2)</td>
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<td>/k/</td>
<td>+(9)</td>
<td>+(5);<a href="1">ç</a></td>
<td>/sw/ <a href="1">ϕ</a></td>
<td>Manner</td>
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<td>+(2);<a href="1">j</a></td>
<td>+(3)</td>
<td>/sl/ <a href="1">l</a></td>
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<td>-</td>
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<td>/spr/ <a href="1">pw</a></td>
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<td>+(2)</td>
<td>-</td>
<td>/skr/ <a href="1">j</a></td>
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<td>-</td>
<td>/spl/ <a href="1">pl</a></td>
<td>4 / 4</td>
</tr>
<tr>
<td>/l/</td>
<td><a href="1">ç</a></td>
<td>+(3)</td>
<td>/skw/ <a href="1">ϕ</a></td>
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<td>/t/</td>
<td><a href="4">w</a></td>
<td>-</td>
<td>/pl/ +(1)</td>
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<td>+(2)</td>
<td>+(1)</td>
<td>/b/ <a href="1">b</a></td>
<td></td>
</tr>
<tr>
<td>/v/</td>
<td><a href="1">b</a></td>
<td><a href="1">b</a></td>
<td>/kl/ <a href="1">k</a></td>
<td></td>
</tr>
<tr>
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<td>+(4)</td>
<td>+(3);<a href="1">θ</a>;<a href="1">ʔ</a></td>
<td><a href="1">ç</a></td>
<td></td>
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<tr>
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<td>+(2)</td>
<td>+(3)</td>
<td>/gl/ +(1);<a href="1">d</a></td>
<td></td>
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<td>/ʃ/</td>
<td><a href="2">ç</a>; +(1)</td>
<td><a href="1">l</a>;<a href="1">ʔ</a></td>
<td>/fl/ <a href="1">fw</a></td>
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<td>/tʃ/</td>
<td><a href="1">k</a>;<a href="1">ç</a></td>
<td><a href="1">t</a></td>
<td>/pr/ <a href="1">pw</a></td>
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<td>/dʒ/</td>
<td><a href="1">g</a></td>
<td><a href="2">ç</a></td>
<td>/br/ <a href="2">bw</a></td>
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<td><a href="1">f</a></td>
<td>/tr/ <a href="1">cw</a></td>
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<td>/ð/</td>
<td>+(1)</td>
<td>-</td>
<td>/dr/ <a href="1">v</a></td>
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### SUMMARY

Specific sound problems: /w/; /ʃ/; /tʃ/; /v/; /f/; /tʃ/; and /dʒ/.

Some high frequency sounds, such as /ʃ/ and /tʃ/ misarticulated.

/θ/ --> [f], or Fricative Simplification

### MAIN PROCESSES EVIDENT (in order of frequency)

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<thead>
<tr>
<th>Process</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Stopping of /w/</td>
<td>100%</td>
</tr>
<tr>
<td>Gliding of /l/ (singletons)</td>
<td>100%</td>
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<tr>
<td>Cluster Reduction (syllable initial only)</td>
<td>42%</td>
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<tr>
<td>Cluster Simplification (or gliding of /l/ and /r/ in Consonant Clusters)</td>
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### CONCLUSION

Phonological delay with articulation disorder probably due to hearing loss.
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