Do bilingual German-English speaking pre-school children catch up to their monolingual English speaking age-group peers in terms of expressive and receptive skills in English?

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List of Abbreviations

SLT	Speech Language Therapist
CELF	Clinical Evaluation of Language Fundamentals
DPP	Descriptive Pragmatics Profile
BF	Bilingual Female
BM	Bilingual Male
MF	Monolingual Female
MM	Monolingual Male

I.   Core Language Score and Indexes

CLS	Core Language Score
RLI	Receptive Language Index
ELI	Expressive Language Index

II.   Core Language Score and Indexes test codes

CLI1 / CLS2	Core Language Score – initial / final test
RLI1 / RLI2	Receptive Language Index – initial / final test
ELI1 / ELI2	Expressive Language Index – initial / final test

III.   Subtests and test codes

SS-receptive	Sentence Structure	ss1r/ss2r – initial / final test
WS-expressive	Word Structure	ws1e/ws2e – initial / final
EV-expressive	Expressive Vocabulary	ev1e/ws2e – initial / final
C&FD-receptive	Concepts & Following Directions	cfd1r/cfd2r – initial / final
RS-expressive	Recalling Sentences	rs1e/rs2e – initial / final
BC-receptive	Basic Concepts	bc1r – initial test
WC-R-receptive	Word Classes-Receptive	wc-r2 – final test

Attestation of Authorship

I hereby declare that this submission is my own work and that to the best of my knowledge and belief it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material, which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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ABSTRACT

The first half of the 20th century, childhood bilingualism was often linked to personality disorders, mental deficits, social problems and even schizophrenia (Baker, 2000). However, this has been challenged in more recent studies where bilingualism is believed to improve cognitive abilities and enhance meta-linguistic awareness (Bialystok, 2001). The aim of this study was to determine whether bilingual German English children catch up to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of receptive and expressive skills in English, or whether exposure to two languages from birth has a detrimental impact on early language development compared to that of a monolingual English speaking child. The initial study involved two groups of 10-12 children, all around 4 years of age. Group one were the monolingual group, who had only been exposed to the English language. Group Two were the bilingual group of German descent, living in New Zealand, who had been exposed to the German language from birth. Both groups had an initial test modelled on Clinical Evaluation of Language Fundamentals (CELF-P2) tests, followed by a final test at the end of 10-12 month period. All testing conditions, except for a substituted age- and ability related subtest in the final test, remained identical. There were two research questions to be examined: firstly, the researcher hypothesised that a child with exposure to two languages from birth may develop at a slower rate than a child who only needs to master one language. Secondly, the researcher anticipated that any gap in English skills development would narrow as the children moved towards 5 years of age. Research question one was examined to test significance of results for both bilinguals in their second language, English, from hereon referred to as their L2, and monolinguals at age 4 in their English language development. The findings were subjected to a one-tailed t-test which indicated no significant differences between the two groups of children. The findings related to research question two were subjected to a two-tailed t-test to test for any true differences between the groups at age 5, and similarly reported no significant differences between groups. Mean values did reveal marginal difference for the bilinguals at age 5 in terms of receptive language behaviour. As the receptive language and expressive language scores were not significantly different in both tests between the two groups, both groups' abilities in these modalities could be considered comparable, with no indication of delay.

CHAPTER ONE: INTRODUCTION

'Mornings meine mami come hier in mein room and ich wake michself up. Sie   says   mir 'komm steh auf, wasch dich und putzt dir die zahne.' And denn ich come aus di bed und think zu mir speak ich Deustch or sprech I English now? Ich say zu my mami 'mami, ich hab gemacht mich nass und cleane ich mein teeth'. Meine mami says 'komm du weisst schon jetzt sprechen wir Deutsch'. Dann my papa comes zu haus later und sagt to mir 'hello–look I bought you some kiwi fruit.' And I say 'kiwi papa you have ge-bought them for me?' 'Yes, eat them–here I have given you a spoon'. I say 'no daddy ich habe gegeben mein loffel zu dir'. Papa says 'now we speak English'. I say 'sorry- bin ich falsch, or- am I wrong again?'

1.1   Background of the study

The above quote is fictional, but could have been uttered by a German-English bilingual preschool aged child. This utterance might have been anticipated from material collected for the study described in this thesis. New Zealand is rapidly becoming a multicultural society, where many children are exposed to a language other than English in the home and in society at large. Research in different countries around the world has focused on areas of bilingualism such as Bilingual Education, Psycho-linguistics, Neuro-linguistics, and Bilingual Acquisition.

Studies have indicated that the effect of bilingualism from birth is a divided issue, and, in fact, researchers have varying opinions as to whether bilinguals have an advantage cognitively over monolinguals. There have been studies carried out in this field which examine exposure to bilingualism from birth, and its positive or negative effects on the language development of young children in the early years, compared to that of monolingual children. The literature contained a few assumptions. The earlier body of thought from the 1930s to 1950s through until the 1960s assumed bilingualism was implicated in personality disorders, mental deficits, social problems, and even schizophrenia (Baker 2000, p. 17). Baker described how bilingualism was also assumed to be associated with people stuttering and mixing up their languages, which in his opinion is socially and cognitively undesirable (Baker, 2000).

Research carried out from the late 1930s to the 1950s also supported the idea that bilingual children were not as intelligent as monolingual children, and that, indeed, bilingual children were disadvantaged in their cognitive abilities. Earlier studies examining cognitive development in bilingual children provided support in relation to the negative effects that bilingualism allegedly had on development, and that when measured by verbal tests of intelligence bilinguals were at a real disadvantage (Darcy, 1953).

More recently, however, it has been argued by some researchers (e.g. Bialystok, 2001) that bilingualism is, indeed, beneficial for cognitive development and that in many cognitive tasks bilinguals perform better than monolinguals by virtue of the fact they seem to have greater control of attention. Bialystok and other linguists, psychologists, and sociologists have investigated in-depth the cognitive and language development of different bilinguals in the preschool years. These later studies were to challenge earlier theories, and in fact indicated that bilingualism may in fact improve cognitive ability, meta-linguistic awareness, social confidence, left/right brain hemisphere development, elasticity of the brain, and perceptual memory.

One could posit that many bilingual children experience far more challenges than their monolingual peers. The ultimate challenge for most bilinguals is to use and maintain their respective languages for effective communication in everyday life. The extent to which they will be able to do so will depend on their exposure to their different languages and their communicative partners. Indeed, in a predominantly monolingual society such as New Zealand, there may be said to be some degree of lack of understanding of bilingualism and the communicative needs of bilingual children. Bilinguals may struggle to maintain their language other than English, resulting in a gradual attrition of language skills.

In this context, the researcher found the former body of thought particularly interesting, because anecdotal evidence suggests that some of the negative perceptions about bilingualism still appear to persist among non-bilinguals. Early Childhood Educators in New Zealand, even today, are referring bilingual children to Speech Language Therapists for perceived language deficit behaviour in English. This is not surprising, given that 80% of New Zealanders are monolingual (Census, 2006), and hence may not be familiar with bilingualism. Features of this perceived language deficit behavior often include stuttering, articulation problems, and low performance in Receptive and Expressive skills in English. The existence of these perceptions of bilingualism as a non-desirable and as a possibly

negative influence on children's language development in today's society was an impetus for the current study.

1.2　　Aims of the research and practical implementation

The aim of this study was to be two-fold; firstly, to explore early theories positing the negative effects of bilingualism are understandable and secondly, the study aimed to investigate whether bilingual children do 'catch up' with their monolingual peers over the next 10-12 months learning to simultaneously process two languages. The expression catch up is used here to indicate a situation where bilingual German-English speaking children initially lagged behind their monolingual English-speaking peers in terms of expressive and comprehension skills in English, but as time goes by reach a stage where their expressive and comprehension skills in English are at the same level as those of monolingual English speaking children. In fact, the study aimed to testify that bilingual children do this to the extent that, when given the standard speech language test for English speaking children at age 5, there is no significant difference in performance between the bilingual German-English and English monolingual children.

In relation to the first, the study aimed to show that there may be some merit to the idea that some children may have problems processing two languages in the early stages, i.e. in the preschool years. When bilingual speakers, including young children, have problems expressing themselves in one of their languages, or understanding particular content words in one of their languages, they may express this by means of non-linguistic behaviour, which may be observed. Recurrent types of non-linguistic behaviour in relation to these types of language problems have been documented in studies. The study described here made use of a test which also included observation of non-linguistic behaviour in relation to language-related tasks. Most bilingual children stayed on task with a few exceptions, for example, subject BF9.

The researcher was trained by a qualified SLT. A pilot study was conducted in the presence of the SLT, including an inter-rater reliability evaluation of accuracy of testing as well as accuracy of scoring of test. The actual study involved 10 bilingual German-English speaking children born in New Zealand or other English-speaking country to German parent(s), and 12 monolingual children. The children were aged between 3;10 and 4;4 at the time of the initial test, and between 4;9 and 5;3 for the final test. All children attended full-

or part-time at an Early Childhood Education Centre in Auckland. The type of data sought consisted of a questionnaire survey for the bilinguals and Descriptive Pragmatics Profile checklist to be completed by the parents of the children prior to the initial test. Then, for the testing procedure English language skills test based on the standard Speech Language Therapy (SLT) assessments were conducted at the initial test stage around age 4, and then at the final test stage around age 5. The Standard Speech Therapist's assessment at both test stages related to participants' receptive; i.e. 'input' of information and how the brain receives this information, and expressive language skills; i.e. information 'output'. These assessments examine how information is received and, in turn, processed and expressed. Children's behaviour during testing was observed and recorded onto behaviour observation checklist and the standard Speech Language Test observation sheet lists some of these behaviours. The researcher observed children during the test, and ticked relevant boxes on the observation sheet. Observations noted during the test were looked at in relation to the findings of the language itself.

The current study employed a multiple research approach in order to describe the findings qualitatively, and also to give meaning to test outcomes using standardized SLT test measures, which are predominantly quantitative in nature.

1.3   Significance of the study

The results of the study may have significance in terms of a) trying to mitigate those negative perceptions about bilingualism and the supposed negative effect on early language development and; b) educating Speech Language Therapists (SLTs) and Early Childhood (EC) Educators about the same; and c) filling a gap in the research area. The researcher sees the study as an important way to empower bilingual children and their parents, across language groups, and make their cases heard in a context where some (mainly monolingual) professionals may still view bilingualism from a slightly negative perspective.

This research will also have relevance to any Childhood Early Learning Centre, not necessarily limited to the New Zealand setting, where the majority of teaching is done in a monolingual environment. It may provide an argument for the establishment of more bilingual instruction programmes, with bilingual preschool teachers, so as to benefit the wider community as it will address the issue of bilingualism in early childhood and the community at large (see also Foster-Cohen, 2003). The study may also advocate the

acceptance of bilingual instruction in an area where little research has been done, i.e. in Early Childhood Education. The researcher also feels a preschool test system, which could detect English language delay, should be put in place in Early Childhood Centres, so as to not rely on just having English testing when the child attends Primary School. The testing, when done, needs to be user-friendly and accommodate the needs of younger children.

In sum, the researcher believes that this information will be of relevance and importance to all Early Childhood Teachers, Speech Language Therapists, and linguists researching the area of Bilingualism and language behaviour/development in early childhood. The study may also benefit parents of bilingual children and enable them to make a more informed decision as to first language (L1) and second language (L2) maintenance.

1.4   Organisation of the study

This thesis consists of eight chapters. The introductory chapter provides an outline of the thesis and this is followed by a review of the literature in Chapter Two. This chapter includes an overview of the literature and research around child bilingualism including the perceived advantages and disadvantages of child bilingualism especially in relation to cognition. The literature review is underpinned by the research questions and attempts to address these. As the current study made use of standardised speech language therapy tests for preschool children, the literature review also considers the role of Speech Language Therapists from the perspective of bilingual children, and reviews findings from empirical research studies concerning SLT and bilingualism methods used. Gaps in previous research addressing SLT and bilingualism methods used are subsequently identified and discussed, as are the methodologies employed.

Chapter Three outlines the methodological approach adopted in this study. A multi-method design was employed, and justification for this approach is provided. Research instruments included – the standardised Clinical Evaluation of Language Fundamentals (CELF-P2) tests, supplemented by information on the behavioural observation checklists, Descriptive Pragmatics Profile (DPP) checklist, and bilinguals' questionnaire surveys - are introduced and the data collection and analysis processes described.

Chapter Four presents case studies on a child from the respective bilingual and monolingual groups with quantitative and qualitative findings from the initial and final tests

conducted. Chapter Five offers a summary of the receptive language skills for bilinguals and monolinguals with statistical analyses from the initial and final tests conducted. Chapter Six provides a summary of the expressive language skills for bilinguals and monolinguals with statistical analyses from the initial and final tests conducted. Chapter Seven presents a discussion and a summary of the findings from the previous two chapters, referring back to the research questions and the literature review. Finally, Chapter Eight summarises the key findings of the study and relates findings to the existing literature. It also presents some of the limitations of the study, as well as research implications and recommendations for future research.

CHAPTER TWO: A REVIEW OF THE LITERATURE

2.1   Introduction

The current study, which involves a pilot and a main study, focuses on two groups of bilingual and monolingual children and the purpose is to ascertain whether bilingual German English children 'catch up' to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of receptive and expressive skills in English. Some of the existing assumptions are that exposure to two languages from birth may have a detrimental impact on early language development compared to that of monolingual English speaking children. This chapter, therefore, reviews the literature associated with the main areas of interest appropriate to examine above. These areas include: firstly, general definitions of bilingualism and the bilingual mind/brain; secondly, child bilingualism (general definitions and, in particular, language development in young children); thirdly, language contact and its various associations including contact phenomena, and language choice; fourthly, language and education in the context of Early Childhood Education (ECE) and Speech Language Therapists (SLTs); and finally, previous research on empirical studies concerned with speech language therapy and Bilingualism research methods used.

2.2   Bilingualism
2.2.1 General introduction

Research into the area of bilingualism has been addressed in literature and research worldwide. However, research published in English has mostly originated from Canada and USA, being immigration countries.

Ellis (1994) defines bilingualism as 'the use of two languages by an individual or speech community' (1994, p. 694). However, his statement is rather confusing as there is no mention of the degree to which the individual or speech community is able to use their languages. Nor is there any mention to the degree or manner in which they achieved their bilingualism, from birth in a bilingual setting growing up in a bilingual environment, or acquired as a second language later in life. Yet unlike Ellis, who specialises more in Second Language Acquisition (SLA), De Houwer (1995) specialises in bilingual children, and some of her research tends to focus on bilinguals raised from birth with two languages.

The debate continues further since there is various information within the literature in terms of the definition of bilingualism. Some researchers, such as Hornby (1977, p. 3) comment on 'bilingualism and the perception across the spectrum of bilinguals' ranging abilities, from 'minimal' to 'native-like' ability of the language. Some like Grosjean (1982) refer to the use of both languages simultaneously, whereas others like Weinreich (1953) refer to alternating between the two and using only one language at any one time.

There are multiple definitions of bilingualism and childhood bilingualism. The literature refers to various distinctions made under the reference of bilingual language acquisition. Among the distinctions, we note early bilingualism, as those who become bilingual in infancy, late bilingualism in adolescence (Lambert, 1975).

This study focuses, in particular, on bilingual children, and so it is important to look at some of the definitions of general bilingualism. In this section more general definitions of bilingualism (Section 2.2.2) will be discussed moving onto more specific definitions of child bilingualism in the next section (Section 2.3).

2.2.2 General definitions

There are various terminologies used in the literature to describe bilingualism. In generic terms, we note the various forms of bilingualism, i.e. 'additive', 'subtractive', 'balanced', and 'semi-lingual'. We also note in terms of second language acquisition; L1 (first language) and L2 (second language). As we are dealing with preschool children, who may have had uneven input in their two languages and not adults whose language acquisition in both L1 and L2 may be said to have been consolidated, the above bilingual generic terms are not pertinent and important within the scope of the current study. However, 'simultaneous bilingualism' is pertinent and important and will be described later in the chapter under Section 2.3 'Child Bilingualism'.

Within the current framework, L1 will be the German language and referred to as the bilingual children's first language. L2 will be referred to as the English language and hence is the bilingual children's second language. There is sometimes a problematic nature associated with the terminology of L1 and L2. Sometimes original L2 can be become more dominant than the L1. This is relevant to the subjects in the current study, who have turned out to be simultaneous bilinguals. Normally the attrition process starts at primary school age, when the L2 input becomes really dominant. However, the children in the current

research are exposed to the L2 even earlier than primary age because they more often are attending English speaking preschools from about 3 years of age. Although they are fully immersed in the L1 at home, they are becoming more exposed to L2 English outside.

2.2.3 Bilingualism and the bilingual mind

There are different theories as to what happens in the mind when the bilingual processes one's languages simultaneously. One theory looks at the cognitive abilities of the bilingual child, and this section will address some of the negative and positive associations with this (Bialystok, 2001). Additionally, this section will attend to the gains the bilingual is said to make with 'attention and inhibition control', in line with cognitive functioning (Bialystok & Martin, 2004).

Some of the literature has focused on the bilingual experience and how languages are represented in the bilingual brain. Reviews by Bialystok (2001) and Hakuta (1986) reveal that the earlier literature in the 1920s pointed to the negative effects (e.g. Arsenian, 1937; Darcy, 1953, 1963; McNamara, 1966) for the bilingual child growing up with two languages, in that it affects, for example, measures of intelligence (Hakuta & Diaz, 1985). By the 1960s, Peal and Lambert's (1962) study found that bilinguals were linguistically deficient compared to their monolingual peers. However, more recently these earlier claims have been called into question.

By contrast, the more recent research has investigated the advantages of executive functioning in young children. Bialystok and Martin (2004) extensively reviewed the research on the perceived cognitive functioning advantages bilinguals have over their monolingual peers. She concluded that bilinguals have greater 'inhibitory control', and due to their 'extensive bilingual experience', they also have 'conscious control of thought and action' (Posner & Rothbart, 2000, p. 428). In other overviews Carlson (2005), Kopp (1982), Zelazo and Muller (2002) commented on children making gains in thought, emotions, and behaviours, particularly in the preschool period. These are important insights for this study as it assesses language skills in bilingual children of preschool age.

2.3 Child bilingualism

2.3.1 General comments on child bilingualism

In line with the current study, this section will introduce more specific definitions of child bilingualism. This will include definitions of simultaneous and sequential bilingualism with reference to children, and these will be briefly discussed within the context of the current research. Other relevance to child bilingualism primarily concerns that of the language development of young children, and more specifically, the influence of the child's environment and the parent language. These will also be addressed in this section, along with the definitions of the 'Critical Period Hypothesis' (CPH) and 'Unitary/Differentiated Hypothesis' (UH/DH). Theories proposing that bilingualism is disadvantageous for preschool children will be discussed in more detail under 2.7.

2.3.2 Definitions

Simultaneous bilingual acquisition

The term simultaneous bilingualism is used to refer to a situation where two languages are acquired concurrently before age 3 (Valdes & Figueroa, 1996). Simultaneous acquisition of two languages is relevant to the current study, as the bilingual children in this study are mainly exposed to two languages from birth. Moreover, the children are generally part of a 'bilingual family' unit, that is one parent, one language (Goodz, 1989).

The literature has revealed varying findings in the field of bilingualism addressing simultaneous acquisition of two languages in early childhood. Interestingly and relative to the current study, Doepke (1996) conducted a study among Australian children, who were growing up with German and English simultaneously. Her aim was to investigate whether the simultaneous acquisition of two languages in early childhood was equal to acquiring each of the two languages individually. Her task was to establish whether by separating the two languages, the children acquired the languages separately like monolingual children, or whether 'the grammatical systems of the two languages are acquired in relation to each other' (1996, p. 1). Her major theoretical question was based on the 'separate development hypothesis' around primary language acquisition. Refer also to the material on 'unitary/differentiated' hypotheses in Section 2.3.3. The results suggested that there was evidence for a common grammar in both languages. In fact, right from the onset, the children seemed to be able to distinguish between the two languages. Moreover, Doepke's

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study revealed cross-linguistic code-switching (Section 2.4.1) and negation structures as a regular occurrence in German. Even though these linguistic features did not occur in English they were not entirely absent, thus confirming a separate development hypothesis in its weaker form.

Sequential bilingual acquisition

Sequential bilingualism refers to children, who learn a first language at home L1 and a second language L2 at school (Brisk & Harrington, 1999; Cummins, 2000). These children are also able to successfully transfer their linguistic knowledge from one language to the other. Within the scope of the current study, there may be cases where children are exposed only to L1 German in the home and only come into contact with English when they attend preschool. These children may be considered sequential bilinguals, as they only come into contact with the L2 English when they attend early childhood, even though they live in an overwhelmingly monolingual English society (Census 2006). Nevertheless, simultaneous bilingual acquisition is the main focus of the current study as most of the bilingual children grew up in a bilingual family unit, i.e. one parent, one language (Goodz, 1989).

2.3.3 Language development of young children

Introduction

This section will address the language development of young children, the different factors influencing this development and shaping the language(s) a young child uses. The influence of the child's environment is one such factor as it may influence the way a bilingual child uses each of his/her respective languages. Also socioeconomic status can have implications for a child's language development, as, for example, the quality of the language input is instrumental in shaping and optimizing the language learning experience of the young child (Hart & Risley, 1995). Furthermore, the influence of parent language in the language learning acquisition process is fundamental in the language development of young children. This section will look at the language of parents defined in the literature as 'motherese', 'fatherese', etc. (Bynon, 1968; Brown, 1973; Goodz, 1989; Macwhinney, 2000) as aspects of parent language influencing language development. This section will discuss the 'Critical Period Hypothesis' (CPH) in relation to the current study, hypothesized as an age-related critical period or threshold for learning a language (Long, 1990). Finally, the researcher will define the Unitary Hypothesis/Differentiated Hypothesis (Genesee, 1989),

along with a discussion of how these two language system hypotheses relate to the current study.

Influence of child's environment

The influence of the child's environment may influence the way a bilingual child uses each of their respective languages. For example, when the input in one language is greater because of sociolinguistic factors, then such factors can be strong determiners for exposure to one language over the other (Unsworth, 2007). This may also factor into the current study, given the bilingual children attend predominantly English-speaking preschools and mostly live with one native English-speaking parent. Therefore, more than half of the input to which these children are exposed is likely to be English. In addition, according to Bloom (2002), language learning depends on the child's genetic make-up and social interactions. Here, Bloom refers indirectly to the notion that as babies we are born with this innate ability to learn any language. But it is our social conditioning, i.e. the way we are raised by our parents/caregivers that guides us as humans to communicate with one another.

Finally, the child's social and physical environments may characterise the variation and quantity of language input the child receives. For the current study, this further reveals how the environment; family, home, and preschool etc. interacts with language input, thus affecting the language environments for infants and young children.

Influence of socio-economic factors

To continue along this theme, let us consider socioeconomic factors that may influence the child's environment for language learning. Honig (2007) refers to the number of words a child hears in the first three years of life. Furthermore, Pearson, Fernandez and Oller (1992) advocate advanced receptive vocabularies in bilingual children of school-age, hence the immersion in the number of words they hear in the first years of life. The more immersed they are in the auditory/receptive aspects of language, the more enriched their vocabulary becomes. While the mother's language, e.g. 'motherese' is important in terms of the child's language development, Schachter (1979) reports that their socioeconomic status is a directive for the enrichment of language. This is of relevance to the current study as in most cases the mother is the primary caregiver and would interact with the child most during the day. Moreover, the majority of the mothers in the present study would appear to be from working-class and professional backgrounds. Even though they may spend less time with

their young children, it is the quality and content of paternal speech that impacts on their children's speech, language skills, and intellectual abilities right through to school (Hart & Risley, 1995). The literature points to the scientific notion for effective language learning, but it is the educators, families, and other conversational partners that enrich the quality of the spoken language. In the current study, it would seem that educators and parents alike are instrumental in shaping and optimizing the language learning experience of the young child.

Influence of parent language

In this section the researcher will look at 'motherese', 'infant-directed speech', and 'fatherese' in terms of the influence of parent language in the language learning acquisition process. The literature refers to 'maternal speech' as 'baby talk' or 'motherese' (Bynon, 1968). According to Brown (1973) and Macwhinney (2000), maternal speech is the most salient in the child's environment. Numerous studies contribute that 'infant-directed speech' and 'maternal speech' are important in an infant's language development. Soderstrom (2007) postulates that the female maternal language is pivotal in the infant's learning experience. The current study involves the mother as the main caregiver and German speaker in the bilingual family unit (Goodz, 1989). In most cases she has exposed the child to the German language from birth. Interestingly for this study too is that the maternal speech plays a central role for the child language learner.

The literature tends to pay less attention to the importance of other forms of language input, for example, the language of the father referred to in the literature as 'fatherese' (Soderstrom, 2007). While most of the research in 'infant-directed' speech has focused on the mother; mothers are not the only people infants and young children are exposed to in the home, but also fathers (Van den Weijer, 2002). Extensive research was conducted in the 70's and 80's comparing infant/child-directed speech of mothers with that of fathers (Berko Gleason & Weintraub, 1978). Berko Gleason and Weintraub suggested that there was more conversation between mother and child than father and child, perhaps due to mother at home and by default spends more time interacting with the child. This ties in with the current study, where it was mainly the mother who spoke German with the child participants.

Critical Period Hypothesis (CPH)

Chiswick & Miller (2008) describe the 'Critical Period (CP)' or 'Threshold' as a 'sharp decline in learning outcomes with age' (2008, p. 16), and maintain that language learning at an age below the critical period can achieve 'native-like' mastery of a language. Many studies in the literature (e.g. Long, 1990) have hypothesised an age-related critical period. Conversely, above the critical period, acquisition can be more difficult to achieve (Paradis, 2004). Long (1990) implies that older learners may be at an advantage in terms of grammar, but this is in essence short-lived.

There have been different points of view in the literature as to the cut off age for the critical period, i.e. early years, puberty etc. (e.g. Penfield & Roberts, 1959; Lenneberg, 1967; Krashen, 1973). The children in the current study are well before this age and, so, this study focuses on the fact that the children will all be able to pronounce English and German in a native-like manner.

Interestingly, Long (1990) re-visits the research on the 'CPH' and still fifteen years on maintains that only young children can attain native-like competency levels in their language learning capacity. The current study focuses on children who have had exposure to two languages, L1 German and L2 English, from birth to age 5. In light thereof, it may be fair to assume Long's suggestion that young children attain native-like competence levels, is relevant to the present study.

Unitary/Differentiated Hypothesis

Genesee (1989) discusses early bilingual development and presents the discussion within a unique theoretical framework of language system hypotheses, referring to the two language system hypotheses, namely the unitary and differentiated hypotheses. The view is, under the unitary hypothesis, that children are exposed to two language systems, fused together to represent one single linguistic system. Children are only able to differentiate between their two language systems after the age of 3. This accords with the early language development of young children, and while the children are not essentially delayed relative to their monolingual peers, they do undergo a process of 'protracted language development', i.e. their language development appears drawn out (Genesee 1989) in Petitto (2001, p. 455).

Genesee (1989) refutes the claim that children, who learn two languages simultaneously, have a unitary language system. Instead, he argues for a differentiated

system with children developing two language systems differently from the beginning, and hence using their languages in various settings. Genesee argues under this hypothesis that language mixing does not indicate confusion, but instead argues that the bilingual child's two languages are distinctly represented from a young age. Petitto's 'fundamental hypothesis' also advances the theory that 'bilingual infants represent their two languages differently from the first steps into the language acquisition process' (Petitto 2000, p. 474). The current study focuses whether the exposure to two languages affects bilingual children's performance in their L2 English. Therefore, Genesee's and Petitto's comments might be pertinent to the current study in determining whether the children in the current study are able to differentiate their languages from early on. Refer also to Doepke's (1996) paper in Section 2.3.2, which is connected to and essentially addressing and giving us an understanding of this later material on the "unitary" etc hypotheses. Further, this study may also contribute to findings as to whether children undergo actual language delay or confusion or they show indications similar to Genesee's protracted language development.

2.4   Language Contact

The current section looks at language contact phenomena, in particular, the phenomenon of code-switching and speech production problems, including possible language delay in the context of young preschool children. Furthermore, it will examine the different social situations that may impact on language behavior that effect language choice. Finally, this section will address language maintenance and attrition in terms of the young children's L1 German. The children in this study belong essentially to what Goodz (1989) describes as the bilingual family unit, i.e. one parent/ one language, that is the L1 is spoken with the main caregiver (mother) and the L2 with the other parent (father). In situations such as this, there is a real danger that children may gradually lose their L1, immersed as they are in a predominantly L2 English-speaking community.

2.4.1 Contact phenomena
Code-switching/mixing
Auer (1984, 1985) explains how children use code-switching to negotiate language for interaction, but also to adjust their language to other interlocutors' language preferences and proficiencies. Where in the past, code switching (CS) was sometimes seen as a sign of

language confusion, in recent years perspectives on the use of CS have changed. Currently, language mixing in simultaneous bilingual children is recognized increasingly for its positive associations, for example, developing linguistic competence, rather than causing language confusion. Nicoladis and Secco (2000) discredit the language confusion theory, arguing instead that in fact bilinguals can distinguish their languages from very early on. They argue instead that language mixing is used for a specific purpose. Bilingual's language mixing can also be attributed to the language input from the parents and parents' response patterns (e.g. Goodz, 1989; Lanza, 1997, 2001; Mishina, 1999; Juan-Garau & Perez-Vidal, 2001). Goodz (1989) found that parental language mixing impacted on children's choice of language because it was realized in situations to emphasize, attract attention, or to discipline. Parents accepted their child's language mixing and code-switched themselves between languages to encourage communication. Moreover, within a bilingual context for interaction, parental speech acts can also encourage code-mixing (Lanza, 2001).

