CODE-MIXING IN SIMULTANEOUS LANGUAGE ACQUISITION

By

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DECLARATION

I, Agness Bernadette Hara, hereby declare that this treatise is my own work and has not been presented for any degree of another university.

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ABSTRACT

This thesis is based on the recorded speech and field notes of the author's three-year-old child who was acquiring three languages simultaneously (Chichewa, Chitumbuka and English). Chichewa is his mother's first language, Chitumbuka is his father's first language and English is both the language of the preschool that he was attending and the official language in Malawi. This study was unusual in that it involved African languages that are under-researched in the field of language acquisition and dealt with two cognate languages (Chichewa and Chitumbuka) and a non-cognate language, English. The fact that Chichewa and Chitumbuka strongly resemble each other may have made movement between the two easier for the child.

The analysis of the child's recorded speech shows that he mixed more at the lexical level (64.2%) and less at the phonological level (6.3%). The findings demonstrate that what the child had learnt at school in English fulfilled a booster function when either Chichewa or Chitumbuka was used. The results also reveal that the child's language mixing was influenced by the topic of discussion, the context and the interlocutor's mixed input. The interlocutor's discourse strategies also had an impact on the child's use of mixing. The results therefore provide support for the bilingual bootstrapping hypothesis, the modeling hypothesis and the discourse hypothesis. The results also demonstrate that Chichewa was generally the matrix or host language when mixing occurred. At school, however, where only English was permitted, the question of a matrix language did not occur. Furthermore, the combination of lexical and grammatical morphemes demonstrates that Chichewa was dominant in the child's speech, in terms of the dominant-language hypothesis proposed by Petersen (1988).

This study challenges the Free Morpheme Constraint and the Equivalence Constraint in that they do not appear to be universally applicable. Instead, the Matrix Language Frame Model is supported as it applies to code-mixing involving English and Bantu languages. This model was relevant, as the speech analyzed in this study involved code-mixing between English and the two Bantu languages, Chichewa and Chitumbuka. However, it

was difficult to apply the Matrix Language Frame Model to some of the child's mixed utterances because the MLU was low. It is hoped therefore that researchers will create further models that will allow for an analysis of the mixed morphemes in single word utterances, especially for the Nguni African languages, which are agglutinative by nature.

This treatise is dedicated to

my late father, Amos Chimangeni,

who did not live long enough to see his children grow and get educated.

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Finally, my appreciation goes to all those who participated in this study, including my sisters-in-law, Zamiwe Hara-Nkhoma and Deliwe Hara-Msisya, and Chatonda's cousins, John and Edward, as well as all those who offered practical assistance.

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LIST OF ABBREVIATIONS AND SYMBOLS

Agr M – Agreement Marker

Appl – Applicative

Caus – Causative

Cond – Conditional

Cop – Copula

1st Pers Sing – First Person Singular

Fut – Future Tense

FV – Final Vowel

MLU – Mean Length of Utterance

Neg M – Negative Marker

OM – Object Marker

Pl – Plural

Pres – Present Tense

Pres Perf – Present Perfect

Pres Prog – Present Progressive

Prog – Progressive

SM – Subject Marker

Translations for the child's and his interlocutor's utterances have been placed inside these brackets <...>.

CHAPTER ONE: INTRODUCTION

1.1 Introductory Remarks

This treatise is based on a case study that was carried out on the author's son who was acquiring three languages simultaneously, namely Chichewa, Chitumbuka and English. It investigates the nature and extent to which the child mixes codes, that is, uses in the same utterance lexical items drawn from two or more of the languages which he is in the process of acquiring. It also explores the reasons for code-mixing.

The child lives in a city called Mzuzu located in the northern region of Malawi in which Chitumbuka is the dominant language. His mother, the present author, always speaks to him and expects him to answer her in Chichewa; his father speaks to him in both Chitumbuka and Chichewa and tends to code-switch. His caregiver, like his father, switches between Chitumbuka and Chichewa. The language used at school is English.

1.2 Background, Rationale for the Study and Definitions

1.2.1 Background and Rationale for the Study

According to Fantini (1985), not much work has been done on bilingual language acquisition[1] if we compare this to the number of studies that have been carried out on monolingual language acquisition. Much of the research on bilingual language acquisition has concentrated on languages spoken in Europe, America or Asia, (Fantini 1985; De Houwer 1990; Koppe 1994). In agreement are Barnes (1996), and Barnes and Fedele (1997) who say that family bilingualism in communities which tend to speak African languages is a neglected field of research in South Africa. It is, therefore, interesting and timely to carry out a research project of this nature in one of the countries in Africa, that is, Malawi, where there are many bilingual and multilingual speech communities. Furthermore, research that has been done on bilingual language acquisition

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[1] The main focus of such research has been on child bilingualism as opposed to child trilingualism or multilingualism. As a result, what is seen to be common amongst bilingual children is extended to trilingual or multilingual children as well. Hoffmann and Widdicombe (1999:51) state that "in the absence of any theoretical underpinning of our understanding of trilingualism as a distinct linguistic configuration, most of us are working within the theoretical framework of bilingualism."

has normally concentrated on children whose parents have practised the 'one parent, one language (OPOL)' strategy when speaking to their children (Redlinger and Park 1980; De Houwer 1990; Koppe 1994; Cunningham-Andersson and Andersson 1999). But what about Africa, where parents are not aware of and therefore do not follow such strategies? In bilingual and multilingual nations of Africa, children successfully become bilinguals or multilinguals in the absence of any conscious strategy. Wölck (1987), as cited in De Houwer (1995:226), argues that many of the world's bilingual children are raised in "native bilingual communities" in which strategies such as the OPOL strategy may be unavailable or nonexistent.

1.2.2 Simultaneous Language Acquisition Defined

The term 'simultaneous acquisition', (McLaughlin, 1984), is used in this study to refer to the acquisition of two or more languages at the same time, as opposed to 'successive acquisition' which is a situation in which a child is exposed to a second or third language after the first language is already established. McLaughlin limits the use of the term 'simultaneous acquisition' to situations where the child starts acquiring the languages in question before the age of three. The child in this study, Chatonda, was exposed to two Malawian languages, Chichewa (his mother's first language) and Chitumbuka (his father's first language) from birth, while 'full exposure' to English began at the age of two years and six months, when he began attending preschool. Before he started preschool, he had been exposed to English through television and sometimes through conversations that his father and mother had with each other or with friends. However, English was not used in conversations with the child by his caregivers until the time he started attending preschool.

1.2.3 Code-mixing Defined

The term 'code-mixing' is used in this study to refer to the existence of elements from two or more languages in a single utterance. This paper's working definition of the term derives from that of Genesee (1989, 2002). However, Genesee argues that it is not easy to define code-mixing in relation to speech by young bilinguals because this definition does not take into account 'one-word' stage of development. This is why he extends the

definition of code-mixing to include single-word utterances from two languages during the same stretch of conversation between a child and a caregiver. An example might be the utterance *wane* which is discussed in Section 4.4.3, and in which the element *wa* derived from Chichewa and the element *ne* from Chitumbuka. In a similar manner, Döpke (1992) defines code-mixing as the mixing of elements from two languages on the word level or sentence level. The use of the phrase 'word level' caters for the mixing at the 'one-word' stage of development.

Code-mixing may occur at phonological, morphological, lexical, syntactic, phrasal or pragmatic levels (Genesee 1989, 2002; Genesee and Nicoladis 2006). However, the most frequent type of code-mixing that researchers have reported involves the use of lexical items from both languages. For instance, McLaughlin (1984) gives an example of mixing at vocabulary level in a study conducted by Tabouret-Keller (1962) in which a French/German bilingual child of two years of age was observed using vocabulary from both languages. The study revealed that 60% of the child's three-word sentences contained words from both languages. One of the reasons that Tabouret-Keller gives for the child's code-mixing is that she preferred to use certain German dialect words because they were more easily inflected than the French equivalents.

How does code-mixing differ from other language contact phenomena such as code-switching and borrowing? Nwoye (1993) points out that the distinction between code-mixing and code-switching is not a clear one. He defines code-switching as "the use of more than one language or variety of language in the course of a single discourse" (Nwoye 1993:365). However, many researchers in this field agree that one of the distinctions between code-mixing and code-switching is based on the position of the switched elements, i.e. with regard to the former, the switching of the elements occurs intrasententially while the latter, intersententially (Nwoye 1993; Kamwangamalu 1989; Bokamba 1988; Kachru 1978). Other researchers in this field use the term code-switching as an umbrella term to refer to instances of both intersentential and intrasentential switching (Heller 1995; Myers-Scotton 1993).

On the other hand, it is difficult to clearly differentiate code-switching from borrowing because code-switching sometimes occurs at a word or phrase level in a similar way to borrowing. But the term 'code-switching' is applicable when a particular word or phrase has an equivalent or alternative in the matrix or base language; if it does not, the term 'borrowing' is used. In other words, the term 'borrowing' is used when a lexical item does not have an alternative in the matrix language (Kamwangamalu 1994). In this study, the researcher draws on Kamwangamalu's use of the term 'borrowing'.

1.3 Aims of the Study

The first aim of the study is to explore the nature and extent to which the child code-mixes. This means that I shall investigate whether the child's code-mixing is at phonological, lexical, syntactic or morphological levels. My second aim is to discover the reasons for code-mixing. In relation to the reasons for code-mixing, I shall aim to investigate whether the phenomenon of code-mixing is the result of parental discourse strategies or whether code-mixing is a sign that bilingual children are sufficiently resourceful and competent to move between the languages that they are acquiring.

The following key questions will shape the study:

- What is the nature of exposure to the three languages?
- Does the child have preferences in his use of the three languages, in terms of which language to use, and with whom?
- What is the child's stage of language acquisition in terms of the Mean Length of Utterance (MLU)?[2]
- What is the nature of Chatonda's code-mixing? Is it at the phonetic, lexical, syntactic or morphological level or all of them? What social factors cause this code-mixing?
- Can Chatonda's language mixing be attributed to the patterns of parental (or caregiver's) input and the parents' interaction with the child?

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[2] The Mean Length of Utterance (MLU) is an average length of a sample of 50 to 100 utterances produced by a child. It is calculated by dividing the total number of morphemes in the utterance sample by the number of utterances. According to Brown (1973:77), the MLU is "an excellent simple index of grammatical development because almost every new kind of knowledge increases length", for instance, the addition of negative forms and auxiliaries used in interrogative and negative modalities.

- Does the child have a dominant language?
- Are there any grammatical constraints on the child's code-mixing?

1.4 Significance of the Study

This study is unique in that it involves African languages that are under-researched in the field of language acquisition and it deals with two cognate languages (Chichewa and Chitumbuka) and a non-cognate language, English. It makes a significant contribution to this field as it has been carried out in an African context where the focus on bilingualism and multilingualism studies, for instance, code-mixing and code-switching, has previously been on adults rather than on children (Slabbert and Finlayson 1999; Kamwangamalu 1994, 1999; Barnes 1994; Myers-Scotton 1988, 1992 and 1993). The findings will make a valuable contribution to an already existing body of research in this field and the recommendations outlined will encourage linguists and other interested scholars to research some of the neglected languages spoken on the African continent. The study also contributes original data to the field of simultaneous language acquisition that may be used by scholars in Africa and internationally.

1.5 Data and Methodology

Data collection involved three samplings. The first sampling took place in December 2005 and January 2006. This consisted of tape recordings (a total of three hours) of the child's dialogues with both parents and one of his own peers. Also, records of the child's progress in the three languages were recorded in a diary. The second sampling was informal: the child's father was asked to make notes on the child's progress in the acquisition of the languages. Finally, the third sampling took place in June and July 2006 in which nine hours of recordings were made. The theoretical framework discussed in Chapter Two forms the basis for the analysis of data.

1.6 Structure of Treatise

This dissertation is divided into five chapters. The first chapter has described the topic of the study as well as the rationale and scope for the investigation. It has also made a case for the significance of the study. The second chapter outlines the key theoretical concepts

in the field of simultaneous language acquisition. Chapter Three focuses on the research design and methodology of the study. This chapter also discusses procedures and techniques employed to analyze data. Chapter Four focuses on the actual analysis and discussion of data. Key theories outlined in Chapter Two provide the background against which data are discussed and interpreted in this chapter. Chapter Five presents a summary and a discussion of the implications of the findings, limitations and recommendations which might have an impact on future research in the field of simultaneous language acquisition.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAME-WORK

2.1 Introduction

This chapter is organized around the following issues: the Unitary Language System Hypothesis; the Separate Language System Hypothesis; Input-Based Hypotheses, such as the Modeling Hypothesis and the Discourse Hypothesis; Proficiency-Based Hypotheses such as the Dominant-Language Hypothesis and the Bilingual Bootstrapping Hypothesis; models for analyzing forms of code-switching such as the Free Morpheme Constraint, the Equivalence Constraint and the Matrix Language Frame Model.

2.2 Unitary Language System Hypothesis

Supporters of the Unitary Language System Hypothesis, (Taeschner 1983; Redlinger and Park 1980; Volterra and Taeschner 1978; Swain 1977 as cited in Genesee 1989; Swain and Wesche 1975 as cited in Lyon 1996; Leopold 1939 as cited in McLaughlin 1984), claim that a child who is in the process of learning two or more languages starts with a merged lexicon before separating it into two or more systems. For the system to become separated, they argue, a bilingual child goes through three different phases whilst acquiring the languages. In the first phase, the child has one lexical system "which includes words from both languages but where pairs of words have not yet been matched up", (Harding and Riley, 1986:51). It is assumed that when the child has one vocabulary item in one language, it is not likely that he can have an equivalent one in the other language. In the second phase, the child begins to have two separate vocabularies but he applies the same grammatical rules to both languages. In this phase, it is difficult for him to tell which lexical item is appropriate in which language. In the last phase, the child is able to differentiate two separate vocabularies and apply syntactic rules accordingly. It is assumed that the mixed utterances are reduced as the child reaches the third phase.

In support of the Unitary Language System Hypothesis, Swain (1972) as cited in McLaughlin (1984) suggests that there is a 'common storage model' in bilingual development. She argues that all rules of both languages are initially stored in one

common location. She believes that rules that are specific to each language are initially kept in this common storage "and subsequently tagged as appropriate for a particular language through a process of differentiation," (Genesee 1989:165). The study carried out by Redlinger and Park (1980), which involved four 2-year-old children who were acquiring two languages in a German speaking community, also supports the unified system. In order to measure the degree of mixing, their study covered a span of linguistic development from Stage I to Stage 5. Levels of mixing for these children at Stage 1 were between 20% and 30%[3], the levels were between 12% and 20% at Stage II, Stage III levels were between 6% and 12% and at Stage IV and Stage V, levels were between 2% and 6%. Their results show high rates of mixing during the earliest stages of bilingual development and a decrease in mixing rates as the children developed linguistically. They conclude that these high rates of mixing demonstrate that the children were unable to differentiate between the two languages in the early stages.

2.3 Separate Language System Hypothesis

Arguments against the Unitary Language System Hypothesis have been put forward by researchers such as Mishina-Mori (2002), Petitto *et al* (2001), De Houwer (1990, 1995), Genesee (1989) and, Lindholm and Padilla (1978) who support the Separate Language System Hypothesis. They posit that a bilingual child develops two different systems right from the beginning. Proponents of the Separate Language System Hypothesis argue that supporters of the single system hypothesis provide no valid evidence for the existence of a merged lexicon. They argue that bilingual children are able to differentiate between the two linguistic systems from an early age. The findings of the study that Lindholm and Padilla (1978) carried out on five Spanish and English bilingual children between the ages of two years and ten months and six years and two months show a small percentage of language mixing, that is, only two percent of the total utterances examined contained mixes. They conclude by stressing that children are able to differentiate between the two linguistic systems from an early age as their results only reveal a small percentage of

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[3] These figures were calculated out of the total number of mixed utterances, i.e. they represent mixing in general without specifying whether mixing was at lexical, syntactic or phonological level. However, Redlinger and Park (1980) report that mixing by the four subjects they studied was predominately at lexical level.

mixes. This is contrary to Redlinger and Park's (1980) findings as outlined above, (see Section 2.2).

The present study partially investigates the two hypotheses discussed above because the child was over three years of age when data collection began, that is, past the age for investigating whether a child is separating languages or not. Instead, the researcher takes into account input-based and proficiency-based hypotheses and models for analyzing forms of code-mixing, which are discussed in detail below.

2.4 Input-Based Hypotheses

Recent studies on bilingual child language acquisition carried out by Goodz (1994) as cited in Genesee (2001), Lanza (1992, 1997) and Comeau, Genesee and Lapaquette (2003) show that young children's mixing can be attributed to caregivers' mixed input (modeling hypothesis) and their discourse strategies towards the child's mixing (discourse hypothesis). A discussion of the two hypotheses is given below.

2.4.1 Modeling Hypothesis

The assumption of this hypothesis is that bilingual children's use of code-mixing is due to their exposure to mixed input. It is argued that children who are exposed to extensive code-mixing do code-mix more than those who are exposed to relatively less mixed input. For instance, Mishina's (1999) study confirms that the bilingual child's language mixing is influenced by parental input and the response patterns of the parents to the child's mixing. Mishina's results were based on a longitudinal observation of natural interaction between an English/Japanese child (from the age of one year ten months to two years and two months) and each of his parents. The findings of a study carried out by Goodz (1994) in the Montreal area, as cited in Genesee (1989, 2001), also show that there is a correlation between parents' and children's rates of mixing. According to her study, Goodz argues that parents tend to code-mix when they interact with their children for motivational purposes i.e. in order to maintain and encourage communication. Finally, the findings of a study carried out by Comeau, Genesee and Lapaquette (2003) confirm that children are sensitive to the language choices of their interlocutors. The six French-

English bilingual children (average age two years and four months) that they observed were able to adjust their rates of mixing accordingly and match their language choice with that of their interlocutors on a 'turn by turn' basis. Since evidence concerning a modeling hypothesis is minimal and inconclusive (Genesee 2001), the findings of this study make a valuable contribution to bilingual child language research.

