

**A CONSTRAINT-BASED APPROACH TO CHILD LANGUAGE
ACQUISITION OF SHONA MORPHOSYNTAX**

BY

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UNIVERSITY OF SOUTH AFRICA

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ACQUISITION OF SHONA MORPHOSYNTAX**

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DECLARATION

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I, Cathrine Ruvimbo Sibanda, declare that **A Constraint-Based Approach to Child Language Acquisition of Shona Morphosyntax** is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

A black rectangular box containing a handwritten signature in green ink that reads "Sibanda".

Signature

30 November, 2014

Date

ABSTRACT

This study falls under the broad area of child language acquisition with specific focus on Shona morphosyntax. The understanding that knowledge of the nature of child language contributes to the sustainability of language acquisition matters forms the basis of the investigation. A qualitative approach is followed in the study, specifically focusing on the constraints on the development of inflectional morphemes (IMs) in the acquisition of nouns and verbs in child Shona. The study investigates the development of child Shona inflectional morphology and how morphology interacts with syntax. The constraints that operate in the acquisition of Shona are identified. The study refers to linguistic theories for an account of the development of child Shona morphosyntax. The study is based on the understanding that knowledge of the nature of child language contributes to the sustainability of language acquisition matters. The data used in this study is collected from four Shona speaking children. The ages of the children range from two years (2; 0) to three years and two months (3; 2). Two female and two male children participated in this study. The primary method of data collection used in this study is the naturalistic method, while elicitation is used to elicit plural formation. The results indicate that child Shona morphosyntax is characterized by omission of the various inflectional morphemes on nouns and verbs, while the lexical morphemes are retained. The child Shona IM is phonologically different from the adult Shona IM. This is because the children are constrained and hence use simplification strategies in order to try to be faithful to the input grammar. The noun and verb IMs are produced in the form of a reduced syllable, because the children dropped the consonant in the IM syllable and retained the vowel. The study reveals that the development of child Shona morphosyntax is based on pivotal constituencies of the sentence. These pivots are the nouns and verbs that are used by the children. The study identifies constraints that operate on

the process of child Shona development as phonological, morphological, semantic, visibility and frequency constraints. The finding that is arrived at through this study is that syntax is in place before morphology.

Key Terms

child Shona, adult Shona, child language acquisition, morphosyntax, constraints, inflectional morphemes, inflectional morphology.

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Last but not least to God be all the glory.

ABBREVIATIONS

#	number
1	first person
2	second person
Agr	agreement
APPL	applicative
ASP	aspect
ATOM	agreement tense omission model
aux	auxiliary
C	consonant
CHILDES	child language data exchange system
CL	class
CLA	child language acquisition
CV	consonant vowel
Dimin	diminutive
E-language	externalized language
EXT	extension
Ft	Foot
FIM	future tense inflectional morpheme
FV	final vowel
HM	hortative morpheme
I-language	internalized language
IM(s)	inflectional morpheme(s)
INF	infinitive
INFL	inflection
IP	inflectional phrase
L1	first language
LAD	language acquisition device
LGB	lectures on government and binding
loc	locative
m	mora
MI	mutually intelligible
MLU	mean length of utterance
MMA	morpheme to morpheme analysis
NIM	negative inflectional morpheme
NPr	noun prefix
NP	noun phrase
NS	noun stem
∅	omitted morpheme
OIM	object inflectional morpheme
OM	object marker
OOM	output omission model
OT	Optimality Theory
PL	plural
PPT	principles and parameters theory

PrIM	present tense inflectional morpheme
PIM	past tense inflectional morpheme
PW	phonological word
RIM	reduced inflectional morpheme
S	strong
SA	subject agreement
SCH	Strong Continuity Hypothesis
SG	singular
SIM	subject inflectional morpheme
SLI	specific language impairments
SM	subject marker
SOV	subject object verb
SVO	subject verb object
T	tense
TIM	tense inflectional morphemes
TMA	tense mood aspect
UG	universal grammar
V	vowel
Vol	volume
VP	verb phrase
VR	verb root
w	weak
yr	year
σ	syllable