In sum, there are conflicting opinions in the literature pertaining to bilingual children's use of language code-mixing. Some of the earlier theories supported the idea that mixing can be detrimental to language development and cause confusion. Later research supports the idea that code-mixing is used by bilinguals as a means to differentiate their languages from an early age. As discussed, language mixing is important for child-parent communication and can be established from when the child starts to speak. All this is of relevance to the current study because CS also occurs between languages that could be said to be linguistically close, like German and English.

Speech production and perceived speech production problems

Bilingualism and its effect on speech production is an area of interest to both linguists and speech language therapists (SLTs) with previous studies having argued that bilinguals may be more likely to engage in stuttering (Van Borsel, Maes, & Foulon, 2001). Surprisingly, it would seem that the occurrence of stuttering in bilinguals has not received much attention, given that 50% of the world's population is bilingual, and that only 1% of the world's population stutters (De Houwer, 1998; Bloodstein, 1995). The World Health Organisation (WHO) refers to stuttering as disorders with speech patterns in which the individual knows what they want to say but at the same time they are unable to say it due to other variables

such as involuntary repetition, prolongation, or cessation of sounds (World Health Organisation, 1977).

Seeman and Schwer (1959) suggested that early bilinguals were at a higher risk of stuttering, and there was a common belief that children were to avoid exposure to a second language until they had a good command of their first language. According to Eisenson (1986), it would appear that stuttering is more widespread in bilinguals than monolinguals, yet few studies have assessed actual stuttering in bilinguals. Furthermore, there were limitations with the earlier studies as clinicians' evaluations of stuttering were based on a single assessment only (Stern, 1948). Travis, Johnson and Shover (1937) erred on the side of caution with their own previous findings in relation to the assumption that the prevalence of stuttering between monolinguals and bilinguals is solely to do with bilingualism per se. In addition, the studies may have involved different types of bilingualism including; simultaneous bilingualism involving two languages from birth, and consecutive bilingualism, where a second language is introduced later after mastery of the first (e.g. Valdes & Figueroa, 1996; Cummins, 2000). Further, Travis and colleagues added that the occurrence of stuttering may differ for these different types of bilingualism. There are also references in the literature to stuttering in bilingual children and their utterances in code-mixing, and a tendency for dysfluency to occur within code-mixing. The current study may show traits of code-mixing and/or stuttering in terms of the L2 English language tests as bilinguals process their languages.

So far, we have discussed the potential speech production problems for bilinguals, in particular, stuttering. Conversely, by initiating the bilingual experience and learning a foreign language, stuttering might also be used therapeutically to treat and overcome speech production problems (Boehme, 1981). In support of this, Lebrun (1997) uses cortical control, referring to the cortex of the brain, relied upon when a speaker has only limited command of a foreign language. By contrast, only when a language is fully mastered is stuttering likely to occur. Perhaps neuroscientists will investigate brain studies to attest to this theory in future research.

Language delay
Initially, in the earlier part of the previous century, some theorists thought that bilingualism was perceived as causing language delay and articulation problems in bilingual children

(e.g. Darcy, 1953). However, more recent literature has advocated that, in fact, bilingualism improved perceptual memory, cognitive and meta-linguistic awareness, attention and inhibition control (Bialystok, 2001; Bialystok & Martin, 2004). It would appear that bilinguals often outperform their monolingual peers in special awareness tasks. This is important as it was the motivation for the research question in this study that whether exposure to two languages from birth may cause an initial 'lag' in the development of the L2 English language. The current study may or may not prove a language delay theory, based on the performance of the bilingual children in the L2 English language tests.

2.4.2 Language choice

The social dynamics of an individual is explored using Fishman's (1967) concept of domains analysis. He suggests that the effects of social situations in language behavior are pertinent to code-choice. Furthermore, interlocutor influence, such as Gal's (1979) view, proves to be the most important factor in choice. This is of interest in the context of part of the current study, in that, first of all, according to Gal, interlocutor influence proves to be the most important factor in choice. In the case of the family domain, this means that the bilingual children accommodate their language to the speakers of their family. Quay (2008) further supports Gal's suggestion, in that language choice is affected by the language input from the parents directed at the child, and also the language use with each other within the family unit. Quay holds that there needs to be an acceptance of both languages in the home, and as in this case the child is sensitive to both L1 German and L2 English.

Earlier in the chapter, the researcher referred to parental code-switching and how this impacted on children's language choice (Goodz, 1989). In the present study, parents may have tended to use more German to encourage the child's language choice, or may have engaged in code-switching between German and English.

2.5 Language and education

In this section the researcher will concentrate for the most part on language use and bilingual instruction in Early Childhood Education (ECE). To commence the researcher will give a brief overview of the role of ECE in a bilingual context. Then, advantages and disadvantages of child bilingualism will be briefly addressed and given further discussion in Section 2.7, which deals with the perceived advantages and disadvantages of child

bilingualism. This will be followed by a brief discussion of ECE and its place in the New Zealand preschool education system. Finally, the role of Speech Language Therapists (SLTs) in New Zealand, particularly within ECE and primary schools, will be discussed.

2.5.1 ECE and language use

In Early Childhood Education, the role of bilingual instruction and language skill testing is largely ignored in language research, both overseas and here in New Zealand. Recently in New Zealand there has been research conducted in Pasifika Early Childhood Education, with a focus on bilingual instruction. Foster-Cohen (2003) in her research adopts the approach toward community language based Early Childhood Centres (ECCs). In this sense the community language is their L1 and language of instruction and English is the L2. Although this highlights a move toward closing the gap in terms of bilingual instruction in ECCs, there is still a need to extend the focus of bilingual instruction across other ethnic and linguistic communities in New Zealand.

2.5.2 ECE and its place in the New Zealand system

Early Childhood Education Centres in New Zealand work within the framework of Te Whaariki, the New Zealand early childhood curriculum. A longitudinal Competent Children project shows the contribution of three or more years of early childhood education to NZ children's general educational competencies at age 10 (Gunn, Child, Madden, Purdue, Surtees, Thurlow, & Todd, 2004). Arguably, the central aspirations of early childhood education in Aotearoa New Zealand works on the premise of inclusive education, which includes notions of fairness, rights, and social justice (Gunn et al., 2004). According to Gunn and colleagues, inclusive early childhood settings are ones which value diversity. This is insightful for the current study as Early Childhood Education Centres in New Zealand appear to be moving towards working with children from different ethnic, cultural, and linguistic backgrounds.

2.5.3 SLT in the New Zealand context - ECE and primary

The New Zealand context

Within the Asian Pacific region there has been a shift towards educating training speech-language therapists (SLTs), also referred to as Speech Language Pathologists (SLPs), to

cater to the growing needs of a multi-cultural and multi-lingual world (Cheng, Battle, Murdoch, & Martin, 2001). This shift is based on clinical education using the United Kingdom (UK) model, which includes a survey of multi-cultural programs in Australia and New Zealand. Ideally, in order to serve client's needs, SLTs should develop cultural and social clinical skills to become competent communicators. Cheng et al., (2001) point out that it would not be practical for SLTs to learn all the languages and cultures of their client bases. However, if they live in a multi-cultural and multi-lingual society, they may at least become familiar with people from other cultural and linguistic diversities. This is relevant as the current study focuses on children born in New Zealand, half from bilingual backgrounds living in a multi-cultural setting.

The model is currently in place in the UK and other countries, and educates SLTs in more 'linguistic, psycholinguistic, social and educational aspects of language difficulties' to work with multicultural populations (2001, p. 124). Interestingly for this study, German is identified as one of the most relevant European languages in urban areas in Australia and New Zealand (Cheng et al., 2001). The survey for Australia and New Zealand recognized that SLTs are likely to work with multi-cultural clients. However, the current training facilities for SLTs in New Zealand do not provide them with adequate practical and theoretical awareness required to work in multicultural settings.

SLTs in the context of ECE

Maas (2000) suggested the case for integrating primary and secondary prevention for early detection of speech and language delays in the Netherlands. The Dutch situation is relevant in terms of the role of SLTs in testing preschool children. By this the researcher refers to the need for a comprehensive English language assessment, similar to standardised tests Speech Language Therapists use at preschool level in New Zealand, so apparent language problems do not go undetected before children enter primary school. Similarly, the trend here, as in other countries around the world, is to wait for patterns of difficulty in language to emerge before children are referred for clinical evaluation. Again, this reinforces the social relevance of the current study in that it will help parents and teachers to identify actual rather than perceived language delay in bilingual preschool children.

Winter (1999) highlights the current challenges to bilingual children and speech and language therapists. She proposes that working with bilingual and bicultural support is a

prerequisite at all stages. It is an additional skill to be learned for the monolingual therapist to work with bilingual assistance (Winter, 1999). Therefore, information from the parent regarding the child's cultural and linguistic background is vital to provide background information to the SLT involved in assisting a particular child.

The Primary school context

SLTs worldwide, particularly in the UK, have shifted towards a more integrated training model to cater to the clinical needs of multicultural clients (Cheng et al., 2001). In the Netherlands, early detection of speech and language delays in young children has been an important feature for over a decade (Maas, 2000). During this time, there have been considerable changes in the aims of both screening and methodologies used. Maas refers to some key outstanding issues that are also important for the current study which include: the best age to identify speech and language delays in children; the measures and assessments available; how to detect speech and language delays in multilingual children; and finally, which groups of people parents, teachers, speech and language therapists etc. are best able to detect speech and language problems in young bilingual children.

The Dutch seem to have found a solution to these problems, taking into account other confounding variables such as social and demographical knowledge and understanding of language delay. Currently, the system in the Netherlands involves a diagnosis at primary school, unless children are referred to speech and language therapists with perceived speech and language difficulties at an earlier stage (Maas, 2000). The Dutch argue for the case of integrating primary prevention; that is to provide support to parents, doctors and preschool educators for early detection of speech and language issues. The current study aims to endorse a preschool English language assessment before entry to primary, based on the CELF-P2 model. Furthermore, the researcher feels that Maas's comments regarding the current system in the Netherlands should be reflected in New Zealand, so that parents and educators alike are better informed in terms of detecting speech language problems.

Identification of Language Impairment (LI)

This section will look at language development and possible language impairment in bilingual children (Bedore & Pena, 2008). Bedore and Pena define LI as the 'inability to learn language as manifested by deficits in expressive and or receptive language skills relative to age-matched peers which have comparable language exposure' (2008, p. 1).

Bilingual children are sometimes diagnosed with Language Impairment (LI) because predominantly monolingual educators do not understand the language development processes of bilinguals, and 'do not have the appropriate developmental expectations' (Bedore & Pena, 2008, p. 1). Conversely, bilinguals with Language Impairment are at risk of misdiagnosis because educators are waiting for problems to present themselves while children learn the second language. To this end, Bedore and Pena propose a framework to help identify bilingual children at risk with LI, with the proposal of clinical testing models to diagnose LI. This is relevant to the current research as bilingual children are at times misrepresented by monolingual educators with perceived language problems, when in fact they are processing their two language systems at the same time. In light of this the researcher wants to propose that English language tests become a fundamental part of the 'Te Whaariki' Early Childhood Education program in NZ.

A number of studies published in literature in the United States have revealed under-identification and over-identification of LI and learning difficulties for sequential and simultaneous bilingual children. But the research suggests that sequential bilinguals demonstrate delays with their expressive and receptive language skills. However, in this domain there is little discussion on early simultaneous bilingual language acquisition, which is the type of bilingualism examined in the current study.

Demographic information may also play its role in recognising LI in bilingual children, for example, 'exposure to the home language is influenced by the extent of exposure to the school language' (Bedore & Pena, 2008, p. 2). Children may be more exposed to one language over the other, and so one language may be more dominant or preferred. Thus, children who are assessed in both their languages may score along the at risk scale of LI in the weaker language (WL). Similarly, this could happen with the stronger language during the time children are transitioning to the second language. In the current study the researcher proposes the use of monolingual CELF tests because she is assessing the L2 English in terms of the research questions driving this study. It is not the researcher's intention to determine from the test whether the L2 is stronger or weaker.

In sum, Bedore and Pena concentrate to a greater extent on sequential bilingual language acquisition in their writing, i.e. learn the first language at home and second at school. By contrast, the current study serves to examine simultaneous bilinguals and so it will be interesting to see whether findings from the current study correspond with those of

Bedore and Pena. The clinical evaluation tests used in Bedore and Pena's version are similar models to those used for the current study. The limitations and flaws of these clinical tests, in relation to adapting and translating models for bilinguals, will be given further attention and discussion in Section 2.8 of this chapter.

Socioeconomic status of bilingual children

In the UK speech language therapists work a lot with bilingual children in lower socioeconomic areas (Winter, 1999; Stow & Dodd, 2001). Clinicians fear that bilingual children from lower income areas with specific language impairment (LI) are not being identified and, therefore, not accessing speech and language therapy services (Winter, 1999; Stow et al., 2001). The situation for SLTs is not just confined to the UK; indeed, it is reflected around the world. This is relevant to the current study because it includes a sociolinguistic questionnaire, requesting information about parents' educational background. Although this does not depict their exact socioeconomic status, the researcher may be able to identify any variables, which may impact on results. The study is too small to result in statistically relevant findings, yet it may still be interesting to see what patterns can be identified in terms of children's linguistic performance and their parents' sociolinguistic backgrounds.

2.6   Previous studies on SLT and Bilingualism methods used
Cross-linguistic studies of narrative development/acquisition

Berman and Slobin (1994) conducted a cross-linguistic study of story-telling development in 3- and 5-year old children. The study revealed that 3-year olds could describe pictures, but were not structured in their story-telling. Yet, by contrast, the 5-year olds were more adept with their expressive language and produced information on characters and events in telling the story, and also used temporal markers in their speech.

The standardised CELF-P2 test method used in the current study features a supplementary story-telling subtest, i.e. recalling in context. The subtest concentrates predominantly on expressive language skill, and is also consistent with past studies on comprehension and recall. Since this is no longer a compulsory subtest, it does not form part of the expressive language testing module in the present study. Nonetheless, the advanced expressive abilities of 5-year olds over the 3-year olds is relevant to the present

study as it validates the decision to conduct a final test at a later age around 5 prior to entry into primary school.

Fiesta and Pena (2004) investigated the effect of language on Spanish-English bilingual children's production of narrative discourse, which was elicited in two ways using a book task and picture task. Latino American children selected for this study (n=12), ranging in age from 4:0 to 6:11 were typically developing children according to parental and school reports, and fluent speakers of English as a second language. None were receiving speech and language therapy services at time of participation in the study. The results revealed that although children were equally productive across both languages, they produced more Spanish-influenced utterances in the book task. The picture task yielded mixed results, which were not compared quantitatively. In terms of clinical implications, the picture task was not as successful as the book task because it did not challenge children when assessing their L2 English. In this way, SLTs need to exercise caution when considering the assessment language and the use of prompts and visual stimuli to elicit story-telling in bilingual children. Findings from studies similar to above may explain why subtests such as the book task are used over picture task in standardised CELF tests to evaluate English language. This is relevant here as the standard CELF-P2 test has a similar supplementary subtest in the expressive language category to the book task. This is also used with bilingual children where children are required to recall sentences in context. Previous studies have attested to the strength of the book task in assessing the English language, which is pertinent in the present situation and which involves testing bilingual children using CELF Preschool 2 (CELF-P2).

Cross-linguistic studies of receptive/expressive deficit behaviour (LI)

As mentioned previously Bedore and Pena (2008, p. 1) refer to Language Impairment (LI) as the 'inability to learn a language as a result of deficit in receptive and/or expressive language skills compared to age-matched peers with similar language exposure'. Bedore and Pena propose two hypotheses for children with LI; firstly, children with LI present delays in language development and are thus unable to formulate grammar. Secondly, children with language learning difficulties are unable to process auditory and visual information as effectively as their peers with normal language. The above has discussed the hypotheses for children with only one language. Paradis, Crago, Genesee and Rice (2003) suggest these models have different ramifications for bilingual children with LI. Their

assertion here is that bilinguals have equal difficulties in each of their languages relative to monolinguals. Bedore and Pena comment that bilinguals with LI might be expected to present similar language deficits as monolinguals, yet language input of bilinguals is less as it spreads across two languages.

This is of relevance to the current study as the initial hypothesis presupposes an expected deficit/delay in receptive and/or expressive language skills. Furthermore, it is the researcher's aim to prove or disprove the initial hypothesis, which underpins the present research and is the motivation behind the research questions.

2.7   Perceived advantages and disadvantages of child bilingualism

This section on perceived advantages and disadvantages of child bilingualism will review different theories as to the various occurrences in the mind when the bilingual child processes his/her languages simultaneously. One theory looks at the cognitive abilities of the bilingual child, and this paper will address some of the positive associations with this (Bialystok, 2001). This section will also attend to the gains the bilingual is said to make with attention and inhibition control, in line with cognitive functioning (e.g. Bialystok, 1999, 2001; Bialystok & Martin, 2004). It will also refer to the 'two language systems housed in one mind' hence 'duet in two voices' (Foster, 1996 p. 100), and how 'language serves as an organizer of experience and representation of oneself for the bilingual person (1996, p. 115), which according to Foster constitutes to the early infant experience.

The paper will then go onto focus on some of the contentious issues associated with bilingualism and how earlier studies focused on personality and social-deficit and development disorders that were supposedly prevalent in bilinguals (Baker, 2000). It will also concentrate on the identification of language impairment (LI), often encountered when assessing bilingual children, be it an accurate diagnosis or a misdiagnosis. The identification of LI is customarily carried out in conjunction with parents, educators and Speech Language Therapists (SLTs) (Bedore & Pena, 2008). Finally, the section will address language delay and speech production issues, usually more negatively associated with bilingualism, but the researcher will also discuss this in a positive light.

Executive Cognitive Functioning

More recent research has investigated the advantages of 'executive functioning' in young children. Bialystok (1999) extensively reviewed the research on the perceived cognitive functioning advantages bilinguals have over their monolingual peers. Bialystok concluded that bilinguals have greater 'inhibitory control', and due to their 'extensive bilingual experience', they have conscious control of thought and action' (Posner & Rothbart, 2000, p. 428). Carlson (2005), Kopp (1982), Zelazo & Muller (2002) also commented on children making gains in thought, emotions, and behaviours, particularly in the preschool period. These are important insights of relevance in this study as it assesses language skills in bilingual and monolingual children of preschool age.

Attention and Inhibition Control

Research to-date has primarily concerned itself with the developmental differences between monolinguals and bilinguals. However, the idea that bilinguals use two languages as part of their 'linguistic repertoire' provides a means of 'investigating aspects of cognitive development and cognitive organisation itself' (Bialystok & Martin, 2004, p. 325). Bialystok and Martin replicated a task from Bialystok's (1999) previous study, known as the dimensional change card sort task, which examined the ability of bilingual and monolingual children to solve a cognitive problem. The intention of the task was to understand how bilingualism shapes bilinguals to problem-solve, but to also identify the use of cognitive processes in the development of both groups of children. Bialystok distinguished two processes; analysis of representation, e.g. recording detailed information, and control of attention, e.g. problem-solving. The former study indicated the bilingual advantage for pre-school children in inhibition of attention, though it was deemed bilinguals gained from superior representational abilities. The replicated version, however, confirmed the results of the original study and asserted greater attention and inhibition control in bilingual children. This is relevant to the current study as bilinguals may show these cognitive abilities in the results of the L2 English language tests.

Bilingual self in two voices

Foster (1996) presents the paper of the bilingual self in two voices, with the idea that bilingual speakers have 'different representations of self that are organized around their respective languages' (1996, p. 99). She adopts the expression of 'talking in several

tongues', and how the experiences of the bilingual are represented in their respective languages, and so they draw upon their different languages for different purposes.

She refers to two language-bounded systems, which are housed in the single mind, and hence refers to 'duet of voices' (1996, p. 100). Her proposal for 'language related self-representation' is drawn about by the idea that 'language serves as an organizer of experience for the bilingual person' (1996, p. 115). She also emphasises the important role of language in the early infant experience into early childhood. In terms of 'language as an organizer', Paradis (1977) supported by other neurolinguistic researchers, refers to the bilingual's languages being 'cortically represented in areas of the brain' (Foster 1996, p. 115).

The current study would also support the idea of two languages enhancing the bilingual infant experience and development. It motivates a discussion to either disprove or prove the initial research question that early language exposure may have a detrimental impact on the linguistic development of young bilinguals.

Earlier studies, by contrast, relate bilingualism to split personality issues and disorders. Until the 1960s negative views have been expressed associated with the personality and social development of bilinguals. In Baker (2000, p. 17) it was pointed out that 'bilingualism was long associated with, and even said to cause schizophrenia, mental confusion, identity and emotional problems, social attachment deficits, loyalty conflicts, and poor self-esteem and self-concept'. Bilingualism is also perceived as a problem by some individuals, and as Baker describes 'can be associated with bilinguals who stutter'. Similarly, the other concern is the mixing of two languages, e.g. code-switching, which is described in Baker as 'cognitively and socially undesirable'. Here, 'bilingualism would appear more casually linked to potential problems' (Baker 2000, p. 17). However, other researchers such as Grosjean (1995) have challenged this and asked the question whether there are bilinguals, who show these traits, e.g. personality, identity or social problems. In his view there will always be individuals with such issues, in bilinguals or monolinguals, the question is 'whether bilingualism causes them?'

Language delay/speech production problems

As discussed earlier under Section 2.3, young bilinguals, while they are not essentially delayed relative to their monolingual peers, they may undergo a process of protracted

language development (Genesee, 1989). Refer to section 2.3.3 in relation to 'protracted language development in bilinguals. Further under 2.3.3, Genesee (1989) referred to the 'Differentiated Hypothesis', whereby bilinguals develop two language systems from the beginning and use their two languages in various settings. Refer to 2.3.3 in terms of languages represented differently from a young age and Genesee's comments on the separate development hypothesis. Recent studies on young bilinguals have moved us closer to a resolution of the 'bilingual paradox' (Petitto 2001, p. 489), i.e. the idea of bilingualism having both a positive and a negative impact, and the influence of very early bilingual exposure on infants and young children.

2.8   Gaps, flaws and limitations in SLT and BL methods used in research

Limitations with methods used in studies concerning Speech Language Therapy (SLT) and Bilingualism (BL) will be elaborated further in the next section. On closer examination, it would appear that there are several gaps in the previous research of SLT research and bilingualism methods. Firstly, there is lack of normative data and appropriate tests to distinguish between normal language differences and genuine language impairment (LI). In particular, there is a definite need to identify variation in language as a result of exposure to more than one language with discrepancies in language due to LI (Bedore & Pena, 2008). This is relevant to the present study as the bilingual children are exposed to more than one language. Further, the impetus for the current research was to find out whether exposure to more than one language has detrimental impact on their receptive and/or expressive language skills.

A particular issue with assessment of the language ability in bilingual children is lack of standardised testing tools to test children with two languages (Bedore & Pena, 2008). While translation models have been proposed (e.g. Taylor & Payne, 1983; Stow & Dodd, 2003), there are two fundamental problems with these in the assessment of LI. Firstly, translation of language tests assumes language development in other languages based on similar development in the first language. Secondly, LI markers in the translation model are based on the source language (L1) and may overlook important markers in the target language (L2). Furthermore, lack of normative data on bilingual acquisition further emphasises the limitations with standardised tests. The lack of reliability and validity of the Spanish Preschool Language Scale-3 for use with bilingual children (Restrepo & Silverman, 2001) addresses some of these limitations and issues of translating a preschool language

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assessment similar to CELF-P2 used in the current study. The outcome of such translated tests is the risk of over- or under-identification of LI. According to Spaulding, Plante and Farinella (2006) the accuracy of language ability assessment tools for bilinguals is critical in the diagnosis of LI, and currently most adapted/translated tests of language skills in English do not meet the criteria for accurate diagnosis. The tests mentioned above are not applicable as the CELF-P2 test used in this study is used to test English language skills, and has been used with and continues to be used with bilingual children.

In sum, language tests adapted or translated from English into other languages are based on monolingual children (Bedore & Pena, 2008). Subsequently, bilingual children's abilities are not appropriately compared to their monolingual peers. Further, Restrepo and Silverman (2001) point out that determining bilingual performance is important in the language assessment of bilinguals as they generally present different profiles of development compared with monolingual children. The construct of the English language model into Spanish is flawed with problems and can lead to misdiagnosis of disorders, which vary between bilingual-monolingual children (e.g. Restrepo, 1998; Restrepo & Kruth, 2000; Restrepo & Gutierrez-Clellen, 2001). Finally, it is noteworthy that the current study does not investigate both languages. Therefore, the CELF Preschool-2 (Wiig, Secord, & Semel, 2004) will assess English only, and has been used with bilingual children in the past to evaluate their English language skills. On another note, even though tests are not conducted in the German language here, cultural differences among bilinguals may also have a diverse effect in the outcome of results. In terms of research methodology, previous SLT research studies were predominantly quantitative in nature, that is, they were based on psychometric standardised test methods. However, more recently it has been recommended that tests combined with qualitative components are used particularly in young children. Please refer to Chapter Three for an extensive overview. The researcher, therefore, will incorporate standardised test measures with supporting qualitative data to lend reliability and validity to the data. Thus, reliability and validity of this research approach will be given more attention in Chapter Three.

2.9   Summary of chapter

This chapter has provided a review of the literature concerned with four main areas of importance in the current study. Firstly, the literature that addresses general definition of bilingualism was discussed. The role bilingualism plays in the mind, which has received a

great deal of focus and attention over the decades, was also discussed. Secondly, definitions under child bilingualism were critically examined, followed by an overview of considerations relating to the language development of young children, including the influences of the child's environment and parent language. Thirdly, the chapter presented a section on language contact, with particular focus on the phenomenon of code-switching and speech production. Language choice was also discussed in this section, but is not very relevant since at this stage the researcher is not evaluating L1 German. Fourthly, language bilingualism in an educational context was reviewed, addressing Early Childhood Education (ECE) and language use, along with ECE and its place in the New Zealand system. Further Speech Language Therapists (SLTs) in a NZ context in both ECE and primary schools were discussed because of their role in conducting SLT testing in ECE and primary to young children.

Empirical studies concerning Speech Language Therapy (SLT) and Bilingualism (BL) methods used were also presented within the context of the current study. Some of the findings from empirical studies revealed that expressive language skills are improved on the lead up to primary school, and hence justification for final test in this study. Theories supporting perceived advantages and disadvantages of bilingualism for preschool children were reviewed. Issues, limitations and gaps in the literature research then followed, with particular attention to studies involving SLT testing of bilingual children. These have also been a consideration in determining the research methodology and design, which also incorporated a discussion of the pilot study in Chapter Three. Finally, theories supporting perceived advantages and disadvantages of bilingualism for preschool children were reviewed. The next chapter will present an outline of the methodological approach.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1   Introduction

The preceding chapter provided an extensive review of the literature. The main purpose of this study, which involved a pilot study and main study, was to ascertain whether bilingual German-English children catch up to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of expressive and receptive skills in English. Some of the existing assumptions (please refer Chapter Two) are that exposure to two languages from birth may have a detrimental impact on early language development compared to that of monolingual English-speaking children. This chapter, therefore, discusses the research design and methodological approach most appropriate to examine the question outlined above. A quantitative and qualitative design is set out in order to seek answers to the research questions in this study. This is followed with an overview and rationale for the research design, commencing with an outline of the key methods used. Each method used will be justified, given the importance of design and validity in the choice of research instruments. The subsequent section illustrates the data collection process and analysis methods used and their implementation. In addition, ethical issues concerning the research process are clarified. The chapter concludes with a brief summary of the preceding sections.

3.2   Methodological approach

The literature refers to two different orientations of research, qualitative and quantitative. One difference is the nature of data; the other difference is that qualitative and quantitative researchers hold 'different assumptions about social life and hold different objectives' (Neuman 2003, p. 139). Neuman (2003) has advocated the importance of appreciating different strengths of each style and to see how they can be complementary to 'understand the distinct orientations of researchers' (2003, p. 139). This study will make use of standardised speech language therapy tests. Due to the unanticipated quantitative nature of standardised speech-language therapist tests (Becker, 1996) and hence limitations associated with this research method alone, a multiple qualitative and quantitative approach to data collection was used to support the research design process.

3.2.1   Incorporating quantitative and qualitative approaches

There is a distinct tradition in the literature that advocates the use of multiple research methods. This form of research is described as the multi-method or multi-trait approach, (Campbell & Fiske, 1959) and tends to be associated with the incorporation of quantitative and qualitative research designs. This form of research strategy has also been called triangulation (Webb, Campbell, Schwartz & Sechrest, 1966). A quantitative approach tends to limit what can be learned about meanings participants give to events. Moreover, in quantitative analysis 'researchers have less room for the unanticipated' (Becker 1996, p. 61). Conversely, qualitative researchers are unable to as readily as quantitative researchers 'insulate themselves from data' (Becker 1996, p. 56). Finally, there is more of a fine line between finding out what is there and describing what has been found in quantitative than in qualitative research (Becker, 1996). As Denzin (1978) suggested using a combination of methodologies to collect different kinds of data bearing on the same phenomenon, can improve accuracy of judgments made by researchers. The CELF Preschool-2 (CELF-P2) tests used in this study are predominantly quantitative in nature, and central to assessing the receptive and expressive language scores of both groups of children. An observation checklist is used in conjunction with the CELF-P2 test, to allow for explanation of any unanticipated results, and give meaning to response items. That is, behaviours observed during testing, for example; physical activity level, attention to task, response latency, evidence of fatigue/boredom/frustration, and level of interaction are factors to be considered as the child responds to each test item, and thus may complement and describe why happenings have occurred in the test results. One could posit that the use of such a checklist adds a further qualitative perspective to the analysis. Therefore, the integration of both quantitative and qualitative approaches in this study would appear to offer the addition of confidence, strength, and stability in the resulting data.