2.4.2 Discourse Hypothesis

According to the discourse hypothesis (Lanza, 1992, 1997), parents who tolerate child mixing use certain discourse acts that indicate to the child that mixing is acceptable. In light of this, Lanza states that parents allow or even encourage their child to code-mix more. They do this by merely continuing with the conversation. In doing so, they demonstrate to the child that the mixed utterance has been understood. Lanza refers to this strategy as the Move On Strategy. Apart from this, parents use another strategy which Lanza calls the Code-Switching Strategy. With this strategy, the parents continue their conversation with their child by code-switching either intra-sententially or inter-sententially. Regarding intra-sentential code-switching, the bilingual English/Norwegian child that Lanza (1997) studied uttered a Norwegian word 'borte' (gone) when the child and her English speaking mother were reading a story. In response, the mother said 'the girl is borte'. This indicates that the mother encouraged the child to code-mix by incorporating the child's use of Norwegian into her utterance.

On the other hand, some parents reply to a child's mixing by asking for clarification. They tend to ask for clarification by using strategies which Ochs (1988), as cited in Lanza (1992, 1997), calls Minimal Grasp and Expressed Guess Strategies. Regarding Minimal Grasp Strategy, parents use a Wh-interrogative in response to the child's mixing in order to ask the child for clarification. Regarding the Expressed Guess Strategy, parents reformulate and question the child's utterance using the other language. In other words, the Expressed Guess Strategy contains a yes-no question and it may also include an expansion of the child's utterance. For instance, the English-speaking mother cited in the example above would have been expected to recast her child's utterance using the

English equivalent of the lexical item 'borte'. In this case, the question which might have been asked would have been 'has the girl gone?'.

The Discourse Hypothesis is relevant to this study in several ways. For instance, the interlocutors in the present study did not request the child to repair or clarify his mixed utterances. Instead, they moved on with the conversations. It can therefore be argued that the child's mixed utterances were approved by the caregivers.

2.5 Proficiency-Based Hypotheses

Bilingual children who are more proficient in one language tend to use more code-mixing when using the language in which they are less proficient (Genesee, Nicoladis and Paradis 1995). Genesee *et al* also argue that children are likely to use all their linguistic resources in order to express themselves. There is evidence which shows that bilingual children tend to mix less when they become proficient in their languages (Redlinger and Park 1980; Vihman 1985). As they get older, they no longer need to supplement their vocabulary in one language by drawing on another in order to express themselves fully, since their vocabulary and expressions in both languages are adequate for their needs. The discussion below focuses on the two proficiency-based hypotheses, the dominant-language hypothesis and the bilingual bootstrapping hypothesis, and the way in which they contribute to mixing in the speech of bilingual children.

2.5.1 Dominant-Language Hypothesis

There are several measurements that are used in research on bilingual proficiency, such as translation tests in the two languages, word association tests, word detection tests and subjective self-rating. However, these tests are not suitable for very young bilingual or trilingual children and as a result researchers opt for the dominant-language hypothesis proposed by Petersen (1988) which states that grammatical morphemes of the non-dominant language do not co-occur with lexical morphemes of the dominant language. Petersen also states that there are four logically possible word types in the child's mixed utterances. In the first word type, grammatical morphemes from the dominant language co-occur with lexical morphemes from the dominant language; in the second word type,

grammatical morphemes from the dominant language co-occur with lexical morphemes from the non-dominant language; in the third word type, grammatical morphemes from the non-dominant language co-occur with lexical morphemes from the non-dominant language; and in the last word type, grammatical morphemes from the non-dominant language co-occur with lexical morphemes from the dominant language. The findings of Petersen's study of a Danish/English bilingual three-year-old child demonstrate that the child's English was dominant because her grammar only allowed word types 1, 2 and 3 which is the expected pattern for an English-dominant child.

Petersen's dominant-language hypothesis has been supported by Lanza (1997). She identified the dominant language of the Norwegian/English bilingual child she studied by applying this hypothesis. The results of her study portray that English lexical morphemes co-occurred with Norwegian and English grammatical morphemes such as 'looke' and 'looks' ('e' is an ending in Norwegian verbs while 's' an ending in English verbs), Norwegian lexical morphemes only co-occurred with Norwegian grammatical morphemes such as 'huske' (to swing) and Norwegian lexical morphemes did not co-occur with English grammatical morphemes such as 'husks' (swings). The directionality of mixing suggests that the child was Norwegian-dominant.

However, Petersen's hypothesis has been criticized by Romaine (1989) because there is a possibility that it can make false predictions. Romaine's argument is based on findings from a study conducted by Burling (1959) on his Garo/English bilingual child. The results show that the morphology and syntax that Burling's child used was either Garo or English. Burling also found that mixing at word-level was of all four possible types. This is an indication that Petersen's hypothesis on language dominance did not apply to these results and this is the reason why Romaine argues that Petersen's hypothesis is flawed and can make wrong predictions. According to this hypothesis, the child who was dominant in Garo was not expected to use Garo words with English grammatical morphemes (i.e. the fourth word type). Even though the dominant-language hypothesis worked with Petersen's results, Romaine argues that this hypothesis requires testing in a larger sample of bilingual children. Moreover, the child that Petersen studied was unusual

in the sense that she was always addressed in Danish by her parents and was never exposed to individuals who code-switched. My discussion in Chapter Four seeks to determine whether Petersen's hypothesis applies to the data in this study or whether it makes false predictions, as Romaine (1989) has suggested.

2.5.2 Bilingual Bootstrapping Hypothesis

Researchers such as Gawlitzek-Maiwald and Tracy (1996) and Genesee (2001, 2002) argue that children's mixed utterances are not the result of a deficit or linguistic confusion but reflect the children's respective competencies in both languages. Gawlitzek-Maiwald and Tracy's argument is based on the bilingual bootstrapping hypothesis which states that "something that has been acquired in language A fulfills a booster function for language B," (1996:903). The findings of the study that they carried out on English/German bilingual children show that language mixing helps children to bridge both lexical and structural gaps. Some examples of lexical and syntactic mixing that Gawlitzek-Maiwald and Tracy provide are given below.

1. boots anziehen (2;01 to 2;03)
   <boots put-on>
2. Simone is zu klein zu gehen in die kita (2;7.14)
   <Simone is too little to go to the day-care centre>

It is obvious that the child has used lexical items from the two languages that he is acquiring in example 1 above, but in example 2, all the lexical items are from German but this utterance has been classified as mixed because the syntax of the utterance seems to obey English rules and Gawlitzek-Maiwald and Tracy (1996) argue that the child is unable, at this stage, to produce the German equivalent which is given below.

3. Simone ist zu klein (um) in die kita zu gehen
   < Simone is too little (for) to the day-care centre to go>

Genesee (2002) also provides evidence to support Gawlitzek-Maiwald and Tracy's bilingual bootstrapping hypothesis. He points out that a child who utters 'un petit bird' (a

little bird) when speaking with her French speaking mother surely does not know the French word for 'bird' (oiseau). The child, in this case, can complete the utterance by using the English word 'bird'. The reason for using the English word, according to Genesee, is to fill in the lexical gap in French. Genesee refers to this as the lexical bootstrapping hypothesis which he argues parallels Gawlitzek-Maiwald and Tracy's bilingual bootstrapping hypothesis explained above. He argues that there is considerable evidence from a short-term intensive study that he and other researchers (Wolf *et al* 1995) conducted to support the lexical bootstrapping hypothesis of code-mixing in children. In this study, he examined the development of two bilingual English/French children. However, according to Genesee (2002), Deuchar and Quay (2000) disagree with the lexical bootstrapping hypothesis and provide counter examples.

2.6 Models for Analyzing Forms of Code-Mixing

There is a widespread belief that bilingual speakers follow certain rules in terms of what to mix and not to mix in their speech, (see Kamwangamalu 1994). A number of such rules have been proposed such as the Free Morpheme Constraint and the Equivalence Constraint by Sankoff and Poplack (1981) as cited in Kamwangamalu (1994) and the Matrix Language Frame Model (Kamwangamalu 1994, 1999; Myers-Scotton 1992, 1993). A detailed discussion of these models is given below.

2.6.1 The Free Morpheme Constraint

Sankoff and Poplack (1981) as cited in Kamwangamalu (1994:72) argue that "no switch may occur between a bound morpheme and a lexical form unless the latter has been phonologically integrated into the language of the bound morpheme". However, the Free Morpheme Constraint has been challenged by scholars such as Slabbert and Finlayson (1999) and Kamwangamalu (1994, 1999) who have presented code-switching examples that have lexical items that are not phonologically integrated into the language of the bound morphemes, as indicated in this constraint. The Free Morpheme Constraint claim to universality has also been challenged by Ramsay-Brijball (2003) as it works on some code-switching instances but not on all. Ramsay-Brijball conducted a study on code-switching from isiZulu to English by students studying at the University of Durban-

Westville and she provides counter-examples to the above constraint as shown in 4 and 5 below.

4. nalaba-association
   <and these associations>
5. in most yamafollowers
   <in most of the followers>

In the examples above, *association* and *followers* have not been phonologically integrated into the language of the bound morphemes *nalaba* and *yama* respectively, which means that the Free Morpheme Constraint does not apply to all languages as examples 4 and 5 from Ramsay-Brijball's (2003) study demonstrate.

2.6.2 The Equivalence Constraint

Sankoff and Poplack (1981), as cited in Kamwangamalu (1994:72), argue that code-switching tends to occur at points where the insertion of lexical items from one language into a speech act in another does not violate the syntactic rules of either language. Ramsay-Brijball (2003) argues that the syntactic integrity of both languages cannot be maintained. Instead, the syntactic integrity of only one language (isiZulu in her study) can be maintained. Ramsay-Brijball's argument is that the Equivalence Constraint is not valid universally.

The Free Morpheme Constraint, the Equivalence Constraint and Ramsay-Brijball's (2003) findings from the code-switching study which involved English and isiZulu (a Bantu language) are relevant to this study, due to the fact that the child's mixed utterances contain morphemes from English and the two Bantu languages that the child was in the process of acquiring. The researcher compares Ramsay-Brijball's results with the findings in this study in Chapter 4. A comparison is made on the basis that some of the models for analyzing forms of code-switching are also used to analyze children's mixed utterances.

2.6.3 The Matrix Language Frame Model

Kamwangamalu (1994, 1999) argues that the model that applies to code-switching in English with other Bantu languages is the Matrix Language Principle which is also known as the Matrix Language Frame Model. According to this model, in code-switching situations one language acts as the matrix language and another as the embedded language. The matrix language is the one that supplies the grammatical framework for the mixed constituents. Finlayson, Calteaux and Myers-Scotton (1998) support the notion of a matrix language versus embedded language opposition in code-switching situations. The argument in their study is that mixing is orderly, in the sense that within a single complementiser phrase (CP)[4], one language consistently provides the grammatical framework for each CP (in minimalist syntax this refers to the projection of the complementizer formerly known as the S-bar).

The question that has been raised in code-switching research is how to identify the matrix language in speech. There are a number of ways that scholars use to determine the matrix language in a given discourse. For instance, Myers-Scotton (1997), as cited in Kamwangamalu (1999), observes that the matrix language is the language that contributes more morphemes in a sample of discourse-relevant intra-sentential code-switching; it is also the source of more morphemes in the discourse as a whole, including monolingual stretches. Kamwangamalu (1999) also cites Bhatt (1997) who suggests another way of identifying the matrix language. According to Bhatt, the matrix language is the language that marks tense, aspect and agreement in a code-switching discourse.

The Matrix Language Frame Model is relevant to the data in this study, since the child is acquiring English and two Bantu languages. Chapter Four provides a detailed discussion of the following: the language that supplies the grammatical framework for the child's mixed utterances, i.e. the language that marks tense, aspect and agreement (given that the

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[4] According to Radford (2004), a complementiser is a term that is used to refer to a word (such as *that*, *if*, *for*) that introduces a complementiser phrase. Whereas a complementiser phrase (CP) is a term that is used to refer to a phrase or clause headed by a complementiser. However, there are some complementiser phrases or clauses that are not headed by complementisers.

two Bantu languages are rich in terms of agreement); and the language that contributes more morphemes to the child's mixed utterances.

2.7 Conclusion

In this chapter, I have presented an account of the on-going debate in the field of simultaneous language acquisition. I have also discussed other hypotheses relevant to the study of code-mixing in bilingual children, such as the Modeling Hypothesis, the Discourse Hypothesis, the Dominant-Language Hypothesis and the Bilingual Bootstrapping Hypothesis. Other models for analyzing forms of code-mixing such as the Free Morpheme Constraint, the Equivalence Constraint and the Matrix Language Frame Model have also been considered. The next chapter will be a discussion of the research design and methodology of the study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

In this chapter, I shall focus on how I set about gathering data in an effort to find answers to the key questions of this study as outlined in Chapter One. Firstly, I shall provide a detailed account of the study. Secondly, I shall present the data collection procedure. Thirdly, I shall discuss the procedure that was followed to transcribe the recordings of the subject's conversations with other speakers of the three languages that he was in the process of acquiring. Finally, I shall discuss the general procedure for data analysis.

3.2 The Study

This dissertation is based on a case study which was carried out on my trilingual child. Yin (1984) as cited in Cohen, Manion and Morrison (2000) identifies three types of case studies in terms of their outcomes which are exploratory, descriptive and explanatory. This study used a combination of qualitative methods (which cover descriptive and explanatory types of case studies as stipulated by Yin) and quantitative methods. For instance, I shall provide, among other things, narrative accounts of the procedures involved when collecting and analyzing data and I shall interpret the data in light of the theoretical framework provided in Chapter Two. Apart from that, I shall present part of the findings, such as the MLU, discourse strategies and the types of mixing, in terms of statistics which are presented in the form of tables.

The trilingual child in this study, whose name is Chatonda, was the only child in the family at the time of data collection. Chatonda was born on 5th November 2002 in the city of Mzuzu in Malawi. Chatonda's mother (who is the present researcher) is a mother-tongue speaker of Chichewa while his father is a mother-tongue speaker of Chitumbuka. Both parents are fluent speakers of English. The mother understands Chitumbuka but she is not a fluent speaker, while the father is fluent in Chichewa. Chatonda has been exposed to three spoken languages, Chichewa and Chitumbuka from birth, and English from the age of two years and six months when he started attending preschool. Chatonda's exposure to Chichewa has been through his mother, his father (even though his father and

other mother-tongue speakers of Chitumbuka speak Chichewa with a heavy accent) and the community, except from the period between August 2005 and December 2006 when his mother was studying in South Africa. During this period his mother only met him during vacations. However, he was still exposed to Chichewa in her absence because Chichewa, being the lingua franca of Malawi, is used within the community for exchanges between speakers of different languages. His exposure to Chitumbuka has been through his father and the community. Chatonda picked up Chitumbuka in various contexts: for instance, from speakers within the community, as Chitumbuka is the main language of his community, and also from his interactions with relatives from his father's family.

Since he knew that Chichewa was his mother's language, Chatonda did not like the idea of being addressed in Chitumbuka by his mother as Dialogue 1 (see Appendix IV) shows. This dialogue was recorded when the child was interacting with his aunt, Zamiwe, in Chitumbuka. When I repeated the question (i.e. Zamiwe was asking where Chatonda's friend, Atupele, had gone) that his aunt had asked earlier on in Chitumbuka, the child reacted by saying that the question was not supposed to be asked in that way. But when I asked the same question in Chichewa, the child responded without complaining which shows that the child was aware that Chichewa was his mother's language but not Chitumbuka, and he associated his mother with this language and his father with both Chichewa and Chitumbuka.

Surprisingly enough, the child did not complain when his mother or father used English when interacting with him. Sometimes the child was the one who demanded that his parents use English when interacting with him, as shown in Dialogue 2 (see Appendix IV). This implies that there were no issues of identity with English due to its status of being a foreign language in Malawi and the child had actually understood this. Prior to this dialogue, the father wanted to know from the child how the languages (i.e. Chichewa and Chitumbuka) were used in the home in terms of who used Chichewa most. Since the subject of discussion was the way languages were used in the home, this made the child demand that his father use English immediately.

3.3 Data Collection

Data collection involved three samplings. Data collection for the first sampling took place in spontaneous conversations. For the second sampling the child's father collected some notes as he interacted with the child in the absence of the mother, while for the third sampling, data collection was carried out in contrived settings (i.e. in the form of a quasi-experimental design). The term quasi-experimental design refers to an investigation that is almost an experiment. According to Cohen, Manion and Morrison (2000:214) investigators sometimes "employ something approaching a true experiment in which they have control over the who and to whom of measurement but lack control over the when and to whom of exposure or the randomization of exposures – essential if true experimentation is to take place". They explain that since randomization is not used in quasi-experiments, matching strategy is employed instead. This means that the results derived from the child's speech in his interactions with interlocutors, in each session are compared with those derived from the other sessions.

The first sampling took place in December 2005 and January 2006 in South Africa. This consists of tape recordings (a total number of three hours) of the child's dialogues with both parents and one peer, i.e. Tapes 1-3 (see Table 3.1 in Appendix V). Besides the tape recordings, I took notes in a diary of the child's progress in the three languages. At this time, the child was between three years and three years and two months. These dialogues were all in Chichewa[5] as this is the main language that the parents use when they are together (even though Chitumbuka is sometimes used by the father and English by both parents when communicating with the child). The recordings took place at unfixed times depending on the time when the family was together at home. Both parents were involved in compiling field notes, while the recordings were done by me.

The second sampling was informal. It was conducted by the father between January and June 2006 and it resulted in notes concerning the child's progress in acquisition of all

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[5] Except for the dialogues with the child and his peer which were carried out in Chichewa and English to accommodate the child's peer who is a monolingual speaker of English.

three languages. The notes contained, among other things, errors that the child regularly made, overgeneralizations and mixed utterances.