LIST OF TABLES

Table 1: History of CLA studies	5
Table 2: Shona noun classes.....	48
Table 3: Name, age range, total recordings	78
Table 4: Morpheme codes.....	80
Table 5a: Elicitation task data (ARI).....	112
Table 5b: Elicitation task data (TAD).....	112
Table 5c: Elicitation task data (JOH).....	113
Table 6: Child Shona pivot schemas.....	121
Table 7: Child (2; 2 - 2; 6) vs. adult noun structures.....	129
Table 8: Child vs. adult verb structures.....	131

LIST OF FIGURES

Figure 1: Typical Shona syllable.....	92
Figure 2: Child Shona syllable.....	92
Figure 3: V-shape syllable.....	92
Figure 4: Adult word vs. child word.....	130

Contents

DECLARATION	iii
ABSTRACT	iv
Key Terms	vi
ACKNOWLEDGEMENT	vii
ABBREVIATIONS	ix
LIST OF TABLES	xi
LIST OF FIGURES	xii
CHAPTER ONE: INTRODUCTION	1
1.0 PREAMBLE	1
1.1 AREA OF INVESTIGATION	4
1.2 RESEARCH PROBLEM.....	14
1.3 AIM OF THE STUDY	15
1.3.1 Objectives.....	16
1.3.2 Research questions.....	16
1.4 JUSTIFICATION	17
1.5 CONCLUSION	20
CHAPTER TWO: LITERATURE REVIEW.....	21
2.0 PREAMBLE	21
2.1 ACQUISITION OF LANGUAGES: GLOBAL VIEWS	21
2.1.1 From the past to the present	21
2.1.2 Approaches to morphosyntax acquisition	23
2.2 ACQUISITION OF BANTU LANGUAGES.....	26
2.2.1 Zulu	26
2.2.2 Swati	27
2.2.3 Sotho	30
2.2.4 Tswana	34
2.2.5 Sangu.....	35
2.2.6 Chewa	35
2.2.7 Swahili	35
2.2.8 Shona.....	36
2.3 PROPOSITIONS ON THE ACQUISITION OF INFLECTIONAL MORPHOLOGY	39
2.3.1 The role of perceptual salience.....	40
2.3.2 The single-dual dichotomy approach in acquisition of IM	41
2.3.3 Pre- and proto-morphology in acquisition of inflections	43
2.4 SHONA MORPHOSYNTAX.....	44
2.4.1 Morphosyntax.....	45
2.4.2 Shona nominal and verbal morphosyntax	47
2.5 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER	61
CHAPTER THREE: THEORETICAL FRAMEWORK AND METHODOLOGY	63
3.0 PREAMBLE	63
3.1 LANGUAGE ACQUISITION AND THEORIES	64
3.1.1 Principles and Parameters Theory (PPT).....	68
3.1.2 Prosodic Constraints Theory	71
3.2 DATA COLLECTION METHODS.....	73
3.3 DATA ANALYSIS	79

3.4 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER ...	81
CHAPTER FOUR: INFLECTIONAL MORPHOLOGY IN CHILD SHONA	83
4.0 PREAMBLE	83
4.1 CHILD SHONA NOUN AND VERB INFLECTIONAL MORPHOLOGY.....	84
4.1.1 Child Shona noun inflectional morphology	85
4.1.2 Child Shona verb inflectional morphology	96
4.2 ELICITATION RESULTS	111
4.3 CHILD SHONA MORPHOSYNTAX	117
4.4 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER .	122
CHAPTER FIVE: CONSTRAINTS IN CHILD SHONA	124
5.0 PREAMBLE	124
5.1 PHONOLOGICAL CONSTRAINTS	126
5.1.1 Word structure (number of syllables) constraints	127
5.1.2 Articulation constraints	132
5.2 MORPHOLOGICAL CONSTRAINTS	136
5.3 SEMANTIC CONSTRAINTS.....	137
5.4 VISIBILITY AND PERCEPTUAL SALIENCE CONSTRAINTS	138
5.5 FREQUENCY OF IMS IN INPUT AS A CONSTRAINT	140
5.6 CONSTRAINTS AND LINGUISTIC THEORIES	142
5.6.1 Constraints in child Shona from an Optimality Theory perspective	142
5.6.2 Constraints in child Shona and maturational theory	145
5.6.3 Constraints in child Shona from the perspective of the dual mechanism model	146
5.7 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER .	148
CHAPTER SIX: CONCLUSION	150
6.0 PREAMBLE	150
6.1 RESEARCH FINDINGS	150
6.2 RECOMMENDATIONS.....	153
REFERENCES	154
APPENDIX 1: CAR (2; 0-3; 0)	172
APPENDIX 2: JOH (2; 5- 2; 11)	190
APPENDIX 3: TAD (2; 0- 2; 6)	194
APPENDIX 4: ARI (2; 6- 3; 2)	198
APPENDIX 5: ELICITATION DATA.....	202