The researcher should be extra diligent about combining the two methods, as not to use for the purpose of dressing up data, but to use its effectiveness in a complementary fashion 'to examine the same dimension of a research problem' (Denzin 1978, p. 302). For example, the English language ability of the children in the current study may be evaluated by conducting standardised language tests and observing his or her behaviour. The focus always remains that of the children's language ability but the mode of data collection varies.

A multi-method approach, if it reaches the same conclusions, provides a more certain portrayal of the children's language ability (Denzin 1978, p. 302).

The incorporation of quantitative and qualitative research methods is also known as a process called triangulation. Applied to research, it means 'it is better to look at something from several angles than to look at it in only one way' (Neuman 2003, p. 138). Denzin (1978, p. 291) has broadly defined triangulation as 'the combination of methodologies in the study of the same phenomenon', an area that will be discussed further in the next section.

Triangulation

Triangulation in research involves the application of multiple data methods to examine the same dimension of a research problem or phenomenon (Patton, 1990). Denzin (1978, p. 302) has also referred to the 'between' and 'within' methods of triangulation. The 'within-method' essentially involves cross-checking for internal consistency or reliability, while the 'between method' examines the degree of external validity. Neuman (2003, p. 137) has suggested that by 'observing data from different angles or viewpoints, researchers can get a fix on its true location'. In his framework, Neuman (2003) has described several types of triangulation, namely:

- Triangulation of measures, where researchers measure something in more than one way to see all aspects of it;

- Triangulation of observers, involving multiple observers or researcher to add alternative perspectives;

- Triangulation of theory, when researchers use multiple theoretical perspectives in research;

- Triangulation of method, using qualitative and quantitative styles of research and data.

In the current study triangulation can be achieved by using the 'triangulation of method' approach (Neuman, 2003), which means mixing the qualitative and quantitative styles of research methods. Hence, by combining the quantitative methods of standardised language

assessment tests with the qualitative methods of behavioural observation checklists and questionnaires might be considered an effective and constructive form of triangulation here. Further, triangulation in time, as suggested by (Freeman, 1998), which involves collecting the same type of data over a given period of time, may be used in the 10-12 month period in this study.

The table below outlines the combination of methods and approaches, and is structured according to the following factors. The first factor indicates the importance of each approach method within the current study, that is qualitative approach of questionnaires and observations etc. is used to facilitate quantitative approach of Speech Language Therapist (SLT) tests in this study, and numbered accordingly from 1 to 4; 1 reflecting quantitative approach and 2 reflecting quantitative and qualitative approach and 3 and 4 the qualitative. The second involves ordering as to when the different collection methods; standardised CELF-P2 tests, questionnaires, behaviour observations, and descriptive pragmatics profile (DPP), were employed at the different time intervals, initial test stage and final test, over a 10-12 month period. For example, questionnaires for the bilingual group were employed at the pre-initial test stage, DPP was employed at the pre-initial and pre-final test stage, and CELF-P2 tests and behaviour observation checklists were carried out at both the initial and final test stages. The checklist was filled in after conducting the test(s) and not during the testing procedure.

Table 3.1 Triangulation of method and time

	PRE INITIAL/FINALTEST		DURING TESTING	
Time	Questionnaires (Bilinguals) [4]	Descriptive Pragmatics [2]	CELF-P2 Test [1]	Behavioural Observations [3]
Initial Test	X	X	X	X
Final Test		X	X	X

In sum, the multiple method strategy was the most appropriate for the current study as it:

- Allowed for accuracy by collecting different kinds of data bearing on the same phenomenon, and with triangulation of time to investigate over 10-12 month time period.

- Enabled the researcher to be more confident of results, and to give explanations to outcomes.

The next section will present an explanation of the rationale behind the research methodology selected.

3.2.2   Rationale for choice of research methodology

The aim of this study was to be two-fold. Firstly, to explore early theories positing the negative effects of early bilingualism are understandable, in other words studies proposing that some children may have problems processing two languages in the early stages. Secondly, to investigate whether bilingual children do catch up with their monolingual peers in the next 10-12 months learning to simultaneously process two languages. In fact, the study aimed to testify that bilingual children do this to the extent that, when given the standard speech language test at age 5, there is no significant difference in performance between the German-English bilingual children and the monolingual English-speaking children.

3.3   Participants

The study was carried out among German-English bilingual children born in New Zealand or other English speaking country to German parent(s), and English monolingual children. The children were aged between 3;10 and 4;4 years at the time of the initial test, and between 4;9 and 5;3 years for the final test. This means that informants from both groups were selected from the same age group 3;10 to 4;4 years for the initial pre-test, with similar educational backgrounds, social backgrounds, equal balance of gender (as much as possible), e.g. 8 females 2 males (8:2) in bilingual group and 9 females 3 males (9:3) for the other group. It was important that the researcher, a speaker of English but fluent in the German language, had a good understanding of how the German language interplayed with English. Further, the researcher was able to carry out the CELF-P2 initial test with appropriate guidance and self-practice. This would make for a potentially stronger research design because the same person would carry out the test, and the researcher would be closer to her material. The assessment groups were as balanced as possible in order to try and avoid the introduction of too many confounding variables.

3.3.1 Bilingual children

General background

Assessment Group One consisted of German-English bilingual children who were born in New Zealand or other English speaking country to German parent(s). These children found themselves in a predominantly German speaking environment in the home, but a predominantly English speaking environment in the community. Participants in this group would have comparable exposure to English compared to the children in Assessment Group Two. This assessment group was initially sampled through German Kindergarten contacts.

Table 3.2 Bilingual participants' background information

Child	Age	L1 of Mother	L1 of Father	L spoken at home
BF1	4:0	German	English	German/English
BM2	4:0	German	English	German/English
BF3	4:1	English	German	English/German
BF4	4:2	German	English	German/English
BM5	3:10	German	English	German/English
BF6	4:0	German	English	German/English
BF7	3:11	German	English	German/English
BF8	4:3	English	German	English/German
BF10	4:4	German	English	German/English
BF13	4:3	German	English	German/English

Table 3.2 indicates the bilingual children's ages at time of the initial test.

There were only two children initially, BF9 and BM12[1], in the test who had two L1 German-speaking parents, where the other bilingual children had either an L1 German-speaking parent or one L1 English-speaking parent. These children are not featured in Table 3.2. The researcher was unable to conduct the final test for participant BF9. It was determined that participant BM12 was too young to fit the age criteria for this study. However, results for BF9 in the initial test were monitored to see if findings were markedly different to those for the other bilingual children. BF9's results will be referred to in Chapter Seven with a discussion of findings and explanation as to why the researcher was unable to continue using this particular participant in the final test.

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[1]It is worth reiterating that the researcher had initially decided to sample children with two L1 German-speaking parents as it was proving very difficult to obtain German children with the appropriate sample fit. Furthermore, these children had equal exposure to L2 English as they attended an English preschool.

3.3.2 Monolingual children

General background

Assessment Group Two consisted of English monolingual children who were born in New Zealand or other English-speaking country. These children found themselves in a predominantly English-speaking environment in and outside the home and the community at large. This assessment group was initially sampled through English Kindergarten contacts, and friends and contacts of the German families.

Both assessment groups consisted of slightly more females to males within each group. The test results for male and female informants were compared against each other within each group. The rationale for this was that it was interesting to see whether findings vary between male and female participants, in terms of English language development or delay issues prevalent in a particular gender group. According to the literature, studies have shown that girls tend to talk earlier than boys:

> They reach each of the [language] milestones earlier than boys – but only by a little
> bit ... Biological theorists argue that because girls mature earlier, the part of their
> brains devoted to language becomes specialised sooner (Golinkoff & Hirsch-
> Opasek 1999, p. 139).

The results were monitored, even though the group was small, to see if any specific patterns became apparent across genders.

Table 3.3 Monolingual participants' background information

Child	Age	L1 of Mother	L1 of Father	L spoken at home
MF1	4:2	English	English	English
MF2	4:3	English	English	English
MM4	4:3	English	English	English
MF5	4:0	English	English	English
MF6	4:1	English	English	English
MF7	4:3	English	English	English
MM8	4:3	English	English	English
MM9	4:0	English	English	English
MF10	4:3	English	English	English
MM12	4:3	English	English	English
MF13	4:0	English	English	English
MF14	4:3	English	English	English

Table 3.3 indicates the monolingual children's ages at time of the initial test.

3.4 Instruments – rationale for choice of instruments

3.4.1 Clinical Evaluation of Language Fundamentals (CELF) tests

Language skills were assessed using the revised (2004) version of the Clinical Evaluation of Language Fundamentals Preschool, the CELF Preschool-2 (CELF-P2) (Wiig, Secord & Semel, 2004). This is an individually administered instrument used by Speech language Therapists (SLTs) in children aged between 3 years and 0 months and 6 years 11 months, where both receptive and expressive language are evaluated, assessed and scores calculated from 3 subtests. In addition, Carstairs and Lloyd for Harcourt Assessment Australia and New Zealand, have produced an Australian and NZ language adapted version of the CELF Preschool-2, sourced from (Wiig et al., 2004) which adjusts for cultural differences between the US and Australia in both language and everyday objects and traditions.

CELF-P2 features a Core Language score based on 3 subtests resulting in a quick, reliable decision about a child's overall language ability. In CELF Preschool a total of 6 subtests use to be administered to determine language status. Now, in CELF Preschool-2, 1 or 2 additional subtests need to be administered to derive Receptive Language, Expressive Language, Language Content, or Language Structure Index scores (See Appendix E). However, note for the purpose of this project all 6 Receptive-Expressive Language subtests were administered to the child. See Table 3.4 for subtests.

Table 3.4 Subtests under Receptive and Expressive

SUBTEST	OBJECTIVE
Expressive Language	
Word Structure (WS)	To evaluate the child's ability to (a) apply word structure rules (morphology) to mark inflections, derivations, and comparisons; and (b) select and use appropriate pronouns to refer to people, objects and possessive relationships.
Expressive Vocabulary (EV)	To evaluate the child's ability to label illustrations of people, objects and actions.
Recalling Sentences (RS)	To evaluate/ measure the child's ability to recall and reproduce sentence structures without a story context. *(Revised format from **CELF Preschool**– Recalling Sentences in Context. RSC now*

	*supplementary in **CELF Preschool-2**).* *Note: Assessing the ability to imitate sentences has long been used to discriminate between normal and disordered language development.**
<u>Receptive Language</u>	
Sentence Structure (SS)	To evaluate the child's ability to interpret spoken sentences of increasing length and complexity.
Concepts & Following Directions (C&FD)	To evaluate the child's ability to (a) interpret spoken directions of increasing length and complexity that contain concepts that require logical operations; (b) remember the names, characteristics, and order of mention of pictures, and (c) identify from among several choices the targeted objects.
Basic Concepts (BC) (*Initial test only*)	To evaluate the child's knowledge of concepts of dimension/size,direction/location/position, number/quantity, and equality.
Word Classes (WC) (Ages 5-6) (*Final test only*)	To evaluate the child's ability to perceive relationships between words that are related by semantic class features and to express those relationships.

Demonstration, Familiarisation, Trial Items

Before administering any subtest items the respective Demonstration, Familiarisation and Trial Items were carried out to teach the child the nature of the task, and to enable the child to practise the task. For any subtest, if the child was unable to give any response or respond to any familiarisation or trial item, the researcher was able to encourage, repeat, and prompt any response items necessary to teach the subtest task. If the child was unable to respond to the task, the researcher could not administer the subtest.

Once the familiarisation and trial items were complete, the researcher proceeded to Item 1 of the subtest. All subtests were started from Item 1, regardless of the child's age or ability.

Repetition and Discontinue Rules

Subtests that were designed to evaluate the ability to process, interpret, and recall or imitate auditory information did not permit repetition (Wiig et al., 2004). For example, repeated items were not allowed in the *Concepts & Following Directions* and the *Recalling Sentences* subtests. In all the other subtests, the researcher was able to repeat items once at the child's request, or when it appeared the child was not attentive during the presentation of the item. In all cases, the researcher was not permitted to repeat an item if the child's response was incorrect.

The Discontinue Rules indicated criteria for determining when to cease the subtest testing after so many consecutive scores of 0, and were used to maintain rapport and minimise testing time if a subtest was proving too difficult. Below in Table 3.5 is an indication of the Repetition and Discontinue Rules against each of the individual subtests.

Table 3.5 Summary of Repetitions and Discontinue Rules for each Subtest

Subtest	Repetitions	Discontinue Rule
Sentence Structure (SS)	Allowed	After **5** consecutive scores = 0
Word Structure (WS)	Allowed	After **8** consecutive scores = 0
Expressive Vocabulary (EV)	Allowed	After **7** consecutive scores = 0
Concepts & Following Directions (C&FD)	None allowed	After **6** consecutive scores = 0
Recalling Sentences (RS)	None allowed	After **3** consecutive scores = 0
Basic Concepts (BC)	Allowed	After **5** consecutive scores = 0 on the receptive item part

Administering the CELF Preschool-2 (CELF-P2)

The CELF-P2 test was the main form of data collection in this study. For the purpose of administering the test, the researcher was equipped with the stimulus manual and a data collection record form for each individual child with each child being given a 3-digit identification code. It was important that the stimulus book be visible to the researcher and to the child and that during testing the child did not see the data collection record form or the researcher's side of the stimulus manual. The stimulus book enabled the researcher to stand it up and flip the pages away from her. The visual stimuli faced the child while the directions faced the researcher. Table 3.6 below indicates the administration order of all the subtests carried out during the CELF-P2 testing procedure, with a summary of the tasks performed.

Table 3.6 Summary of administration order of subtests and tasks performed

Subtest	Task Performed
Sentence Structure (SS)	The child pointed to the picture in the Stimulus Book in response to the oral directions.
Word Structure (WS)	The child completed a sentence (cloze procedure) with the targeted structure(s).
Expressive Vocabulary (EV)	The child identified an object, person, or activity portrayed in the Stimulus Book.
Concepts & Following Directions (C&FD)	The child pointed to pictures in the Stimulus Book in response to oral directions.
Recalling Sentences (RS)	The child imitated sentences presented by the researcher.
Basic Concepts (BC) *(Initial test stage)*	The child pointed to a picture that illustrated the targeted concept.
Word Classes (WC) (Ages 5-6) *(Final test)*	The child chose two words that were related and described the relationship.

Recording Responses

The researcher made an entry on the Record Form for every administered item to distinguish them from those items that had not been administered. This entry was a score, a checkmark, or the child's response. Responses to verbal items were recorded verbatim to allow for later evaluation and scoring, and item analysis.

For the subtests: *Sentence Structure (SS), Word Structure (WS), Basic Concepts (BC), and Word Classes (WC) – Receptive Score and Expressive Score*, each score entry was circled with **1** for a correct response and **0** for an incorrect response. For the *Word Structure* subtest, if the child gave a response that was different from the expected response, but demonstrated the target and was meaningful to the context of the item, the researcher wrote it in the space provided on the form and scored the response as correct. For the *Word Classes* subtest the following applied:

Receptive: The researcher circled the words that the child gave in response to *two words that were related*. She circled **1** for a correct pair and **0** for an incorrect pair.

Expressive: The researcher asked, **How do the words_____and_____go together?** Correct responses *describing the relationship of the two words* were listed. If the child's response was similar or close to one of the responses, it was circled and scored as **1** point. If the child gave a response that was not listed, the researcher wrote it in the space provided

on the form for later evaluation and scoring. Note this was only performed at the final test stage, as deemed older children (5-6 years) were able to master this skill.

In the *Expressive Vocabulary* subtest, the child had to identify a person, object or activity. **1** and **2** point responses were listed in the Stimulus Book and on the Record Form. The researcher circled the child's response on the Record Form and the corresponding point value of **2** or **1**. If the child's response was not listed, it was written down verbatim for later scoring consideration. If the child's response reflected regional vocabulary or wording and was appropriate for the context, the response was scored as correct.

There had to be special considerations with the *Concepts & Following Directions* subtest, as if the child failed to identify all animals in the Familiarisation items, even after prompting, the subtest could not be administered. The researcher had to be certain that the child had completed his or her response to each item before presenting the next item. On the Record Form, the researcher marked down the order in which the child pointed to the stimuli, where appropriate following oral directions. For example, the response key on the Record Form was:

1, 2, 3 = specified order of individual responses

* = any order of response

and = both must be selected

The researcher circled **1** for a correct response and **0** for an incorrect response or if the child made no response.

For the *Recalling Sentences* subtest, where the child had to imitate sentences presented by the researcher, points were allocated based on errors and no errors made. On the Record Form, the researcher circled the score in the **OK** column for an exact repetition of the sentence. If the response was not the exact repetition, the response was written down verbatim or the sentence edited, and the score circled that corresponded to the number of **Errors** in the child's response. **OK** scored **3** points, **1 Error** scored **2** points, **2-3 Errors** scored **1** point, and **4+ Errors** scored **0**. Refer to Appendix A for above test items).

Recording Responses – Repetitions and Self-Corrections

When recording responses, it was important to note the occurrences of repetitions and self-corrections. This type of information allowed the researcher to easily recall what had occurred in the testing session and aided her when scoring the subtest. Table 3.7 below lists the abbreviations used for representing the child's responses and test-taking behaviours.

Table 3.7 Abbreviations for child's responses

Symbol	Use
SC	Child self corrected
P	Administered prompt
R	Repeated item
DK	Child stated that he or she did not know
NR	Child did not respond
PC	Child pointed correctly
PX	Child pointed incorrectly

3.4.2   Behavioural Observation Checklist

Qualitative Data from the Behavioural Observation Checklist supported and complemented the quantitative Data in the standardised CELF-P2 test, [CELF Preschool-2] (Wiig et al., 2004). The strength of this tool is that, when used in conjunction with the CELF-P2 test, it is thought to provide an explanation of any unexpected results, and to be able to give meaning to the response items.

The Behavioural Observation Checklist was included in the CELF-P2 Data Collection Record Form and used to document the researcher's observations of the child's behaviour during testing. The checklist provided descriptive information on Physical Activity Level, Attention to Task, Response Latency, Fatigue/Boredom/Frustration, and Level of Interaction that could be compared with prior observations of the child made by parents or caregivers. The checklist could be completed during or after testing. However, due to the researcher conducting the CELF-P2 test without the assistance of third parties, the checklist

was completed after testing. The researcher indicated which of the choices best described the behaviour observed (see Appendix E to refer to the Behavioural Checklist). The researcher also considered the child's age, and behaviour compared with typically developing children of the same age, as she responded to each of the items.

3.4.3 Descriptive Pragmatics Profile (DPP)

A qualitative form of Data Collection with remarks in the Descriptive Pragmatics Profile (DPP) Checklist was also scored quantitatively with number ratings in this study. This was a supplementary measure considered favourable for the study as the comments from the parents supported the observations made by the researcher after testing, which also formed part of the CELF-P2 test.

The overall objective of the DPP checklist was to identify nonverbal and verbal pragmatic deficits that might negatively influence social and academic communication in context (Wiig et al., 2004). The DPP profile was completed by a parent, who was familiar with the child's interactions and social skills in the context of being observed in home, school, and other. If the parent was not familiar with the child and/or the child's culture, for example, in preschool, the researcher requested that the parent elicited information from the child's preschool teacher. The researcher also reviewed and explained the checklist to those parents who might have been unfamiliar with some of the terms used, e.g. eye contact, nonverbal messages to ensure understanding of all items. The researcher had to be sure that the parent understood the following:

- If the skill was not appropriate for the child, e.g., was not part of the child's background or the child had a physical disability and was unable to use gestures circled NA.

- Items could be rated if the target behaviour had been observed by the parent but not necessarily on the day the form was completed.

- To include pragmatic skills not mentioned on the form as additional information to help evaluate the child.

The score for each item was the rating (number) circled to describe the frequency of occurrence of each skill below in Table 3.8.

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Table 3.8 Demonstration of child's skills in DPP

Child demonstrated the skill:

    1   Never or not old enough to demonstrate

    2   Sometimes

    3   Often

    4   Always or demonstrates more advanced skills

    NA   Not Appropriate (culturally or other reason)

Assessment of how often the child appropriately demonstrated a skill was rated under:

1. Nonverbal Communication Skills

2. Conversational Routines and Skills

3. Asking for, Giving, and Responding to Information

The scores were added for each column in each section of the profile. The three section scores were summed and the total was written in the raw score box on the Record Form (see Appendix E). The subtest raw score was then recorded on the Record Form. Each child was given a Raw/Criterion Score, and Criterion, whether the child met or did not meet the criterion to demonstrate skills in verbal and nonverbal communication. If any item was rated NA, the total score could not be computed and the child's performance could not be compared to that of aged peers.

3.4.4 Questionnaires

The use of a data collection tool such as questionnaires has the benefit of ensuring stability of responses across a range of questions presented by the researcher. Wyatt (2002) states that it is important to evaluate a child's language skills on his or her dialectal background, community, culture, and ethnicity, as such important variables can have an impact on how you report a child's performance. Hence, in this study, the questionnaire was self-derived by the researcher, taking into account the cross-cultural/linguistic backgrounds of the respondents. The qualitative nature of the instrument was designed to measure the extent of

German language use among the bilingual children in order to gauge the extent of their bilingualism. A questionnaire was issued to the family of each bilingual child to be completed by the parents. The questions from the questionnaire would not be asked in an interview setting, but it was expected that the families respond to all the questions prior to commencement of testing. The questionnaire addressed issues of family background, the child's language use at home, and the child's language use outside the home. The data collected from this measurement was not scored or represented quantitatively, it was described qualitatively to support the data from the standardised CELF-P2 test. See appendix J for details on how the questionnaire was set out.

3.5 Data reliability and validity

The reliability and validity of data measurements used in a study are central issues and provide credibility to the research design and data collection and analysis methods employed. Reliability and validity, according to Neuman, are salient 'in establishing truthfulness, credibility, or believability of findings' (Neuman 2003, p. 178).

3.5.1 Data reliability

Reliability refers to the 'dependability or consistency' of the data collection procedure (Neuman, 2003). To determine reliability in the current study, the multi-method triangulation approach was adopted, as in using combined qualitative and quantitative measures to examine a phenomenon from different perspectives (Denzin, 1978 & Neuman, 2003).

The standardised CELF-P2 test that provided quantitative data assured the consistency of the results, and was instrumental when evaluating, assessing, and calculating scores for both receptive and expressive language skills. The informal use of behavioural observation checklists in this study, however, provided qualitative, rather than just quantitative, information regarding not only what the child could or could not do, but also 'behavioural descriptions of strategies the child employed to arrive at the answers' (Caesar & Kohler 2009, p. 227). According to Caesar and Kohler, it is not recommended to use standardised tests alone and they should be considered as only one aspect of the assessment procedure. Further, standardised tests do not provide information on the child's unique communication style and lack specificity and sensitivity (Spaulding, Plante & Farinella, 2006). This

limitation has been especially true of younger children, whose interactive styles often do not fit those required by standardised tests, (Spaulding et al., 2006) and the information obtained by standardised tests does not provide a true indication of the child's communicative ability and language skills (Schraeder, Quinn, Stockman & Miller, 1999). Findings in the literature point to the frequent use by SLTs of combined formal standardised CELF test and informal behavioural description assessment when working with monolingual English-speaking children (Caesar & Kohler, 2009). Important for this study, SLTs reported more frequent use of informal observations with preschoolers than in any other setting (Caesar & Kohler, 2009).

It is rare to have perfect reliability and, therefore, the implementation of a pilot test assisted in improving the reliability; thus revising, modifying, and adjusting instruments, method and design of study etc., where appropriate (Neuman, 2003).

Thus, a pilot study was conducted before the initial test, and was carried out under the guidance and supervision of a qualified speech language therapist, who observed the testing protocol carried out by the researcher. After the pilot, the speech-language therapist reported on recommended techniques and strategies for the researcher to work on prior to the main study.

The revised categories included:

- *Testing Environment* – ensure child seated across from you, and free from distractions.

- *Rest Periods* - ensure breaks are administered at the end of subtest and not during.

- *Encouragement/Reinforcement* – do not tell child responses are right or wrong, but reinforce with, e.g. 'We're almost done' or 'I like the way you're working'. If child cannot perform task or answer a question, encourage with, e.g. 'Just try your best' or 'See how well you do'.

- *Repetitions* – ensure take note of repetition rules in some subtests and not repeat items.

All other conditions of the research process remained the same in the test for the main study, except for tape-recording the oral responses and not the whole test, i.e. the pointing

requests were not audio-taped. In addition, it was decided not to use a Pre-Literacy Rating Scale (PLRS) checklist, as all children in this study were considered preliterate. Finally, the language use questionnaire was piloted and no adjustments or modifications were necessary for the main study. The added benefit of this tool was that it provided the researcher with more reliable and consistent data for measuring the bilingual children's exposure to the German language in and outside the home.

3.5.2 Data validity

Validity would appear more difficult to achieve than reliability. We cannot have total confidence about validity and 'some measures may be more valid than others' (Neuman 2003, p. 184). The standardised testing instrument adapted from Wiig et al., (2004) version uses measures to score the Core Language and Language Indexes, e.g. sum of index scaled scores, percentile ranking, and confidence interval levels etc., most likely have strong validity as a comprehensive assessment when identifying, diagnosing, and performing follow up evaluations of language disorders in children.

However, when dealing with younger children, the standardised testing methods alone do not yield information concerning the child's 'communicative competence and linguistic skills' (Schraeder et al., 1999, p. 198). The procedure consisting of two types of instruments; formal assessment procedures defined as standardised, and alternative assessment procedures defined as non-standardised, e.g. behavioural observations is a more commonly used language assessment procedure (Caesar & Kohler, 2009). This measure was employed for the current study as it was deemed more valid than the single standardised method and, as supported by the literature, more fitting for younger children in preschool settings (Caesar & Kohler, 2009). Moreover, the behavioural data collected through unobtrusive measures in this research, increased the validity because the participants were unaware that the researcher was observing their behaviours, and hence complemented the other data (Newman & Benz, 1998).

Finally, the method of triangulation was incorporated to enhance the validity of the research design and data collection methods. 'Triangulation allowed for more confident interpretations, for both testing and developing hypotheses, and for the unpredicted findings' (Jick 1979, p. 608). In the triangulation approach, the researcher is left to determine a logical, coherent pattern and piece together a complex puzzle. The researcher's

claim to validity rests on his /her judgment or as Weiss (1968, p. 349) refers to it 'a capacity to organise materials within a plausible framework'. While one can rely on quantitative analysis to maximise the credibility of one's findings, using triangulation the researcher can draw on knowledge of a situation from qualitative methods (Jick 1979, p. 608). In so far, the qualitative evidence in this research confirmed the behaviours the children employed to arrive at the answers outlined in the quantitative results (Caesar & Kohler, 2009). Thus, the knowledge and intuition drawn from this multiple-trait approach, to which data is viewed from multiple vantage points, are 'centrally reflected in the interpretation process' (Caesar & Kohler 2009, p. 211). The points raised by Caesar and Kohler further contributed to the validity of the current study, as the researcher found that the behaviours observed during testing, in fact, complemented and helped facilitate with understanding the outcome of CELF-P2 test findings.

3.6   Data collection

The methodological approach taken to obtaining data and testing the following factors in relation to the research questions took over a period of 10-12 months.

The factors relating to the research questions that were tested:

- **Exposure to two languages from birth – overall rate of development may be slower until age 5.** One may anticipate that a child with exposure to two languages, German and English from birth, leads to an initial 'lag' in the development of the second language L2 English compared with a child who only needs to master one language.

- **Bilingual children overcome this initial delay in English language development by age 5.** By the age of 5, the bilingual children overcome this initial delay in English language development when compared to their English language speaking monolingual age-group peers and that, the difference in receptive and expressive skills in English will be less marked between the two groups.

All the data for the study was collected in two stages over a 10-12 month period, as shown below:

Table 3.9 Data collection at initial and final test stage

Stage One – Initial Test	Stage Two – Final Test
-language use questionnaires completed by parents for bilingual group	-descriptive pragmatics profile (DPP) completed by all parents to assess school-age verbal skills
-descriptive pragmatic profile (DPP) completed by all parents to assess pre-school verbal skills	standardised CELF-P2 tests conducted at this stage for both groups of children to assess English language core skill, receptive & expressive skills *(children do a different receptive subtest – Word Classes (WC)*
-standardised CELF-P2 tests conducted at initial test stage to test children's core language, receptive and expressive skills	
-behavioral observation to observe behaviour	-behaviour observation in line with CELF-P2 test to observe patterns of behaviour occurring during testing *(same for initial)*

For the purpose of this study, there were two groups of children; bilingual 10 children and monolingual 12 children. These children were all between 3;10 and 4;4 years of age at the commencement of testing. This is also important in relation to the Critical Period Hypothesis (CPH) as there is a window of opportunity between the ages of 2 and 5, with regards to the rate of language development in a second language. This is significant for this study as the CPH theory supports dual language learning prior to age 5, and as Paradis (2004, p. 59) states 'gradual loss of plasticity of the procedural memory for language is about the age of 5'. Children at this age have a general understanding of the basic concepts of word structure and formulating sentences. The first group were born in New Zealand, but of German descent, and have been exposed to the German language from birth. This bilingual group all have German speaking parent(s), who were living in an English speaking community. Second group was the monolingual group, who have only been exposed to the English language, and have come from a monolingual background. All subjects were attending in either a full-time or part-time capacity in an Early Learning Childhood Centre with appropriate language facilities.