The third sampling took place in June and July 2006 (Tapes 4-12 in Appendix V). The procedure for collecting data in June and July was similar to that of the first sampling because the same instruments were used i.e. tape recorder and diary. The recordings were done on a weekly basis for six weeks, involving three sessions per week in order to observe the way the languages were used by the child. Each session took thirty minutes. It was decided that three sessions per week were appropriate because of the three different languages that the child was acquiring. This implied that each session was carried out in one of the three languages. For instance, the weekly recordings were carried out as follows: the first session involved myself and other caregivers who are mother-tongue speakers of Chichewa. During the session I engaged the child in a dialogue by using a variety of play objects. The interlocutors in the second session were the child's father and other caregivers who are mother-tongue speakers of Chitumbuka. The recordings in both Chichewa and Chitumbuka took place in a home setting. The recordings of the third session were done in English at the preschool which the child attends, where the teacher played and conversed with the child together with other peers.

However, I was only able to record the child's conversations in English with his teacher in two sessions, i.e. one hour in total, because my recording period coincided with the school's second term holiday. This implies that from the third week up to the sixth week, the main languages used during recording sessions were Chichewa and Chitumbuka. By the end of the six weeks, a total of nine hours of recordings were accomplished, i.e. 18 sessions $\times$ 30 minutes = 540 minutes = 9 hours. The caregivers were asked to use only one of the three languages per session. However, in order to establish whether there is a relationship between parental mixed input and the child's mixed output, I instructed the caregiver (i.e. Zamiwe who is the child's aunt) in 11.1% of the sessions (i.e. two of the eighteen sessions since each session took thirty minutes) to code-mix when interacting with the child. This means that in the remaining sixteen sessions, I advised the caregivers to use only one of the languages, as explained above, when interacting with the child. For

the detailed representation of the interlocutors present and settings for the recording sessions, see Table 3.1, Appendix V.

All the recordings were carried out in my presence and the languages were used as explained above. My presence was necessary in order to keep a record of all the relevant information that could not be captured by the recordings. However, my presence caused me to participate in the conversations where according to the plan I was not supposed to interact with the child. But I could not avoid this because sometimes the child addressed me directly and expected me to participate in the conversation. Concerning participant observation, Bailey (1978) as cited in Cohen, Manion and Morrison (2000:187) explains that "in a natural setting it is difficult for the researcher who wishes to be covert not to act as a participant. If the researcher does not participate, there is little to explain his presence, as he is very obvious to the actual participants." However, the child in this study expected me to participate and indicated this by asking me questions when he was interacting with his father and other family members, but not with his teacher. The assumption is that the child thought that addressing his mother[6] in the presence of his teacher would be misbehaviour and he avoided this because he was afraid of his teacher. He even admitted that he feared his teacher when he was conversing with his father (see Dialogue 3, Appendix IV).

Even though the caregivers engaged the child in conversation mainly by using play objects, there were other activities that the child engaged in. Table 3.2 (see Appendix V) gives an outline of the activities that the child engaged in during the recording sessions, the interlocutor(s) who conversed with the child regarding these activities and the main language that the interlocutor(s) used when interacting with the child. Tapes 1 to 3 contain the recordings in the first sampling, made in South Africa, while Tapes 4 to 12 are for the recordings in the third sampling which took place in Malawi. This table reveals that 50% of the interactions took place in Chichewa, 33% in Chitumbuka, 8.5% in English and 8.5% were mixed (i.e. a mixture of Chichewa and Chitumbuka). Chichewa

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[6] Obviously, if the child were to address the researcher, he would have done so in Chichewa, a language which pupils are discouraged to use within the school premises.

dominated in these sessions due to the fact that I failed to conduct the initially planned sessions at the child's preschool because the recording period coincided with the school's second term holiday.

3.4 Transcription of Data

The verbal utterances on all the audiotapes were transcribed verbatim by the author as soon as possible after their recording. The author also included in the transcriptions any relevant contextual information and other additional information which was presented in brackets next to the relevant utterances. Entries from the notes were also incorporated in the transcripts, in brackets, so that the utterances make sense. Where the child was talking loudly or shouting, this was indicated by the use of exclamation marks. The author transcribed all the conversations with the child in full, including all the child's and interlocutors' utterances, except where the utterances were inaudible. This implies that hesitations, false starts and repetitions were included, with the exception of songs which he had learnt from his teachers at school and his friends in the community. The child sang these songs as he interacted with his conversation partners. In order to attain the highest accuracy rate in the transcription, selected transcripts in Chitumbuka were reviewed by a mother-tongue speaker of this language who at the time of the review was a Masters student in the Linguistics Department at the University of KwaZulu-Natal.

3.5 General Procedure for Analysis

The procedure for analyzing the child's utterances was as follows. Firstly, in order to identify the child's language code choice, all his utterances in the three languages were counted separately. The researcher adopted the code system used by De Houwer (1990) especially in relation to the child's language choices. For instance, the utterances were coded as English if all the lexical items and bound morphemes in them were unambiguously and fully English (a lexical item here is a word as it appears in the dictionary). The same process applied to the utterances that were coded as Chichewa and Chitumbuka. The examples of the child's utterances that were coded as English, Chichewa and Chitumbuka are given below.

1. Drinking Fanta. (An example of an utterance coded as English).

2. *A -lemb -a chiyani apopo?* (An example of an utterance coded as Chichewa).
   SM-write-FV what there
   <What have they written there?>

3. **Ya kwa dada.** (An example of an utterance coded as Chitumbuka).
   It's for Dad
   <It's for Dad.>

Utterances were coded as 'mixed' if they contained lexical items from two of the three languages[7] that the child was in the process of acquiring. An utterance was also coded as 'mixed' if it had a lexical item with one Chichewa and one Chitumbuka morpheme (or one English and one Chichewa morpheme). Example 4 below is an utterance with lexical items from two languages, i.e. Chichewa (*inapanga*) and English ('overtake'), while example 5 contains a lexical item with one English free morpheme ('white') and one Chichewa suffix (*nso*). Example 4 (see Appendix I, Tape 9) was said when the child was conversing with his aunt (Zamiwe) and was telling her about an accident that happened because a bus was trying to overtake another vehicle. Example 5 (see Appendix I, Tape 8) was uttered when Chatonda was providing the names of the colours of the cars that belonged to family friends and relatives.

4. I -na -panga overtake   5. white-nso
   SM- Past -make overtake   white-also
   <It did overtake>   < (it's) also white>

Secondly, in order to determine the average number of morphemes in each of the utterances produced by the child, i.e. the mean length of utterances (MLU), Brown's (1973) criteria were used. For instance, 70 completely intelligible utterances in English which appeared in the transcription were chosen (see Table 3.3, Appendix V). All the morphemes in each utterance were counted. The morphemes for all the 70 utterances were added and the result was divided by 70 in order to get the MLU which was 2.3. The same procedure was followed in order to count the MLU for Chichewa and Chitumbuka

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[7] The child never mixed all the three languages in one utterance.

utterances[8]. The MLU for Chichewa utterances was 4.5 and for Chitumbuka, 3.3 (see Tables 3.4 and 3.5, Appendix V).

However, counting morphemes in Chichewa and Chitumbuka utterances was not easy because Brown's (1973) rules are 'English- oriented' according to Crystal (1974). Crystal argues that the rules that form the bases for the MLU measure are particularly suited to English. For instance, Crystal points out that calculating the MLU for highly inflected languages is more problematic. For example, he explains that Finnish, Swedish and Spanish researchers report some difficulty in adapting the rules of calculation invented for English. Crystal's argument is that counting all inflections as separate morphemes results in an inflated MLU which was the case with the MLU for Chichewa and Chitumbuka, (see Tables 3.4 and 3.5, Appendix V).

Finally, data was discussed and interpreted according to the theoretical framework provided in Chapter Two. This means that the following hypotheses were considered: the Unitary Language System and the Separate Language System Hypotheses; input-based and proficiency-based hypotheses and models for analyzing forms of code-mixing, which are the Free Morpheme Constraint, the Equivalence Constraint and the Matrix Language Frame Model.

3.6 Conclusion

In this chapter, I have discussed the research design and methodology of the study. The chapter has been organized around the following key issues: the research design and the study, the procedure for data collection, transcription and analysis. The details that emerge out of this chapter and the theoretical framework in the previous chapter form the basis for the discussions in the next chapter. Chapter 4 focuses on the presentation of findings and discussion.

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[8] 70 utterances were identified because it was not easy to identify 100 utterances that were in pure Chichewa or Chitumbuka, due to the fact that the child used more than one language in the sessions carried out in the two native languages. For uniformity's sake, 70 utterances that were in pure English were also identified.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION

4.1 Introduction

The analysis and discussion of the findings are based on the methodology provided in the previous chapter and the literature review in Chapter Two. This chapter is shaped by the questions outlined in the first chapter. The following key issues are discussed:

a. The nature of code-mixing in terms of phonological, lexical, syntactic and morphological mixing;

b. Three universal code-mixing constraints, which are the Free Morpheme Constraint, the Equivalence Constraint and the Matrix Language Frame Model;

c. Language dominance;

d. The interlocutor's discourse strategies.

4.2 Presentation of Findings

The analysis of Chatonda's recorded speech provides evidence of the four types of mixing: phonological, lexical, syntactic and morphological, presented in Table 4.1 (see Appendix V). In the informal sampling conducted by Chatonda's father, only lexical mixing was reported (see Appendix II). The discussion below focuses on these four types of mixing. (A list of all the mixed utterances from the tape recordings is provided in Appendix I).

4.2.1 Mixing at Phonological Level

In general, phonological mixing was at a minimum level and Table 4.1 shows that in all the recorded speech, Chatonda's phonological mixing was at 6.3%, which is low compared to the other types of mixing. This was because only six phonological mixed utterances were identified from the recorded speech. For instance, the phonological mixing that was recorded in Chatonda's speech contained sounds that are present in the Chitumbuka language but not in Chichewa, for example, the way Chatonda stressed the consonant 'd' in lexical items, such as *stadium* /ste'diəm/[9], *chidole* /tʃi'dole/ (toy) *mdima* /m'dima:/(darkness) and *kwada* /kwæ'da:/ (it's dark). Chatonda produced the word

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[9] An apostrophe has been placed before the stressed consonant.

stadium when he was interacting with his aunt (Zamiwe, see Appendix I, Tape 9) in Malawi, who used both Chichewa and Chitumbuka in her interactions with him but the child's responses were all in Chichewa. He was reporting that his uncle hit him at the stadium. On the other hand, *chidole, mdima* and *kwada* were used when he was conversing with his mother in Chichewa in Durban (see Appendix I, Tape 1 and 3). *Chidole* was used with reference to a toy in the story book while *mdima* and *kwada* were used when referring to the darkness outside the house because it was a cloudy day.

4.2.2 Mixing at Lexical Level

Lexical mixing in Chatonda's recorded speech was of two types. The first type involved the use of lexical items from one language when another language was used as the matrix language, while the second type involved the use of an item from another language with the item phonologically and/or morphologically integrated into the matrix language of the speech. The latter will be discussed under morphological mixing. Since the dominant language of the child in the study is Chichewa, it is natural to expect greater mixing to involve borrowings from this language. However, there were more borrowings from English in this study than from any other language, including Chichewa, the dominant language (see Section 4.3.1 for the reasons why Chatonda used lexical items from English). Chatonda's overall lexical mixing rate was 64.2% as shown in Table 4.1 in Appendix V.

Chatonda's use of lexical mixing was as follows. Firstly, he used words from either English or Chitumbuka when he was interacting with his mother in Chichewa. Table 4.2 (see Appendix V) shows that in Tape 7, sixteen lexical items were used from the non-dominant languages i.e. Chitumbuka and English (see also Appendix I, Tape 7). This number is high compared to what is presented in the rest of the tapes. Table 4.2 also reveals that Tape 7 had the highest number of mixed utterances overall (twenty-eight mixed utterances) i.e. mixing from all the four levels: phonological, lexical, syntactic and morphological levels, (see Section 4.3 for the explanations).

Apart from using English or Chitumbuka words when interacting in Chichewa with his mother, Chatonda was also recorded using Chitumbuka lexical items when conversing in Chichewa with other mother-tongue speakers of Chichewa, such as his cousins. For instance, he said the following when interacting with his cousins and mother respectively:

1. *Ayi*, **na –kan-a,**   *si ng'ombe*
   No, SM-refuse-FV, not cow
   <No, I refuse, it's not a cow.>

2. **mpende** *wa -nga*
   counter   SM mine
   <my counter>

In example 1 above, *nakana* is a Chitumbuka word while the rest of the words are in Chichewa (hereafter Chitumbuka indented utterances will appear in bold while Chichewa indented utterances, in italics). Chatonda said this phrase when he was looking at a story book with his cousin John. John told him that the picture in the book was of a cow, not a pig as he thought, but he was not convinced with this response and kept on saying that the picture was of a pig, not a cow. While in example 2, *mpende* is a Chitumbuka word and *wanga* is Chichewa. He said this when he was looking for his counter, i.e. one of the bottle tops, that he uses for counting at school.

Secondly, Chatonda used either English or Chichewa words when he was interacting with his father in Chitumbuka. However, he used only a few mixed words, as only a total of seven mixed words were recorded in Tapes 5, 8 and 12 altogether (see Table 4.2, Appendix V). For instance, when his father was asking him about the colour of the clothes he was wearing, Chatonda responded by using English words similar to the way he responded when he was interacting with his mother in Chichewa when the same topic was being discussed. He also used only two lexical items from Chichewa in Chitumbuka utterances in these three tapes which are given below:

3. *A -ka   -mang-e*   **msewu wa kwinu**
   SM-Cond-construct-FV road   to your home
   <(so that) they construct a road that leads to your home.>

4. **na** *ku -nja*
   and SM-outside
   <and outside>

In utterance 3 above, Chatonda was telling his father that the toy truck that he was playing with would carry sand to be used for the construction of a road that led to his father's village. The child incorporated a Chichewa lexical item *akamange* in this utterance instead of the Chitumbuka lexical item *bakazenge*. In utterance 4, *na* is a Chitumbuka word for *and* and *kunja* is a Chichewa word which means *outside*. Utterance 4 was said when his father asked him whether he was playing inside the house with his classmates who had come to visit him.

The discussion above focused on the lexical mixing that occurred when the matrix language was either Chichewa or Chitumbuka. The focus will now be on lexical mixing when English was used as the matrix language for interaction. The study reports no lexical mixing during the recordings at the child's preschool with his teacher and fellow classmates. This is probably due to the fact that pupils were not allowed to speak the native languages within the school premises. Chatonda's utterances with his teacher and fellow pupils were all said in English. However, Chatonda was recorded mixing Chichewa lexical items when interacting in English with his father. The following utterances were obtained from the field notes taken by his father during interactions with Chatonda in Malawi, (see Appendix II):

5. I'm saying *na -khuta*.
   SM-full
   <I'm saying I am full.>
6. The truck is want to take *anthu*.
   <The truck wants to take people.>
7. I'm going to *chipinda*.
   <I'm going to the bedroom.>

Utterance 5 was said when Chatonda could not finish his food and he was reporting to his father that he was full. This was said in response to the command 'finish your food'.

Utterance 6 was produced when Chatonda was playing with his toy truck which he said would be used for carrying people i.e. in response to the question 'where is the truck going?' and finally, utterance 7 was said when he was going to the bedroom in response to the question 'where are you going?'.

4.2.3 Mixing at Syntactic Level

Chatonda's syntactic mixing only involved word order. Table 4.1 (see Appendix V) shows that eight syntactic mixed utterances were recorded in total. Even though this number is small, it was higher than the mixing at phonological level. In six of the eight mixed utterances, Chatonda followed a Chitumbuka word order and an English word order was used in the remaining two. Both word orders were used when the matrix language was Chichewa. Chatonda was recorded using a Chitumbuka word order which consisted of the following combinations (see Section 4.3.4 for the explanations):

a. Noun + Adjective + negative marker, such as, *Jesus woipa ayi*[10] (Jesus is not bad) instead of *Jesus si woipa* (the way *si* is used in Chichewa is similar to the way *not* is used in English as it precedes a verb, adverb or adjective. The opposite happens in Chitumbuka sentences as the Chitumbuka word for *not*, i.e. *yayi*, follows a verb, adverb or an adjective, for example, *Jesus muheni yayi*.

b. Copula + pronoun + negative marker, such as *ndi ako ayi* (it's not yours) instead of *si ako* (in Chichewa *si* has to precede a pronoun).

Apart from using a Chitumbuka word order as illustrated above, Chatonda was also recorded using an English word order when conversing in Chichewa. For instance, he said *ngati-iyo-container* (like-adjective-noun which means 'like that container') when he was interacting with his mother instead of *ngati-container-iyo* (like-noun-adjective). The word order in Chichewa is noun + adjective (post-nominal modification) but not adjective + noun (pre-nominal modification) as in *ngati iyo container*, the latter is the word order in English.

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[10] *Ayi* is a negative marker in Chichewa which means *no*, while both *si* (Chichewa negative marker) and *yayi* (Chitumbuka negative marker) mean *not*. Chatonda applied a Chitumbuka word order when using the Chichewa negative marker *ayi* (no).