CHAPTER ONE: INTRODUCTION

1.0 PREAMBLE

Child Language Acquisition (henceforth CLA) is an important area of study within Linguistics¹ and related disciplines² because of its potential to provide a better understanding of language universals and linguistic processes to linguists in general and acquisitionists in particular. On the one hand, the study of CLA can help to build on knowledge of linguistic theory, while on the other hand linguistic theory benefits from findings that explain the process of language acquisition. Child language data are external evidence for linguistic theory (Fikkert 1994). The central goal of linguistics is the scientific study of language. This implies that the study of linguistics aims to understand what knowledge of language entails. One area that helps linguists to understand language is the study of how language is acquired. Child language research, therefore, facilitates the understanding of the concept of ‘language’. Language acquisition studies in a way aim to answer the questions raised by Chomsky (1981, in Gentile 1995:14) regarding the “knowledge of language”. In that regard, the fundamental questions are:

- What constitutes knowledge of language?
- How does such knowledge develop?
- How is such knowledge put to use?

¹ I will use a very old description of the subject matter of Linguistics from Ferdinand de Saussure (1915:6) who says, “The subject matter of linguistics comprises all manifestations of human speech, whether that of savages or civilized nations, or of archaic, classical or decadent periods”. This means that child language is part of human manifestations of human speech hence a subject matter for Linguistics or the study of language.

² Three branches of Psychology (behavioral, developmental and educational) and specific language impairment are some of the disciplines that can benefit from findings from linguistic studies of child language acquisition.

These questions raise intricate matters that researchers within CLA and linguistics try to explain. The questions are simple on the surface but a deep analysis of each of them reveals vast areas of possible research.

The study of CLA is inter-disciplinary by nature, which explains why psychologists, educationists, linguists, teachers and language therapists are all interested in this area. Steinberg and Sciarini (2006), for instance, applied a psychological approach to describe the order of acquisition of English morphemes, an indication that psychology is a stakeholder in the study of CLA. Educationists have a deep interest in issues of first and second language acquisition, because they understand that these have an impact in the process of learning. In communication disorders, speech therapists/pathologists for instance, use knowledge from researches on normal language acquisition in order to determine the therapy to administer to their client. Capone (2012:2) states that, “When the clinician is well grounded in the normal progression of development, he or she can determine the appropriate treatment goals, appropriate activity level to target the goals, and the types of scaffolding to provide the child as part of the therapy.” Language acquisition, can therefore, be utilized in gaining further understanding of language impairment and appropriate therapy. Bearing in mind the different interests, each discipline approaches the study of CLA from different perspectives. It is, therefore, important to state that the concern of the current study with CLA as a subject matter is strictly linguistic with specific reference to Shona, a Bantu language. The current study is based on the understanding that knowledge of how language is acquired by children helps in sustaining language acquisition matters in general and, more so, in children who are born with specific linguistic impairments and even adults with aphasia. The study of child language contributes to the body of knowledge

of linguistic theories. Darwin's (1877) research on language acquisition, for instance, had effects on the study of adult aphasia. The study of the language of patients and that of syndromes followed Darwin's research (e.g. Low 1931 and Pick 1913). The current study is grounded in the knowledge that there is a paucity of studies on how Shona is acquired. Not surprisingly, therefore, the body of knowledge on child Shona is meagre. The advancement of child language knowledge can only be realized with wide research.