Time-schedule for data collection

Phase one involved an initial Pilot study with about 2 subjects from each group to test all instruments and procedures. The test was identical to the testing environment for the actual study, and carried out with each individual in the English language. The researcher tried to consider the same variables by having equal balance of gender, same age group, and ethnic background. Any modifications or adjustments were made, if necessary, and applied to the methodology procedures prior to commencing the initial pre-test.

Phase two involved both groups of children doing an initial test between 3;10 and 4;4 years of age to analyse their level of expressive and receptive skills in the English language. The variables to consider were equal balance of gender (as much as possible), same age group and ethnic background. The researcher carried out the CELF-P2 test, having received the appropriate training, supervision, and guidance to enable her to do so. This made for a potentially stronger research design because the same person, i.e. the researcher herself, carried out the test. An added beneficial result was that the researcher was closer to her material. To allow for ease and cooperation with the research process, and also to contribute to children feeling they were empowered by being in a familiar environment, the testing was conducted at the participants' homes, following agreement by both the parents and the researcher. During testing, the researcher also took into account a child's short attention span and allowed time for interaction and play.

The test was done with coloured pictures to provide stimulus, and was a series of initial and final tests to examine language ability levels. The initial test was conducted around age 4, and was carried out over a period of 45-60 minutes, allowing for a 10-15 minute break midway through the testing procedure, or on completion of an individual subtest. The researcher anticipated that the initial test scores would point out English language delays in the bilinguals as when compared to the monolinguals.

Phase three involved children from both groups participating in a final test at the end of the 10-12 month period as the child turns 5 or about to turn 5 years of age, and about to commence primary school. Each group underwent a final test at about the age of 5, prior to starting school. The only variance of testing, according to age was the use of the Word

Classes (WC) – (Receptive, Expressive, Total) subtest. This subtest was introduced as it was assumed that older subjects (5-6 years) should be achieving at a higher level than the skill set required for Basic Concepts (BC). There was no other variance of testing according to age. It was assumed that subjects would achieve more of the final in the set time period over the next 10-12 months. The final test tied in with factors relating to the first research question which was a child with exposure to two languages, German and English from birth, may lead to an initial 'lag' in the development of the second language L2 English, compared with a child who only needs to master one language. However, it is anticipated that by the age of 5, the child will have caught up and will actually be seen to benefit from having the ability to communicate in two languages.

3.7   Data analysis

Data analysis in this study was based upon the research questions motivating the study and the research tools used by the researcher to collect the data. The aim of the research was to examine early theories, which proposed that some children might have problems processing two languages in the early stages, are understandable that these theories arose. Furthermore, certain behavioural characteristics, evident in preschool children, might distinguish normal English language development from those with delayed or disordered language. Both aims were tested by looking at the outcomes of the standard CELF-P2 test carried around age 4 in bilingual German-English children and comparing results with those of the same test carried out with their monolingual English age-group peers. In this respect the researcher was using a mixed methods approach combining both quantitative and qualitative analysis (Campbell & Fiske, 1959).

A further aim of the proposed study was to prove, however, that bilingual children would catch up with their monolingual peers, over the next 10-12 months, learning to simultaneously process two languages to the extent that, when given the standard CELF-P2 test at age 5, there would be no significant difference in performance between the bilingual German-English children and the monolingual English speaking children. The methodology employed here tested the performance of German-English bilingual children in standard CELF-P2 test around age 4, before retesting the same two groups of children again at age five, again using the standard CELF-P2 test, and comparing and cross-tabulating the performance of both groups of children.

Scoring and analysis criteria for CELF-P2 tests

On the basis of the research aims and the methodological design used to achieve those aims, the researcher analysed the data from the language skills tests in the following way. Once the researcher had completed and compiled the data from the initial test, she started to analyse the results from the record forms to determine common themes occurring.

The aim of the English Language skills test was for the researcher to look at the scores and add up the three (one Receptive, two Expressive) subtest (scaled) scores to give an overall Core English Language score (CLS). To sum the three (Receptive) subtest (scaled) scores to give a Receptive Language Index score (RLI), and to sum the three (Expressive) subtest (scaled) scores to give an Expressive Language Index score (ELI). (*New and revised format in CELF Preschool-2 2004). See Appendix H to convert Sum of Subtest Scaled Scores into Core language and Index Standard Scores for ages 4;0-4;5 (initial) and 5;0-5;5 (final). Scaled Scores inserted on Page 1 of Record Form (Appendix E).*

- Firstly, the researcher looked at the overall Core Language score by adding up the three subtest scaled scores: Sentence Structure (SS) *(Receptive)*, Word Structure (WS) *(Expressive)*, and Expressive Vocabulary (EV) *(Expressive)* to calculate the Core Language Score (CLS).

- Secondly, the researcher looked at the Receptive language by adding up the scaled scores of the three subtests: Sentence Structure (SS), Concepts & Following Directions (C&FD), and Basic Concepts (BC) – Initial test only, Word Classes (WC) – Final test only to give a Receptive Language Index score (RLI)

- Finally, the researcher looked at the Expressive language by adding up the scaled scores of the three subtests: Word Structure (WS), Expressive Vocabulary (EV), and Recalling Sentences (RS) to give and Expressive Language Index score (ELI).

Please refer to Appendix G for conversion of raw scores to Subtest Scaled Scores above for ages 4;0-4;5 (initial) and 5;0-5;5 (final test). Subtest Scores inserted on Page 2 of Record Form (Appendix E).

Please refer Appendix I regarding age-related and test-related issues in terms of justification to score all children 4;0-4;5 (initial test) and 5;0-5;5 (final test) and for all

children to be tested with the Receptive subtest Word Classes (WC) for (5-6 year olds) in the final test.

The Core Language score is the sum of the three subtests (one Receptive and two Expressive language) used to best discriminate typical language performance from the performance of children with disordered language skills, resulting in a quick, reliable decision about a child's overall language ability (Wiig et al., 2004).

The researcher also required the Core Language score as this score was for decision making, i.e. to identify any areas where children scored lower than expected, and to form impressions of children's overall strengths and/or weaknesses. Each preschool subset yielded a raw score that, when based on the child's chronological age, was converted to a scaled score. These scaled scores could then be converted to confidence interval levels and percentile ranks. The same procedure was repeated for the final test.

Case Study Analysis

Scoring of the CELF-P2 tests was conducted as illustrated in steps 1 – 3 above and the subtest and index scaled scores calculated from the conversion tables (Refer to Appendices G and H). Children's performance was determined from the Core Language Score and Index Scores and the criteria for the scores in the Case Study chapter were as follows below:

Table 3.10 Guidelines for performance level in CLS/RLI and ELI Scores

Core Language Score and Index Scores	Classification	Relationship to Mean
115 and above	Above average	+ 1 *SD* and above
86 to 114	Average	Within + or – 1 *SD*
78 to 85	Marginal/Borderline/Mild	Within – 1 to – 1.5 *SD*
71 to 77	Low range/Moderate	Within – 1.5 to – 2 *SD*
70 and below	Very low range/Moderate	- 2 *SD* and below

The researcher decided to do the Case Study in Chapter Four using one child from the bilingual group and one child from the monolingual group as it was not feasible to conduct such a large study doing a case study analysis on each child for the current thesis.

Calculating Confidence Interval levels

The Confidence Interval level of 90% that will be used in Chapter Four is more commonly used by SLTs to form diagnostic impressions, but is also used to learn about language status. These levels are inserted on page 1 and 2 of Record Form (Appendix E).

Calculation for Confidence Interval Levels is as follows:

- Refer to Subtest Scaled Score table in Appendix G for the 90% confidence level point score for the appropriate test, e.g., for a child aged 4;0-4;5 Sentence Structure (SS) is **2**. This process is applied to all individual subtests on page 2.

- Subtract **2** scaled score points from SS and add **2** points to get confidence interval.

- Transfer subtest scaled scores from page 2 to page 1. Refer to Standard Score table in Appendix H, e.g., child aged 4;0-4;5 the Core Language Score (CLS) is **6.**

- Subtract **6** from CLS and add **6** to CLS to get confidence interval level on page 1.

Comparing the Index Scores

The first step in comparing index scores was to determine if the difference between them was statistically significant. Table 3.11 shows minimum differences between index scores (critical values) that are required for statistical significance at the .05 level by age. Level of significance at .05 gives a narrower indication of differences and is more stringent.

Discrepancy Comparisons between Receptive Language Index and Expressive Language Index score on page 1 of Record Form (Appendix E) can help determine significant differences, if the difference is greater than or equal to the Critical Value.

- Write the score of RLI in Score 1 and ELI in Score 2 of Discrepancy Comparisons column on page 1 of Record Form (Appendix E).

- Subtract Score 2 (ELI) from Score 1 (RLI). The difference is recorded in the Difference column, noting whether result is positive or negative.

- Table 3.11 provides differences between index scores needed for statistical significance at .05 level for each age

- Find appropriate age in Table 3.11 and level of significance at .05 level. Write appropriate number in Critical Value column of Discrepancy Table on page 1.

- To be statistically significant, the difference between scores must be greater than or equal to critical value. Circle **Y** for **Yes** in Significant Difference column and **N** for **No** if less than critical value. If **N**, abilities in RLI/ELI can be comparable.

Table 3.11 Critical Values for Discrepancy Comparisons between RLI/ELI Scores

Age	Level of Significance	Critical Values for RLI-ELI
4:0-4:5 (Initial test)	.05 (e.g., $p < .05$)	10
5:0-5:5 (Final test)	.05 (e.g., $p < .05$)	11

Scoring criteria for Questionnaires

Data from questionnaires were numerically coded and the researcher recorded information from the questionnaire onto a spreadsheet. The researcher made up two spreadsheets; spreadsheet one for the Bilingual Group. Column A was created to write questions from the questionnaire. Column B was created to record the answers from the participants with the following (3-digit identification) code headings, e.g., BM1 = (Bilingual Male 1); BF2 = (Bilingual Female 2). This procedure applied to Behaviour/DPP profiles.

Group Statistical Analysis

An independent samples *t*-test analysis was conducted to determine statistical significant differences between two groups for their core language, receptive and expressive skills. The significance of results for these tests was tested using a one-tailed *t*-test to see whether the results were placed in one tail, or see whether results were equally divided across two tails. The presentation of findings will be presented in Chapters Five and Six.

A multivariate ANOVA analysis was performed to see whether coefficients, such as gender, had any significant impact between groups for CLS, RLI and ELI respectively. The presentation of results will be summarised in Chapters Five and Six.

Cohen's *d* is a sample size effect and may be used to accompany *t*-test and ANOVA results. It determines whether a sample size is too small. The criterion is as follows: 0.2 to 0.3 might be small 'effect', 0.5 medium and 0.8 large. Formula used to calculate Cohen's *d* is as follows: difference between 2 means divided by pooled standard deviation of data.

The researcher expected that the initial test might provide an answer to the following questions:

1. Do bilingual children show a delay in their English language development compared to their monolingual peers at age 4 – given that both bilinguals and monolinguals are attending a preschool where English is the main language used?

2. Do bilingual children show delay in their English – in what particular English language areas do these bilinguals encounter problems – again given that both bilinguals and monolinguals attend preschool where English is the main language

3. If there is no language delay in English with the bilinguals compared to their monolingual peers around age 4 – is there any indication they have similar level of English language development around age 4 – given that both bilinguals and monolinguals are attending a preschool where English is the main language used?

The researcher expected that the final test might provide an answer to the following questions:

1. Is there any delay in the English language development of the bilinguals compared to their monolingual peers? - assuming there was an initial 'lag'

2. If there is any language delay – in what particular language areas do the bilinguals encounter problems? - assuming there was an initial 'lag'

3. If there is no language delay – do the bilinguals show signs they have 'caught up' with their monolingual English speaking age-group peers by age 5?

It was anticipated that the results of the initial test would indicate some English language delay in group 1 (bilinguals) in comparison to group 2 (monolinguals) both in their receptive and expressive English language skills. The researcher also expected that, particularly at the age of 4, the bilingual children would demonstrate a significant amount

of code-mixing, and that they would put words from the different languages together into the same sentence. It is important to note, however, that code-switching/mixing is not deemed as deficit behaviour. Some examples of what might be articulated by a German-English bilingual child follow below:

ein big cow ('a big cow')   from up in Himmel ('sky')

alle Auto on the ship ('all car')   er geht up ('he goes up')

I put Socken an (I put 'socks on')   Ich gehe in bed ('I go to bed')

Having established the fact that each group revisited the same test twice throughout a period of 10-12 months, the researcher envisaged that the results in the final assessments would gradually show the bilinguals catching up to the same level of oral and expressive skills in English as their monolingual English-speaking peers.

3.8 Ethical Issues

In line with the current Guidelines, published by the Auckland University of Technology Ethics Committee (AUTEC), the researcher clearly understood her obligations and respected the rights of the participant in terms of anonymity and confidentiality as well as the empowerment of both children and their parents throughout the research process.

Special issues with child participants

Various researchers have raised potential problems with the use of children as participants in research projects. To this aim, the researcher felt it was important that the children participating in the study were empowered to have 'control over the research process and methods which are in tune with the way they see and relate to their world' (Thomas & O'Kane 1998, p. 337). Therefore, the researcher needed to redress any power imbalances between the child and the researcher and allow the child to participate in their own terms, rather than being used as mere objects in the research process. As Morrow and Richards in Thomas and O'Kane (1998, p. 337) point out 'the biggest challenge for researchers working with children is the disparities in power and status between adults and children'.

According to Livingstone and Bovill (2001, p. 33), the question of age also raises power differential between the child and the researcher, and the younger they are affects how we 'study' and 'perceive' them. They also contend that it is important to do research 'with' children than 'on' children, albeit a challenging task. Again, to concur with Hedges (2001), children's voices should be heard and they should be dealt with as direct participants.

To ensure that the children felt a sense of 'respect', 'reciprocity', 'direct participation' and 'empowerment', and that they had a voice in this research rather than being used as subjects or objects, the researcher used the following protocol to approach them: (Hedges 2001, p. 18).

- the researcher contacted the parents of the children to make an appointment to see them at their home or a place agreed by both parties;

- when they met, the researcher went through the Participant Information Sheet, answered any questions, and got the parents to sign a consent form;

- at the same time the researcher talked to the child about the proposed research, and went through the Child Assent Form and Participant Information Sheet.

The researcher, together with the parents involved, used the following protocol to approach the children:

- sit down with the child to say 'hello', and introduced herself. The researcher made the child feel as comfortable as possible by first of all engaging in some small talk, asking the child some everyday questions. She then continued by saying that if they were worried about anything they could come and talk to her (the researcher), or parents about it;

- go through the Assent Form/Participant Information Sheet step-by-step to explain why the research was being carried out, and allowed the child to ask any questions;

- reassure the child that it was a very child-friendly process, and that they could stop being part of the study whenever they wanted and that it was fine for them to do this;

- explain that the researcher would sit down with them to ask some questions about how they listened to and spoke English. The researcher would also explain things if the child was unsure of something;

- ensure that the child understood that the researcher would ask questions and write some things down to help her remember things. The researcher would also ask the child if it was okay that the audio-recorder recorded their voice, and reassured the child that nobody except the researcher would know who the voice belonged to;

- finally the researcher stated that she would report back on conclusions and provide feedback to the children.

The researcher's approach was such that it met the important criteria set out by the AUT Ethics committee, given that there are special ethical issues involved when dealing with child participants.

3.9   Summary of chapter

This chapter has outlined in detail the methodological and research design process used for this study. The research design has focussed on a multi-method quantitative and qualitative approach to collect the data. It involved the use of triangulation, as an effective approach used when mixing methods and styles over a given period of time. Hence, validity and reliability were able to be achieved through this 'triangulation approach' to analyse research questions. The rationale for choice of research instruments was discussed, with the standardised CELF-P2 test as the principal tool for data collection in this study. The scoring and analysis methods for CELF-P2 were described in detail. Diagrams were provided explaining the general content of the CELF-P2 test and this was supplemented by information on the behavioural observation checklists, which were used during testing. Moreover, information was presented on how data from the questionnaires was used to present an overall picture of second language use in the home for the bilinguals. The DPP information was described and scored and how this played a role in presenting an overview of participants' level of verbal communication in the English language prior to the initial test and then again at the final test stage. Finally, the chapter concluded with a brief discussion of ethical issues and measures put in place by the researcher in order to meet the requirements of the AUT Ethics Committee and ensure an ethical approach to research. This chapter discussed the research design and methodological approach used in this study. The next chapter will present a case study of the findings for two children; one from the bilingual and one from the monolingual group respectively.

CHAPTER FOUR: PRESENTATION OF RESULTS

Case study on a fairly typical bilingual and monolingual child

4.1   Introduction

Chapter Three discussed the research design and methodological approach. This chapter will present an in-depth case study analysis of a fairly typical child from each of the bilingual and monolingual groups respectively. The case study indicates a mixed method approach of predominantly quantitative, but also qualitative methods. The subjects chosen were selected as being somewhat 'on average' performers for their respective groups. Two case studies for the monolingual and bilingual groups during two phases of testing, initial and final, of standardised testing will be discussed. The testing procedure was outlined in Chapter Three, along with the score criteria to determine level of language performance.

4.2   Quantitative Results

Quantitative data in this research was collected by means of standardised CELF-P2 test including the supplementary measure of the Descriptive Pragmatics Profile (DPP) to yield age-based criterion scores. In this chapter the data for Core Language, index, and subtest scores is presented in the form of individual case studies for two children, one from the monolingual and one from the bilingual group. The Core Language Score (CLS) provided information about the child's overall language ability, while the RLI and ELI index scores indicated the level of their auditory and expressive (productive) skills. The researcher decided to add a separate case study chapter, as providing an analysis of individual raw results would have yielded far too much information with the quantitative measures alone.

4.3   Qualitative Results

In addition, a qualitative and multi-method/triangulation approach was used to describe behavioural observations during testing, which qualified the scores from the standardised tests. The DPP checklist also provided qualitative data in the form of case history information from a variety of sources, including the child's parents and teachers. Language-use questionnaires were administered to parents of the bilingual group prior to the initial test to gain an impression of the child's L1 German usage in different environments.

Initial Test – Case study 1 for subject for the bilingual group

Table 4.1: Assessment Results for Subject BF4 (Bilingual-Female) at 4 years

Score	Std Score M = 100 SD = 15	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
CLS [a]	110	104-116	75	61-86
RLI [a]	98	92-104	45	30-61
ELI [a]	109	103-115	73	58-84

a. CLS - Core Language Score	**M = Mean**
b. RLI - Receptive Language Index	**SD = Standard Deviation**
c. ELI - Expressive Language Index	**Std Score = Standard Score**

Subtest	Std Score M = 10 SD = 3	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
SS [a]	11	9-13	63	37-84
WS [a]	14	12-16	91	75-98
EV [a]	10	8-12	50	25-75
C&FD [a]	9	7-11	37	16-63
RS [a]	11	10-12	63	50-75
BC [a]	9	7-11	37	16-63

a. SS - Sentence Structure	d. C&FD - Concepts & Following Directions
b. WS - Word Structure	e. RS - Recalling Sentences
c. EV - Expressive Vocabulary	f. BC - Basic Concepts

This child is an average performer in terms of overall performance in CELF-P2. She comes from a fairly advantaged socio-economic background, and attends daycare in a full time capacity. The child's Core Language, index, and subtest scores are presented in table 4.1. Her Core Language score of 110 (confidence interval of 104-116 at the 90% level) is in the average developmental range and does not support any L2 language or learning difficulties. The index scores of 98 for Receptive Language (confidence interval of 92-104) and 109 for Expressive Language (confidence interval of 103-115) also indicate performance within the average developmental range. The 11-point difference between the child's Expressive Language and Receptive Language index scores is considered significant at the .05 level. This indicates that expressive language as measured by ELI is a relative strength for this child when compared with her receptive language skills. The girl's relative strengths in producing linguistic structures may explain why the score for Word Structure is high. Conversely, weaknesses in following directions and basic concepts explain a low RLI.

Initial Test – Case study 2 for subject for monolingual group

Table 4.2: Assessment Results for Subject MM8 (Monolingual-Male) at 4 years

Score	Std Score M = 100 SD = 15	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
CLS [a]	94	88-100	34	21-50
RLI [a]	98	92-104	45	30-61
ELI [a]	94	88-100	34	21-50

a. CLS - Core Language Score		**M = Mean**
b. RLI - Receptive Language Index		**SD = Standard Deviation**
c. ELI - Expressive Language Index		**Std Score = Standard Score**

Subtest	Std Score M = 10 SD = 3	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
SS [a]	9	7-11	37	16-63
WS [a]	9	7-11	37	16-63
EV [a]	9	7-11	37	16-63
C&FD [a]	10	8-12	50	25-75
RS [a]	9	8-10	37	25-50
BC [a]	10	8-12	50	25-75

a. SS - Sentence Structure	d. C&FD – Concepts & Following Directions
b. WS - Word Structure	e. RS – Recalling Sentences
c. EV - Expressive Vocabulary	f. BC – Basic Concepts

This child is an average performer in terms of performance in CELF-P2, and comes from a fairly advantaged socio-economic background. Table 4.2 summarises the Core Language, index and subtest scores. MM8's Core Language score is 94 (confidence interval of 88-100 at the 90% level). This score indicates performance in the average developmental range and does not support any language problems. The Receptive and Expressive Language index scores, at 98 and 94 respectively (confidence intervals of 92-104 and 88-100), indicate also performance within the average developmental range with no discrepancy in performance between receptive and expressive scores. In other words this child does not have language difficulties that are receptive and expressive in nature, and the child's abilities in these areas can be considered comparable. The marginally higher C&FD/BC subtest scores may contribute to the higher RLI scaled score, but RLI/ELI scores are not significantly different and, therefore, the child scores equally well in receptive and expressive skills.

4.3 Qualitative Results

Observational behaviour checklist / Descriptive Pragmatics Profile (DPP)

Initial Test – Case study 1 for subject from bilingual group

The behavioural observation checklist was used in combination with the quantitative CELF-P2 test findings as explained in Chapter Three. Evaluation of the behavioural tasks did point to the lower score in the receptive language for this child. Observations of the child's behavior during testing pointed to the child's lack of ability to remain focused and maintain attention to task for more than 10 minutes throughout the testing process. The child occasionally engaged in off-task behaviours, which meant her listening and concentration were affected, particularly in some of the response items, where the researcher asked her to point to something. Invariably she missed part or whole of the request, and subsequently the researcher scored her as having failed to perform the task correctly. After a time lapse of 15 minutes the child evidenced signs of fatigue and frustration with aspects of the test. This became more evident towards the end of the test, with her relative weakness in following directions and grasping basic concepts becoming more and more obvious by that stage.

Initial Test – Case study 2 for subject from monolingual group

The behavioural observation checklist was used to qualify the data from the quantitative SLT test findings. Evaluation of the behavioural tasks did not point to any significant problems with language performance, and observations of MM8's behaviour were considered typical for his age. However, the level of interaction from the child, in terms of the expressive productive language, indicated that the child was only sometimes engaged in test-appropriate conversation. While there were no major discrepancies to report, the researcher felt the child's willingness to describe items that were not always contextually test appropriate, may explain the slightly lower ELI score. The child did not always respond to the task at hand, and this was more evident in the expressive subtests. Thus all the expressive subtests yielded the same scores, which were lower than average. These were behaviours observed by the researcher during testing to explain a slightly lower ELI score, but for the main part, his listening and speaking abilities were equal.

Initial Test – Case study 1 for subject from bilingual group

The researcher discussed below the contents of the Descriptive Pragmatics Profile (DPP) (based on what parents filled in) in relation to scores. The parent of this child, who was familiar with the child's interactions and social skills, completed the DPP Profile. The child's raw score of 88 in Table 4.3 below met the criterion for her age, indicating her pragmatic skills in verbal and non-verbal communication were relatively strong.

Moreover, the child's scores were predominantly in the 3 and 4 range (Appendix F), indicating her demonstration in skills to appropriately respond to a familiar person's nonverbal communications, such as facial expressions, other gestures and nonverbal messages. Scores were also in the higher range of 3 and 4 for her verbal conversational skills, and ability to ask, give and respond to information. The girl's relative strengths in the areas of verbal communication may explain why the score for ELI is high.

Table 4.3: Descriptive Pragmatics Criterion Score for Subject BF4 (Initial Test)

Checklists	Raw Score	Criterion Score	Criterion
Descriptive Pragmatics Profile (DPP)	88	$\geq$ 68	Meets

Initial Test – Case study 2 for subject from monolingual group

The researcher discussed below the contents of the Descriptive Pragmatics Profile (DPP) (based on what parents filled in) in relation to scores. The child's raw score of 79 in Table 4.4 below met the criterion for his age, demonstrating a reasonable level of pragmatic skills.

In nonverbal communication and gestures, the child appeared to score in the upper 4 range, and in the lower 2 range for conversational routines and asking for, giving and responding to information. The boy's slight weakness in verbal communication may also explain the slightly lower expressive language score in the standardised CELF-P2 test.

Table 4.4: Descriptive Pragmatics Criterion Score for Subject MM8 (Initial Test)

Checklists	Raw Score	Criterion Score	Criterion
Descriptive Pragmatics Profile (DPP)	79	$\geq$ 68	Meets

Final Test – Case study 1 for subject for the bilingual group

Table 4.5: Assessment Results for Subject BF4 (Bilingual-Female) at 5 years

Score	Std Score M = 100 SD = 15	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
CLS [a]	98	91-105	45	91-105
RLI [a]	113	106-120	81	106-120
ELI [a]	98	92-104	45	92-104

a. CLS - Core Language Score   **M = Mean**

b. RLI - Receptive Language Index   **SD = Standard Deviation**

c. ELI - Expressive Language Index   **Std Score = Standard Score**

Subtest	Std Score M = 10 SD = 3	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
SS [a]	9	7-11	37	16-63
WS [a]	11	9-13	63	37-84
EV [a]	9	7-11	37	16-63
C&FD [a]	13	11-15	84	63-95
RS [a]	9	7-11	37	16-63
WC-R [a]	14	12-16	91	75-98

a. SS - Sentence Structure   d. C&FD – Concepts & Following Directions

b. WS - Word Structure   e. RS – Recalling Sentences

c. EV - Expressive Vocabulary   f. WC-R – Word Classes-Receptive

This child is an average performer in terms of performance in CELF-P2, and comes from a fairly advantaged socio-background. Table 4.5 presents the Core Language, index and subtest scores. This child's Core Language Score is 98 (confidence interval of 91-105 at the 90% level). This score indicates performance in the average developmental range and does not indicate any language learning issues. The index scores of 113 for Receptive Language (confidence interval of 106-120) and 98 for Expressive Language (confidence interval of 92-104) differ by 15 points. This is significant at the .05 level, indicating a relative weakness in primarily expressive language tasks. These final test scores indicate that the child has improved in receptive language over time, but not improved at the same rate in expressive language skills. The strength in RLI may be attributed to the higher C&FD and WC-R scores. This discrepancy in listening and speaking index scores clearly points to a fluctuating profile, particularly compared with the initial test profile where ELI was higher.

Final Test – Case study 2 for subject for monolingual group

Table 4.6: Assessment Results for Subject MM8 (Monolingual-Male) at 5 years

Score	Std Score M = 100 SD = 15	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
CLS [a]	100	93-107	50	93-107
RLI [a]	105	98-112	63	98-112
ELI [a]	91	85-97	27	85-97

a. CLS - Core Language Score	**M = Mean**	
b. RLI - Receptive Language Index	**SD = Standard Deviation**	
c. ELI - Expressive Language Index	**Std Score = Standard Score**	

Subtest	Std Score M = 10 SD = 3	Confidence Interval 90% Level	Percentile Rank	Percentile Rank Confidence Interval 90% Level
SS [a]	12	10-14	75	50-91
WS [a]	10	8-12	50	25-75
EV [a]	8	6-10	25	9-50
C&FD [a]	10	8-12	50	25-75
RS [a]	7	5-9	16	5-37
WC-R [a]	10	8-12	50	25-75

a. SS - Sentence Structure	d. C&FD – Concepts & Following Directions
b. WS - Word Structure	e. RS – Recalling Sentences
c. EV - Expressive Vocabulary	f. WC-R – Word Classes-Receptive

This child comes from a fairly advantaged socio-economic background, and attends daycare full time. The child's Core Language, index, and subtest scores are summarised in Table 4.6. His Core Language Score of 100 (confidence interval of 93-107 at the 90% level) is in the average developmental range and does not indicate any issues with language performance. The Receptive and Expressive Language index scores at 105 and 91 respectively (confidence intervals of 98-112 and 85-97), indicate also performance in the average developmental range. The 14-point difference between the child's Receptive Language and Expressive Language index scores is considered significant at the .05 level. This analysis indicates that receptive language as measured by RLI is a relative strength for this child when compared with his expressive language skills. The final scores suggest the child's overall performance has improved, particularly in the receptive language, but ELI has not increased at quite the same rate indicating a weakness in expressive language tasks.

4.3 Qualitative Results (continued)

Observational behavior checklist / Descriptive Pragmatics Profile (DPP)

Final Test – Case study 1 for subject from bilingual group

The behavioural observation checklist was used to describe the CELF-P2 findings. In contrast to the initial test, the behaviour observed during final testing pointed to more focus and attention to task. This time the child did not evidence fatigue, boredom, and/or frustration, did not engage in off-task behaviours, and her response rate was generally quicker and appropriate, with her responding within 0 to 15 seconds. Observations of the child's behaviour during the testing process can be reflected in the receptive language score. Higher concentration span and improved listening skills could be seen in her relative ability to follow directions and understand semantic word relationships.