4.2.4 Mixing at Morphological Level

The analysis indicates that morphological mixing was at 21.1% (see Table 4.1, Appendix V) which is much higher than the other two levels, i.e. phonological and syntactic mixing. This involved the use of prefixes/suffixes that mark tense, aspect, agreement and plurality. Chatonda was fond of applying Chichewa prefixes/suffixes to either English or Chitumbuka words. For instance, he used the word *a-ku-thuny-a* (he's spitting) when interacting with his mother in Chichewa. *Thuny-* is a Chitumbuka stem while the prefix *a* (SM) is from Chichewa. *Ku* (Pres Prog) and the final vowel *a* could either be from Chichewa or Chitumbuka. The correct Chitumbuka word would have been *wakuthunya*, and in Chichewa *akulavula*. It appears that Chatonda was unable to use the Chitumbuka subject marker *wa* and instead he preferred the Chichewa subject marker *a*. He used the Chichewa subject marker, and *akuthunya* was not the only word in which he mixed the Chichewa prefixes with the Chitumbuka stem. For instance, when he was interacting with his mother in Chichewa, he used the word *u-na-kwanth-a* (SM-Past-scratch-FV, 'you scratched yourself') in which *kwanth* is the Chitumbuka stem and *u* and *na*, Chichewa prefixes. He also used the word *a-phyok-a* (SM-break-FV) which means 'he broke' when he was conversing with his father in Chitumbuka in which the prefix *a* is from Chichewa while *phyok* is a Chitumbuka stem. Actually the utterance *aphyoka* is incorrect; the correct Chitumbuka version would have been *wakaphyoka* and the Chichewa version, *anathyoka* (both versions are intransitive verbs). This means that Chatonda omitted *ka*, the marker for past tense, in this utterance. Chatonda said *aphyoka* in response to a Chitumbuka question that his father asked which is given in Dialogue 4 (see Appendix IV) in which he wanted to know what happened to his friend, Watipaso, who was run over by a bicycle.

Chatonda was also recorded combining a prefix from Chichewa with a stem from Chitumbuka, such as *wa-ne* (*wa* is an agreement marker in Chichewa while *ne* is a Chitumbuka pronominal stem, this utterance means 'mine'). He also mixed a tense marker from Chitumbuka with a stem from Chichewa, for instance the word *a-ka-dy-a* which means 'he ate'. In this utterance, *a* is a Chichewa subject marker, *ka* is a Chitumbuka marker for past tense and *dy-* is a Chichewa stem. Chatonda said *akadya*

when he was interacting with his aunt (Zamiwe) in both Chichewa and Chitumbuka. He said this in response to a Chitumbuka question *wakarya baby*? (Did the baby eat?) in which his aunt wanted to know if the baby ate the fruits that the monkey was giving him in the film that he watched, 'Baby's Day Out'. The correct response in Chitumbuka would have been *wakarya* and in Chichewa *anadya* (*na* marks past tense in Chichewa while *ka* marks past tense in Chitumbuka).

He also used some English words that were phonologically and morphologically integrated into Chichewa, for instance, the word *ndi-ku-shut-a* (SM-Pres Prog-shoot-FV, 'I am going to shoot you') which consists of the English word 'shoot' and the three Chichewa prefixes *ndi, ku* and *a*. The Chichewa version of the word *ndikushuta* is *ndikuwombera*. The word 'shoot' has been phonologically and morphologically integrated into Chichewa, the language of the prefixes. Other examples include *a-ma-ni-shut-a* (SM-Pres-OM-shoot-FV, 'they shoot at me'), *ndi-ma-hed-a* (SM-Pres-head-FV, 'I head something'), *mu-sa-ndi-hed-e-nso* (SM-Neg M-OM-head-FV-again, 'do not head me again'), *na-he-da* (SM-head-FV, 'I have headed something'), and *ndi-na-hed-a* (SM-Past-head-FV, 'I headed her') in which the English lexical items 'shoot' and 'head' have been phonologically and morphologically integrated into Chichewa, the language of the bound morphemes.

4.3 Discussion

The findings demonstrate that Chatonda's linguistic system is based on variable rules and variable language dominance in terms of phonological, lexical, syntactic and morphological mixing. In other words, Chitumbuka could be phonologically and syntactically dominant, English and Chichewa could be lexically dominant and Chichewa alone morphologically dominant. These variations depend on the topic of discussion, the interlocutor's input, the context and language separation. The discussion below interprets and explains Chatonda's code-mixing in terms of these variable factors.

4.3.1 Topic of Discussion

The analysis of data in Tape 7 (see Appendix I) shows that most of the words that Chatonda mixed were from English, for instance, the insertion of lexical items such as 'black', 'blue', 'white', 'red', 'triangle', 'rectangle', 'mouth', 'fingers' and so on into Chichewa utterances. It appears that the topic of discussion triggered the use of such English words when he was conversing with his mother in Chichewa. For instance, Chatonda and his mother discussed some of the activities that took place at his school. This topic was triggered by different shapes that were shown on TV that he was familiar with. For instance, Chatonda talked about drawings in the form of circles, rectangles and triangles; he also mentioned body parts and numbers. He used English words with reference to such objects because he had learnt them in English. Similarly, Fantini (1985) reports that his child preferred to express the time in English even when conversing in Spanish (the child's dominant language), for instance, 'on Monday', 'in the fall', 'at 4:00 p.m.' and 'on Saturday'. This was due to the manner in which the child had learnt notions of time. Fantini reports that his child had learnt notions of time in an English-speaking environment, i.e. the classroom. But Chatonda used the Chitumbuka word *mpende* ('counter') when he was interacting with his mother in Chichewa even though this word is likely to be acquired in school settings where such counters are used. The fact that the school setting had many Chitumbuka speakers may be the reason why Chatonda was only familiar with *mpende* but not *werengero* (the equivalent in Chichewa), despite the insistence there that English only should be used.

In light of the discussion above, Hoffmann (1991) argues that if one item has been acquired in one language but not yet in the other, thereby creating a lexical gap, a child may use the one device s/he has available to express certain lexical or grammatical meanings. This is also in line with the bilingual bootstrapping hypothesis which states that what is acquired in one language fulfills a booster function in the other language until the item is acquired in the other language. For instance, in this study, what Chatonda had learnt at school in English fulfilled a booster function when either Chichewa or Chitumbuka was used. In agreement, Genesee (1989) suggests that language mixing may be used by bilingual children as a temporary relief strategy, especially with respect to the

borrowing of lexical items that may be known in only one of the languages. Genesee (2002:192) also argues that

> when bilingual children code-mix they are drawing on all their linguistic resources to express themselves, much like monolingual children, except that bilingual children have the resources of two languages, in contrast to the monolingual child who has only one.

4.3.2 Interlocutor's Input

Chitumbuka appeared to have had an influence on Chatonda's pronunciation of some English and Chichewa words but not vice versa. Chatonda speaks Chichewa with a heavy accent that is characteristic of Chitumbuka speakers who have learnt Chichewa as their second language. During the recordings, Chatonda uttered some Chichewa words with this accent because in the community where he was brought up, most people (including his father and his peers) had acquired Chichewa as their second language. Peer influence appeared to have also played a role. There is evidence that children prefer the variety of a language or dialect used by their peers as opposed to that of parents (Dulay, Burt and Krashen 1982). Chatonda's exposure to Chichewa, apart from his mother and other mother-tongue speakers of Chichewa, was through people (including his peers) who could not speak it with a mother-tongue accent.

Chatonda was recorded using lexical items from English when the matrix language was Chichewa. Some of these lexical items were phonologically and morphologically integrated into the language of the bound morphemes which was Chichewa, his dominant language. Apart from this, he also used Chitumbuka stems, such as *thuny-* and *kwanth-* when conversing in Chichewa. It might have been predicted that Chatonda would have done the opposite i.e. use lexical items from Chichewa, his dominant language, when conversing in the non-dominant languages. The reason for this direction of mixing is that such mixed utterances were triggered by the interlocutors who interacted with him in both the mixed sessions in which the main interlocutor, the child's aunt, was asked to code-mix deliberately, and in other sessions in which the interlocutors were asked to use

only one language when interacting with the child. This is in accordance with Hoffmann (1991) who argues that if a child is exposed to mixed input, s/he will often respond with mixed production.

An example of a mixed utterance which was triggered by the interlocutor's mixed input is the utterance *na-hed-a* (SM-head-FV = I have headed). Chatonda said this utterance when he was interacting with his father in Chitumbuka. This was a response to the question that his father had asked *wa-a-hed-a*? (SM-OM-head-FV = have you headed her?) because Chatonda had accidentally hit his mother with his head. Actually Chatonda's utterance *naheda* is incorrect; it should have been *na-wa-hed-a* (SM-OM-head-FV = I have headed her). This means that Chatonda's mixed utterance was modeled on the mixed input from his father, that is, the question *wa-a-heda*? If Chatonda were to use pure Chitumbuka, the utterance would have been *nawaganda na mutu*.

Another example that illustrates how the interlocutor's code-mixing influenced Chatonda's mixed utterance is Dialogue 5 (see Appendix IV). In this dialogue, John (Chatonda's cousin) was explaining to Chatonda in Chichewa that Satan's home is hell by incorporating an English lexical item *hell* into the Chichewa sentence. Chatonda's immediate response, *osati kumwamba* (not in heaven), was in Chichewa. But as they continued with the conversation, Chatonda later on asked John a question *ku hell*? (in hell?), hence John's mixed utterance triggered Chatonda's use of mixing i.e. the question *ku hell*? But John's response to Chatonda's question was in pure Chichewa.

4.3.3 Context

The term 'context' is used in this section to refer to the situation that led Chatonda to produce mixed utterances. For instance, it could be said that the use of the Chitumbuka word *nakana* when he said *ayi, nakana, si ng'ombe* which means 'no, I refuse, it's not a cow' (see section 4.2.2) was influenced by the situational context. Chatonda produced this utterance when he was interacting with his cousin in Chichewa. He thought that by refusing in that manner, John would agree with him by admitting that the story book

contained a pig's picture but not a cow's. Moreover, the child kept on telling John again and again that the picture was of a pig prior to this mixed utterance.

Furthermore, when the child was interacting with his father in the second sampling, he produced the utterance 'I'm saying *nakhuta*' (see Section 4.2.2) in response to the command 'finish your food!' to emphasize to his father that he could not finish his food because he was full. For Chatonda to produce this mixed utterance, it is possible that the context was well known and he therefore used familiar linguistic expressions which were normally a mixture of Chichewa and English elements in order to make his father understand that he could no longer continue eating.

Another example which demonstrates that the situational context influenced Chatonda's use of code-mixing is the utterance *a-ku-thuny-a te* (SM-Pres Prog-spit-FV like this, 'he is spitting like this') which is a mixture of the Chitumbuka stem *thuny* with Chichewa prefixes (see Section 4.2.4). He said this when he was interacting with his mother in Chichewa with reference to the monkey which was spitting out part of the pawpaw that it was eating. The word *akuthunya* is onomatopoeic in the sense that this word is associated with the sound that is produced when one spits out something. It could be said that Chatonda used this word in order to demonstrate what the monkey was doing, as opposed to the Chichewa equivalent *akulavula* which is not onomatopoeic.

4.3.4 Language Separation

Chatonda was recorded using a Chitumbuka or an English word order when conversing in Chichewa. However, even though Chatonda used this kind of word order, he sometimes used a correct Chichewa word order without following a Chitumbuka/English word order. For instance, the utterance *iyiyi si blue* (this is not blue) is grammatical in Chichewa and if a Chitumbuka word order had been followed, this utterance would have been *ndi blue ayi*. The results thus show a variable application of rules for word order because Chatonda was still learning these rules and it would take a series of stages for him to master them. Genesee (2002) suggests that if a bilingual French/English child uses the English adjective + noun word order for adjective-noun constructions in both English

and French, this would be a sign that the child is not differentiating between the two languages. In other words, the child has a unitary language system. However, Chatonda was able to use different word orders on occasions which suggests that he was in the process of differentiating between the three syntactic systems. Moreover, Chatonda's syntactic mixing was at 8.4% which is very low (see Table 4.1, Appendix V). Similarly, Fantini (1985) reports that the syntactic and morphological mixing documented throughout his case study was surprisingly low and he attributes the small number to the fact that the child was able to separate his dual systems at the age of three and that he was in control of each system.

4.4 Universal Code-Mixing Constraints

This section focuses on the interpretation of data in light of the three code-mixing constraints: the Free Morpheme Constraint, the Equivalence Constraint and the Matrix Language Frame Model.

4.4.1 The Free Morpheme Constraint

The Free Morpheme Constraint states that "no switch may occur between a bound morpheme and a lexical form unless the latter has been phonologically integrated into the language of the bound morpheme" (Sankoff and Poplack 1981 as cited in Kamwangamalu 1994:72). Data collected from this study both support the Free Morpheme Constraint and at the same time challenge it. For instance, examples 8 and 9 below support the Free Morpheme Constraint. Chatonda said the utterance in 8 below when he was interacting in Chichewa with his mother and Dan (the housekeeper). He produced this utterance when he was advised to stop throwing stones at cars. He himself admitted that if he continued, he would be taken to the policemen who would shoot at him. Actually Chatonda's utterance is incorrect; the correct utterance is *akanishuta* (they are going to shoot at me) and not *amanishuta* (they shoot at me). The Chichewa equivalent of the mixed utterance *akanishuta* is *akaniwombera*. This utterance was not modeled on the input from the two interlocutors that he was interacting with as they did not mix this word in their utterances prior to Chatonda's mixed utterance.

8.   *a*   *-ma -ni* -shut *-a*

    SM-Pres -OM-shoot-FV

    <They shoot at me.>

In example 8 above, the English lexical item 'shoot' has been phonologically and morphologically integrated into Chichewa, the language of the prefixes *a* and *ma*. Example 8 therefore supports the Free Morpheme Constraint. Another example that supports the Free Morpheme Constraint is given in 9 below.

9.   *na* -hed *-a*

    SM-head-FV

    <I have headed (her).>

This example supports the Free Morpheme Constraint in the sense that the English lexical item 'head' has been phonologically and morphologically integrated into the language of the prefix *na* which is Chitumbuka in this case.

On the other hand, the utterance in 10 below does not support the Free Morpheme Constraint. Chatonda said this utterance when he was interacting with his aunt, Zamiwe, in both Chichewa and Chitumbuka. In this example, the child was narrating an accident that happened close to the location where he lived. The accident happened because a bus was trying to overtake another vehicle. Chatonda's utterance was a response to the question that his aunt asked in Chichewa *Sacramento inatani?* ('What happened to Sacramento?' Sacramento is the name of the bus). The Chichewa equivalent to the word 'overtake' is *dutsa*. The child's mixed utterance was not modeled on the input from Zamiwe because she did not use the word 'overtake' prior to the child's response.

10.   *I* *-na –pang-a* overtake.

    SM-Past-do-FV   overtake

    <It did overtake.>

11. * *I*   *-na-ovatek-a* (Chichewa) or * **I**   **-ka**   **-ovatek-a** (Chitumbuka).

    SM-Past-overtake-FV   SM-Past-overtake-FV

    <it overtook>   <it overtook>

In example 10 above, 'overtake' has not been phonologically and morphologically integrated into Chichewa, the language of the prefixes *i* and *na*[11]. Any way, this process would render the sentence ungrammatical, as shown in 11. As a result, the Free Morpheme Constraint claim to universality is challenged. It appears that when the English lexical item begins with a vowel, as in the word 'overtake', the item cannot become morphologically and/or phonologically integrated into either Chichewa or Chitumbuka, as demonstrated in 11 above. To test this hypothesis, I tried to integrate the word 'emphasize' into either Chichewa or Chitumbuka bound morphemes, but the English lexical item could not be integrated into the bound morphemes of these two languages because the outcome was not grammatical, as illustrated in 12 below. On the other hand, example 13 is grammatical because the word 'emphasize' has not been integrated into either Chichewa or Chitumbuka bound morphemes.

12. * *a* -*na* -*emphasaiz-a* (Chichewa) or *ba -ka -emphasaiz-a (Chitumbuka)
    SM-Past- emphasize-FV   SM-Past-emphasize-FV
    <they emphasized>   <they emphasized>

13. *a* -*na* -*pang-a emphasize*(Chichewa) or ba -ka-chit-a emphasize (Chitumbuka)
    SM-Past-do-FV   emphasize   SM-Past-do-FV emphasize
    <they did emphasize>   <they did emphasize>

4.4.2 The Equivalence Constraint

The argument by Sankoff and Poplack (1981), as cited in Kamwangamalu (1994, 1999), is that intra-sentential code-switching tends to occur at points where the syntactic rules of neither language are violated. However, the examples below show that in some code-switching situations, the syntactic integrity of both the participating languages may be violated. This sometimes depends on the speaker's preferences.

In both 14 and 15, Chatonda was asked by his mother in Chichewa to mention some of the things that he liked drawing both at school and at home.

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[11] But if the prefixes *i* and *na* are used with the English lexical item *head*, the lexical item *head* can be phonologically and morphologically integrated into the language of the prefixes *i* and *na* and the result is the utterance *inaheda*, which is grammatical.

14. *ma*-flower.

    Pl-flower

15. *ma*-numbers.

    Pl-numbers

In some code-switching situations, the rules for both languages cannot be maintained, as seen in example 14, whereby the lexical item 'flower' is singular while *ma* is the marker for plural in Chichewa. If the rules for both languages were to be maintained then 'flower' should have been in the plural as well, i.e. the utterance should have been *ma-flowers*. In agreement with these findings is Ramsay-Brijball (2003), who also challenges this grammatical constraint and argues that the syntactic integrity of both languages cannot be maintained in general. Instead, the syntactic integrity of only one language, i.e. isiZulu in her study, is maintained. On the basis of the findings from both this study and Ramsay-Brijball's study, it may be argued that the Equivalence Constraint is not applied universally. However, there are instances where the syntactic integrity of both languages are maintained, as in example 15 where *ma*, a plural marker in Chichewa, is used with the -*s* ending for plural words in English.

4.4.3 The Matrix Language Frame Model

Using the criteria for identifying the matrix language (Kamwangamalu 1994, 1999; Myers-Scotton 1997 and Bhatt 1997 both as cited in Kamwangamalu 1994, 1999), it appears that in some of the child's utterances, Chichewa was the matrix language. English and Chitumbuka were the embedded languages. This 'matrix – embedded' relationship between the languages could be reversed, as the matrix language changed according to topic, interlocutor and context.

16.   *Wa*   -ne. (a mixture of Chichewa word *wanga* and Chitumbuka word **lane**)

    Agr M-mine

    <Mine>

The utterance in 16 above was produced when Chatonda was interacting in Chitumbuka with his father who wanted to know what type of porridge he liked (see Appendix IV, Dialogue 9). Chatonda's utterance was a response to the Chitumbuka question *Bala la*

vichi? ('What type of porridge?'). Chatonda's response should have been *langa* ('mine') which is a possessive in Chichewa or *lane* ('mine'), a possessive in Chitumbuka. *La* in either *langa* or *lane* marks agreement but since Chatonda had not yet mastered agreement markers in either Chichewa or Chitumbuka, he used *wa*, an agreement marker in Chichewa, instead of *la* which means that he overgeneralized the use of *wa*. Since *wa*, a Chichewa agreement marker, marks agreement in the utterance *wane* given in 16 above, Chichewa is therefore considered as the matrix language because, according to Bhatt (1997) as cited in Kamwangamalu (1999), the matrix language marks tense, aspect and agreement.

However, *wane* was not the correct response to the question that was asked and Chatonda's father had to rephrase the question (*la mgaiwa, la mpunga, la nthendero, la vichi*? which means 'is it maize porridge, rice porridge, porridge mixed with groundnuts flour or what type is it?') to make Chatonda give the correct response. His response to the rephrased question was *wa mpunga* ('rice porridge') instead of *la mpunga*. The phrase *la mpunga* could be used in either Chichewa or Chitumbuka but with a different accent. But Chatonda's response *wa mpunga* was said with a Chitumbuka accent.

The utterance in 17 below is another example where Chichewa is the matrix language because it marks tense and agreement. Chatonda produced this utterance when he was conversing with his mother in Chichewa (see Appendix III, Tape 7, number 13). He wanted to know exactly where his mother was scratching herself.

17. *U -na -kwanth -a   apapa*?
    SM-Past-scratch FV   here
    <Did you scratch yourself here?>

Unakwantha in example 17 is a mixture of Chichewa prefixes *u* and *na* with the Chitumbuka stem *kwanth*. Chichewa is providing the grammatical framework in this utterance in the form of tense and agreement and, therefore, it is a matrix language.

Example 18 below is a mixture of Chichewa and English. As in examples 16 and 17 above, Chichewa is supplying the grammatical framework for the mixed utterance and it is therefore considered as the matrix language. This utterance was said when Chatonda was interacting with his cousin, John, in Chichewa. Chatonda said *apanga bye kwa dadi* with reference to the man and the woman he had seen in the story book. He said that the man and the woman were his friend's parents and that his friend had said 'bye' to his father. The Chichewa equivalent for *apanga bye* is *a-tsanzik-a* (SM-bid farewell-FV). The word *apanga* is incorrect as it should have been *anapanga*. In this utterance, *a(na)panga*, which is in Chichewa, is supplying the grammatical framework to the whole utterance since it is marking tense and agreement as shown below.

18. *a*   *-(na)*   *-pang*   *-a*   bye *kwa dadi.*
    SM –(Past) -do   FV   bye to   dad
    <He said bye to his father>

On the other hand, in example 19 below, English is the matrix language while Chichewa is the embedded language. Chatonda produced this utterance when he was conversing with his father in English in the second sampling (see Appendix II). He wanted his father to share the food that he was eating with him.

19. I   want to eat *nawo*
    1st Pers Sing   Pres   to eat with you
    <I want to eat with you>

English is supplying the grammatical framework for the utterance in example 19 above in terms of tense and agreement (the pronoun 'I' agrees with the verb 'want') and therefore, English is the matrix language in this utterance.

The utterance in example 20 below illustrates that in some mixed utterances Chitumbuka acted as the matrix language with English as the embedded language. The child produced this utterance when he was conversing with his aunt, Deliwe, in Chitumbuka. He was reporting that he went to South Africa with his father. Actually this utterance was a

response to the question that his aunt asked *ku South Africa mukaluta na nja*? ('Who did you go with to South Africa?')

20. **na** dad.

    <with dad>

The child was recorded alternating between two expressions, '*na* dad' and *na dada*. When he uttered '*na* dad', he was mixing the Chitumbuka grammatical morpheme *na* with the English word 'dad'. Since *na* is the Chitumbuka grammatical morpheme, it could be said that Chitumbuka is the matrix language in the utterance given in 20 above, while English is the embedded language. When Chatonda produced *na dada*, there was no mixing, since the Chitumbuka word for 'father' is *dada*. It appears that Chatonda used two different expressions for 'with dad' because he was exposed to mixed input when he was interacting with his aunt in Tape 10. Data show that she also alternated between the expressions '*na* dad' and *na dada*. This means that Chatonda's variable use of the two expressions was modeled on the mixed input from his aunt. However, since Chatonda was interacting with his aunt in Chitumbuka, the expression *na dada* was used most.

Apart from identifying the matrix language using the criteria illustrated above, i.e. on the basis of the language that supplies the grammatical framework, Kamwangamalu (1999) observes that the matrix language is the language that contributes more morphemes in a sample of discourse containing intra-sentential code-switching; it also has more morphemes in the discourse as a whole, including the monolingual stretches. In this study, Chichewa has more morphemes, as compared to the other languages. Even though Chichewa had an advantage due to the fact that 50% of the interactions took place in this language, it was still the case that the child used more morphemes from Chichewa even when the main language for conversation was Chitumbuka.

4.5 Language Dominance

The general pattern of the distribution of lexical and grammatical morphemes in Chatonda's mixed utterances is that grammatical morphemes from either English or Chitumbuka did not co-occur with lexical morphemes from Chichewa. According to

Lanza (1992), lexical morphemes refer to open class items/contentives whereas grammatical morphemes refer to function words/closed class items. The analysis reveals only one instance in which an English article co-occurred with a Chichewa lexical morpheme, i.e. 'a *mtengo*' ('a tree'). Table 4.3 (see Appendix V) shows that Chichewa verb stems co-occurred with Chichewa prefixes/suffixes (that mark tense, aspect and agreement), English or Chitumbuka verb stems co-occurred with Chichewa prefixes/suffixes, Chitumbuka verb stems co-occurred with Chitumbuka prefixes/suffixes and English verb stems co-occurred with English prefixes/suffixes.

Apart from the distribution of lexical and grammatical morphemes given above which focuses on verb stems and prefixes/suffixes that mark tense, aspect and agreement, Chatonda's mixed utterances also had the following combinations as portrayed in Table 4.4 (see Appendix V):

- Chichewa nouns co-occurred with Chichewa possessive pronouns.
- English nouns co-occurred with Chichewa possessive pronouns.
- Chitumbuka nouns co-occurred with Chichewa possessive pronouns.
- English nouns co-occurred with English possessive pronouns.
- Chitumbuka nouns co-occurred with Chitumbuka possessive pronouns.

Tables 4.3 and 4.4 (see Appendix V) show that Chichewa was generally the matrix or host language when mixing occurred. At school, however, where only English was permitted, the question of a matrix language did not occur. Furthermore, the combination of lexical and grammatical morphemes illustrated above demonstrates that Chichewa was dominant in Chatonda's speech, in terms of the dominant-language hypothesis proposed by Petersen (1988). In the present study, Chatonda's code-mixing grammar allows only word types 1, 2, and 3 (see Tables 4.3 and 4.4 in Appendix V), because the grammatical morphemes from either Chitumbuka or English did not co-occur with the lexical morphemes from Chichewa (except for one instance mentioned above in which Chatonda produced 'a *mtengo*' which means 'a tree'). Therefore, Chichewa is considered to be Chatonda's dominant language. This means that data in this study supports the dominant-language hypothesis. However, one would expect Chitumbuka to be the dominant

language for Chatonda, since this was the language spoken by the majority in the community in which he was raised. But the results show the opposite. The reason for his dominance in Chichewa might be attributed to the fact that Chichewa was, and still is, the main language of interactions in the child's home. Chitumbuka was used occasionally by Chatonda's father. It could also be said that other Chitumbuka speakers preferred using Chichewa with the child because they had observed that this language was habitually used in the child's home.

Another factor worth mentioning in relation to Chichewa's dominance in Chatonda's speech is that Chatonda did not see the need for using Chitumbuka in his interactions with his father and the other selected interlocutors in this study because he knew that these interlocutors could speak Chichewa. In support of this, Hoffmann (1991) argues that when a bilingual child realizes that one parent is able to speak the language of the other, he may not see the need to use the languages of both parents. In these situations, one language may dominate the other. Evidence for Chatonda's facility in Chichewa is revealed in the recorded data when he used Chichewa in response to speech directed at him in his non-dominant language, i.e. Chitumbuka (see Dialogue 6, Appendix IV). This dialogue took place when Chatonda was conversing with his father in Chitumbuka but most of Chatonda's responses were in Chichewa. Chatonda also responded in Chichewa to speech directed at him in Chitumbuka when he was conversing with his aunt, Deliwe (see Dialogue 7, Appendix IV). Chatonda responded in this manner several times when he was conversing with his aunt and his father to the extent that on one occasion his father had to remind him that the language for interaction at that particular time was Chitumbuka (see Dialogue 8, Appendix IV). As has been noted earlier, Chichewa and Chitumbuka are cognate languages, which strongly resemble each other. This may have made movement between the two easier for Chatonda.

4.6 Interlocutor's Discourse Strategies towards Child Mixing

This section focuses on the question of whether the interlocutors opened negotiations for a monolingual or bilingual context when they interacted with Chatonda. The findings indicate that the interlocutors' discourse strategies opened negotiations for a bilingual

context as they preferred the Move On strategy and the Code-Switching strategy. These correspond to the strategies used by the child's father in Lanza's (1992) study. Concerning the Move On strategy, interlocutors in the present study were observed to continue with the conversation without commenting or requesting the child to clarify or repair a mixed utterance. Dialogue 9 (see Appendix IV) illustrates this. In this dialogue, Chatonda was interacting in Chitumbuka with his father who wanted to know what type of porridge he liked (see Section 4.4.3). When Chatonda produced *wane*, his father proceeded with the conversation without correcting the mixed utterance or asking for clarification. In dialogue 10 (see Appendix IV), the interlocutor's response to Chatonda's mixing was in the form of code-switching, which means that the Code-Switching strategy seemed to be accepted. This dialogue was part of the recordings in which the child interacted with his mother in Chichewa. In this dialogue, the mother was asking the child to mention the parts of the object she was holding. When the mother asked Chatonda a question which was in pure Chichewa, he produced a mixed utterance in response, i.e. *ku side* ('on the side'). The mother repeated this mixed utterance in the form of a question ku side? ('on the side?') and used it again when she said *uku ndi ku side uku, nanga uku* ('this is on the side, how about here?'). This dialogue shows that the mother responded to the child's mixed utterance by code-switching, hence she accepted the use of the Code-Switching strategy.

It appears that Ochs' (1988) strategies, viz. the Minimum Grasp and the Expressed Guess strategies, as cited in Lanza (1992, 1997), were not favoured in this study since they open negotiations for a monolingual context. Therefore, it could be argued that when a bilingual child is exposed to language in a 'fused' context where several languages are used, parents and other caregivers indirectly encourage language mixing by not asking the child for clarification. They may ignore the mixed quality of the child's utterances as they continue with the conversation. It seems that in such a 'fused' context, parents and other caregivers focus on the truth value of an utterance, that is, they correct the child's statements where the mixture of languages has rendered them inexact, by offering correct utterances in relation to content, or sometimes by making the child correct him/herself. This is in line with Clark and Clark's (1977) argument that adults ensure that children's

contributions are true by offering alternatives. They argue in this manner to show that parents and caregivers rarely correct child's grammatical errors, but rather focus on the content and not the form of the utterances.

This study has compared the way code-switching strategies were used by the selected interlocutors. The results are presented in Table 4.5 in Appendix V (see also Appendix III). Table 4.5 reveals that the child's mother in Tape 7 was the one who used more code-switching strategies (43.8%) than the rest of the interlocutors. Furthermore, the results provided in section 4.2.2 demonstrate that Tape 7 had the highest number of mixed utterances (28) compared to the other tapes. This shows that there is indeed a relationship between the interlocutor's discourse strategies and the child's use of mixing, as suggested by Lanza (1992, 1997). However, the mother is shown to have used more code-mixing than the rest of the interlocutors because she wanted the child to understand the message passed on to him. This is in agreement with Goodz's (1994 as cited in Genesee 1989, 2001) suggestion that parents code-mix by opting for lexical items that the children can understand and by repeating and expanding the children's utterances using two or more languages, as illustrated in dialogue 11 (see Appendix IV). This is especially evident in the last part of the dialogue where the mother gave a detailed response by repeating and expanding Chatonda's code-mixed utterance *palibe black*. In this dialogue, Chatonda was conversing with his mother in Chichewa who wanted to know the colour of the shirt that he was wearing. This dialogue reveals that Chatonda's mother did a considerable amount of mixing, especially in the last part of the dialogue, and it shows that the English word 'black' (the equivalent in Chichewa is *kuda*) was used four times in an attempt to explain to the child that the shirt he was wearing was black in colour.

4.7 Conclusion

In conclusion, the findings in this study reveal that mixing occurred at four different levels i.e. phonological, lexical, syntactic and morphological levels. However, the analysis shows that Chatonda mixed more at the lexical level (64.2%) and less at the phonological level (6.3%). He mixed grammatical and lexical morphemes but the analysis of his speech portrays that grammatical morphemes from either Chitumbuka or

English did not co-occur with lexical morphemes from Chichewa (except for one instance mentioned in Section 4.5 in which Chatonda produced *a mtengo* which means *a tree*), hence the interpretation that Chatonda's dominant language was Chichewa.

The results also suggest that apart from the way in which the topic of discussion, the context and the interlocutor's input influenced the child's use of code-mixing, as explained in Section 4.3; the interlocutor's discourse strategies also had an impact on the child's mixed output. It was observed in Section 4.2.2 that Chatonda did more lexical mixing in Tape 7 when he was interacting with his mother in Chichewa than with the rest of the interlocutors. It was also observed that Tape 7 had the highest number of mixed utterances overall i.e. mixing from all the four levels (phonological, lexical, syntactic and morphological levels) than the rest of the tapes. Furthermore, the child's mother in Tape 7 was the one who used more code-switching strategies than the rest of the interlocutors. This shows that there is a connection between interlocutor's discourse strategies, topic of discussion, context, interlocutor's input and the child's use of mixing.

Regarding the forms of code-mixing, I have challenged in this study the Free Morpheme Constraint and the Equivalence Constraint and have concluded that they are not universally applicable. Instead, I have supported the Matrix Language Frame Model as it applies to code-mixing involving English and Bantu languages. This model was relevant, as the speech analyzed in this study involved code-mixing between English and the two Bantu languages, Chichewa and Chitumbuka. However, it is difficult in multilingual settings to determine when one language stops being the matrix language and another language takes over that role in the same conversation because of the morphology and the MLU of the child's utterances. My analysis was guided by Bhatt's (1997, as cited in Kamwangamalu 1999), suggestions that the matrix language marks tense, aspect and agreement. The results show that, generally, Chichewa was the matrix language when mixing occurred according to these criteria.

CHAPTER FIVE: CONCLUSION

5.1 Introduction

I have aimed in this study at providing answers to questions in relation to language mixing in children by investigating the nature and extent to which a Malawian child aged three mixed the three languages he was simultaneously acquiring. I have also explored the reasons why code-mixing between languages occurs, and specifically, the nature and extent of the child's code-mixing. In this chapter, I shall summarize the major findings, discuss the implications of the findings and point out the limitations of the study. Recognizing these limitations, I shall make suggestions for future research.

5.2 Summary of the Major Findings

5.2.1 The Nature of Code-Mixing

My findings have revealed that four types of code-mixing were evident in the child's speech, viz. phonological, lexical, syntactic and morphological mixing. Lexical mixing was by far the most prominent category, with open class items comprising the majority of instances. This is in agreement with Vihman's (1985) findings, which reveal that bilingual children above 2;8 years of age are more likely to mix open class items than closed class items. The child on whom my study focused was recorded mixing lexical items from English when Chichewa and Chitumbuka were the matrix languages of interaction, and vice versa. The analysis shows that the amount of borrowing of English lexical items was influenced by topic, interlocutor's input and context. This means that what the child had learned in English fulfilled a 'booster' function when either Chichewa or Chitumbuka was used. In support of this observation, Genesee (1989) suggests that language mixing may be used as a relief strategy especially with respect to borrowing of lexical items that are unavailable in one language but available in another. This implies that a bilingual child has certain advantages in the sense that s/he is able to express him/herself by drawing on the resources of two languages.

5.2.2 Formal Aspects of Code-Mixing

The forms of code-mixing in this study were analyzed using the Free Morpheme Constraint, the Equivalence Constraint and the Matrix Language Frame Model. The results challenge the claim to universality of the Free Morpheme and the Equivalence Constraint as the grammatical constraints applied to some mixed utterances, but not all of them. Instead, the findings support the Matrix Language Frame Model. This is in agreement with Kamwangamalu's argument (1994, 1999) that the code-switching model that applies to code-mixing involving English and Bantu languages is the Matrix Language Frame Model.

5.2.3 Language Dominance

The child's grammatical and lexical morphemes were analyzed using Petersen's (1988) dominant-language hypothesis. The analysis of his speech shows that grammatical morphemes from Chitumbuka and English did not co-occur with lexical morphemes from Chichewa (see Section 4.5) which means that Chatonda's dominant language was Chichewa. Apart from identifying the dominant language by means of the dominant-language hypothesis, my analysis shows that Chichewa was the matrix language, even when the child was interacting with Chitumbuka speakers. For instance, the findings demonstrate that the child responded in Chichewa to speech directed at him in Chitumbuka (see Section 4.5). This occurred several times when he was interacting with his father and aunt in Chitumbuka, which shows that Chichewa was the child's dominant language as well as his preferred language.