Final Test – Case study 2 for subject from monolingual group

The data from the CELF-P2 test findings was complemented by the behaviours observed during testing. Evaluation of the behavioural tasks at the final test stage did not point to any significant problems with the child's behavioural and emotional status, although the quantitative CELF-P2 data did indicate a significant difference and relative strength in the receptive language. This receptive score was also qualified by the observations of the child's behaviour during testing. The child engaged in appropriate activity levels throughout, maintained attention throughout testing and seemed focused with his listening when requested to follow instructions. As with the initial test, the level of interaction between the researcher and the child (MM8) indicated that the child was only sometimes engaged in test-appropriate conversation. This time, there was also a discrepancy in performance between receptive and expressive scores. The researcher felt that the child's tendency to deviate and use long sentence descriptions for word referential naming tasks was not always test-appropriate, and this may explain the significant anomaly in the speaking/expressive scores for MM8.

Final Test – Case study 1 for subject from bilingual group

The parent of the child completed the Descriptive Pragmatics Profile. The child's raw score of 93 in Table 4.7 below met the criterion for her age, indicating her pragmatic skills in verbal and non-verbal communication were relatively strong.

After 10-12 months the child's scores were equally in the 3 and 4 range (Appendix F), indicating her demonstration in skills to appropriately respond to a familiar person's nonverbal communications, such as facial expressions, other gestures and nonverbal messages. Scores were also in the higher range of 3 and 4 for her verbal conversational skills, and ability to express and respond to information, yet slightly lower compared to the initial test. The girl's slight weakness in the areas of verbal communication may explain why the score for ELI is lower this time. Conversely the ability to follow directions and identify word relationships may describe the significantly higher RLI score

Table 4.7: Descriptive Pragmatics Criterion Score for Subject BF4 (Final Test)

Checklists	Raw Score	Criterion Score	Criterion
Descriptive Pragmatics Profile (DPP)	93	>_ 68	Meets

Final Test – Case study 2 for subject from monolingual group

The child's raw score of 80 in Table 4.8 below met the criterion for his age, demonstrating a reasonable level of pragmatic skills/language. Although the score met the criterion for age, one may expect the result to improve more with age.

Again, in nonverbal communication and gestures, the child performed in the upper 3/4 range, and in the lower 2/3 range for conversational routines and asking for, giving and responding to information. The boy's apparent weakness in verbal communication may also explain the discrepancy between initial and final test with expressive language score.

Table 4.8: Descriptive Pragmatics Criterion Score for Subject MM8 (Final Test)

Checklists	Raw Score	Criterion Score	Criterion
Descriptive Pragmatics Profile (DPP)	80	>_ 68	Meets

Parent's (Language Use) Questionnaire – for bilingual child (BF4)

The questionnaire completed by the German-speaking parent revealed that both sets of parents were from potentially fairly advantaged socio-economic backgrounds, with Master Degree level qualifications. The parent of this child also spoke German with her most of the time at home and considered the importance of maintaining the German language, although

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English was spoken with the Anglophone New Zealand born father. The child from the age of 2/3 attended an Early Childhood Centre in a full-time equivalent capacity and was, therefore, exposed to mainly English outside the home. The mother noted that the child had equivalent language skills in English and German, with listening being the child's stronger skill of the two. The initial test scores were higher in expressive, but over time the receptive skill became stronger and the expressive was comparatively the weaker of the two at later testing. Lastly, while the questionnaire may describe the final test result, it does not substantiate the findings from the initial test.

4.4   Summary of chapter

The standardised CELF-P2 test scores for two children, who were fairly representative for the bilingual and the monolingual group respectively was gathered over 10-12 months, at initial and final test stage, and the findings were presented in this chapter. Quantitative results were collected by means of a standardised CELF-P2 test, and these scores were presented for each individual. Individual case study findings revealed that the Receptive Language Index (RLI) score was predominantly higher than the Expressive Language Index (ELI) score at both test stages, with the exception of subject BF4, whose ELI was higher in the initial test. One might expect this to be predominantly the case that auditory and listening skills would generally tend to precede oral language expression. Furthermore, these children's final scores attested to a greater improvement over time in terms of receptive skills, accompanied by an apparent deterioration in their expressive skills. The qualitative approach, using the behavioural observation and DPP checklist, was able to help give meaning to the results. The researcher discussed the contents of the DPP (based on what parents filled in) in relation to scores. The quantitative approach above was used to supplement the reliability and validity of the researcher's findings. Using triangulation, as outlined above, the researcher was able to draw on qualitative descriptive information. Hence, the qualitative evidence in the behavioural observation checklist confirmed some of the behaviours the children employed to arrive at the answers in the CELF-P2 test. Further the quantitative and qualitative approach of the DPP profile helped support and confirm the output from the CELF-P2 test. Finally, the bilingual questionnaire supported RLI/ELI result.

Chapters Five and Six will present statistical analyses conducted on the test results for receptive and expressive language skills.

CHAPTER FIVE: PRESENTATION OF RESULTS
Receptive Language Skills

5.1   Introduction

The previous chapter presented an in-depth case study analysis for two children; one child from the bilingual group and the other child from the monolingual group. An analysis of the data gathered using standardised CELF-P2 test is presented in Chapters Five and Six. In order to disentangle the research questions to be tested in this study, independent samples *t*-tests, and multivariate ANOVA analyses were performed on the data. Quantitative results collected by means of standard tests are analysed and examined for any significant discrepancies occurring within the data. This is followed with a presentation of the findings comparing two groups of children, bilinguals and monolinguals, for their performance across the Receptive Language skill category in this chapter. Finally, the findings for Expressive language are presented in Chapter Six. Refer to Chapter Six which outlines the statistical findings for the Core Language (CLS) category. This is examined in Chapter Six as CLS is made up of two expressive subtests.

5.2   Description of sample

Please refer to Chapter Three which outlines the Design and Methodology for a description of the sample of bilingual and monolingual children for the purposes of this study.

5.3   Initial test

The results of the means and standard deviations, comparing monolinguals and bilinguals across their Receptive Language Index scores are illustrated in Table 5.1. The mean Receptive language index (RLI) score (*M* = 113.42, *SD* = 11.30) indicated that this was greater than the mean for bilingual children (*M* = 111.70, *SD* = 10.41) In other words the monolinguals were performing better than the bilinguals in the receptive language skill. All results were carried out with a one-tailed *t*-test to research question one. One-tailed indicates 'directional', that is a specific outcome is expected to happen. For example, bilinguals are expected to be 'lagging behind' their monolingual peers at the initial test stage. An independent-samples *t*-test was conducted to evaluate research question one of whether a child with exposure to two languages, German and English from birth, leads to

an initial 'lag' in the development of the second language L2 English. The test data in Tables 5.2 and 5.3 revealed that the differences were not significant between the two groups in terms of their overall receptive skills in English, t (20) = .367, p = .36 (NS) (1-tailed). While the means indicated the bilinguals were slightly behind the monolinguals, there were no significant results and no true difference. Therefore, the results were contrary to the first research question that bilinguals initially lag behind.

Table 5.1 Group Statistics Analysis for RLI scores

	Lingual	N	Mean	Std. Deviation
Rli1	Monolingual	12	113.42	11.30
	Bilingual	10	111.70	10.41

Table 5.2 highlights the results of an independent-samples t-test which was carried out to examine the individual receptive language subtests that make up the Receptive Language Index (RLI). The test revealed the differences were not significant in receptive skills, t (20) = .367, p = .36 (NS) (1-tailed) between the two groups. In addition, the results were not significant for most individual receptive subtests. However, there was a marginal difference found in terms of the receptive concepts & following directions (C&FD) subtest in which children were requested to follow directions with key concepts t (20) = 1.543, p = .069* (1-tailed).

Table 5.2 T-test Analysis for Subtests under RLI

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi number of obs	Bi Mean	Bi Standard Error	t-stat (ONE-TAILD TEST diff>0)	p-value (one-tailed)
RLI 1	12	113.42	3.26	10	111.7	3.29	.367	.358
Ss1r	12	12.42	.85	10	12.6	.79	.156	.439
Cfd1	12	12.83	.76	10	11.3	.60	1.543	**.069***
Bc1r	12	12.17	.65	10	12.70	.83	-.513	.306

*** If p-value <0.01 (significant at the 1 percent level)
** if p-value <0.05 (significant at the 5 percent level)
* if p-value <0.10 (significant at the 10 percent level)

5.4 Final test

The means and standard deviations were compared across both groups, and are presented in Table 5.3 below. Receptive Language Index (RLI) mean score (M = 112.30, SD = 7.60)

indicated that this was greater than the mean for monolingual children ($M = 111.00$, $SD = 10.79$). In other words the bilinguals performed better than the monolinguals in the final test. All results were subjected to a two-tailed *t*-test to the second research question. A two-tailed *t*-test indicates 'non directional', that is it requires us to consider both sides of the distribution. For example, the bilingual children are expected to overcome this initial delay in English language development to the point where they have 'caught up'. An independent-samples *t*-test was conducted to evaluate the research question that the bilingual children overcome this initial delay in English language development when compared to their English speaking age-group peers and that by the age of 5, the difference in linguistic performance in English will be less between the two groups. The means appeared to support research question two in that there was little difference in performance between the bilingual and monolingual group in terms of performance in English. However, the means would suggest the bilingual group, in fact, performed better in terms of their overall receptive skills in English.

Table 5.3 Group Statistics Analysis for RLI scores

	Lingual	N	Mean	Std. Deviation
Rli2	Monolingual	12	111.00	10.79
	Bilingual	10	112.30	7.60

Table 5.4 T-test Analysis for Subtests under RLI

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (TWO-TAILD TEST diff>0)	p-value (two-tailed)
RLI 2	12	111.00	3.11	10	112.30	2.40	-.320	.752
Ss2r	12	11.33	.56	10	12.10	.89	-.758	.457
Cfd2	12	11.92	.58	10	11.90	.60	.020	.984
Wc2 r	12	11.92	.66	10	11.70	.54	.248	.806

Table 5.4 shows an independent samples *t*-test was carried out to assess the individual receptive language subtests that make up the Receptive Language Index (RLI). The test revealed that the differences were not significant between the two groups in terms of their

overall receptive skills in English, t (20) = -.320, p = .75 (NS) (2-tailed). The differences were also not significant to report in any of the individual subtests that make up RLI.

5.5 Change in Receptive Language between initial and final tests

5.5.1 Independent Samples Test

In this section the change between initial and final tests for the bilinguals and monolinguals in Receptive Expressive language skills were addressed. Independent t-test and multivariate ANOVA analyses were conducted in order to:

- Compare the means and standard deviations for change between initial and final for each of the two groups, bilinguals and monolinguals for Receptive Language
- Conduct a t-test to establish change between initial and final test for RLI.
- Using ANOVA to determine change in scores for the expressive language between initial and final test and compare using predictors such as gender / age.

Table 5.5 Group Statistics Analysis for change between RLI1 and RLI2

	Lingual	N	Mean	Std. Deviation
Rli1	**Monolingual**	12	113.42	11.30
	Bilingual	10	111.70	10.41
Rli2	**Monolingual**	12	111.00	10.79
	Bilingual	10	112.30	7.60
Chrli	**Monolingual**	12	-2.42	7.24
	Bilingual	10	.60	7.98

The descriptive statistics for each of the two groups for the receptive language is presented in Table 5.5. In this example, there were 12 children in the monolingual group (N), and they had, on average, 113.42 mean score in the initial test, with a standard deviation (SD) of 11.30 receptive language score. There were 10 children in the bilingual group (N), and they had, on average 111.70 mean score in the initial test, with a SD of 10.41. The final test means for the monolingual children (M = 111.00, SD = 10.79) are lower than for the bilingual children (M = 112.30, SD = 7.60). The means found in the change between initial and final test (M = -2.42, SD = 7.24 (monolingual), and M = .60, SD = 7.98 (bilingual)) appeared to support that bilinguals performed better than the monolinguals in the final. The monolinguals groups' receptive language skills did not increase at the same rate as those of their peers over that year. *(Monolinguals have, in fact, deteriorated between the two tests).*

Table 5.6 Independent Samples Test Analysis for change between RLI1 and RLI2

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (TWO-TAILD TEST diff>0)	p-value (two-tailed)
Rli1	12	113.42	3.26	10	111.70	3.29	-.367	.717
Rli2	12	111.00	3.11	10	112.30	2.40	-.320	.752
Chrl i	12	-2.42	2.09	10	.60	2.52	.929	.364

An independent-samples *t*-test was conducted to evaluate the change between initial and final tests for receptive language (Table 5.6). The test did not indicate any outliers that were significant between the initial and final test scores for the two groups.

5.5.2 Multivariate ANOVA Analysis

The data were also subjected to a so-called multivariate analysis. The regression ANOVA was used to establish whether predictors, such as gender and age, had an impact on the outcome of RLI results. The dependent variable of RLI was compared to:

- Establish change in the results between two tests at initial and final test stage.
- Look at the independent variables of ethnicity, gender, interaction and age to determine if these factors have any impact on how the expressive score changes.

Table 5.7 Regression ANOVA for Dependent Variable RLI

Model		Sum of Squares	Df	Mean Square	F	Sig,
1	Regression	265.879	4	66.470	1.211	.342
	Residual	933.075	17	54.897		
	Total	1198.955	21			

a. Predictors: (Constant), Age, Female, Bilingual, interaction   b.   Dependent Variable: chrli

The information in Table 5.7 indicates the overall change for the dependent variable RLI between the initial test and final test. The table reveals that the difference is not significant between the scores at the initial test and final test stage.

Table 5.8 Predictors/coefficients under ANOVA for Dependent Variable RLI

Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig,
		B	Std. Error	Beta		
1	(Constant)	27.137	59.840		.453	.656
	Bilingual	6.168	3.600	.416	1.713	.105
	Female	8.959	5.193	.509	1.725	.103
	Interaction	-16.378	9.022	-.638	-1.815	**.087***
	Age	-.636	1.204	-.139	-.528	.604

  a. Dependent Variable: chrli

The coefficient data presented in Table 5.8 similarly indicates that these factors; ethnicity, gender and age, do not have any impact on how RLI changes. The interaction independent variable indicates only a marginal significance at $p = 0.87$.

5.6   Summary of chapter

In this chapter, the receptive language skills of a group of bilingual German-English children and a group of monolingual English-speaking children were tested in an initial and final test. Descriptive and Inferential statistical analyses were carried out in order to:

- Compare the means and standard deviations for each of the two groups; bilinguals and monolinguals as defined by the grouping variable for Receptive Language Index (RLI).
- Establish Receptive language skills using the Receptive Language Index (RLI) score between bilingual and monolingual children at an initial test and then final test.
- Determine the changes in scores for the receptive language between initial and final test and compare using predictors such as gender and age

Additionally, the findings of an independent one- and two-tailed t-test method indicated there were no significant differences between the two groups in terms of their overall receptive skills in English. Moreover, an independent t-test analysis did not reveal significant change in scores between initial and final tests in the receptive language skills. A multivariate ANOVA analysis using independent variable coefficients, such as gender and age, revealed that these factors do not impact on how RLI changes. However, the

interaction variable in Table 5.8 did indicate marginal impact on change in RLI and may explain why the receptive means are slightly higher for the bilinguals in the final test.

This chapter discussed the findings of the statistical analyses for Receptive language. The next chapter will discuss the findings in relation to Core and Expressive language skills.

CHAPTER SIX: PRESENTATION OF RESULTS

Expressive Language Skills

6.1   Initial test

Chapter Three contains a description of the sample of bilingual and monolingual children tested for the purposes of this study. The results of the means and standard deviations, comparing the monolinguals and bilinguals across their Core Language Score and Expressive Language Index scores are illustrated in Table 6.1 below. Monolingual children in the Core language category ($M = 111.17$, $SD = 10.68$) on average showed higher scores than the bilinguals ($M = 110.60$, $SD = 10.95$), suggesting monolinguals' overall English language performance was better. The Expressive language index (ELI) mean for the monolingual children ($M = 110.08$, $SD = 9.98$) exceeded the mean score for the bilinguals ($M = 108.90$, $SD = 9.47$), indicating that the monolinguals performed better in the expressive language skill. All results were carried out with a one-tailed t-test in relation to the research question. One-tailed indicates 'directional', that is a specific outcome is expected to happen. For example, bilinguals in this case are expected to be 'lagging behind' their monolingual peers at the initial test stage.   An independent-samples t-test was conducted to evaluate the first research question of whether a child with exposure to two languages, German and English from birth, leads to an initial 'lag' in the development of the L2 English.

The test data in Tables 6.2 and 6.3 revealed the overall English language performance was not significant, $t(20) = .123$, $p = .45$ (NS) (1-tailed); the results were also not significant for the expressive category, $t(20) = .283$, $p = .39$ (NS) (1-tailed). While the results indicated the bilinguals were slightly behind the monolinguals, there were no significant results and no true difference. Therefore, the results were contrary to the first research question that bilinguals initially 'lag' behind.

Table 6.1 Group Statistics Analysis for CLS / ELI scores

	Lingual	N	Mean	Std. Deviation
Cls1	Monolingual	12	111.17	10.68
	Bilingual	10	110.60	10.95
Eli1	Monolingual	12	110.08	9.98
	Bilingual	10	108.90	9.47

The individual subtests for the two groups, analysis of Core Language scores and Expressive Language Index scores respectively are shown in Tables 6.2 and 6.3 below. All results were conducted using a one-tailed (*t*-test).

Table 6.2 Independent Samples Test Analysis for Subtests under CLS

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (ONE-TAILD TEST diff>0)	p-value (one-tailed)
CLS 1	12	111.17	3.08	10	110.6	3.46	.123	.452
Ss1r	12	12.42	.85	10	12.6	.79	-.156	.439
Ws1 e	12	12.42	.79	10	12.2	.74	.197	.423
Ev1e	12	10.92	.38	10	10.6	.48	.527	.302

*** If p-value <0.01 (significant at the 1 percent level)
** if p-value <0.05 (significant at the 5 percent level)
* if p-value <0.10 (significant at the 10 percent level)

Table 6.2 above shows an independent-samples *t*-test was carried out to evaluate individual receptive and expressive language subtests that contribute to the overall English language score referred to as the Core Language Score (CLS). The test revealed that the differences were not significant in the overall English language performance, $t(20) = .123$, $p = .45$ (NS) (1-tailed).

Table 6.3 Independent Samples Test Analysis for Subtests under ELI

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (ONE-TAILD TEST diff>0)	p-value (one-tailed)
ELI 1	12	110.08	2.88	10	108.9	2.99	.283	.390
Ws1 e	12	12.42	.79	10	12.2	.74	.197	.423
Ev1e	12	10.92	.38	10	10.6	.48	.527	.302
Rs1e	12	12.08	.60	10	12.1	.59	-.020	.492

Similarly, an independent-samples *t*-test was carried out to examine the individual expressive language subtests that make up the Expressive language index (ELI) (Table 6.3). The test revealed no significant outliers in the overall Expressive language, t (20) = .283,

p = .39 (NS) (1-tailed). In addition, the results did not show any differences that were significant between the individual expressive subtests that make up ELI.

6.2 Final test

The means and standard deviations were compared across both groups, and are presented in Table 6.4 below. Bilingual children in the overall Core Language category (M = 109.20, SD = 13.64) had on average higher scores than monolinguals (M = 108.25, SD = 8.00). Expressive Language Index (ELI) mean for monolinguals (M = 107.83, SD = 11.41) actually surpassed the mean score for bilinguals (M = 106.60, SD = 11.63). In other words the monolinguals performed better than the bilinguals in their expressive language. All results were carried out with a two-tailed t-test in terms of the second research question. A two-tailed t-test indicates 'non directional', that is it requires us to consider both sides of the distribution. For example, the bilingual children in this case are expected to overcome this initial delay in English language development to the point where they have 'caught up'. An independent-samples t-test was conducted to evaluate the second research question that the bilingual children overcome this initial delay in English language development when compared to their English language speaking monolingual age-group peers and that, by the age of 5, the difference in receptive and expressive skills in English will be less marked between the two groups. The means found in the final test appeared to support research question two in that there was very little difference between the bilingual and monolingual group, in terms of how they performed in English. In fact, the means would suggest that bilinguals performed overall better in Core language category.

Table 6.4 Group Statistics Analysis for CLS / ELI scores

	Lingual	N	Mean	Std. Deviation
Cls2	Monolingual	12	108.25	8.00
	Bilingual	10	109.20	13.64
Eli2	Monolingual	12	107.83	11.41
	Bilingual	10	106.60	11.63

The test data in Tables 6.5 and 6.6 below show the individual subtests between two groups analysed for the Core Language Score and Expressive Language Index at final test stage. All results were conducted using a two-tailed (t-test).

Table 6.5 Independent Samples Test Analysis for Subtests under CLS

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (TWO-TAILD TEST diff>0)	p-value (two-tailed)
CLS 2	12	108.25	2.31	10	109.20	4.31	-.203	.841
Ss2r	12	11.33	.56	10	12.10	.89	-.758	.457
Ws2 e	12	11.83	.73	10	12.80	1.14	-.738	.469
Ev2e	12	11.00	.49	10	9.90	.55	1.497	.150

*** If p-value <0.01 (significant at the 1 percent level)
** if p-value <0.05 (significant at the 5 percent level)
* if p-value <0.10 (significant at the 10 percent level)

An independent-samples *t*-test (two-tailed) was carried out to examine the individual receptive and expressive language subtests that make up the Core language score (CLS) (Table 6.5 above). The test did not show any differences that were significant between the two groups in overall English language performance.

Table 6.6 Independent Samples Test Analysis for Subtests under ELI

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (TWO-TAILD TEST diff>0)	p-value (two-tailed)
ELI 2	12	107.83	3.29	10	106.60	3.68	.250	.805
Ws2 e	12	11.83	.73	10	12.80	1.14	-.738	.469
Ev2e	12	11.00	.49	10	9.90	.55	1.497	.150
Rs2e	12	11.42	.83	10	10.80	.59	.582	.567

Table 6.6 above shows an independent-samples *t*-test was carried out to investigate the individual expressive language subtests that make up the Expressive Language Index (ELI). The results did not reveal any differences that were significant between the two groups in the expressive language skills category.

6.3 Change in Expressive Language between initial and final tests

6.3.1 Independent Samples Test

In this section the change between initial and final tests for the bilinguals and monolinguals in Core language and Expressive language skills were addressed. Independent *t*-test and multivariate ANOVA analyses were conducted to:

- Compare the means and standard deviations for change between initial and final for each of the two groups; bilinguals and monolinguals for CLS and ELI.

- Conduct a *t*-test to establish change between initial and final test for CLS and ELI.

- Using ANOVA to determine change in scores for the expressive language between initial and final test and compare using predictors such as gender and age.

Table 6.7 Group Statistics Analysis for change between CLS1 and CLS2

Lingual		N	Mean	Std. Deviation
Cls1	Monolingual	12	111.17	10.68
	Bilingual	10	110.60	10.95
Cls2	Monolingual	12	108.25	8.00
	Bilingual	10	109.20	13.64
Chcls	Monolingual	12	-2.92	7.76
	Bilingual	10	-1.40	7.23

Table 6.7 gives the descriptive statistics for each of the two groups as defined by the grouping variable. In this example, there are 12 children in the monolingual group (N), and they have, on average, 111.17 core language mean score in the initial test, with a standard deviation of 10.68 core language score. There are 10 children in the bilingual group (N), and they have, on average 110.60 core language mean score in the initial test, with a SD of 10.95 core language score. The final test means for the monolingual children ($M = 108.25$, $SD = 8.00$) and the bilingual children ($M = 109.20$, $SD = 13.64$) underscore the means for the initial test. The means found in the change between initial and final test ($M = -2.92$, $SD = 7.76$ (monolingual), and $M = -1.40$, $SD = 7.23$ (bilingual)) suggested that both groups performed better in the initial test, particularly the monolinguals. The bilinguals performed slightly better than monolinguals in the final test in their Core English language skills.

Table 6.8 Group Statistics Analysis for change between ELI1 and ELI2

Lingual		N	Mean	Std. Deviation
Eli1	Monolingual	12	110.08	9.98
	Bilingual	10	108.90	9.47
Eli2	Monolingual	12	107.83	11.41
	Bilingual	10	106.60	11.63
Cheli	Monolingual	12	-2.25	6.52
	Bilingual	10	-2.30	7.85

The descriptive statistics for each of the two groups for the expressive language is presented in Table 6.8. In this example, there were 12 children in the monolingual group (N), and they had, on average, 110.08 mean score in the initial test, with a standard deviation of 9.98 expressive language score. There were 10 children in the bilingual group (N), and they had, on average 108.90 mean score in the initial test, with a SD of 9.47. The final test means for the monolingual children ($M = 107.83$, $SD = 11.41$) and the bilingual children ($M = 106.60$, $SD = 11.63$) are under the means for the initial test. The means, which were found to have changed between the initial tests and the final tests ($M = -2.25$, $SD = 6.52$ (monolingual), and $M = -2.30$, $SD = 7.85$ (bilingual)) appeared to support the finding that both groups performed better at the initial test stage, with the monolingual children very marginally outperforming the bilingual children in terms of expressive skills.

Table 6.9: Independent Samples Test Analysis for change between CLS1 and CLS2

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (TWO-TAILD TEST diff>0)	p-value (two-tailed)
Cls1	12	111.17	3.08	10	110.60	3.46	.123	.904
Cls2	12	108.25	2.31	10	109.20	4.31	-.203	.841
Chcls	12	-2.92	2.24	10	-1.40	2.29	-.471	.643

Table 6.9 shows an independent-samples *t*-test was carried out to examine the change between the core language score at the initial and final test stages. The results did not show any differences that were significant between the two test stages for the overall English language score.

Table 6.10 Independent Samples Test Analysis for change between ELI1 and ELI2

Test	Mono number of obs	Mono Mean	Mono Standard Error	Bi no. of obs	Bi Mean	Bi Standard Error	t-stat (TWO-TAILD TEST diff>0)	p-value (two-tailed)
Eli1	12	110.08	2.88	10	108.90	2.99	.283	.780
Eli2	12	107.83	3.29	10	106.60	3.68	.250	.805
Chel i	12	-2.25	1.88	10	-2.30	2.48	.016	.987

An independent-samples *t*-test was conducted to evaluate the change between initial and final for expressive language (Table 6.10). The test did not indicate any outliers that were significant between the initial and final test scores for the two groups.

6.3.2 Multivariate ANOVA Analysis

The data were also subjected to a so-called multivariate analysis. The regression ANOVA was used to establish whether predictors, such as gender and age, had an impact on the outcome of ELI results. The dependent variable of ELI was compared to:

- Establish change in the results between two tests at initial and final test stage.
- Look at the independent variables of ethnicity, gender, interaction and age to determine if these factors have any impact on how the expressive score changes.

Table 6.11 Regression ANOVA for Dependent Variable ELI

	Model	Sum of Squares	Df	Mean Square	F	Sig,
2	Regression	147.032	4	36.758	.714	.594
	Residual	875.332	17	51.490		
	Total	1022.364	21			

   b.   Predictors: (Constant), Age, Female, Bilingual, interaction

   c.   Dependent Variable: cheli

The information in Table 6.11 indicates the overall change in measurement for the dependent variable ELI between the initial test and final test. The table reveals that there are no significant outliers between the scores at the initial test and final test stage.

Table 6.12: Predictors/coefficients under ANOVA for Dependent Variable ELI

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	29.772	57.959		.514	.614
Bilingual	.139	3.487	.010	.040	.969
Female	6.564	5.030	.404	1.305	.209
Interaction	-2.332	8.739	-.098	-.267	.793
Age	-.673	1.166	-.159	-.577	.571

b.   Dependent Variable: cheli

The coefficient data presented in Table 6.12 similarly indicates that these factors; ethnicity, gender, interaction and age, do not have any impact on how Expressive Language (ELI) changes, that is any change in ELI is not related to these four factors.

6.4   Summary of chapter

This chapter briefly presented the findings of the core language and expressive language skills for bilingual German-English children compared to monolingual English-speaking children, at an initial and final test stage. Descriptive and Inferential statistical analyses were carried out in order to:

- Compare the means and standard deviations for each of the two groups, bilinguals and monolinguals as defined by the grouping variable for Core Language Score (CLS) and Expressive Language Index (ELI).
- Establish overall English language performance using the CLS scores of a standard preschool SLT test for both bilingual and monolingual children at an initial test and then again at a final test.
- Establish Expressive language using the ELI score between bilingual and monolingual children at an initial test and then final test.
- Determine the changes in scores for the expressive language between initial and final test and compare using predictors such as gender and age.

In addition, the findings of a one- and two-tailed independent *t*-test did not show any significant differences between the two groups in terms of expressive language skills in

English. Furthermore, an independent *t*-test analysis did not reveal significant change in scores between the initial and final test stages.

A multivariate ANOVA analysis using independent variable coefficients, such as gender and age and the interaction of being bilingual and male, for example, indicated that these factors were not related to or impacted on how Expressive Language (ELI) changes.

This chapter summarised the findings of the statistical test results in relation to core language and expressive language skills. The next chapter will provide a discussion of the results from Chapters Five and Six, and will attempt to explain the findings with reference to the literature review.