5.2.4 Interlocutor's Discourse Strategies

The results show that the interlocutors selected for this study opened negotiations for the bilingual context as they used the Move On and Code-Switching strategies in their interactions with the child. The interlocutors did not request the child to clarify or repair his mixed utterances, as is the case when Ochs' (1988) Minimum Grasp and Expressed Guess strategies are used, as cited in Lanza (1992, 1997). The analysis of the data indicates that the child's mother was the one who used more Code-Switching strategies than the rest of the interlocutors when she was interacting with the child in Chichewa in

Tape 7 (see Section 4.6). Furthermore, Tape 7 had the highest number of mixed utterances overall compared to the rest of the tapes (see Section 4.2.2). This therefore suggests that there is indeed a connection between parental discourse strategies and the child's use of code-mixing, as suggested by Lanza (1992, 1997).

5.3 Implications of the Findings

5.3.1 Implications for Parents and other Caregivers

The findings show that the development of the three languages was uneven. The child, at the time of the recordings, was unable to express himself fully in the non-dominant languages which is probably the result of his unequal exposure to the three languages. Hoffmann (1991) points out that the degree of success in the acquisition of the languages in question by a multilingual child depends on the right kind and amount of social support and sufficient exposure to the languages. Regarding the latter, it is easy for parents to determine the child's exposure to the languages when a strategy such as 'one parent one language' (OPOL) is used. However, when a multilingual child is exposed to the languages in a fused context, it is difficult to weigh the amount of input that the child is receiving from the two (or more) languages. When no strategies such as OPOL are used, parents have to ensure that they are giving the child the right amount of exposure to both languages otherwise chances that the child can develop semi-lingually[12] are high.

5.3.2 Implications for Researchers

The models that were used to analyze the formal aspects of mixing were those that had been developed for adult bilingual competence (see Section 5.2.2). It is a common trend for researchers to apply such models to multilingual children's mixed utterances. However, it can be argued that the results of the application of such models to child code-mixing could differ (Genesee, 2002). Moreover, it is difficult to apply the Matrix Language Frame Model to children's mixed utterances because the MLU is low. An example of this would be the utterance *wane* discussed in Section 4.4.3. This implies that

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[12] A semilingual child does not acquire full proficiency according to a monolingual norm in any of his languages (Romaine 1989).

there is a need for researchers to create models that will allow for an analysis of the mixed morphemes in single word utterances, especially for the Nguni African languages, which are agglutinative by nature. In the absence of such models, researchers are more likely to apply models developed for adult bilingual competence to children's mixed utterances and this could result in divergent findings, as pointed out by Genesee (2002).

5.4 Limitations of the Study

The possibilities for interpretation of data from the samplings, especially the first sampling, may be limited in light of the fact that in South Africa the child did not have many conversational partners apart from his parents and one peer. Also, the fact that the child was in Malawi for lengthy periods of time while the researcher was studying in South Africa, made it difficult for the researcher to record more data at regular intervals. McNeill (1970), as cited in Bennett-Kastor (1988), points out that the typical frequency for recording in child language research seems to be intervals of two to four weeks. In order to compensate for this inability to collect data at regular intervals, the child's father in the second sampling continued outside of the formal sampling sessions to record field notes concerning the child's progress in the acquisition of the three languages.

Since all the recordings were carried out in my presence as the researcher, I admit that my presence during the recordings might have been intrusive and it might have led the child to prefer one language over the other, that is, the researcher's mother-tongue (Chichewa) over his father's mother-tongue (Chitumbuka). However, the researcher's presence was necessary in order to keep a record of all the relevant information that could not be captured by the recordings.

The fact that the researcher was unable to collect more data at the preschool where the child was expected to interact with his teacher and fellow pupils in English is another limitation. This occurred because the period for data collection coincided with the school's second term holiday. As a result, the researcher only managed to have two sessions of recordings (i.e. one hour of recordings in total at the pre-school). However, this did not affect the findings because if the recordings had taken place at the child's

preschool as initially planned, the child would still have avoided the use of the native languages, as these were not allowed within the school premises. This would have meant little or no mixing, as the findings in this study have demonstrated.

Finally, perhaps the data could have been analyzed from the prospective of second language theory, particularly interlanguage theory and the crucial similarity measure in relation to transfer. For instance, the crucial similarity measure could have triggered the overgeneralization of the Chitumbuka word *yayi* which was reduced by the child to *ayi* because /y/ is difficult for the child to pronounce initially (see Section 4.2.3). This is a developmental process and it would have been interesting to see how the interacting languages influence language development.

5.5 Recommendations and Areas for Future Research

The findings reveal that the child associated his mother with Chichewa and English but not Chitumbuka. This became evident when he was interacting with his aunt in both Chichewa and Chitumbuka, and showed that he did not like to be addressed in Chitumbuka by his mother (see Section 3.2). However, the child did not object when his mother or father addressed him in English. He nevertheless associated his mother with Chichewa, and his father with both Chichewa and Chitumbuka, as he did not complain when his father used the two native languages.

I recommend that researchers investigate linguistic identity issues in children because this study has shown that there were no issues of identity in the acquisition of English, due to its status of a generally spoken foreign language in Malawi and it appears that the child was aware of this.

Studies that have been carried out in the European, American and Asian contexts have investigated language separation and acquisition of lexical equivalents in multilingual children (Taeschner 1983; Ronjat 1913 and Leopold 1939 as cited in McLaughlin 1984; Vihman 1985; Lanvers 1999). The present study has failed to investigate these areas because the child was over three years of age when data collection began and therefore

past the age for investigating whether a child is separating languages or not. I recommend therefore that future studies on child language acquisition, especially in the African context, take into account separation of languages and acquisition of lexical equivalents, and that data collection should start as early as possible in the subject's life for these issues to be investigated.

Finally, since analysis of formal aspects of the child's mixed utterances in this study has relied on models that have been developed for adult language competence as discussed in Section 5.3.2, I recommend that researchers develop theories relevant to child language samples where the MLU is low, as it has been pointed out that young children produce single word utterances which are difficult to analyze in terms of which language is supplying the grammatical framework to such single word utterances.

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APPENDICES

Appendix I: The Nature of Mixing in the First and Third Sampling

(Chichewa utterances are italicized, Chitumbuka utterances are in bold type and English utterances are in quotation marks).

TAPE 1: The type of mixing and discourse context in conversations with his mother and father:

1. Phonological mixing

   a. *mbalame* – this word was produced with an English pronunciation. He said it when referring to a bird he had seen in the story book.

   b. *kwada* – he said this with reference to the darkness outside the house.

   c. *chidole* – he said this with reference to a doll he had seen in the story book.

2. Lexical mixing

   a. *amati iwe* **chetama** – he said this when referring to his father who was asking him to stop crying.

   b. *amanena* 'go' – he was referring to his father who had asked him to go and fetch his shoes.

   c. *ndinakwera* 'train' – he was saying that he boarded a train when he went to town.

   d. *ona* 'baby' – he said this with reference to a baby he had seen in the story book.

   e. *zakuuza* 'story' *ineyo* – he was telling his mother that he was going to narrate a story to her.

   f. 'fruit' *ya ndani* – he had seen some fruits in the story book and he was asking who they belonged to.

3. Morphological mixing

   a. *ndiku-shut-a mumaso* – he was telling his mother that he would shoot her in the eyes with his toy gun.

b. *ma-ini* – (for *ma-*'earrings') he said this with reference to his mother's earrings.

c. *ma-irini* – (for *ma-*'earrings') he said this with reference to his mother's earrings.

TAPE 2: The type of mixing and discourse context in conversations with his mother and Mua (his friend in Durban):

1. Lexical mixing

   a. *ndi* 'bird' *ya ndani* – he said this with reference to a bird he had seen in the story book and he was asking whose bird it was.

   b. *tinapita ku* 'beach' – he was telling his friend (Mua) that he went to the beach together with his parents.

   c. *ndi* 'frog' – he said this when he was hopping like a frog together with his friend (Mua).

   d. 'clouds' *yabwera* – he said this with reference to the clouds he had seen in the story book and he said that the clouds were going to bring rain.

   e. 'clouds' *imeneyo* – he said this while pointing at the clouds in the story book.

TAPE 3: The type of mixing and discourse context in conversations with his mother:

1. Phonological mixing

   a. *mdima* – he was referring to the darkness outside, since it was cloudy and about to rain.

2. Lexical mixing

   a. *kwa* 'clouds' – he was referring to the clouds in the sky where he said the darkness was coming from.

   b. *ona* 'monkey' – he was asking his mother to look at a monkey outside.

   c. 'baby' *akutani* – he had seen a young monkey outside which he referred to it as a baby and he was asking what this young monkey was doing.

   d. *akudya* 'pawpaw' – (pawpaw was produced as popopo). He was referring to the monkey outside that was eating a pawpaw.

e. *chimagwira* 'shock' – he was referring to the kettle in the kitchen and he was doubting if it would cause electric shock.

f. *waba* **zawene** – he was saying that the pawpaw that the monkey was eating was not his but stolen.

3. Morphological mixing

a. *aku*-**thuny**-*a te* – he said this while referring to the monkey who was eating a pawpaw and spitting out some of it.

TAPE 4: The type of mixing and discourse context in conversations with his mother and Dan (the housekeeper):

1. Lexical mixing

a. **mpende** *wanga* – he said this with reference to his counter, i.e. one of the bottle tops, that he uses for counting at school.

b. *dzina lake la* 'baby' – he said this with reference to his aunt's baby whose name he could not remember. He had to be reminded by his mother.

c. *ya* 'size' *wanga* – he said this referring to the teddy bear which was in a box. Since the teddy bear was small he said that it was of his size.

d. *ya* 'red' – he said this referring to a scarf (which he called sweater) that the teddy bear was wearing which was red in colour

2. Syntactic mixing

a. *ndi James ayi* (Chitumbuka word order) – he was telling his mother that James does not throw stones at cars

3. Morphological mixing

a. *amani-shut-a* – he was saying that policemen might shoot at him; in other words, they would shoot at him because he was throwing stones at cars.

TAPE 5: The type of mixing and discourse context in conversations with his father:

1. Lexical mixing

    a. *pa* 'holiday' – he said this in response to the question that his father had about when he is going to visit Durban again.

2. Syntactic mixing

    a. *three ayi* (Chitumbuka word order) – he said this when he was asserting that he was not three years old. Actually, he did not understand the question that was asked. It appeared that he was familiar with the words used because when the same question was asked in English he responded correctly.

TAPE 6: The type of mixing and discourse context in conversations with his teacher:

1. Phonological mixing

    a. lailon (a mixture of 'lion' and 'iron') – he said this when referring to the iron that his teacher had asked him to name.

TAPE 7: The type of mixing and discourse context in conversations with his mother:

1. Lexical mixing

    a. *ndinakhala* 'baby' – he said this in response to the question asked by his mother who wanted to know what he was doing. His response was that he was crawling to demonstrate what he used to do when he was a baby.

    b. 'mouth' *ndi iyiyi* – ('mouth' was produced as 'mouse') he said this with reference to the teddy bear's mouth.

    c. *palibe* 'black' – he said this with reference to the shirt he was wearing which he said did not have any black colour.

    d. *iyiyi si* 'blue' – he was asking if one of the colours on his toy car was blue.

    e. *ndi* 'red' – since the mother's response to d. above was that the car did not have any blue colour on it. He instead opted for red.

f. *ndi* 'green' *iyiyi* – he said this after his mother had told him that he was wearing a green T-shirt, so he was asking her to confirm whether the T-shirt was indeed green in colour.

g. *ndi ya* 'white' – he was saying that his father's car was white in colour but actually it was black.

h. *ndikhale* 'one' *kulira* – he mistakenly said that he wanted to be the first one to cry instead of the first one to take a bath. Since he was not the first one to take a bath in the morning like he wanted, he ended up crying hence the confusion in the utterance.

i. 'fan' *ya* 'black' – he said this with reference to the fan in his home which was black in colour.

j. *za* 'red' – he was saying that his shoes were red in colour which was not true.

k. *za* 'white' – after his mother had corrected him (see j. above), he then said that his shoes were white in colour.

l. *ku* 'side' – he said this in response to his mother's question when she wanted to know what part of the object she was holding.

m. *imakhala choncho* 'rectangle' – he wanted to know whether the shape shown on TV was indeed that of a rectangle.

n. *ndi* 'triangle' – he was telling his mother that he drew a triangle at school.

o. *ndi* 'square' – he was telling his mother that he drew a square at school.

p. 'a' *mtengo* – he said this with reference to the hanging on the wall which had a tree on it.

2. Syntactic mixing

a. *ikufanana ngati iyo* 'container' (English word order) – he was saying that his green T-shirt was like the container placed on top of the cupboard which was also green in colour.

b. *ya* **kwa** *dadi* (Chitumbuka word order) – he said this with reference to his father's car.

3. Morphological mixing

   a. *ndina-hed-a* – he said this with reference to the way he used to sustain cuts in the head due to frequent falls when he was crawling, i.e. when he was a baby. He said his after his mother had explained to him what he used to do when he was a baby.

   b. *ku-hed-a* – he was referring to the way he frequently fell down when he was a baby and hurt himself (see a. above).

   c. *ma-*'flower' – he said this with reference to the drawing in the form of a flower shown on the TV.

   d. *timasewera ndi ma-*'toy' – he was telling his mother that he played with toys at school.

   e. *ma-*'colours' – he said this to explain to his mother that he made drawings of different colours at school.

   f. *ma-*'numbers' – he said this with reference to the numbers that he learnt at school.

   g. *ma-*'number'– he said this with reference to the numbers that he learnt at school just like in f. above.

   h. *ma-*'fingers' – he said this with reference to the teddy bear's fingers.

   i. *una-***kwanth-***a apapa* – he wanted to know where exactly his mother had scratched. Therefore, he said this while pointing at his mother's hand where she had scratched because there was a mark.

   j. *ma-*'circle' – he wanted to know whether they would show circles again on TV.

TAPE 8: The type of mixing and discourse context in conversations with his father:

1. Lexical mixing

   a. *akamange* **msewu wa kwinu** – he said this in response to his father's question when he wanted to know what his toy truck was carrying. In response, he said that the truck was carrying sand to be used in the construction of a road that led to his father's home village.

   b. *ya* 'black' – this was said with reference to his friend's father's car (Mwayenera's father's car) which was black in colour.

c. *ya* 'white'-*nso* – he mistakenly said that the car belonging to his friend's father was white in colour instead of black. But he corrected himself later.

d. *iyinso* 'red' – he said this with reference to the T-shirt that he was wearing which was red in colour.

2. Syntactic mixing

a. *ndi ako ayi* (Chitumbuka word order) – he was telling his father that the T-shirt his mother was wearing was not his.

b. 'black' *ya galimoto* (English word order) –he was saying that his uncle's car was black in colour.

c. *nawenso ayi* (Chitumbuka word order) – he was telling his father that he did not want to greet him but only his mother.

3. Morphological mixing

a. *wa*-ne – this was said when his father wanted to know the type of porridge that he liked. Actually 'wane' was not the correct response since it means 'for me' and it did not answer the question that his father asked.

b. *na-hed-a* – he said this when he accidentally hit his mother with his head.

c. *musandi-hed-enso* – he said this when he was reporting to his father that his mother did not want to be headed.

d. *a*-phyoka – he said this with reference to one of the boys that he knew who had broken his leg.

TAPE 9: The type of mixing and discourse context in conversations with his aunt (Zamiwe):

1. Phonological mixing

a. 'stadium' (he stressed the consonant 'd' in this word) – he was saying that his uncle hit him at the stadium.

2. Lexical mixing

   a. *inapanga* 'overtake' – he said this when referring to an accident that happened close to the location where he lived, in which a bus was trying to overtake another vehicle.

   b. *ku* 'back' – he was explaining that the bus that was involved in the accident was being towed from the back.

   c. *kwa* 'monkey' – he was narrating the plot of a film that he watched in which a baby was taken to a zoo where there was a monkey.

   d. *anaba* 'baby' – he said this with reference to the gangsters in the film he had watched (see c. above) who had stolen a baby.

   e. *ndi* 'pineapple' – he was narrating that the baby in the film was given a pineapple by a monkey.

   f. *ndinakwera* 'train' – he was telling his aunt that he boarded a train while in Durban.

   g. *ya* 'blue' – he was telling his aunt that his mother bought him a truck which was blue in colour.

   h. *a*-'teacher' – he was saying that he did not find his teacher at school. During the holiday, he mistakenly went to school on a particular day.

3. Morphological mixing

   a. *a*-**ka**-*dy-a* – he was saying that the baby in the film ate all the fruits that he was given by a monkey.

TAPE 10: The type of mixing and discourse context in conversations with his aunt (Deliwe):

1. Lexical mixing

   a. **na** 'dad' – he was reporting to his aunt that he went to South Africa with his father.

b. *pa* 'Thursday' – he was telling his aunt that he would visit his uncle again on Thursday during the holiday.

c. *pa* 'holiday' – he was telling his aunt that he would visit his uncle again on Thursday during the holiday.

TAPE 11: The type of mixing and discourse context in conversations with his cousins (John and Edward):

1. Lexical level

    a. *ndi* 'pig' *uyu* – he was asking John (his cousin) if the picture in a book (story book that he and John were reading) was that of a pig.

    b. *apanga* 'bye' *kwa dadi* – he was saying that some children whose mother and father were in the story book had said goodbye to their father.

    c. *ayi* **nakana** *si ng'ombe* – he was told that the picture in a book was that of a cow but not a pig as he thought, but he was not convinced by this response and kept on saying that the picture was of a pig but not of a cow.

    d. *ku* 'hell' – he was saying that Satan's dwelling place was hell. The story book about Jesus had made him say this.

    e. *ndikung'ambira* 'story' *yako* – he said this with reference to John's (his cousin's) story book. He was saying that he would tear this story book.

    f. *ya* 'baby' – he was asking John (his cousin) to put on a film about a baby for him to watch. The title of the film was 'Baby's Day Out'.

2. Syntactic level

    a. *Jesus woipa ayi* (Chitumbuka word order) – he said this with reference to the story book about Jesus that he and John were reading. He was saying that Jesus was not bad, in other words, he was good.

TAPE 12: The type of mixing and discourse context in conversations with his father and his classmates:

1. Lexical mixing

   a. **na** *kunja* – he was telling his father that he and his friends (his classmates) were playing both outside and inside the house.

   b. *wa* 'white' – he said this with reference to the rice that he and his friends were eating which he said was white in colour.

Appendix II: Lexical Mixing in the Second Sampling

a. 'I want to' *biba* – he said this when he wanted to go to the toilet.

b. 'I'm saying' *nakhuta* – he was telling his father that he was full and that he could not finish his food.

c. 'Ah!' *magesi* 'is going' – he said this when there was power failure. This utterance literally means 'electricity has gone'.

d. 'The truck is want to take' *anthu* – he said this with reference to his toy truck which he said would be used for carrying people.

e. 'I'm going to' *chipinda* – he said this when he was going to the bedroom.

f. 'Thoko is' *tukwana* 'me' – he said that a friend of his by the name of Thoko was swearing at him.

g. *Ndikupanga ma-*'somer' – he said this when he was doing somersault.

h. 'I want to eat' *nawo* – he said this when he wanted his father to share the food he was eating with him.

i. *Ndiziyankha mpira* – he said this with reference to the ball that he was playing with and he was saying that he would be catching it.

j. *Mukandigulire chi-*'faya' (faya = fire) – he was saying that his father should buy him a fire brigade toy after he had seen a real one on the TV.

k. *Zamala zinthu* – he said this with reference to the game he was playing which he said had finished.

l. *Uwone ine ndima-hed-a mpira* – he said this while demonstrating to his friend that he could head the ball.

m. *Ndizipumula* – he was boasting that he could run up and down the stairs but he said that he could not do it without resting.

n. *Nakana sinidyako* – he said this with reference to the food that his father was eating which he did not want to eat.

o. *Mpira amamenya ndi ma-*'boy' (*ma-*'boy' means boys) – he said this when he did not want a girl to play with his football and he said that football is only played by boys.

p. *Ndazi-**pala** ndi mpanda* – he said this when he had hurt himself when he was playing near the fence.

q. *Akundi**pala*** – he was reporting to his father that his friend was hurting him with his finger nails.

r. Look! *Chikwapu* is there – he said this with reference to the whip that he had seen.

s. *Ndikhoza ku-**binkha*** – he said to his friend that he did not want to play at that particular time because his clothes could become dirty.

t. *Zovala za**binkha*** – he said that his clothes were dirty and he wanted his father to give him clean clothes because they were visiting friends.

u. *Undi**dikiske*** – he wanted his father to cover him with a blanket when he was sleeping.

v. *Chima**nangika*** – he said this with reference to the plane he was trying to create from a piece of paper which he said could be torn apart if it is not handled carefully.

w. *Amandi**chema*** – he was reporting to his father that Dan was calling him.

Appendix III: Code-Switching Strategies

Code-switching strategies in Tape 1

1. Chatonda: A   -ma -ti iwe chetama!   Chetama!

       SM-Past Prog -say you stop crying!   Stop crying!

       <He was saying you stop crying! Stop crying!>

   Mum: A   -ma -ti chiyani?

       SM-Past Prog -say what

       <What was he saying?>

   Chatonda: Chetama.

       <Stop crying.>

   Mum: Chetama?

       <Stop crying?>

   Chatonda: ee.

       <Yes.>

   Mum: Chifukwa chiyani a   -ma   -ku -pang -a chetama?

       why   what   SM-Past Prog -OM-do   -FV stop crying

       <Why was he telling you to stop crying?>

2. Chatonda: Ndi   -ku -shut -a mu maso.

       SM-Pres Prog -shoot -FV in eyes

       <I am going to shoot you in the eyes.>

   Mum: U -ndi -shut -a mu maso?

       SM -OM -shoot -FV in eyes

       <You will shoot me in the eyes?>

3. Chatonda: Ndi -na -kwer-a train.

       SM -Past-board -FV train

       <I boarded a train.>

   Mum: U   -na -kwer-a train?

       SM -Past-board -FV train

       <You boarded a train?>

4. Chatonda: Earring ndi chiyani?

    earring   is what

    <What is an earring?>

    Mum: Earring ndi ndolo.

    earring   is earring.

    <It is an earring.>

    Chatonda: Ndolo?

    <Earring?>

    Mum: Ee,   earring ya Mummie.

    <Yes, earring for Mummie.>

5. Chatonda: Fruit ya ndani?

    fruit for who

    <Whose fruit is it?>

    Mum: Fruit ya nzake wa Chatonda.

    fruit   for friend of Chatonda

    <A fruit for Chatonda's friend.>

Code-switching strategies in Tape 3

1. Chatonda: Mummie,   ona   monkey!

    Mummie   see   monkey

    <Mummie, look at monkey!>

    Mum: A   -ku   -tani monkey?

    SM-Pres Prog -do monkey

    <What is the monkey doing?>

2. Chatonda: Baby a-   ku   -tani?

    baby SM-Pres Prog -do

    <What is the baby doing?>

    Mum: Baby a   -fun -a   a -dy -e   nawo za mayi ake.

    baby SM -want -FV Agr M -eat-FV   also for mother her

    <The baby also wants to eat what belongs to her mother.>

Code-switching strategies in Tape 4

1. Chatonda: Mpende wanga.

   counter   my

   <My counter>

   Mum: Wa -tani   mpende wako?

   SM -happen counter   your

   <What happened to your counter?>

2. Chatonda: Sa   -ma -ni -shut -a?

   Neg M -Pres -OM-shoot-FV

   <Don't they shoot at me?>

   Mum: Sa   -ma -shuta.

   Neg M -Pres-shoot

   <They do not shoot.>

   Chatonda: A   -libe   mfuti apolisi?

   SM-do not have guns policemen

   <Don't policemen have guns?>

   Mum: A -li -nazo mfuti koma sa -ma -shut -a.

   SM -have-them   guns but   Neg M-Pres-shoot-FV

   <They have guns but they do not shoot.>

3. Chatonda: Ya size wanga.

   of size my

   <It's my size.>

   Mum: Wa size yako, eti?

   of size your, isn't it

   <It's your size, isn't it?>

4. Chatonda: Eya, ngati ya-nga, ya red?

   Yes   like SM-mine it's red

   <Yes, like mine, is it red?>

   Mum: Ee,   ya red.

   <Yes, it's red.>

Code-switching strategies in Tape 5

1. Chatonda: Pa   holiday.

   during holiday

   <During the holiday.>

   Dad: Ti -za -mu-lut-a   pa holiday?

   SM-Fut -OM-go-FV during holiday

   <All of us will go during the holiday.>

Code-switching strategies in Tape 7

1. Chatonda: Ndi -na -khal   -a baby.

   SM -Past-pretend to be-FV baby

   <I pretended to be a baby.>

   Mum: U -na   -khal   -a baby?

   SM-Past-pretend to be FV baby

   <You pretended to be a baby?>

2. Chatonda: Ndi -na -khal   -a baby ku -hed -a apapa.

   SM-Past-pretend to be FV baby Agr M-head -FV here

   <I pretended to be a baby and hit my head here.>

   Mum: Ndiye u   -ta -hed -a   u -na -tani?

   so SM-Past -head-FV SM-Past-do

   <So when you hit your head, what did you do?>

3. Chatonda: A -ma -dziw -a ndani ku -lemb -a ma-flower?

   SM-Pres-know-FV who Agr M –draw-FV   Pl-flower

   <Who knows how to draw flowers?>

   Mum: Iweyo u -math-a   ku -lemb-a flower?

   You SM-know-FV Agr M-draw -FV flower

   <Can you draw a flower yourself?>

4. Chatonda: Ti -ma -sewer-a ndi ma-toy.

   SM -Pres -play -FV with Pl-toy

   <We play with toys.>

Mum: Mu -ma-sewer-a ndi ma-toy?

    SM-Pres -play -FV   with Pl-toy

    <Do you play with toys?>

5. Chatonda: A-teacher a -ndi-kalip -il -a, a -ti   si -na-lemb-e flower.

    Agr M-teacher SM-OM-shout-Appl-FV SM-say Neg M-Past-draw-FV flower

    <The teacher shouted at me, she said that I did not draw a flower.>

Mum: Ndiye a   -teacher a -ta -ku –kalip –il -a u -na-lemb -a flower?

    so   Agr M-teacher SM-Past-OM-shout-Appl-FV SM-Past-draw-FV flower

    <So when the teacher shouted at you, did you draw a flower?>

6. Chatonda: Ma-numbers.

    Pl -numbers

    <Numbers.>

Mum: Ok. Ma-numbers.

    Ok. Pl -numbers

    <Ok. Numbers.>

Chatonda: Ee.

    <Yes.>

Mum: U   -ma -lemb-a ma-numbers, eti?

    SM -Pres-draw -FV   Pl -numbers, don't you

    <You write numbers, don't you?

7. Chatonda: Pa   -libe black.

    Agr-M-no black

    <There is no black.>

Mum: Ichi ndi cha   -mtundu wanji? Uyu ndi mtundu wanji?

    This is Agr M -colour what   this is colour what

    <What colour is this? What colour is this?>

Chatonda: Black.

Mum: Black, ndiye iwe u -mati palibe black. Iweyo u -mati palibe black, koma

    Black,   so   you SM-say no   black you   SM-say   no   black but

ineyo nda-ona kuti wa -vala malaya a -black. Nanga awa ndi   a -mtundu

I   SM-see that SM-wear   shirt Agr M-black   what this is Agr M-colour

wanji awa?

what this

<It's black, and you were saying that there is no black. You were saying that there is no black but I have seen that you are wearing a black shirt.>

8. Chatonda: Eya, ndi ya-white.

              Yes, is Agr M-white

              <Yes, it is white.>

    Mum: Ndi white imeneyo?

          is white that

         <Is that white?>

9. Chatonda: Ndi -ka-khal-e one ku   -lir -a.

              SM -Fut-be –FV one Agr M-cry-FV

             <I will be the first one to cry.>

    Mum: U -ka-khal-e one ku   -lir -a?

         SM -Fut-be -FV one Agr M-cry-FV

        <You will be the first one to cry?>

10. Chatonda: Fan ya -black.

             fan Agr M-black

            <A black fan.>

    Mum: Ee, fan ya -black.

         Yes, fan Agr M-black

        <Yes, a black fan.>

11. Chatonda: Ya -black.

             Agr M-black

          <It's black.>

Mum: Ya -kwathu ndi ya   -black.

Agr M -ours   is Agr M-black

<Ours is black.>

12. Chatonda: Ya -white?

Agr M-white

<It's white.>

Mum: Ya -white eya.

Agr M-white yes

<Yes, it's white.>

13. Chatonda: U -na-kwanth-a apapa?

SM-Past-scratch-FV here

<Did you scratch yourself here?>

Mum: Ndi -na -kwanth-a apapa-tu,   ee.

SM-Past -scratch-FV here-indeed yes

<Yes, I indeed scratched myself here.>

14. Chatonda: Ku side.

On side

<On the side.>

Mum: Ku side?

On side

<On the side?>

Chatonda: Ee.

<Yes.>

Mum: Uku nanga? Uku ndi ku side uku nanga uku?

this what   this   is on side   this what this

<What about this (part)? This is on the side, what about this?>

Code-switching strategies in Tape 8

1. Chatonda: A -ka -mang -e msewu wa kwinu.

   SM-Cond-construct-FV road   to your home

   <(So that) they construct a road that leads to your home.>

   Dad: A -ka -mang -e msewu wa kwithu?

   SM-Cond-construct-FV road   to my home

   <In order to construct a road that leads to my home?>

Code-switching strategies in Tape 9

1. Chatonda: I -na-pang-a overtake.

   SM-Past-do   -FV overtake

   <It did overtake.>

   Mum: I -na -pang-a overtake chiyani?

   SM-Past—do -FV overtake what

   <What did it overatake?>

   Chatonda: (no answer).

   Zamiwe: Ndiye I -ta —pang-a overtake chi -na -chit -ik -a ndi chiyani?

   So   SM-Past-do -FV overtake   SM-Past-happen-Caus-FV is what

   <So when it did overtake, what happened?>

2. Chatonda: A -na-pit -a kwa monkey.

   SM-Past-go -FV to monkey

   <He went where the monkey was.>

   Mum: Mm.

   Zamiwe: Kwa monkey? Kwa monkey?

   To   monkey to   monkey

   <To monkey's place? To monkey's place?>

   Chatonda: Ee.

   <Yes.>

   Zamiwe: Kwa monkey kula? Wa-ka —chit -ang-a vichi baby kwa monkey?

   To   monkey there   SM-Past-do -Prog-FV what baby to monkey

   <While at monkey's place, what was the baby doing at monkey's place?

3. Chatonda: Ayi, ndi -na-kwel -a train.

      No SM-Past-board-FV train

      <No, I boarded a train.>

Zamiwe: U -ka -kwel-a train?

      SM -Past-board-FV train

      <You boarded a train?>

4. Chatonda: Si   -na -pez-e   a -teacher ku school.

      Neg M -Past-find-FV Agr M-teacher at school

      <I did not find the teacher at school.>

Zamiwe: Mu-ka -wa-sang-a   yayi a -teacher? Ba-ngub-a nkhu

      SM -Past-OM-find-FV Neg M Agr M-teacher   SM-be -FV where

      A -teacher?

      Agr M-teacher

      <You did not find your teacher? Where was your teacher?>

Code-switching strategies in Tape 11

1. Chatonda: Ndi pig uyu

      is pig this

      <This is a pig.>

John: Ayi si pig, ndi ng'ombe

      Neg M pig, is cow

      <No, it's not a pig, it is a cow.>

Appendix IV: Dialogues

Dialogue 1

Zamiwe: Atupele wa-luta nkhu? (Chitumbuka)

           Atupele SM- go where

           <Where has Atupele gone?>

Mum: Wa-luta nkhuni Atupele? Atupele wa-luta nkhuni? (Chitumbuka)

           SM-go where Atupele   Atupele SM-go where

           <Where has Atupele gone? Where has Atupele gone?>

Chatonda: (crying) Sa   -mati chonchi. (Chichewa)

                Neg M-say like that

           <It's not said like that.>

Mum: Atupele wa-luta nkhuni? (Chitumbuka)

           Atupele SM-go where

           <Where is Atupele?>

Chatonda: (crying) Sa   -mati chonchi. (Chichewa)

                Neg M- say like that

           <It's not said like that.>

Mum: Ok. Atupele wa-pita kuti? (Chichewa)

           Atupele SM-go where

           <Ok. Where is Atupele?>

Chatonda: A- ka   gula shuga. (Chichewa)

           SM-Pres Perf buy sugar

           <She has gone to buy sugar.>

Dialogue 2

Chatonda: Ah, speak English!

Dad: Ah?

Chatonda: Speak English!

Dad: You want me to speak English?

Chatonda: Yes.

Dialogue 3

Chatonda: Ineyo ndi-ma -opa Teacher Mvula.

I   SM-Pres-fear Teacher Mvula

\<I fear teacher Mvula.>

Dad: Ndiwo u -ku -opa Teacher Mvula?

The one SM -Pres -fear Teacher Mvula

\<Teacher Mvula is the one that you fear?>

Chatonda: Ee. \<Yes.>

Dialogue 4

Dad: Watipaso wa-ka -chita vichi?

Watipaso SM-Past-do   what

\<What did Watipaso do or what happened to Watipaso?>

Chatonda: A -(ka)-phyoka

SM- Past-break

\<He broke (his leg)>

Dialogue 5

John: Chi-ma-khala ku hell, ku moto.

SM-Pres-live   in hell at fire

\<He lives in hell where there's fire.>

Chatonda: Osati ku mwamba?

Not in heaven

\<Not in heaven?>

John: Eh.

\<Yes.>

Chatonda: Ku hell?

\<In hell?>

John: Eh. Ku moto, koti iweyo kulowako u -khoza kupsyelera.   Eti?

Yes at fire if you enter   SM-can   burn to ashes agreed

\<Yes. There's fire, if you go there you will burn to ashes. Agreed?>

Dialogue 6

Dad: Ba -nyak -o. Awo u -ku-sewer-a nawo limoza, ba -nyak-o?

Agr M-friend-FV those SM-Pres-play-FV   with together Agr M friend-FV

Mba njani awo u -ku -sewer-a nawo? (Chitumbuka)

Cop who those SM-Pres-play -FV with

<Your friends. Those that you play with, your friends? Who are these

friends that you play with?>

Chatonda: Ndi Waliko, ndi Raymond, ndi Atusaye, ndi Atusaye. (Chichewa)

with Waliko with Raymond with Atusaye with Atusaye

<(I play) with Waliko, with Raymond, with Atusaye, with Atusaye>

Dad: U -ku -many-a   kuti Atusaye wize kuno pa chisulo? (Chitumbuka)

SM-Pres-know-FV   that Atusaye   come here on Saturday

<Do you know that Atusaye will come here on Saturday?>

Chatonda: Ee. Ndi Waliko. (Chichewa)

yes with Waliko

<Yes. With Waliko.>

Dad: Wa -za   -mu-sewer-a na njani? (Chitumbuka)

SM-Pres Prog-OM-play-FV   with who

<Who is going to play with him?>

Chatonda: Ndi ine-nso. Ndi Raymond a -bwer-a -nso kunoko. (Chichewa)

With   me-also   with Raymond   SM-come-FV-also here

<With me. And Raymond who is also coming here>

Dialogue 7

Deliwe: Chi-nyake   a -dada ba -ka –gul-a vichi? (Chitumbuka)

Agr M what else Agr M-father SM-Past-buy-FV what

<What else did your father buy?>

Chatonda: Ndi   ina-nso galimoto ya -polisi. (Chichewa)

Is   another-also car   Agr M-police

<He also bought another police car>

Deliwe: Chi   -nyake -so? (Chitumbuka)

SM   -what else-also

<What else?>

Chatonda: Ndi chi-truck-nso. (Chichewa)

and   SM-truck-also

<And also a truck.>

Dialogue 8

Dad: Mhwauno ti -yowoye-nge Chitumbuka.