CHAPTER SEVEN: DISCUSSION OF RESULTS

7.1   Introduction

The previous chapters discussed the results of the statistical tests carried out on the outcomes of the standard CELF Preschool-2 [CELF-P2] (Wiig et al., 2004) This chapter will present a discussion of the main research findings presented in Chapters Five and Six, with reference to factors examined in relation to these. The first section of this chapter will examine research question one followed by a discussion of all relevant findings in relation to this research question one. The subsequent section will revisit the second research question followed by a presentation and discussion of related findings. The third section will evaluate the broader implications possibly affecting L2 English language performance and will discuss these in the context of the wider study findings. The last section will provide a summary of the discussion, as well as examining some other possible factors influencing English language behaviour will also be summarised in this section.

7.2   Research Question One

The first research question examined whether the exposure to two languages, German and English from birth, leads to an initial 'lag' in the development of the second language L2, English. One may anticipate that a child with exposure to two languages from birth may show English language development at a slower rate than a child who only needs to master one language. Research Question One was tested by having all children, both bilingual and monolingual, take age-specific English language receptive and productive skill subtests at age 4 (hereafter referred to as the initial test). These receptive and productive English language skill tests were part of the standardised CELF-P2 test (refer Chapter Three and Appendix E). The significance of the results of these tests was then tested by using a one-tailed *t*-test, to see whether the results were placed in one 'tail' or whether they were equally divided across both tails (refer Chapter Three). The researcher expected the one-tailed *t*-test to show that bilingual preschool children would demonstrate a delay in their L2 English development around age 4.

7.2.1 The initial test

Receptive skills

Research Question One investigated whether exposure to two languages from birth has a detrimental impact on early English language development compared to that of a monolingual English speaking child. Research question one was investigated by using an independent samples one-tailed *t*-test analysis[2] performed on the results of the receptive English language skills tests for the whole sample (n=22), (both bilingual and monolingual children). The findings did not show significant differences in performance between the bilingual and the monolingual children in terms of their receptive language. However, the results did reveal marginal difference in terms of the receptive subtest, Concepts and Following Directions (C&FD), in which children were requested to point to pictures in response to oral directions (please refer to Chapter Five). The receptive mean values for the monolingual children were higher than those for the bilingual children. That is, the monolinguals were slightly ahead of the bilinguals in terms of the receptive language (refer to Chapter Five). The marginal difference found in terms of the receptive C&FD subtest may explain the higher mean values for the monolingual children in the initial test.

The standardised CELF-P2 test which was used to test the children's receptive skills also reports measures of the effect size of samples compared to the general population (refer Chapter Three). This formula was adopted for the analysis of test results and showed that the effect size coefficient *r* was less than 0.2 which was to be expected, considering the small sample size and which may explain why the independent *t*-test did not show significant discrepancies between the bilingual and monolingual groups. In addition, an ANOVA analysis was carried out in order to control independent variables such as for gender and age, but this did not show any significant discrepancies. In other words, when controlling for independent coefficients such as gender, these had no effect on receptive language behaviour between the two groups. In other words, even though each group had slightly more females than males, the female gender did not appear to have a significant effect on the results. This would be contrary to the literature that suggests females reach

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[2] It is noteworthy to reiterate that using the formula of Cohen's *d* size test (usually used to accompany *t*-test and ANOVA results) confirmed the small sample size used in this study (n=22), and therefore no strong claims can be made concerning non-significant differences in language performance between the bilingual and monolingual groups.

milestones in language earlier than boys (Golinkoff & Hirsh-Opasek, 1999). However, the small sample size may make it difficult to draw any generalised inferences.

Expressive skills

An Independent Samples one-tailed *t*-test analysis did not show significant differences between the two groups of children in terms of their expressive language behavior. The expressive language means for the monolingual children were higher than the means for the bilinguals. In other words the monolinguals were performing slightly better in terms of their expressive English language skills (refer Chapter Six). Applying the formula of Cohen's *d* sample size effect (Cohen, 1988) to the outcomes of the expressive language tests showed the effect size coefficient *r* was less than 0.2, which was anticipated, considering again the small sample size and which may explain why the independent *t*-test did not show any significant differences between the two groups.

In brief, one could say:

1. The *t*-test results did not show a delay in the bilinguals' English language development compared to their monolingual peers at age 4. The mean values may suggest the bilinguals are comparatively weaker of the two in their overall Core English language test results (CLS).
2. Again, the results did not indicate any outliers that were significant in any of the receptive (RLI) and expressive (ELI) subtest scores – the *t*-test results did not show a delay with bilinguals in L2 English. The means in receptive language are higher for the monolinguals, indicating that they may be comparatively stronger than the bilinguals.
3. There were no differences that were significant in performance between the bilingual and the monolingual children, suggesting that both may have a similar level of English at age 4.

7.2.2 Discussion

Research Question One investigated whether exposure to two languages from birth has a detrimental impact on early English language development compared to that of a monolingual English speaking child. It was investigated by using an independent sample *t*-

test analyses performed on the results of both receptive and expressive language skills. The findings did not indicate differences that were significant between both groups in terms of their overall receptive and expressive skills. However there was marginal difference found in terms of the receptive subtest, Concepts and Following Directions (C&FD). The receptive and expressive means might be interpreted to indicate that bilingual children scored slightly lower than their monolingual age-group peers in terms of the receptive and expressive skills tests. Further analysis of the results, however, did not highlight any differences that were significant between the two groups. Therefore, the mean results from the first test would appear to contradict research question one.

When the findings were subjected to an independent *t*-test, there did not appear to be significant differences between the two groups of children. In other words, the bilingual children did not appear to be 'lagging behind' their monolingual age-group peers in terms of their productive and receptive skills in English.

As there were no significant outliers between the two groups of children at the initial test stage, we may reject the directional hypothesis that states a predicted outcome to which we expected something to happen. In other words that 'exposure to two languages form birth may have a detrimental impact on English language development of a bilingual child compared to a monolingual child'. The mean values, however, did suggest initially that the bilinguals were slightly behind the monolinguals in the L2 English skills. This might have been the case because they were possibly processing their two languages at age 4 and as a result this may have taken the bilinguals longer to comprehend the L2. Nonetheless the bilinguals were not showing signs of slower L2 development, even at 4.

Long (1990) discusses his research on the Critical Period Hypothesis (CPH) and claims that 'native-like proficiency' of a language cannot be achieved past a certain 'critical age' (1990, p. 274). He explains how learning languages gradually declines with age and would seem to support the benefits of exposure to languages from birth. While the current findings do not support this theory, they also do not suggest that exposure to two languages is detrimental to bilinguals' performance in their L2 English. Moreover, as the findings of the CELF-P2 test did not differ significantly across the two groups, the bilingual children's abilities in their L2 performance could be considered comparable with their monolingual English age-group peers. Thus this may support Long's comments that young children

attain native-like competence in both their languages, since the bilinguals seemed to perform just as competently and native-like as the monolinguals in L2 English.

7.2.3 Summary of section

This section has attended to research questions one, which initially drove the study and went on to address the factors that need to be considered in relation to this. The outcomes of the receptive and expressive language skills tests were analysed using *t*-test and ANOVA statistical analyses. The researcher discussed these findings, adding her own interpretations as to the outcome of the initial test. The next section will consider the second research question and related findings.

7.3 Research Question Two

The second research question related to the question of whether bilingual children overcome this initial 'lag' in the development of the second language L2 English by age 5. Research Question Two was tested by having all children, both bilingual and monolingual, take age-specific English language receptive and productive skill subtests after a period of 10-12 months following the initial test. This second test will hereafter be referred to as the final test. These receptive and productive English language skill tests were again part of the standardised CELF-P2 test (refer Chapter Three and Appendix E). The significance of the results of these tests was then tested by using an independent two-tailed *t*-test. The researcher expected to find that the bilinguals' English language development had not remained static, but that they had developed their English language skills to the point where they had overcome any possible initial 'lag' and had 'caught up' with their monolingual English speaking age-group peers in terms of English language skills.

7.3.1 The final test

Receptive skills

Research Question Two investigated whether bilingual German-English children catch up to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of expressive and receptive skills in English. Research question two was investigated by using an independent samples two-tailed *t*-test to enable us to consider an alternative option that over time the German-English children will not show signs of 'lagging behind' in the

development of the second language L2 English, but 'catching up' with their age-group peers. The findings did not indicate differences that were significant between groups in their receptive language behaviour. In contrast to the 'directional' one-tailed, the two-tailed *t*-tests are used to see whether results are spread equally across two tails, and hence 'non directional'. Cohen's *d* sample size effect (Cohen, 1988) computed for the expressive language skills showed an effect size coefficient *r* of less than 0.2, which is what you would expect to see in a small sample. Furthermore, ANOVA analysis indicated that gender, age and ethnicity had no impact on Receptive Language Index (RLI) results between initial and final test.

The receptive mean results appeared to have declined somewhat between initial and final tests for both groups. The mean values might have been interpreted to show that there was an improvement in receptive language skills for bilinguals and a decrease in receptive language skills for their monolingual age-group peers. These results do not, however, represent significant trends between initial and final tests.

Expressive skills

These were tested by using the standardised CELF-P2 test. Again, an Independent Samples two-tailed *t*-test analysis was performed on the whole sample (n=22) and this did not show any significant differences between the two groups of children in terms of their expressive language behaviour. In addition, the *t*-test did not reveal significant differences between the initial and final test in relation to receptive and expressive language skills. Further, an ANOVA analysis found that gender, ethnicity and age had no effect on Expressive Language (ELI) results between initial and final test.

Using the formula of Cohen's *d* sample size effect (Cohen, 1988) computed for the expressive language skills in the final test confirmed the effect size coefficient *r* was less than 0.2. This is what one would expect given the small sample size and which might also explain the fact that the *t*-test results did not show any differences that were significant.

The mean values for expressive language test results were comparatively lower for both groups in the final test. In other words both bilinguals' and monolinguals' productive language appeared to have declined somewhat between initial and final test. Such an outcome is difficult to explain as one might expect the children's expressive language to improve as they get older and as their vocabulary expands. Bilinguals may indicate these

characteristics since they need to continually distinguish between their two languages when it comes to processing language and producing language utterances. Yet, when one considers that monolingual English children had to access vocabulary in one language only, it would appear surprising that they scored less well than the bilingual children when it came to productive skills in that one language, i.e. English. The final test was again age-specific (please refer to Appendices E & I), and this time they took a test aimed at 5-year olds, so it might have been slightly more challenging.

In brief,

1. The *t*-test results did not show a delay in the development of the second language (L2) English compared to their monolingual peers at age 4 – and therefore at age 5. At age 5 the bilingual children scored higher means than the monolingual children in terms of receptive skills in the English language.

2. There were no outliers within specific areas of receptive and expressive language categories in either of the tests that would pre-dispose a delay in the development of the second language (L2) English. The final test means revealed that bilinguals are comparatively stronger than monolinguals in their receptive language skills.

3. There were no significant differences between the groups that appear to suggest the bilingual children were not performing less well in the tests than their monolingual age group peers at age 4. In light thereof, since they did not appear to be 'lagging behind' in terms of English language skills, the concept of possibly any 'catching up' in terms of language skills does not appear to be justified.

7.3.2 Discussion

Research Question Two investigated whether German-English bilingual children catch up to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of expressive and receptive skills in English. It was investigated by using an independent samples two-tailed *t*-test . The results from the statistical analyses for the final test revealed that:

(i) The bilingual children did not show signs of 'lagging behind' at the initial test stage in the development of the second language L2 English, as no significant discrepancies between groups were identified to justify a 'lagging behind' theory.

(ii) The results tend to support the research question two that German-English children overcome any initial delay in English language development they may be showing to the point where they have 'caught up' with their monolingual English speaking age-group peers both in terms of expressive and receptive skills in English by age 5.

Finally, since the bilinguals do not appear to be 'lagging behind' in terms of English language skills even at age 4, the concept of 'catching up' in terms of their language skills does not seem to be sustainable. In other words, the bilingual children seem to be performing on a par with their monolingual English speaking age-group peers right from the initial test at age 4. Other possible explanations for this are offered under 7.4 below. Moreover, the means would indicate that the bilinguals perform marginally better in their core language and receptive language skills at age 5 (please refer to Chapters Five and Six). The bilinguals' L2 English performance may suggest a heightened cognitive awareness, enabling them to do well in the receptive tests, which would seem consistent with Bialystok (2001) positing that bilingualism enhances cognitive ability.

On a final note, one could speculate that since all the bilingual children were exposed to two languages from birth, this stimulated their meta-linguistic skills from an early age creating a sort of 'hyper awareness' of both their languages. Since they spent most of their waking hours in an English-speaking daycare environment, on average five plus hours a day, it may not come as a huge surprise that they were actually not lagging behind in English from the beginning. One may suggest that the majority of their waking hours were spent in daycare, which is also where they received the majority of their L2 English language input. The fact that they had two languages, stimulated their linguistic awareness and helped them to develop fairly competent skills in their L2 English, on a par with those of their monolingual English speaking age-group peers. While this may seem speculative, Unsworth (2007) has posited that sociolinguistic factors, for example, language exposure and influence of child's environment, can be strong determiners affecting language performance (please refer to section 7.4.2). Bloom (2002) states language learning depends on the child's genetic make-up and social interactions, which might have played a role in the current study, given bilingual children attend English daycares and mostly live with one English-speaking parent. In addition, the language input from the English

speaking parent, mostly the father, may also have been important. Even though the children may not have spent much time with their English speaking parent in terms of quantity, the time spent with this parent should be measured in terms of quality. It is conceivable, for instance, that the children may have really valued any time spent with their English speaking parent (mostly the father) at home in the evening and during the weekend, making them more 'receptive' to any input from this parent.

The results of this study would mean an incentive for bilingual parents to continue to bring up their children bilingually. It might possibly reassure parents that exposure to two languages from birth does not appear to have a detrimental impact on the development of the second language L2 English. Furthermore, the study could inform parents and educators alike that in this small sample, bilinguals' abilities in receptive and expressive modalities and general L2 performance are comparable with their monolingual peers as young as age 4.

7.3.3   Summary of section

This section has discussed the findings relating to research question two. T-test and multivariate ANOVA analyses were conducted to analyse differences that were significant between groups in terms of their receptive and expressive language skills. The researcher attempted to explain and discuss the findings in relation to research question two and the tests conducted in the final test. The next section will consider other possible explanations influencing English language performance.

7.4   Other possible explanations

The first sections of this chapter presented a summary of findings of the various analyses conducted on the data. This part of this interpretation of results is to consider the broader implications of the researcher's findings. The researcher will attempt to frame her findings by revisiting relevant aspects of the referenced literature review in Chapter Two. The study did not show significant differences in English language performance between the monolingual and the bilingual group. However the sample was quite small and involved two languages which may be said to be linguistically related, in that they are part of the same language family. Previous literature has found that factors such as gender, interlocutor influence, child behaviour, influence of child's environment/language exposure, influence

of socio-economic factors, and influence of parental language played a role in tests done to determine competence in English language performance. In the current study, some of these factors were identified and supported by means of qualitative data using behaviour observation checklists, questionnaires and descriptive pragmatics profile (DPP), and quantitative CELF-P2 test.

The case study in Chapter Four looked at two children, one taken from the bilingual group of subjects, while the other was taken from the monolingual group of subjects. In this chapter the multi-method triangulation approach of qualitative and quantitative was discussed for individuals taken from the bilingual group of subjects and monolingual group respectively. The language use questionnaire employed in this study managed to bring out some of the factors mentioned above in terms of influencing English language performance. Other qualitative approaches included child behaviour observation checklist and descriptive pragmatics profile to determine verbal and non-verbal communication in context.

7.4.1 Gender influence

It has been suggested that girls generally do perform better than boys in terms of English language performance (Golinkoff & Hirsch-Opasek, 1999). An ANOVA regression analysis was performed on scores from the standardized CELF-P2 test to establish whether gender-related variables had any impact on the outcome of Receptive Language Index (RLI) or Expressive Language Index (ELI) scores. The findings from the ANOVA analysis did not show any real relationship between females and males in terms of impact on RLI/ELI results. Further, controlling for age over time did not indicate significant differences or changes between initial and final tests. Finally, the small sample size, in particular, with the male gender in this study, may explain the findings.

A multivariate ANOVA analysis for gender indicated no differences that were significant in English language test performance between boys and girls. However, the sample size was very small. Yet, interestingly all the boys bilingual (n=2) and monolingual (n=3), on average, scored in the 'above average' range on the SLT score scale, with exception to MM8 in the case study. Moreover, MM8 had significant results in the final test with receptive language. The two bilingual boys were slightly stronger in their receptive language, possibly impacting on the higher RLI mean for bilinguals in the final test. The bilingual boys were not analysed individually in the Case Study chapter as they were above

average performers and limited to one typical child from each group. (Please refer Chapter Three for justification of subject choice in Chapter Four).

A study containing an equal number of males and females might possibly have turned up some patterns of difference between the bilingual and monolingual groups. Findings supporting the positive effect of being male and bilingual, for example, might create an interesting discussion since the literature claims that girls generally perform better than boys in language. In this study the only two bilingual boys were 'above average' performers, and scored, on average, marginally better than their monolingual gender. Again, there were no significant differences across the group, however the male sample size was too small, bilingual (n=2) and monolingual (n=3) and this may give a reason for these findings.

A larger study with equal number of boys to girls might be warranted to see if boys in the current study were an exception or whether boys perform linguistically better than their monolingual gender and age-group peers in general.

7.4.2 Language exposure and influence of child's environment

The literature (cf. Doepke, 1996) indicated some research on the separate development hypothesis, the idea that languages are represented differently in the bilingual mind from birth. It would appear that language exposure and the influence of the child's environment may have had an impact on the outcome of the results.

The findings of the present study appear to show that the theory relating to dual language exposure may have some merit, in that children may have acquired a common grammar even at age 4. Some bilingual children, for example BF4 in the Case Study chapter, demonstrated knowledge of words in the expressive vocabulary tasks that they appeared to be familiar with in their L1 German and L2 English. Conversely, they struggled with some word finding tasks in English, and had similar problems when the researcher spontaneously asked if they knew the word in German.

The researcher might have interpreted from this that bilingual children were able to make associations with pictures and separate their languages accordingly. However, it was not the researcher's intention to examine the L1 German as she was interested in finding out if bilinguals could relate L2 terms equally in their L1 German.

In addition, Genesee (1989) in Petitto (2001, p. 455) suggests that in early language learning, children's language is not delayed, but rather undergoes 'protracted language development', i.e. their language development is essentially drawn out as they sort out their two input languages (please refer Chapter Two). This appears to have been supported by the findings of the present study as bilingual children as young as 4 were not showing signs of delay or disordered language.

The researcher did notice bilingual children using particular features in their speech which might be considered indicative of word-finding and meta-linguistic processing issues. Such features included requesting prompts in verbal communication, and pauses, hesitation and contemplating their responses in non-verbal communication. Findings from the current study also appeared to confirm the researcher's observations in that there was no indication of language delay in the development of the second language (L2) English either at age 4 or age 5. The researcher felt this was the case because firstly, there was no evidence to suggest bilinguals were lagging behind, and secondly, the bilingual children showed particular prosodic features in their speech to suggest they were possibly processing and drawing out their language. Finally, Petitto's (2001) 'Fundamental Hypothesis' advanced this theory of developing two language systems from birth. Petitto promotes two language systems and it would possibly apply to the current study as the bilingual children did not show signs of the L1 interfering with their L2. It would appear that they had developed their two language systems, the L1 from the L2 quite separately.

7.4.3 Socioeconomic factors and influence of parental language

Schachter (1979) proposes that socioeconomic status influences the enrichment of language in children. This seems to have been in line with the findings of the language use questionnaire, since most of the mothers, who usually acted as primary caregivers to the children, had higher Diploma or Degree equivalent education. Further, this might have resulted in 'quality' language in interactions with their offspring, and fits in line with Brown (1973) and Macwhinney's (2000) contribution that education and quality of the mother's language (Hart & Risley, 1995) may have been factors in the bilinguals' success. It might be also fair to consider then that these children came from families with higher economic status, which may have contributed to bilinguals' performance linguistically.

It would be interesting to see the results of studies examining bilingual children from a range of socioeconomic households, and with parents from a range of educational backgrounds, whether the children's (L2) English performance would be affected. However, this study was also too small to make statistically viable inferences. A future study may want to assess parents' economic and financial status in terms of affecting children's linguistic performance.

The influence of the parents' choice of code appeared somewhat to play a role. In discussions with mothers it would appear they mixed their language codes to accommodate certain situations, for example, dinner conversations at the table with the father. The majority (n=8) of the fathers were in fact L1 English speakers, and so the mothers would address their children in the L2 English when also talking to the father. The majority of fathers in this study did not speak or even understand German and so it was quite significant that the mothers and the children would switch to English in the presence of the father. Therefore, it would seem that parental code-switching/mixing (Goodz, 1989) did have an impact in this sense on children's language choice as discussed in Chapter Two.

The mothers also explained that they would code-mix with their children around other L1 English speakers too. They would do this out of politeness to accommodate the fact that the L1 English speakers could not speak German, and often to engage them in the conversation. However, the mothers explained that they did not code-switch with their children in a single utterance, so as to avoid confusion. In this study, mothers tended to use German with their children during the day and around other L1 German speakers.

7.4.4 Speech production and language delay

Contrary to earlier findings in the literature where some theorists thought that exposure to two languages can lead to confusion, language delay, and even speech production problems, the findings from this research did not reveal stuttering or articulation as prominent features in the speech of bilingual subjects. As discussed in Section 7.4.2, there were hesitations and contemplation of answers in some of the bilinguals' response patterns, but these did not show signs of delay or confusion. In fact more recent research (e.g. Bialystok, 1993, 1999, 2001; Bialystok & Martin, 2004) has showed that bilingualism in children enhances cognitive awareness, asserts greater attention and inhibition control. These features

appeared to be more evident in the study findings since the majority of these children were not showing signs of stuttering, but did show signs of pausing etc.

Stuttering and Code-mixing

There were no signs of apparent code-mixing in the speech of bilinguals. However, there was an exception with one child, bilingual subject, BF9, who demonstrated speech production problems, such as stuttering. Unlike other subjects in the study, both parents were of German descent and spoke German with the child in the home. Unfortunately, the researcher was unable to conduct the final test as the child was clearly struggling in the initial test and it was evident from her dominant German code-mixing between languages that she was more pre-disposed to the German language. Secondly, the mother insisted on being present during the test and when the child stuttered or struggled with word-finding expressive tasks, the mother would translate the task into German for her. Moreover, this child's parents requested testing conditions to be different in the final test, which the researcher could not allow as this would have given this particular child an unfair advantage. Most importantly, test conditions had to be the same for all subjects and therefore, to have different test conditions for one subject would invalidate the findings. Subsequently, the researcher was unable to continue testing this child onto the final test. Obviously this invalidated the test results, and the researcher was therefore, unfortunately, unable to include the results for this child in the results for the sample as a whole. Nonetheless, a discussion of this child's initial inclusion was considered important and validated as she was selected as part of the testing process.

Almost all subjects were born to bilingual marriages or partnerships. BF9's parents were both native speakers of L1 German and also fluent in L2 English. Since this child's parents spoke L1 German, it would have been interesting to see how she would have fared overall in the final test. The researcher noted from her own observations throughout testing that this child was quite different from the others, in that she seemed to be clearly struggling with her comprehension of tasks and her oral language production. Again, with this particular child, as with the others, the majority of her daytime hours were spent in an English-speaking centre. Yet the disparity was with the language input she received within her home family unit that seemed to impact on her results. She was the only candidate to score in the lower range using the standard CELF-P2 scoring system used in this study.

The bilingual children in this study appeared to have been exposed from birth to two languages until about the age of 3. By age 3 the children had started attending an English preschool, where they received instructions through the English language medium (n=10) during the day, while also speaking English with at least one parent at home. This may explain their familiarity and level of comfort with the English language and also why there were no traits of stuttering occurring in their L2 English speech and language.

Language impairment

The findings discussed in Bedore & Pena's (2008) study in relation to children's language impairment in the English language are not relevant here. The children in this study did not show that they were linguistically impaired or delayed. However, the CELF clinical evaluation tests used in their study were similar models to tests used in the current study, hence their findings do appear relevant here. Bedore and Pena discussed limitations associated with these tests, in terms of adapting and translating models for sequential bilinguals in their study. In contrast to the existing literature relating to Speech Language Therapists and Bilingualism methods used, the current study did not use a translated model, as the researcher was not testing bilinguals' L1 German but rather their linguistic skills in their L2 English. The present study, therefore, made use of the standardised CELF preschool test in English, which is also used for bilingual children. Thus, the limitations associated with Bedore and Pena's version, in relation to adapting and translating models, are not pertinent to the current study, but may be relevant if a future study were to examine L1 German. In fact, this choice seemed to be validated by the outcomes, as the bilingual children showed similar ability levels in their L1 German and L2 English as simultaneous bilinguals, and so did perform equally well in their L2 as their monolingual peers.

The findings from this study would seem to suggest these bilingual children were not delayed or impaired and the same might apply to bilingual children with other language pairs. In fact, some of their verbal and nonverbal behaviour shown by the bilingual children in the sample might be considered indicative of meta-linguistic processing, which bilinguals experience as they work with their two language systems concurrently. In spite of the fact that subjects in the current study did not show signs of L2 English language development delay, the researcher feels that there is a case to be made for a standard English language assessment at preschool level similar to what SLTs use in Early

Childhood Centres (ECCs) for children with perceived problems. In the researcher's opinion this is justified so that language issues do not go undetected before children enter primary school. Additionally, the children might then be said to be better prepared for what is expected of them at primary school level in terms of expressive and receptive English language skills. Even today, bilingual children in New Zealand are being referred to Speech Language Therapists for perceived language problems, so a comprehensive testing system may eliminate parents' and teachers' misunderstandings, or bilinguals being misrepresented as having L2 English language difficulties when often this is not the case.

Finally, the social relevance of the outcomes of the current study, together with a standard testing system in preschools, will help parents and teachers to identify actual rather than perceived language problems in bilingual preschoolers. At present there does not seem to be an adequate English language tests for preschool children in New Zealand. As the literature explains (Winter, 1999), the trend is for, e.g. educators and parents to sometimes wait for problems with language difficulty to occur before any intervention. An English language test at preschool level might help to eliminate uncertainties and so by the time children enter primary school, primary educators are well informed as to the children's linguistic ability levels.

7.4.5   Language choice and interlocutor influence

Fishman's (1967) domains analysis suggests that effects of social situations in language behaviour are important factors in language choice. Interlocutor influence (Gal, 1979) is where bilinguals accommodate their languages to the speakers of their family, e.g. in the family domain. Further, Quay (2008) holds that language choice is affected by language input from the parents directed at the child. Influence of interlocutor was relevant to the current study, in that children spoke with the mother or father in one of their respective languages. Language orientation depending on the mother or father was questioned in the language use questionnaire, and would appear to support the study findings that bilingual children had the ability to organise and accommodate their choice of language, even at age 4. The results from the questionnaires and SLT tests would support the use of both L1 German and L2 English in the home, where one parent uses one language with the child.

Paradis (1977) in Foster (1996) refers to the paradigm of 'language as an organiser' the idea that bilinguals' languages are 'cortically represented in the brain' and serve as

'organisers of experience' (1996, p. 115), which may seem factors that qualify the early infant learning experience. The mean values might lend support towards Paradis's theory, in that the bilinguals appeared to perform comparatively better in their L2 English language performance than their monolingual peers in the final test. It seemed that bilingual children in the current study were able to draw on their linguistic repertoire and experiences from early on, as even at age four they were on a par with their peers. Since there was no significant evidence to suggest bilinguals excelled in L2 performance to support Paradis's statement, the fact that bilinguals seemingly performed well compared with their age-group peers, may possibly suggest this.

Postulations regarding L1 language maintenance and attrition

There were no significant differences in performance between the bilingual and monolingual children. Therefore, the following postulations might be made from the findings; firstly, there was no indication of delay with L2 English anticipated at age 4. Secondly, L2 English was possibly stronger for the bilinguals as children were attending English-speaking Early Childhood Centre (ECC) during the majority of the day. Even though L1 German was used primarily at home with the main caregiver, it was possible that the children's L1 was the less dominant language. L2 English skills may still surpass their German as exposure to English increases as they get older and move through their primary school years. Subsequently, this may raise the question of L1 maintenance and we may notice a gradual attrition of language at the individual level. Since L1 German was not examined in the CELF-P2 test, L1 maintenance and possible future attrition could only be assumed from information given in the questionnaire and discussions with the German parents. In the current context, both L1 maintenance and possible future attrition are actually irrelevant to the findings. However, L1 maintenance may possibly be relevant in a future study examining the L1 German language.

7.4.6 Expressive and receptive behaviours

Expressive skills

The results from this study were not consistent with the findings in Berman and Slobin's (1994) study advocating advanced expressive language abilities in 5-year olds compared to 3-year olds. Their findings showed that 5-year olds were more adept in producing information on characters and events in story-telling. This was relevant to the present study

because it supported the researcher's decision to conduct a final test around age 5. In relation to Berman and Slobin's study, the current thesis did not significantly prove or disprove their claim. Indeed, the researcher found that the results for both groups were not statistically significant at age 4 and 5. Yet, the mean values did represent changes and patterns emerging in expressive language behaviour between 4 and 5. In fact, the mean results in Chapter Six highlight how expressive language was slightly down for both groups at age 5.

Receptive skills

When measuring bilingual children's receptive vocabularies, Pearson, Fernandez and Oller (1992) found that bilinguals' vocabulary was more advanced with school age children. Their study would be consistent with the mean values in this study since bilingual children performed marginally better at age 5 than age 4 in their receptive language skills. In other words the standard CELF-P2 test showed an improvement in bilinguals' ability to evaluate and interpret basic to more complex vocabulary and concepts.

The children were expected to do a more advanced receptive subtest designed for 5-6 year olds in the final test. Speech Language Therapists (SLTs) maintain that according to ability and age, older children are expected to handle a complex task, such as the Word Classes (WC) subtest, referred to in detail in Chapter Three. The subtest involved the child's ability to perceive relationships between words that were related by semantic class features. Interestingly, the bilinguals seemed to perform better than the monolinguals in the later test. A feasible explanation attributing to the higher Receptive Language Index (RLI) score might be related to the idea that two languages activate different hemispheres of their brains (Baker, 2000). Thus, this enables bilinguals to engage parts of the brain differently from children with one language. Further Honig (2007) refers to the number of words a child hears in the first three years of life; the more immersed they are in the auditory and receptive aspects of language, the more enriched their vocabulary becomes.

7.5   Summary of discussion

This chapter has summarised the study's findings from Chapters Five and Six, and discussed them with reference to each of the research questions and factors that need to be addressed in looking at the research questions in this study. The results have also been

considered in relation to previous referenced literature in Chapter Two. However, not all information in former studies was found to be relevant.

This study supported that there were no significant differences in English language performance between the bilingual and the monolingual children. The means indicated that monolinguals performed better in core language, receptive and expressive language skills at age 4, but then gradually declined in these language skills by age 5. Conversely, the bilinguals performed slightly better in their core language skills in the final test compared to the initial test. In addition, the bilinguals improved slightly in their receptive language behaviour in the final test compared to the initial test, and also compared to the monolinguals. Case Study analysis also indicated no differences that were significant with receptive and/or expressive behaviour (refer Chapter Four). Significant discrepancies were discussed taking into account scoring and analysis criteria outlined in Chapter Three.

Results from this study pointed to a number of factors that may have affected language performance including: gender influence, language exposure, influence of child's environment, socioeconomic factors, influence of parental language and receptive/expressive behaviours. These factors were discussed in relation to previous literature and supported by means of multi-method qualitative and quantitative tests.

The Conclusion chapter will discuss the key research findings collected from the analysis chapters, in order to address the research questions and factors examined in relation to these in this study. It will revisit the original aims and review the methodological approach. The limitations of the study will be addressed and recommendations for future research proposed.

CHAPTER EIGHT: CONCLUSION

8.1   Introduction

This chapter will firstly review the original aims of study, followed by a review of the methodological approach employed. An overview of the research questions and actual findings will follow next. Then, a consideration of previous studies from the literature review and relevance to the current study is addressed, as well as a summary of key findings from Chapters Four, Five and Six. The limitations of the study are subsequently assessed, followed by implications for future research. The chapter concludes with a brief summary of preceding sections.

8.2   Reviewing original aims of study

The principal aim of this study was to prove early theories positing the negative effects of bilingualism are understandable, in other words studies proposing that some children may have problems processing two languages in the early stages. A further aim was to prove that bilingual children do catch up with their monolingual peers over the next 10-12 months learning to simultaneously process two languages. In fact, the study aimed to prove that bilingual children do this to the extent that, when given the standard CELF-P2 test at around age five, there is no significant difference in performance between the bilingual German-English and English monolingual children.

8.3   Review of methodological approach

In order to review the original aims and purpose of the study and prove or disprove some of the earlier theories and similarly later theories, a comprehensive and in-depth design and methodological approach was employed. A multi-method triangulated approach, as supported by Neuman (2003) was used to give different dimensions to the data. The triangulation method was adopted to collect the data using various data collection tools – standardised CELF-P2 test, behavioural observations, Descriptive Pragmatics Profile (DPP) checklists, and questionnaire surveys for bilinguals – at an initial test stage and final test stage over a period of 10-12 months. Further, collecting data over time is also consistent with Freeman (1998) and his framework of 'triangulation in time'. The CELF-P2 test was predominantly quantitative in nature, and yielded test scores based on the participants'

English language skills. As it is becoming less standard for Speech Language Therapists to use CELF tests alone with young children, the test scores were supported by qualitative information from behavioural observations and questionnaire surveys to give meaning and describe the outcome of results (refer to Chapter Three and case study Chapter Four). Further, observations of the behavioural characteristics is what SLTs do in order to identify children with possible language development from those with potential disordered language, and that as the researcher was using the standardised CELF-P2 test, she also used the behavioural checklists. The inclusion of behavioural observations, Descriptive Pragmatics Profile (DPP) checklists and questionnaires proved pivotal in terms of describing the findings of the CELF-P2 test. The researcher noted that children's behaviour was reflected in their English language performance in that they used certain strategies, such as contemplating responses and pauses, to often arrive at the answers. This observation is also consistent with Caesar and Kohler's (2009) comments outlined in Chapter Three. Refer to Appendix E for more information on the Behavioural Checklist. Further, the pre-information from the DPP profile supported the CELF-P2 test and helped the researcher to better understand and interpret the findings of the oral expressive language. The pre-information did not in any way prejudice the researcher, it merely provided explanation and meaning to expressive results.

There were no modifications for the main study following the pilot study in terms of design and data collection tools used, except for the decision to not use the Pre-Literacy Rating Scale (PLRS). It was realised that literacy development examining reading and writing skills was not pertinent to expressive or receptive behaviour, and because preschool children are preliterate.

A qualified SLT was present during all testing sessions for the pilot study and afterwards gave feedback to the researcher. The SLT carried out an inter-rater reliability evaluation of accuracy of testing as well as accuracy of scoring of test. She agreed with the methodology and data tool collection methods. However, she gave constructive feedback as to some of the tactics and strategies the researcher was using during the test, as explained in Chapter Three.

The researcher encountered teething problems with the statistical analyses involved in this research. The researcher recruited the assistance of statisticians to conduct statistical analyses on the data sets, and found using *t*-tests that there was no indication of statistical

differences between the two groups. The researcher then conducted multivariate ANOVA analysis to control for gender and this did not suggest differences that were significant. The means from the independent *t*-test, however, did allude to differences in relation to receptive and expressive behaviour. For example, the bilinguals appeared to have made gains in the final test in relation to their receptive language skills, when they were behind in both receptive and expressive skills at the initial test.

A Cohen's *d* sample effect size that can be used to support *t*-test and ANOVA results seemed to suggest that the sample size in this study was too small. Though there was difference between two groups' mean scores, the difference was not considered to be a true difference and this could possibly be due to small sample size. While the researcher considered the sample was small, using Cohen's *d* may support the statistical tests above.

8.4 Overview of research questions and actual findings

The initial research question in this study explored whether the exposure to two languages, German and English from birth, leads to an initial 'lag' in the development of the second language L2 English as compared to monolingual English speaking age-group peers. Research question one, referred to here, examined whether the bilinguals were significantly lagging behind the monolinguals in terms of their overall English language development and their receptive and expressive language skills. The actual findings did not show any significant differences between the two groups to suggest a 'lag' in the bilingual children's development. Likewise, the two groups' scores in the initial were not significantly different to imply that monolinguals were even ahead in their English language performance. In fact, as the scores were not significantly different between the two groups, the children's overall abilities in these content areas can be considered comparable. Yet, the difference in mean values between the independent groups appeared to suggest the bilinguals were slightly behind the monolinguals in terms of both receptive and expressive English language skills.

The second research question investigated whether German-English speaking children overcome this initial delay in English language development to the point where by age 5 they have 'caught up' with their monolingual English speaking age-group peers both in terms of expressive and receptive skills in English. This research question was tested in the final test to ascertain whether the bilinguals had caught up to the extent that there was no real difference in the English language skills as evidenced by their performance in the

standardised age-specific CELF-P2 test. Again the results of the second test did not uncover any significant outliers. However, the mean values between the two groups did expose that; firstly, bilinguals had, in fact, slightly improved in their overall English language performance (CLS) compared to the monolinguals, but results were down from the initial test for both groups. Secondly, both groups were weaker in the final test in terms of their expressive skills (ELI), but the monolinguals performed marginally better in both tests; and finally, bilinguals had improved in their receptive skills (RLI) compared to monolinguals.

8.5   Previous studies and relevance to current study

This section will review previous literature and will place the current study into the current theoretical framework with regard to childhood bilingualism. This will also help identify whether, and if so to what extent, the current study has made a contribution to the existing body of knowledge.

In the first part of the twentieth century linguists adopted the idea that bilingualism was in some way detrimental and had quite a negative impact on early childhood development. The earlier literature pointed to the negative effects (e.g. Arsenian 1937; Darcy 1953) suggesting it might affect, for example, measures of intelligence. Please refer to Chapter Two for an extensive overview of the earlier literature. Code-switching and stuttering, for example, were perceived to be features of bilingual speech, which were considered to be deviating from the norm, i.e. it was thought that bilingual children would show both stuttering and code-switching, but that both these features were actually abnormal features. Some of these thoughts continued until the 1960s where bilinguals were still considered linguistically impaired when compared to monolingual peers (e.g. Peal & Lambert, 1962).

The perceptions as to the negative impact of early childhood bilingualism published in the earlier literature were, in fact, what drove the researcher to formulate the research questions for the study. The first question poses the idea that children experience issues involving delay in the development of one of their languages. The second question advances the idea that bilingual children overcome this initial delay to the point where they have 'caught up' with their monolingual English speaking age-group peers both in terms of receptive and expressive skills in English.

Later theorists have challenged some of the earlier research and have advanced the idea that bilingualism is, in fact, beneficial to the child growing up with two languages (e.g. Bialystok, 2001). Again, refer to Chapter Two for an overview of the later literature challenging some of the earlier thoughts on bilingualism. In addition to the research questions listed in the previous paragraph, the researcher also wanted to extenuate some of those earlier negative perceptions associated with bilingualism and indicate benefits both cognitively and linguistically. Conversely, the findings of the study might also strengthen and add to those former negative connotations.

In terms of re-considering the later literature, this study tends to lean towards those studies which suggest the more positive implications of bilingualism. In the present study the bilingual children seem to be distinguishing between their languages earlier than initially anticipated, at school age. The bilinguals do not appear to have problems organising and processing their L2 and there are no significant disparities between them and the monolinguals. This is supported by Doepke (1996), who stated that the results in her study supported a 'separate development hypothesis', by which she meant that bilinguals are able to process their two languages separately from birth.

Some theorists have linked bilingualism and stuttering as possible causes of speech production and impediment problems (e.g. Darcy, 1953). Children with stuttering issues have been referred to Speech language Therapists (SLTs) in the past and even today, and some of these children have included bilinguals. With exception of one bilingual subject (refer Chapter Seven), none of the children had stuttering issues in the current study. However, they did show other verbal and nonverbal features in their speech; including stress on words, intonation, pauses, hesitation, and contemplation of responses. Some of these prosodic features might be indicative of 'protracted language development', the view that bilinguals take longer to process their L2 language rather than due to language delay. As discussed in Chapter Two and Seven, the current study would also lend support to Genesee's (1989) in Petitto (2001) 'Differentiated Hypothesis', the idea that two language systems are represented distinctly from the beginning, rather than fused together.

The findings in the existing study do not allude to a language performance issue in relation to receptive and expressive behaviours. Speech Language Therapists define 'language impairment/delay' as a 'deficiency in receptive and/or expressive language' (Bedore & Pena 2008, p. 1). The findings in the present study do not support language

impairment or delay as manifested in terms of receptive and/or expressive behaviour. Since the bilinguals did not show signs of delay at the initial test which was carried out when subjects were aged between 3;10 and 4;4 months, they essentially did not need to 'catch up' in the final test. Nonetheless, in support of Pearson, Fernandez, and Oller's (1992) study (please refer Chapters Two and Seven) regarding advanced receptive vocabularies in school-age children, the receptive mean values showed bilinguals to be slightly ahead to their peers.

Finally the concerns raised in Bedore and Pena's (2008) study, concerning limitations with adapting and translating models of clinical tests for bilingual children do not apply (refer Chapter Two). Bedore and Pena's comments may apply if were to test both L1 and L2 in a future study since there seems a lack in terms of suitable translated versions.

The CELF Preschool system in this study is generally used with bilingual preschool children to assess their L2 English skills, but only when referred for perceived speech and/or language problems. There is no English language assessment tool, similar to the CELF test, for normally developed children in preschool that might bridge the gap to primary school. In the researcher's opinion, since there would appear to be a void with early childhood assessment (please refer to comments in Chapter Seven), she feels her study may present a strong case for a comprehensive English language test system in NZ preschools.

8.6   Summary of findings and discussion

In this section, the researcher will provide a summary of the findings from the receptive, expressive, and case study chapters. She will further discuss why she found what she found in each of the respective chapters in relation to previous literature and studies.

8.6.1   Receptive skills

The bilingual children improved in their core language and their receptive English language skills compared with monolinguals in the final test, according to the bilinguals' mean values. It is possible that the bilingual children's receptive English language skills have improved because they are more queued into the listening and auditory parts of their brain, which may be further supported by Honig (2007) (please refer Chapters Two and Seven). The children have been exposed to two languages from birth, which have been stored in the

brain ready to be activated at some point. It may well be the case that bilinguals' dual language system from a young age allows them to activate different neuropath ways. This speculative theory is proven and attested by theorists and neurolinguists researching the field on brain lateralisation and activation of left and right hemisphere (e.g., Paradis, 2004). Often a similar analogy may be referred to when learning a musical instrument. It is possible that languages and music learned from an early age in some way stimulate the brain mechanisms differently to those of children, who have not been exposed from early on to two languages or to music from an early age.

Finally, the children in the study have bilingual parents and are exposed to bilingual input in the home from birth. Moreover, the type and quality of language from a parent at a very early age can heighten and strengthen the receptive skill awareness in English. Thus, the child's skill in receptive language may reflect the type and quality of language input.

8.6.2 Expressive skills

The bilingual children's expressive language skills would appear to have been reduced between the initial and final test (refer Chapter Six). They also performed less well in both initial and final expressive language tests compared with the monolingual children. Since auditory and listening skills generally precede oral language expression, one might expect this to happen (with expressive language) in the initial test. Interestingly though, the bilinguals' overall expressive language appeared stronger in the initial test than the final. Yet, one might envisage as the comprehension of language appears to have improved between tests, so might the expression of language accordingly.

On a final note the findings for the bilinguals in the expressive language final test is not consistent with Berman and Slobin's (1994) study in relation to improved expressive abilities at age 5 (please refer to Chapters Two and Seven).

8.6.3 Case study

The Case Study chapter revealed significant findings between receptive and expressive language behaviour for subjects, BF4 from the bilingual group and MM8 from the monolingual. The bilingual subject indicated a significant relationship with her expressive language in the initial test. Her relative strength in producing linguistic structures in the standardised CELF-P2 test may have explained this positive relationship. Conversely, BF4

demonstrated relative strength in her receptive language skills in the final test (refer Chapter Four). She displayed higher concentration and improved listening skills and hence this could be reflected in the receptive language score. Moreover, her ability to identify word relationships and follow basic concepts and directions impacted on her higher Receptive Language Index (RLI) score. Subject MM8 supported a level significantly higher in the receptive language in the final test. As with BF4, his apparent strength in understanding word relationships and directions attributed to his higher receptive language score.

There may be a plausible explanation to the outcome of results with the bilingual child where her oral language expression measures stronger compared to her auditory receptive language in the initial test. In discussions with a qualified Speech Language Therapist (SLT), the researcher discovered that children can in fact demonstrate higher levels of expressive language over their receptive, which may go against the norms of what one might expect. It may well be that children are able to activate the productive part of their brains over their comprehension and reasoning side.

However, BF4 showed a significant improvement in her receptive language in the final test, similar to the mean values for the bilingual group discussed in Section 8.6.1. Her final test results would suggest that her listening and auditory comprehension has improved. Again, this is an interesting result because her expressive part of the brain seems to have been activated in the initial test. It might be expected that productive language should improve with age, when it seems auditory comprehension has advanced.

8.7 Limitations of the study

The researcher encountered difficulties and challenges with this study that were somewhat restrictive at times. One of the limitations of this study concerned the number of participants in the sample, which still proved relatively small to extrapolate statistically viable conclusions from the results.

Further, the lack of male gender within each of the respective groups did not enable the researcher to determine male-female differences and similarities among groups. The rationale for this was that it would be interesting to see whether findings vary between male and female participants, in terms of English language development or delay issues prevalent in a particular gender group. The selection criteria included locating ideal

participants; that being they had to attend an Early Childhood Centre and be within a certain age limit (around age 4) for the initial and (around age 5) for final test. In particular, a larger bilingual sample with linguistically and culturally diverse backgrounds and an equal male-female ratio, may have posited significant differences. Moreover, an equal gender ratio could have depicted variations not only across the groups of children, but within the individual groups. Nonetheless, the smaller sample did provide data pertinent to the research questions, and justification for further research in this interesting field.

Once the researcher had located her sample group, which met the selection criteria, further issues also posed a problem. The researcher travelled all over the Metropolitan Auckland area to assess her initial 29 participants. After all her arduous and time-consuming efforts, it was realised after the initial test that the researcher could only use 22 children. This lead to the researcher having a problem with uneven groups, i.e. 10 bilinguals (8 girls:2 boys) and 12 monolinguals (9 girls:3 boys). Irrespectively, statisticians advised the researcher that it was not a good idea to remove subjects as it would impact on results. Also from the researcher's perspective it was not wise to throw out subjects to even out groups.

There were two young bilingual boys involved in the study initially. Yet it soon became apparent that they were more than six months younger than the other subjects, which would have age and development related implications for their performance in language tests. The strict parameters in terms of criteria for chronological age with the standardised CELF-P2 tests accentuated the difficulty using these two young bilingual boys. As it was, some of the children's ages had to be adjusted to score them at 4 years in the initial test and 5 years in the final test respectively, if were bordering on age 4 in initial and 5 in final test. The researcher could not do this for the 2 young bilingual boys because even in the final test, they were only 4;4 months, and could not justify scoring them as 5-year olds. (Refer Appendix I regarding age-related issues).

Further, the researcher encountered difficulties with two young monolingual boys, in terms of language behaviour issues, which resulted in the initial tests being terminated early. The time period involved in conducting the CELF-P2 test over 10-12 months did present the researcher with some problems. These time-constraint issues are briefly mentioned in Appendix I. Finally, test-related issues in terms of the researcher working

under the constraints of the CELF-P2 test meant she had to make adjustments to the children's age, as outlined in Appendix I.

8.8   Recommendations for future research

For future research the researcher would propose that receptive and expressive language behaviour be evaluated among an equal sample of males to females with a larger sample of children. The limitations with a smaller sample have been discussed in earlier chapters and further supported by using Cohen's d effect size to determine the sample size of this study. Furthermore, the researcher would recommend future research could follow the same sample group for another 3 to 5 years through primary school to see how they progress. If using the same sample size, the researcher could conduct a case study analysis on each individual child, observing their progression through primary school years. Alternatively, to contribute to the reliability of the findings, it may be suggested to add to the sample group or locate a new larger sample and follow their progress. This may be difficult to do logistically considering the limitations involved locating the current sample.

A future study may consider extensive quantitative research, targeting more variables, for example, language and socioeconomic status. Even though the education background in the questionnaire has facilitated the research to focus on the qualitative dimension, the quantitative data was slightly constrained. Therefore, it is suggested that future research would be better to collect data measuring and controlling for a multiple range of variables.

Finally, it would be interesting to assess and follow the bilingual children's L1 German into later years, using similar standardised tests (if available) for older age groups adapted for the German language and culture. By this, the researcher would possibly measure their L1 German performance and do a comparative analysis with their L2 English. They may find difficulty maintaining their L1, particularly as their L2 English is further strengthened by L2 English input and instruction in primary school. Further, children's German could be delayed which needs higher prominence. English is the community language and the language they will be immersed in on a day-to-day basis. So it would be interesting to follow these children up and test them again at age 10 to see which language is their dominant language at that point. Obviously the researcher would use a completely different testing system, not the CELF test itself. It might be interesting to replicate a

similar study, but monitoring L1 and L2 performance within a German-speaking environment. It would essentially be a reversal of the current study, but might enable us to gain further insight into maintenance and attrition of L1 German and L2 English.

8.9   Summary of chapter

This chapter reviewed the original aims of the study that motivated the current research. It then continued to review the methodological approach employed by the researcher using a multi-method combination of qualitative and quantitative methods. The researcher discussed these different approaches in terms of how they complemented the current study. The researcher then gave an overview of the original research questions that underpinned the current study and discussed the actual factors and findings in relation to these questions. A discussion of the key findings in previous literature with relevance to the current study was also give attention in the Conclusion chapter. The researcher discussed some of the earlier school of thought in contrast to later literature, and also addressed key points from Chapter Seven.

The researcher proceeded with a summary of the key findings from the statistical analyses. She summarised the results from the statistical t-test and ANOVA tests, and discussed them in relation to receptive language and expressive language skills. Key findings from the Case study chapter analysing one child from the bilingual group and one from the monolingual group respectively were also discussed in this section.

The researcher attended to the limitations of the study, which were addressed in the Methodology chapter, but will also be given further attention in the Appendix I section, particularly in terms of age-related and test-related issues.

Finally, further research is recommended to look at a larger sample and follow the children for the next 3 to 5 years. It is also suggested to assess the L1 German to see how language is affected over time, or even to observe children in Germany or other German-speaking country. More advanced quantitative design taking into account other variables, such as socioeconomic information, is also suggested as providing further information to support the standardised CELF-P2 test. However, reliability and validity of the quantitative approach of the CELF-P2 test, complemented by descriptive qualitative information did seem effective in the current study.

LIST OF REFERENCES

Arsenian, S. (1937). *Bilingualism and mental development.* New York, NY: Columbia
      University Press.

Auer, P. (1984a). *Bilingual Conversation.* Amsterdam, The Netherlands: John Benjamins.

Auer, P. (1984b). On the meaning of conversational code-switching. In P. Auer, P. &
      Di Luzio (Eds.). *Interpretive sociolinguistics* (pp. 87-112). Tubingen, Germany:
      Narr.

Auer, P. (1995). The pragmatics of code-switching: A sequential approach. In L. Milroy, &
      P. Muysken (Eds.). *One Speaker, Two Languages: Cross-Disciplinary Perspectives
      on Code-Switching* (pp. 115-135). Cambridge, England: Cambridge University
      Press.

Baker, C. (2000). *The care and education of young bilinguals.* Clevedon, England:
      Cambrian Printers Ltd.

Becker, H.S. (1996). The epistemology of qualitative research. In R. Jessor, A. Colby, &
      R.A. Shweder (Eds.). *Ethnography and human development: Context and
      meaning in social inquiry* (pp. 53-71). Chicago, IL: University of Chicago Press.

Bedore, L.M., & Pena, E.D. (2008). Assessment of bilingual children for identification
      of language impairment: Current findings and implications for practice. *The
      International Journal of Bilingual Education and Bilingualism, 11* (1), 1-29.

Berko Gleason J., & Weintraub, S. (1978). Input language and the acquisition of
      communicative competence. In K.E. Nelson, (Ed.). *Children's language 1* (pp.
      171-222). New York, NY: Gardner Press Inc.

Berman, R.A., & Slobin, D.I. (1994). *Relating events in narrative: A crosslinguistic
      developmental study.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Bialystok E. (1993). Metalinguistic awareness: The development of children's
      representations of language. In C. Pratt & A. Garton. *Systems of representation in
      Children. Development and use* (pp. 211-233). London, England: Wiley & Sons.

Bialystok, E. (1999). Cognitive complexity and attentional control in the bilingual mind.
      Child Development, *70*, 636-644.

Bialystok, E. (2001). *Bilingualism in development: Language, literacy, and cognition.*
      Cambridge, England: Cambridge University Press.

Bialystok, E. (2001). Book review by Mashakiko, M. (2002). Bilingualism in development: language, literacy, and cognition. *Bilingual Research Journal.* Washington, WA *26* (3), 729.

Bialystok, E., & Martin, M.M. (2004). Attention and inhibition in bilingual children: Evidence from the dimensional change card sort task. *Developmental Sciences*, *7* (3), 325-339.

Bloodstein, O. (Eds.). (1995). *A handbook on stuttering.* San Diego, CA: Singular.

Bloom, P. (2002). *How children learn the meaning of words.* Cambridge, MA: MIT Press.

Boehme, G. (1981). Mehrsprachigkeit und Sprachheilkunde. *HNO, 29,* 278-281.

Brisk, M.E., & Harrington, M.M. (1999). *Handbook: Literacy and bilingualism.* Mahwah, NJ: Lawrence Erlbaum.

Bromberg, P.M. (1993). Shadow and substance: A relational perspective on clinical process. *Psychoanal. Psychol.*, *10*, 147-168.

Brown, R. (1973). *A first language: The early stages.* Cambridge, MA: Harvard University Press.

Bynon, J. (1968). Berber nursery language. *Transactions of the Philological Society, 67* (1), 107-161.

Caesar, L.G., & Kohler, P.D. (2009). Tools clinicians use: A survey of language assessment procedures used by school-based speech-language pathologists. *Communication Disorders, 30* (4), 226-236.

Campbell, D.T., & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 81-105.

Carlson, S.M. (2005). Developmentally sensitive measures of executive function in preschool children. *Developmental Neuropsychology, 28* (2), 595-616.

Cheng, L., Battle, D., Murdoch, B., & Martin, D. (2001). Educating speech-language pathologists for a multicultural world. *Folia Phoniatrica et Logopaedica 53* (3), 121-127.

Chiswick, B.R., & Miller, P.W. (2008). A test of the critical period hypothesis for language learning. *Journal of Multilingual and Multicultural Development, 29* (1), 16-28.

Cohen, J. (Eds.) (1988). *Statistical power analysis for the behavioural sciences.* Hillside, NJ: Lawrence Erlbaum Associates.

Cummins, J. (2000). Interdependence of first and second language proficiency in bilingual children. In E. Bialystok (Ed.). *Language processing in bilingual children* (pp. 70-89). Cambridge, England: Cambridge University Press.

Darcy, N.T. (1953). A review of the literature on the effects of bilingualism upon the measurement of intelligence. *Journal of Genetic Psychology, 82*, 21-57.

Darcy, N.T. (1963). Bilingualism and the measurement of intelligence: Review over a decade of research. *Journal of Genetic Psychology, 103*, 259-282.

De Houwer, A. (1995). Structural aspects of young bilingual children's mixed utterances: a unified analysis. Antwerpen, Belgium: Universitaire Instelling.

De Houwer, A. (1998). Taalontwikkeling bij meertalige kinderen. In P.H.F.M. Bastiaanse, R. Van Borsel, J. Dejonckere, P.H.O. Jansonius-Schultheiss, K. van der Meulen, Sj. And Mondalaers, B.J.E. (Eds.). *Handboek Stem-, Spraak-, Taalpathologie* (pp. A7.4.20). Houten, The Netherlands: Bohn Stafleu Van Loghum

Denzin, N.K. (1978). *Sociological methods: A source book.* New York, NY: McGraw Hill.

Doepke, S. (1996). Is the simultaneous acquisition of two languages in early childhood equal to acquiring each of the two languages individually? *Proceedings of the 28th annual child research conference.*

Eisenson, J. (1986). *Language and speech disorders in children.* New York, NY: Pergamon Press.

Ellis, R. (1994). *The study of second language acquisition.* Oxford, England: Oxford University Press.

Fiesta, C.E., & Pena, E.D. (2004). Narrative discourse in bilingual children: Language and task effects. *Language, Speech and Hearing Services in Schools 35* (2), 155-168.

Fishman, J.A. (1967). Bilingualism with or without diglossia: Diglossia with or without bilingualism. *Journal of Social Issues, 23,* 29-38.

Foster, R.P. (1996). The bilingual self: Duet in two voices. *Psychoanalytic Dialogues, 6* 99-121.

Foster-Cohen, S.H. (2003). A review of bilingualism and second language acquisition in Early childhood. In A. Meade, H. PuhiPuhi, & S. Foster-Cohen (Ed.). *Pasifika ECE Final Report.* Wellington, New Zealand: Ministry of Education.

Freeman, D. (1998). *Doing teacher research: From inquiry to understanding.* Boston, MA: Heinle & Heinle.

Gal S. (1979). *Language Shift: Social determinants of linguistic change in bilingual Austria.* New York, NY: Academic Press.

Genesee, F. (1989). Early bilingual development: One language or two? *Journal of Child Language 16* (1)*, 161-79.

Golinkoff, R.M., & Hirsch-Pasek, K. (1999). *How babies talk.* Harmondsworth, England: Penguin.

Goodz, N.S. (1989). Parental language mixing in bilingual families. *Infant Mental Health Journal, 10* (1) 25-44.

Grosjean, F. (1982). *Life in two languages: An introduction to bilingualism.* Cambridge, MA: Harvard University Press.

Grosjean, F. (1995). A psycholinguistic approach to code-switching: The recognition of guest words by bilinguals. In L. Milroy & P. Muysken (Eds.). *One speaker, two languages: Cross-disciplinary perspectives on code-switching* (pp. 259-275). New York, NY: Cambridge University Press.

Gunn, A.C., Child, C., Maddren, B., Purdue, K., Surtees, N., Thurlow, B., & Todd, P. (2004). Building inclusive communities in early childhood education diverse perspectives form Aotearoa/New Zealand. *Contemporary Issues in Early Childhood, 5* (3), 293-308.

Hakuta, K. (1986). *Mirror of language: The debate on bilingualism.* New York, NY: Basic Books.

Hakuta, K., & Diaz, R.M. (1985). The relationship between degree of bilingualism and cognitive ability: A critical discussion and some new longitudinal data. In E. Peal, & W. Lambert (Eds.). *The relation of bilingualism to intelligence.* Children's Language.

Hart, B., & Risley, T. (1995). *Meaningful differences in the everyday experiences of young American children.* Baltimore, MD: MD University Press.