Today   SM-speak   -future Chitumbuka

<Today, we will speak Chitumbuka>

Chatonda: Chitumbuka.

Dialogue 9

Dad: Bala   la   vichi?

Porridge type what

<What type of porridge?>

Chatonda: Wa -ne

SM-mine

<Mine>

Dad: La mgaiwa, la mpunga, la nthendero, la vichi?

< Is it maize porridge, rice porridge or porridge mixed with groundnuts

flour, what (type) is it?>

Dialogue 10

Mum: Ukuku ndi ku chiyani?

part   is   this what

<What is this part?>

Chatonda: Ku side.

<On the side.>

Mum: Ku side?

<On the side?>

Chatonda: Ee.

<Yes.>

Mum: Uku nanga? Uku ndi ku side uku, nanga uku?

this what? This is on side this what here

<What about this (part)? This is on the side, what about this?>

Dialogue 11

Mum: Iweyo wa -vala Malaya a -mtundu wanji? Su -na -ndi-uzetu.

You SM-wear shirt Agr M-colour what SM-Past-OM-tell

<What is the colour of the shirt you are wearing? You didn't tell me.>

Chatonda: Pa -libe black.

Agr M-no black

<There is no black.>

Mum: Ichi ndi cha-mtundu wanji? Uyu ndi mtundu wanji?

This is Agr M-colour what this is colour what

<What colour is this? What colour is this?>

Chatonda: Black.

Mum: Black, ndiye iwe u -mati palibe black. Iweyo u -mati palibe black, koma ineyo

Black, so you SM-say no black you SM-say no black but I

nda-ona kuti wa-vala malaya a -black. Nanga awa ndi a -mtundu wanji awa?

SM -see that SM-wear shirt Agr M-black what this is Agr M-colour what this

<It's black, and you were saying that there is no black. You were saying that

there is no black but I have seen that you are wearing a black shirt.>

Appendix V: Tables

Table 3.1 Interlocutor's present and settings for the recording sessions

Tape[13]	Interlocutor(s) present	Settings	Main language used
1	Mum and Dad	Mum's apartment (Durban)	Chichewa
2	Mum and Mua[14] (child's friend)	Mum's apartment (Durban)	Chichewa
3	Mum	Mum's apartment (Durban)	Chichewa
4	Mum/Dan[15]	Child's home (Malawi)	Chichewa
5	Dad	Child's home (Malawi)	Chitumbuka
6	Teacher	Child's preschool (Malawi)	English
7	Mum	Child's home (Malawi)	Chichewa
8	Dad	Child's home (Malawi)	Chitumbuka
9	Zamiwe (child's aunt)	Child's home (Malawi)	Chichewa/ Chitumbuka
10	Deliwe (child's aunt)	Child's aunt's home (Malawi)	Chitumbuka
11	Cousins (John/Edward)	Child's aunt's home (Malawi)	Chichewa
12	Dad and child's class-mates (Waliko and Grace)	Child's home (Malawi)	Chitumbuka

[13] Each tape (i.e. 1 hour) consists of recordings with two sessions in total because each session took thirty minutes.

[14] Mua was the child's friend in Durban who only spoke English. Mua could not speak Chichewa during the time of the recordings since he had forgotten all the Chichewa he had acquired in Malawi before moving to Durban with his parents.

[15] Dan was the family's housekeeper who spoke both Chichewa and Chitumbuka fluently. However, he was asked to use Chichewa when interacting with the child during the sessions.

Table 3.2 Main activities engaged in by Chatonda and his interlocutors and languages used

Tape	Activity	Main Interlocutor	Main language used by interlocutor
1	Naming his friends and pictures in the book; counting; discussing past events i.e. Mum's trip to South Africa by plane, his visit to Gate-Way where he rode on a motorbike and train.	Mum/Dad	Chichewa
2	Naming and counting pictures in the story book; discussing past events, i.e. his visit to the beach.	Mum	Chichewa
3	Discussing a monkey he had seen outside the house, change of weather, as he didn't like lightning and thunder and the whereabouts of his father who was in town.	Mum	Chichewa
4	His visit to his aunt's home; naming his friends, colours and parts of a teddy bear; discussing clothes and toys bought by parents; discussing his naughty acts e.g. throwing stones at cars, standing on a table and spilling things on carpet; pretending to be hungry.	Mum/Dan	Chichewa
5	Naming his teachers and friends; requesting his toys; discussing Mum's trip to South Africa, discussing a drink bought by Dad, his age and holiday.	Dad	Chitumbuka
6	Naming colours, play objects and other objects in the classroom; giving shapes	Teacher	English

	of objects; counting; saying the alphabet and singing.		
7	Pretending to be a baby and to be riding on a horse; discussing drawings made on TV and at school; naming colours, parts of a teddy bear, his friends, animals and objects; singing; discussing his friend's family, alphabetical letters on a hat and Mum's trip to South Africa.	Mum	Chichewa
8	Naming his friends in the neighbourhood; discussing his favourite food; pretending to be transporting sand with his toys; discussing his sick friends and past events e.g. a dance he attended.	Dad	Chitumbuka
9	Discussing past events e.g. a bus that was involved in an accident, a film he watched and his visit to Durban.	Zamiwe	Chichewa/Chitumbuka
10	Discussing his visit to grandmother's home, clothes and toys Mum bought from South Africa; counting and singing.	Deliwe	Chitumbuka
11	Discussing pictures in a book and film that he was watching.	John/Edward	Chichewa
12	Discussing food, his school, locations where he and his friends reside and the kind of games that he played with his visiting friends; naming colours and singing songs.	Dad	Chitumbuka

Table 3.3 Mean Length of Utterance (MLU) for English utterances

#	Child's Utterance	# of Morphemes	#	Child's Utterance	# of Morphemes
1	A wireless	2	36	Gate	1
2	Triangle	1	37	House	1
3	Yes	1	38	Insects	2
4	Circle	1	39	I'll beat you	4
5	Circle has no corner	4	40	I'll fight you	4
6	Triangle	1	41	Speak English	2
7	Six	1	42	This umbrella	2
8	Has three corners	4	43	Story the baby	3
9	Semicircle	1	44	Babies	2
10	I am three years old	6	45	Meow	1
11	A train	2	46	This one meow	3
12	A car	2	47	This curtain	2
13	A gun	2	48	For Mua this	3
14	A radio	2	49	The cow	2
15	I am building a house	6	50	I want this	3
16	A bottle	2	51	Want this	2
17	A bell	2	52	Is the beating friend	5
18	A duster	2	53	Stop it	2
19	A stone	2	54	On the bed	3
20	A ruler	2	55	The jump	2
21	A flower	2	56	Read me story	3
22	A cup	2	57	I want my car	4
23	Drinking Fanta	3	58	I want my vehicle	4
24	A stick	2	59	Yes	1
25	A table	2	60	This	1
26	A chair	2	61	To pep	2
27	Sit	1	62	Yes	1
28	Iron	1	63	I closed	3
29	For trouser	2	64	Am three years old	5
30	A boy	2	65	Babies	2
31	A butterfly	2	66	The frog	2
32	A bird	2	67	A gun	2
33	A dog	2	68	A stone	2
34	elephant	1	69	Story the baby	3
35	Flower	1	70	Stop it	2

159 total morphemes divide by 70 utterances = an MLU of 2.3

Table 3.4 Mean Length of Utterance (MLU) for Chichewa utterances

#	Child's Utterance	# of Morphemes	#	Child's Utterance	# of Morphemes
1	*A-na-ndi*-samb-**ik-a** Dan	7	36	*Ku-ndi*-kwapul-**a** a-dadi	6
2	*Ku*-bwer-**a** a-wo-wo	6	37	*Ku*-lir-**a**	3
3	*Wa-zi*-mang-**i-lir-a**	6	38	*A-na-ndi*-kwapul-**a** kwa-mbiri	7
4	Ap-a	2	39	*Si-na*-chedw-**e-nso** *ku*-sewer-**a**	8
5	Lero	1	40	Eti *ndi-ma*-gend-**a** galimoto	6
6	I-ne *ni-ma-mu*-dziw-**a**	7	41	Ya kwa Banda	3
7	Ku Moyale	2	42	*I-ma*-swany-**ik-a** ndi ma-galasi	8
8	Blessings *a*-li ku-ti-ko	6	43	A-dadi a-nga *a-ka-ndi*-pelek-**a** ku polisi	11
9	*A-ku*-tani	3	44	*A-ma-ni*-mang-**i-lir-a**	7
10	*Ndi-zi*-kwer-**a** pa tebulo	6	45	A-libe mfuti a-polisi	5
11	Nsapato	1	46	Pa-ti-po	3
12	*Ndi*-gw-**a**	3	47	Ndi zi-wiri i-zi	5
13	*a-na*-lir-**a**	4	48	Zi-wiri-nso	3
14	*A-na*-thyok-**a** mwendo	5	49	*I-na*-gw-**a**	4
15	Ku sukulu	2	50	*I-na*-thyok-**a** ndege	5
16	Wa-bwino	2	51	*A-ka*-konz-**e-tsa**	5
17	*Wo-sa*-mver-**a**	4	52	*A-ka*-konz-**a**	4
18	Fun-**a** *ku*-thyok-**a**	5	53	*I-ma*-onong-**ek-a**	5
19	A-dadi *a*-thyok-**a** mwendo	6	54	Ap-a	2
20	Ngati a-dadi	3	55	Ndi i-ne-yo	4
21	*Wa*-thyok-**a** mwendo a-dadi i-yi-yi	9	56	I-ch-i-chi	4
22	*A*-thyok-**a** mwendo	4	57	*A-na-ndi*-pats-**a** ku-ti-ko	8
23	Osati ndi Mike	3	58	*Ndi-na*-yend-**a** chonch-o	6
24	*Ndi-ma-mu*-dziw-**a**	5	59	I-ne-yo *ndi-na*-yend-**a** chonch-o	9
25	Ku Chibanja	2	60	*Ku*-kanik-**a**	3
26	Pa galimoto	2	61	*Ndi-na*-gw-**a** ku-ti	6
27	Madzi	1	62	Chonch-o	2

28	Chi-yani	2	63	*Ndi-na-zi-*pwetek-**a** pa-ti	7
29	Madzi m-mesa	3	64	*Ndi-na-*pwetek-**a** ndi ndani	6
30	*Ndi-na-*lir-**a**	4	65	Ndi i-ne-yo	4
31	Lero-li	2	66	Ndi chi-yani	3
32	A-dadi *a-dza-*bwer-**a** ku-no	8	67	Ndi nsapato	2
33	Ku chipinda	2	68	Njala *ya-ndi-*umbuz-**a**	5
34	Ku ofesi	2	69	Dzuwa *ya-*wal-**a**	4
35	*Ndi-na-mu-*gwir-**a** pa dzanja	7	70	*Si-ndi-ka-li-*on-**a**	6

Note: verbs in Chichewa and other Bantu languages (including Chitumbuka) consist of a verb root or stem. Attached to this stem are suffixes such as the causative, applicative, reciprocal, passive, etc. Prefixes such as markers that denote subject(s) or object(s) of the verb, tense/aspect, negation, modality, etc are also added. In Table 3.4 above, verb stems are underlined, suffixes appear in bold type and prefixes are in italics. The rest of the words are nouns, adverbs, adjectives and so on, some of which have prefixes and suffixes attached to them to mark agreement in terms of gender and number.

When calculating the MLU, each suffix, prefix, and a word without inflections were counted as separate morphemes. The total number of morphemes is 316. 316 total morphemes divide by 70 utterances = an MLU of 4.5.

Table 3.5 Mean Length of Utterance (MLU) for Chitumbuka Utterances

#	Child's Utterance	# of Morphemes	#	Child's Utterance	# of Morphemes
1	A-mama	2	36	*A-ku*-many-a	4
2	A-dada	2	37	Ndi-ne	2
3	A-ku Mchinji	3	38	*Ti-ka*-sewer-e-ng-e	6
4	Yayi	1	39	Na Martha	2
5	Bala	1	40	*Na*-kan-a	3
6	Na nsima	2	41	*Na*-uk-a kwa-li i-mwe	7
7	Ya kwa dada	3	42	a-dada	2
8	Na mama	2	43	*Mwa*-uk-a	3
9	Nga-ne	2	44	*Na*-uk-a	3
10	Kwa nyak-e	3	45	Bala	1
11	A-nyak-o	3	46	Nthendero	1
12	*Ti-ka-wa*-sang-a	5	47	Ku-munda	2
13	Ndi-ne a-dada yayi	5	48	Wa kwi-thu	3
14	Mu-nyumba	3	49	*A-ku*-khal-a yayi ku Ekwendeni	7
15	Na ma-galimoto	3	50	A-mama *mu-ku*-khumb-a vi	7
16	Na ku-walo	3	51	*Mu-ku*-khumb-a *ku*-gon-a	7
17	Yayi	1	52	*Mu-ku*-khumb-a vi	5
18	*Na*-khut-a	3	53	Bek-a-ni ku-no a-dada	7
19	*Vi*-li mu-nthumbo	4	54	*Wa-ji*-pwetek-a	4
20	Ya Waliko	2	55	Pa njinga ya moto	4
21	Mu-nthumbo	2	56	Pa lundi	2
22	Nja-ne	2	57	*I-ka-mu*-gand-a njinga ya moto	8
23	A-nyak-o	3	58	Njinga ya moto	3
24	a-dada	2	59	Mwauno *mu-ku*-lut-a nkhu	6
25	Pa galimoto	2	60	Na-mama yayi	3
26	Ya kwa dada	3	61	Ka-mama	2
27	Ya kwa mama	3	62	A-dada na-mama	4
28	Ya kwa Chatonda	3	63	A-mama	2
29	Na mama	2	64	Na-ma-galimoto	3
30	*Ku*-sambiz-a	3	65	Ku-walo	2
31	*Mu*-li u-li a-mama	6	66	Ni gamoto	2
32	*Mu-ku*-chit-a vi-chi	6	67	Ya kwa dada	3
33	*Mu*-khal-a waka chifukwa	5	68	*Wa*-tondek-a-nso	4

| 34 | Yayi | 1 | 69 | *Za*-binkh-a | 3 |
| 35 | *Mu-ku-chi*-many-a Chitumbuka a-mama | 8 | 70 | *Na*-khut-a | 3 |

Note: Chitumbuka verb stems have been underlined, their prefixes are in italics and their suffixes appear in bold. See the note below Table 3.4 which applies to Chitumbuka language as well.

The total number of morphemes is 234. 234 total morphemes divide by 70 utterances = an MLU of 3.3.

Table 4.1 Total number of mixed utterances and their percentages

Nature of mixing	Number	Percentage
Phonological mixing	6	6.3
Lexical mixing	61	64.2
Syntactic mixing	8	8.4
Morphological mixing	20	21.1
Total	**95**	**100**

Table 4.2 Chatonda's phonological, lexical, syntactic, and morphological mixing in interactions with the selected interlocutors

Interlocutor	Phonological mixing	Lexical mixing	Syntactic mixing	Morphological mixing	TOTAL
Mum/Dad Tape 1	3	6	0	3	12
Mum/Mua Tape 2	0	5	0	0	5
Mum Tape 3	1	6	0	1	8
Mum/Dan Tape 4	0	4	1	1	6
Dad Tape 5	0	1	1	0	2
Teacher Tape 6	1	0	0	0	1
Mum Tape 7	0	16	2	10	28
Dad Tape 8	0	4	3	4	11
Zamiwe Tape 9	1	8	0	1	10
Deliwe Tape 10	0	3	0	0	3
Cousins Tape 11	0	6	1	0	7
Dad/child's class-mates Tape12	0	2	0	0	2
TOTAL	6	61	8	20	95

Table 4.3 Verb stems with prefixes/suffixes that mark tense, aspect and agreement

Word Type	Lexical Morpheme	Grammatical Morpheme	Examples
1	Chichewa	Chichewa	A -ka -konza SM-Fut-repair <they will repair>
2	English Chitumbuka	Chichewa Chichewa	A -ma -ni -shuta SM-Pres-OM-shoot <They shoot at me> A -ku -thunya SM-Pres Prog-spit <He is spitting>
3	English Chitumbuka	English Chitumbuka	Closed Ti-ka-wa-sanga We-Past-OM-find <We found her>

Table 4.4 Possessive pronouns plus nouns

Word Type	Lexical morpheme	Grammatical Morpheme	Examples
1	Chichewa	Chichewa	Za eni ake. For another person his <for another person>
2	English	Chichewa	Ya size wanga of size my <It's my size>
	Chitumbuka	Chichewa	mpende wanga counter my <my counter>
3	English Chitumbuka	English Chitumbuka	My car Ya kwa adada For Dad's.

Table 4.5 Interlocutor's Code-Switching Strategies

Interlocutor(s) present	Code-switching strategies
Tape 1: Mum and Dad	5 (15.6%)
Tape 2: Mum and Mua (child's friend)	0
Tape 3: Mum	2 (6.3%)
Tape 4: Mum/Dan	4 (12.5%)
Tape 5: Dad	1 (3.1%)
Tape 6: Teacher	0
Tape 7: Mum	14 (43.8%)
Tape 8: Dad	1 (3.1%)
Tape 9: Zamiwe (child's aunt)	4 (12.5%)
Tape 10: Deliwe (child's aunt)	0
Tape 11: Cousins (John and Edward)	1 (3.1%)
Tape 12: Dad and child's classmates (Waliko and Grace)	0
TOTAL	32 (100%)