Hedges, H. (2001). A right to respect and reciprocity: Ethics and educational research with children. *NZ Research in ECE, 4,* 1-18.

Honig, A.S. (2007). Oral language development. *Early Child Development and Care, 177* (6), 581-613.

Hornby, P.A. (1977). *Bilingualism: psychological, social and educational implications.*
New York, NY: Academic Press.

Jick, T.D. (1979). Mixing qualitative and quantitative methods: Triangulation in action.
Administrative Science Quarterly, 24, 602-611.

Juan-Garau, M., & Perez-Vidal, C. (2001). Mixing and pragmatic parental strategies in
early bilingual acquisition. *Journal of Child Language, 28*, 59-86.

Kopp, C.B. (1982). Antecedents of self-regulation: A developmental perspective.
Developmental Psychology, *18*, 199-214.

Krashen, S. (1973). Lateralization, language learning and the critical period: Some new
evidence. *Language and Learning 23*, 63-74.

Lambert, W.E. (1973). Culture and language as factors in learning and education. In A.
Wolfgang (Ed.). *Education of immigrant students* (pp. 55-83). Toronto, Canada:
Ontario Institute for Studies in Education.

Lanza, E. (1997). Language contact in bilingual two-year-olds and code-switching:
Language encounters of a different kind? *International Journal of Bilingualism*, *1*,
135-162.

Lanza, E. (2001). Bilingual first language acquisition: A discourse perspective on
language contact in parent-child interaction. In J. Cenoz & F. Genesee (Eds.).
Trends in bilingual acquisition (pp. 201-230). Amsterdam, The Netherlands: John
Benjamins.

Lebrun, Y. (1997). Adult-onset stuttering. In Y. Lebrun, (Ed.). *From the brain
to the mouth. Acquired dysarthria and dysfluency in adults* (pp. 105-138).
Dordrecht, The Netherlands: Kluwer Academic Publishers.

Lenneberg, E.H. (1967). *The biological foundations of language.* New York, NY: Wiley &
Sons.

Livingstone, S.M., & Bovill, M. (2001). *Children and their changing media environment.*
Mahwah, NJ: Lawrence Erlbaum Associates.

Long, M.H. (1990). Maturational constraints on language development. *Studies in Second
Language Acquisition 12* (3)*,* 251-285.

Maas, W. (2000). Early detection of speech and language delays in the Netherlands. The
case for integrating primary and secondary prevention. *Child: Care, Health and
Development, 26* (2), 150-162.

Macwhinney, B. (Eds.). (2000). *The CHILDES project: Tools for analyzing talk.* Mahwah, NJ: Lawrence Erlbaum Associates.

McNamara, J. (1966). *Bilingualism and primary education.* Edinburgh, Scotland: Edinburgh University Press.

Mishina, S. (1999). The role of parental input and discourse strategies in the early language mixing of a bilingual child. *Multilingua, 18* (4), 317-342.

Neuman, W.L. (Eds.). (2003). *Social research methods: Qualitative and quantitative approaches.* Upper Saddle River, NJ: Pearson Education, Inc.

Newman, I., & Benz, C.R. (1998). *Qualitative – Quantitative research methodology: Exploring the interactive continuum.* Carbondale, IL: Southern Illinois University Press.

Nicoladis, E., & Secco, G. (2000). The role of a child's productive vocabulary in the language choice of a bilingual family. *First Language*, *20*, 3-28.

Paradis. M. (1977). Bilingualism and aphasia. In H. Whitaker & H. Whitaker (Eds.). *Studies in Neurolinguistics* (pp. 65-121). New York, NY: Academic Press.

Paradis, M. (2004). *A neurolinguistic theory of bilingualism.* Amsterdam, The Netherlands/ Philadelphia, PA: John Benjamins.

Paradis, J. (2004). On the relevance of specific language impairment to understanding the role of transfer in second language acquisition. *Applied Psycholinguistics, 25,* 67-82.

Paradis, J., Crago, M., Genesee, F., & Rice, M.L. (2003). French-English bilingual children with SLI: How do they compare with their monolingual peers? *Journal of Speech, Language and Hearing Research, 46*, 113-127.

Patton, M.Q. (Eds.) (1990). *Qualitative evaluation and research methods*. Newbury Park, CA: Sage.

Peal, E., & Lambert, W.E. (1962). The relation of bilingualism to intelligence. *Psychological Monographs*, *76*, 546.

Pearson, B.Z., Fernandez, M.C., & Oller, D.K. (1992). Measuring bilingual children's receptive vocabularies, *Child Development, 63,* 1012-1020.

Penfield, W., & Roberts, L. (1959). *Speech and brain mechanisms.* Princeton, NJ: Princeton University Press.

Petitto, L.A. (2001). Bilingual signed and spoken language acquisition from birth: Implications for the mechanisms underlying early bilingual language acquisition. *Journal of Child Language, 28,* 453-496.

Posner, M.I., & Rothbart, M.K. (2000). Developing mechanisms of self-regulation. *Development and Psychopathology, 12*, 427-441.

Quay, S. (2008). Dinner conversations with a trilingual two-year old: Language socialization in a multilingual context. *First Language, 28* (1), 5-33.

Restrepo, M.A. (1998). Identifiers of Spanish-speaking children with specific language impairment. *Journal of Speech, Language, and Hearing Research, 41*, 1398-1411.

Restrepo, M.A., & Gutierrez-Clellen, V.F. (2001). Article production in bilingual children with specific language impairment. *Journal of Child Language, 28*, 433-452.

Restrepo, M.A., & Kruth, K. (2000). Grammatical characteristics of a bilingual student with specific language impairment. *Journal of Children's Communication Developoment, 21*, 66-76.

Restrepo, M.A., & Silverman, S.W. (2001). Validity of the Spanish preschool language scale-3 for use with bilingual children. *American Journal of Speech-Language Pathology 10*, 382-393.

Schachter, F. F. (1979). *Everyday mother talk to toddlers: Early intervention.* New York, NY: Academic Press.

Schraeder, T., Quinn, M., Stockman, I.J., & Miller, J. (1999). Authentic assessment as an approach to preschool speech language screening. *American Journal of Speech-Language Pathology, 8,* 195-200.

Seeman, M., & Schwer, M. (1959). *Sprachstoerungen bei Kindern.* Berlin, Germany: VEB Verlag Volk und Gesundheit.

Soderstrom, M. (2007). Beyond babytalk: Re-evaluating the nature and content of speech input to preverbal infants. *Developmental Review, 27* (4), 501-532.

Spaulding, T.J., Plante, E., & Farinella, K.A. (2006). Eligibility criteria for language impairment: Is the low end of normal always appropriate? *Language, Speech, and Hearing Services in Schools, 37*, 61-72.

Statistics New Zealand (2006). 2006 Census of Population and Dwellings. Wellington,
New Zealand: Statistics New Zealand.

Stern, E. (1948). A preliminary study of bilingualism and stuttering in four Johannesburg
Schools. *Journal of Logopaedics 1*, 15-25.

Stow, C., & Dodd, B. (2003). Providing an equitable service to bilingual children in the
UK: A review. *International Journal of Language & Communication Disorders, 38*
(4), 351-377.

Taylor, O.L., & Payne, K.T. (1983). Culturally valid testing. *Topics of Language
Disorders, 3*, 8-20.

Te Whariki Early Childhood Education, (Ministry of Education), Wellington, New Zealand.
http://www.educate.ece.govt.nz/learning/curriculumAndLearning/TeWhariki.aspx

Thomas, N., & O'Kane, C. (1988). The ethics of participatory research with children.
Children and Society Journal, 12, 336-348.

Travis, L.E., Johnson, W., & Shover, J. (1937). The relation of bilingualism to stuttering.
Journal of Speech Disorders, 2, 185-189.

Unsworth, S. (2007). Age and input in early child bilingualism: The acquisition of
grammatical gender in Dutch. *Proceedings from the 2nd Conference on Generative
Approaches to Language Acquisition North America (GALANA)*, (Ed.). Alyona
Belikova et al., (pp. 448-458). Somerville, MA: Cascadilla Proceedings Project.

Valdes, G., & Figueroa, R.A. (1996). *Bilingualism and testing a special case of bias.*
Norwood, NJ: Ablex Publishing.

Van Borsel, J., Maes, E., & Foulon, S. (2001). Stuttering and bilingualism: A review.
Journal of Fluency Disorders, 26 (3), 179-205.

Van de Weijer, J. (2002). How much does an infant hear in a day? *Paper presented at
the GALA 2001 Conference in Language Acquisition, Lisboa, Portugal.*

Webb, E.J., Campbell, D.T., Schwartz, R.D., & Sechrest, L. (1966). *Unobtrusive
measures: Non-reactive research in the social sciences.* Chicago, IL: Rand McNally.

Weinreich, U. (1953). *Languages in contact.* New York, NY: Publications of the Linguistic
Circle of New York.

Weiss, R.S. (1968). *Issues in holistic research.* In H.S. Becker, B. Geer, D. Riesman, &
R.S. Weiss, (Eds.). Institutions and the Person (pp. 342-350). Chicago, IL: Aldine.

Wiig, E.H., Secord, W., & Semel, E.M. (2004). *Clinical Evaluation of language
fundamentals-Preschool-2.* San Antonio, TX: The Psychological Corporation.

Wiig, E.H., Secord, W.A., & Semel, E.M. (2004). *CELF Preschool-2 Examiner's Manual.* San Antonio, TX: The Psychological Corporation.

Winter, K. (1999). Speech and language therapy provision for bilingual children: Aspects of the current service. *International Journal of Language & Communication Disorders, 34* (1), 85-98.

World Health Organisation, (1977). In *Manual of the international statistical classification of diseases, injuries, and causes of death* vol. 1. Geneva, Switzerland: World Health Organisation.

Wyatt, T.A. (2002). Assessing the communicative abilities of clients from diverse cultural and linguistic backgrounds. In D. Battle (Ed.). *Communication disorders in multicultural populations* (pp. 415-460). Boston, MA: Butterworth Heinemann.

Zelazo, P.D., & Mueller, U. (2002). Executive function in typical and atypical Development. In U. Goswami (Ed.). *Handbook of childhood cognitive development* (pp. 445-469). Oxford, England: Blackwell.

Zimmerman, I.L., Steiner, V.G., & Pond, R.E. (1993). *Preschool Language Scale-3: Spanish Edition.* San Antonio, TX: Psychological Corporation.

APPENDIX A: ETHICS APPROVAL LETTER

M E M O R A N D U M
Auckland University of Technology Ethics Committee (AUTEC)

To:	Ineke Crezee
From:	**Madeline Banda** Executive Secretary, AUTEC
Date:	4 June 2008
Subject:	Ethics Application Number 07/162 **Do bilingual German-English children catch up to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of expressive and receptive skills in English?**

Dear Ineke

Thank you for providing written evidence as requested. I am pleased to advise that it satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC) at their meeting on 11 February 2008 and that I have approved your ethics application. This delegated approval is made in accordance with section 5.3.2.3 of AUTEC's *Applying for Ethics Approval: Guidelines and Procedures* and is subject to endorsement at AUTEC's meeting on 16 June 2008.

Your ethics application is approved for a period of three years until 4 June 2011.

I advise that as part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through *http://www.aut.ac.nz/about/ethics*. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 4 June 2011;

- A brief report on the status of the project using form EA3, which is available online through *http://www.aut.ac.nz/about/ethics*. This report is to be submitted either when the approval expires on 4 June 2011 or on completion of the project, whichever comes sooner;

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are reminded that, as applicant, you are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

Please note that AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to make the arrangements necessary to obtain this. Also, if your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply within that jurisdiction.

When communicating with us about this application, we ask that you use the application number and study title to enable us to provide you with prompt service. Should you have any further enquiries regarding this matter, you are welcome to contact Charles Grinter, Ethics Coordinator, by email at charles.grinter@aut.ac.nz or by telephone on 921 9999 at extension 8860.

On behalf of the AUTEC and myself, I wish you success with your research and look forward to reading about it in your reports.

Yours sincerely

Madeline Banda
Executive Secretary
Auckland University of Technology Ethics Committee

Participant Information Sheet

AUT
UNIVERSITY
TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

Date Information Sheet Produced: **March 2009**

Project Title

Title: **Do bilingual German-English children catch up to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of expressive and receptive skills in English?**

Subtitle: **Or does exposure to two languages from birth have a detrimental impact on early English language development compared to that of a monolingual English speaking child?**

An Invitation

You and your children are invited to take part in a study which will look at/assess English language development and language use by young bilingual German-English children born to German parent(s). The study will also look at the English language development and language use by English monolingual pre-school children.

What is the purpose of this research?

The purpose of this study is to look at the effects of bilingualism on young children in the preschool age. A group of bilingual German-English children will be compared to a group of monolingual English children.

The main study will be preceded by a small pilot study, involving only a small number of children. Two or three bilingual German-English children and two or three monolingual English children will be chosen to take part in the pilot study. Your child is invited to participate in this pilot study.

The aim of the pilot study will be to test all procedures before testing a larger group of children, to enable the researcher to see if any changes need to be made to the test procedure. The proposed protocol for both the pilot study and the main study has been outlined below under 'What will happen in this research'.

How was I chosen for this invitation?

You and your child were chosen if your child was born in New Zealand (and/ or other English speaking country) to German speaking parent(s). They were also chosen if they were born in New Zealand (and/ or other English speaking country) within a monolingual setting. They will be between 3 years 9 months and 4 years of age at the commencement of testing. Similarly, they will be between 4 years 9 months and 5 years of age when they will complete the final test.

The age timeframe is important as the final test must be completed prior to your child turning 5 years of age and starting primary school. Your child will be attending an Early Childhood Centre within the Auckland area, and will preferably be attending in a full-time capacity. In addition, your child will need

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to be available for all three tests. These will be carried out over a 1-year period up until your child starts school – with one test taking place at the beginning of the one-year period, one test taking place midway through, and one test taking place at the end of the period. It is essential that one or (preferably) both of you, (the child's parents) are of German descent and that German is the main language spoken in your home.

If your child has any conditions or illnesses that may affect their ability to do the language skills assessment, then please notify the researcher prior to the initial test. Also, if there is any other known reason which may affect their performance in the assessment, please let the researcher know. If they have any problems with concentration or tiredness/fatigue, please let the researcher know.

Unfortunately, if your child does have any of the above conditions, the researcher may not be able to involve your child in her study or use any data obtained from the assessment.

Please note that the mode of assessment is based on a Speech Language Therapists' standard test for use with young children and is therefore very child-oriented and child friendly. The test itself will be carried out by a language therapist who is accustomed to working with young children in which your child feels happy and comfortable.

What will happen in this research?

1) **The researcher will contact you to make an appointment to see you at your home or at a place mutually agreed by us.**

2) **When we meet, I will go through the participant information sheet with you. I will be happy to answer any questions you may have.**

3) **I, (the researcher) will then ask you for your consent on your child's behalf so that your child can take part in the study.**

   - **An initial test will be conducted when your child is aged between 3 years 9 months and 4 years of age to focus on your child's expressive/receptive language skills in English.**

   - **An identical test and testing procedures will be used for the midway test which will take place when your child is aged between 4 years 2 months to 4 years 5 months of age.**

   - **A final test will be conducted when your child is aged between 4 years 9 months and 5 years of age.**

4) **Once I have gone through the participant information sheet with you and answered any questions you might have, I, will then give your child an Assent Form/Participant Information sheet (required when pre-schoolers are involved). According to AUT University Ethics regulations, the Assent Form and the Participant Information sheet must be accompanied by a Consent Form. I will ask you to go through the Assent Form and complete it with your child. Of course, I am happy to answer any questions you or your child may have at this time.**

5) **Next I will go through a questionnaire with you. Once I have answered all your questions, and you and your child are happy to go ahead with the testing, we will make an appointment for the first test.**

6) **Once we have made this appointment, I will visit you and your child at your home or a place mutually agreed by us.**

7) **I, (the researcher) will then carry out a standard SLT (English Language) assessment.**

8) **I, (the researcher) and will use a standard checklist to evaluate your child's language-related behaviour during assessment.**

9) **The assessment will be tape-recorded and transcribed. All information will be anonymised, so nobody, aside from the researcher, will know/recognise the speakers.**

10) **Information from the assessments will be written up and presented in a thesis. You and your child will be able to receive a copy of the research findings if you are interested in the outcomes.**

11) **It is possible that the findings may be used for comparison with data obtained from the same participants assessed at a later stage. For example, to conduct a PhD study with the same participants and follow them from 5 years and upwards, and use the findings to draw comparisons, similarities etc. However, the researcher will contact you to obtain your consent prior to using the data again. In the meantime, the data will be securely stored at AUT University, and will not be accessible to anyone without prior permission of the participants and their parents/caregivers.**

What are the discomforts and risks?

This is a standard test carried out by Speech Therapists, and therefore, there is no additional physical harm foreseen from the presence of the researcher conducting the test, who is a mother of a young child herself and receptive to the needs of young children. You, as parents, will be re-assured that these results will be used for the purpose of the research project only, and will under no circumstances affect any education progress reports, nor will their information be disseminated to other parties (except for the researcher, and the researcher's supervisor).

How will these discomforts and risks be alleviated?

If this should happen, the researcher will ask your child whether they are comfortable with continuing the assessment. She will ask your child whether they would like her to stop recording, and then follow-up with you whether you would be comfortable with the material being used for the study.

To avoid and mitigate the risks of possible embarrassment you, as parents, may feel at any stage, consultation and support will be available prior to, during and post assessments. You, as parents, will be re-assured that these results will be used for the purpose of the research project only, and will under no circumstances affect any education progress reports, nor will their information be disseminated to other parties (except those already mentioned in conducting this study). You, as parents, will be further assured of the advantages and benefits such a study may yield in terms of direction, instruction and success of Bilingualism in Early Childhood Education.

What are the benefits?

Information from the study will be presented to 'Te Whaariki' (New Zealand Curriculum for Early Childhood) at the Ministry of Education in Wellington, as it may help them provide a (child user-friendly) testing system for children attending pre-school prior to entry into primary school.

How will my privacy be protected?

The pre-, midway and post-test will be tape-recorded and transcribed; however, all information will be anonymised, so that nobody, aside from the researcher and the therapist, will know the speakers.

What are the costs of participating in this research?

Participants will do a pre-, midway and post-test conducted at (6 monthly intervals) over a 12-month period.

The pre-, midway and post-test will take no longer than 45 minutes.

What opportunity do I have to consider this invitation?

Please take some time to consider the invitation for you and your child to participate in the study. Please let the researcher know within one week of receiving this information sheet whether you would like your child to participate. The researcher will then contact you to arrange a time and place to meet with your child and yourself.

How do I agree to participate in this research?

You will need to complete a Consent Form on your child's behalf. You will also need to complete an Assent Form to discuss and go through with your child. (There are both a Consent Form and an Assent Form accompanying this Information Sheet).

Will I receive feedback on the results of this research?

Please let the researcher know if you would like to receive a summary of the findings of this research study. If you wish to receive this summary, you can indicate this by ticking the correct box on the Participant Consent Form.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Madeline Banda, *madeline.banda@aut.ac.nz*, 921 9999 ext 8044.

Whom do I contact for further information about this research?

Researcher Contact Details:
Sharon Driscoll-Davies, AUT School of Languages, sharon-ibs@xtra.co.nz, 021 524 655.

Project Supervisor Contact Details:
Ineke Crezee, AUT School of Languages, icrezee@aut.ac.nz, 921 9999 ext 6825.

Approved by the Auckland University of Technology Ethics Committee on *4 June 2008*, AUTEC Reference number *07/162*.

Consent Form

Project title: Title: Do bilingual German-English children catch up to their monolingual English speaking age-group peers between the ages of 4 and 5 in terms of expressive and receptive skills in English?

Subtitle: Or does exposure to two languages from birth have a detrimental impact on early English language development (compared to that of a monolingual English speaking child)?

Project Supervisor: Ineke Crezee

Researcher: Sharon Driscoll-Davies

○   I have read and understood the information provided about this research project in the Information Sheet dated 31 March 2009.

○   I have had an opportunity to ask questions and to have them answered.

○   I understand that notes will be taken during the assessments and that my child will also be audio-taped and transcribed.

○   I understand that I may withdraw my child or any audiotapes that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.

○   If I withdraw my child, I understand that all relevant information including tapes and transcripts, or parts thereof, will be destroyed.

○   I agree (for my child) to take part in this research.

○   I wish to receive a copy of the report from the research (please tick one): Yes○ No○

Parent's signature:
....

Parent's name: ....…………………………….………………………

Parent's Contact Details (if appropriate):
…………………………………………………………………………..
…………………………………………………………………………..
…………………………………………………………………………..
…………………………………………………………………………..

Date:

Approved by the Auckland University of Technology Ethics Committee on 4 June 2008, AUTEC Reference number 07/162

APPENDIX D: CHILD ASSENT FORM / INFORMATION SHEET

Thank you for completing this form – will you ask your parent/caregiver to sign here

.... (signature)

.... (Date)

if they feel that you understand what the project is about and give this form back to your teacher at the centre tomorrow please.

Researcher Name: Sharon Driscoll-Davies

WHAT DO I DO IF I HAVE CONCERNS ABOUT THIS RESEARCH?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Ineke Crezee, *icrezee@aut.ac.nz*, 921 9999 ext 6825.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Madeline Banda, *madeline.banda@aut.ac.nz* 921 9999 ext 8044.

Approved by the Auckland University of Technology Ethics Committee on *4 June 2008*, AUTEC Reference number *07/162*.

TITLE OF RESEARCH: EXPOSURE TO TWO LANGUAGES FROM BIRTH: 'DOES THIS HAVE A DETRIMENTAL IMPACT ON EARLY ENGLISH LANGUAGE DEVELOPMENT (COMPARED TO THAT OF A MONOLINGUAL ENGLISH SPEAKING CHILD?'

INFORMATION SHEET AND ASSENT FORM FOR CHILDREN

(parent/caregivers please read to children)

This form will be kept for a period of 6 years

Hello – my name is Sharon.

I would like to spend time at your preschool/kindergarten/home and will come to see you 2 or 3 times within 1 week, every 6 months within a 1 year period.

When I am there I will do some writing and you will notice me. You will know that I am not one of your teachers. You can talk to me and we can get to know each other. You can ask me about my work whenever you want to. Sometimes I might use a tape recorder. Let me know how you feel about this by colouring in one of these words –

Happy   Fine

Not Sure

Worried

If you are not sure or worried come and talk to me about it or ask one of your teachers or your parents about this.

I am finding out about how you listen to English and how you speak - you might like to find out about this as well. I am not sure how to explain the word language to you.

The English language might be something you speak and hear, it might be something you use when talking to your friends. I am asking all of you at the centre to be taped so that I can hear you using, listening and speaking English. We will all work together on this.

Please circle **YES** if you would like to be taped

Please circle **NO** if you do not want to do this

Please circle **MAYBE** if you are not sure. If you cannot decide that is fine because you can come along anytime and tell me or one of your teachers or your parents that you want to join in.

I hope we can do this together. It will be great to meet you and you will know who I am because of my photograph. I will also wear a badge with my name on.

See you, when I am in your centre/home.

APPENDIX E: CELF PRESCHOOL TEST

The material in Appendix E on pages 134 to 145 has been removed by the author of this thesis for copyright reasons.

APPENDIX F: DESCRIPTIVE PRAGMATICS (DPP) FORM

The material in Appendix F on page 146 has been removed by the author of this thesis for copyright reasons.

APPENDIX G: SUBTEST SCALED SCORES

The material in Appendix G on pages 147 to 148 has been removed by the author of this thesis for copyright reasons.

APPENDIX H: INDEX STANDARD SCORES

The material in Appendix H on pages 149 to 152 has been removed by the author of this thesis for copyright reasons.

APPENDIX I: SLT GUIDELINES / MISCELLANEOUS

Age-related issues

There were two young bilingual boys that the researcher thought initially she could use. Yet it soon became apparent that the age disparity was too large between these boys and the other candidates in the study to utilise in the type of comparative study. The strict parameters in terms of criteria for chronological age with the standardised CELF-P2 tests accentuated the difficulty using these two young bilingual boys. As it was, some of the children had to be bumped up to 4 years scoring for initial test and 5 years scoring for final respectively, if were bordering on age 4 for initial and 5 for final. The researcher could not do this for the 2 young bilingual boys because even for the final test, they were only 4 years and 4 months, and could not justify scoring them as 5-year olds. To add to this, there was an issue with the subtests Basic Concepts (BC) and Word Classes (WC) in the receptive category. That is children 5 years upwards are according to SLTs, ability and age wise, able to achieve the WC subtest. Therefore, these two boys at 4 years 4 months (final test stage) could not be doing WC subtest the same as the other children as they were not even close to 5 years. Furthermore, they could not be scored as per chronological age as this would not be comparing apples, and not reflective of all the other children in sample tested at age 4 and 5.

Test-related issues

Since the researcher was using the standard CELF-P2 test, she was working under the constraints of that test, which included the fact that receptive skills were tested using different subtests at age 4 and 5. Subsequently, the researcher faced some problems when scoring and analysing results. She could not score the Basic Concepts (BC) subtest for 5-year olds in the final test, even if she wanted to replicate the initial test as there was not a scoring summary in the examiner's manual for her to score from. In order to compare apples, she adjusted two to age 4 and they were tested with BC subtest in initial test. It transpired that more children were adjusted to age 5 in the final test as had to test over 10-month versus 12-month period (due to time constraints). These children at 5 years completed the Word Classes (WC) subtest. Hence, all children were scored from scoring summary (4;0-4;5) for initial and (5;0-5;5) for final. (Refer Appendices G and H) Speech Language Therapists (SLTs) score per chronological age. This was not feasible in this study since some children would have been scored at 3 and 4 years chronological age in the initial test, and similarly 4 and 5 years in the final test.

AUT
UNIVERSITY
TE WĀNANGA ARONUI O TAMAKI MAKAU RAU

Sharon Driscoll-Davies
Student ID: 9921570
School of Languages, AUT
Date: March 2009

ENGLISH
Questionnaire # _____

LANGUAGE USE

QUESTIONNAIRE

Parents before completing the questionnaire,
go through Information Sheet and Consent/Assent Forms with the researcher,
and have Consent Form signed.
_____

QUESTIONNAIRE FOR LANGUAGE USE

<u>Section 1: Family background</u>
Please indicate your answers to the following:

1.   Sex: Male _____   Female: _____

2.   Age: 21 - 29 _____   31 - 39_____   41 - 49 _____

3.   What was your occupation in Germany?

4.   What is your highest level of education you have reached?
                              Father   Mother
     Diploma
     Bachelor
     Master
     Doctor

5.   How long have you lived in New Zealand?   Years _____   Months _____

6.   Do you plan to stay in New Zealand for the next five years?
                    Yes   No   Uncertain

7.   Do you consider New Zealand 'home'?
                    Yes   No   Uncertain

8.   How well could you speak English when you arrived in New Zealand (circle)?
     Very Well   Quite Well   Fairly   Poor   Very Poor

9.   Are both parents German speakers?
                    Yes   No

10. Which language/dialect do you speak with your spouse?
                    German   English   Other (please specify)

11. Which language/dialect do you use with your children most of the time at home?
                    German   English   Other

Section 2: The child's language use at home

1. Where was the child born?

   New Zealand   Germany   Other

   Other English Speaking Country   Other German Speaking Country

2.(i) Is there a rule that you (can) speak only German in the home?

   Yes

   No   (go to 3)

   (ii) If yes, to what extent do people (you, your spouse, the children) always follow it?

   Always   Often   Half and half   Not very often   Never

   Why?

3. Have you ever felt that your child is using too much English with you at home?

   Yes   No   Uncertain

   If yes, what do you do when you feel your child is using too much English?

   a.
   b.
   c.

4. Have you ever stopped your child using English and asked them to use German?

   Yes   No

   If yes, does the child usually do as you say?

   Yes   No

5. How often do you use English with your child (circle)?

   Always   Most of time   Sometimes   Rarely   Never

6. (i) In which language skill is the child stronger [at the moment]?

   German   English   Other

   Listening
   Speaking

   (ii) Please rank language skills, e.g. speaking (1), listening (2), if speaking is your
   child's strongest skill, followed by listening?

7. (i) Apart from the people the child lives with, how often does the child mix with other
   German-speaking people?

   Everyday   Once a week   Once a month   Every 3 months   Less often
   at least   at least   at least   at least   or never

   (ii) What language/dialect does the child usually use with his/her German friends?

   German   English   Other

8.   How often does the child do the following in German?

	Everyday at least	Once a week at least	Less often at least
Read German story books			
Listen to German radio			
Watch German TV			
Watch German videos			

9.   (i) Do you think your child is better at expressing some ideas or feelings in German than in English?

Yes

No

(ii) If yes, what kind of things?

Section 3: The child's language use outside the home

1.   How long has the child been attending an Early Childhood Centre?

Years   Months

2.   What age was your child when they commenced Early Childhood Education Centre/ when they started to attend the Early Childhood Centre?

0 – 2 years   2 – 4 years   4 – 5 years

3.   In what capacity do they attend the Early Childhood Education Centre?

Full-Time   Part-Time
(3-5 days)   (1-3 days)

4.   What language is primarily spoken by Early Childhood Centre Educators at the Early Childhood Education Centre in question?

English   Other

5.(a)   Is the child attending or has the child attended any German classes?

Yes

No   (go to 6)

(b)   If yes, for how many years?   Years _____   Months _____

(c)   If yes, how often? (please specify)

(d)   Are you planning for them to do so in the next two years?

Yes   No   Uncertain

6. How important do you think it is to maintain the German language with your child at home?

Extremely important	Very important	Important	Not very important	Not important at all