Shona, also known as ChiShona, is a southern Bantu language and is classified as S.10 in Guthrie's classification (Guthrie 1948). Shona is spoken by about seventy-five percent of the approximately thirteen million³ people in Zimbabwe and its use also extends into neighbouring countries such as Botswana, Zambia, Malawi, Mozambique and South Africa⁴. Although Shona is spoken in the mentioned neighbouring countries of Zimbabwe it is known to be native to the Shona people of Zimbabwe, Mozambique and southern Zambia. Maho (1999) lists Shona in the top five of the two top-ten lists of the most spoken Bantu languages. It was classified as a language following the research by missionaries. Eventually Doke (1931) added weight to the recommendation that unified the five historically attached as well as mutually intelligible⁵

³ Population results of the 2012 census reveals that the population of Zimbabwe is 13 061 239 cited in Zimbabwe National Statistics Agency (ZimStat).

⁴ According to <http://en.wikipedia.org/wiki/> there is a significant population of Zimbabweans in South Africa, making up the country's largest group of foreign migrants. It is estimated that about 1, 5 million Zimbabweans live in South Africa which is in fact a tenth of Zimbabwe's population. Based on this figure South Africa is surely a host to the Shona language.

⁵ Although the five dialects are said to be mutually intelligible (MI), it should be noted that MI is not equal among speakers of the Shona dialects. MI is also governed by social factors such as attitudes of certain groups and the diglossic situation of the varieties. In the Zimbabwean context a diglossic situation can be noted among the Shona dialects - with Zezuru being "a high variety" whilst the other varieties are low. All this affects the level of MI. See Sithole and Mutonga (2011) for more on the imbalance of MI within the Shona language.

varieties of ChiShona, namely, Karanga, Zezuru, Manyika, Nda⁶ and Korekore. This development led to the creation of a standardized Shona orthography. In terms of morphological typology Shona is an agglutinative language, characterized by heavy prefixing and suffixing. However, it has the characteristics of other typologies; for example, it shows isolating characteristics although they are very minimal. Classifying languages strictly according to the familiar morphological typologies of isolating, agglutinating, fusional, and polysynthetic is problematic and has occupied linguists for many years (Greenberg 1959). Shona is classified as agglutinating because of its proximity to the agglutinating end of the continuum and the morphemes are generally invariant and easily segmentable. This, however, does not render Shona a wholly or purely agglutinating language because the concept only represents points along a continuum and no real language completely fits one category.

It is this language that the current researcher intends to scrutinize in order to present a theoretical appraisal of the nature of child Shona morphosyntax.

1.1 AREA OF INVESTIGATION

The study falls under the broad area of CLA. CLA studies have a long history dating back to 1876. Since the inception of CLA studies in 1876 there have been three major periods which are documented in literature (see Ingram 1989), namely the diary studies, large sample studies and the longitudinal and experimental studies⁷. Table 1 below represents each of these periods with respective information on methodologies, theoretical orientation and examples of studies⁸.

⁶ The status of these varieties is bound to change due to the recommendations of the Zimbabwe Constitution of 2013, which recognises Nda^u as a language. There is also current research into the status of Nda^u as a language.

⁷ An elaborate review and description of these periods is discussed in Chapter Two, section 2.1.1.

⁸ Information of these periods is captured from Ingram (1989).

TABLE 1: History of CLA studies

PERIOD	METHOD	THEORETICAL ORIENTATION	EXAMPLES OF STUDIES
1876-1926	DIARY STUDIES	NATIVIST/ BEHAVIOURIST	Taine (1877), Stern & Stern (1907), Leopold (1939-1949)
1926-1957	LARGE SAMPLE STUDIES	BEHAVIOURIST	Templin (1957)
1957- present	LONGITUDINAL & EXPERIMENTAL STUDIES	DATA DRIVEN Child Language Data Exchange System (CHILDES)	Brown (1973), Bloom (1970), Braine (1963)

Table 1 indicates that studies of child language have been characterized by different methodologies and theoretical orientations. MacWhinney (2012) expands the historical periods of research on CLA from the three that are discussed by Ingram (1989) to five. The five periods that are described by MacWhinney overlap with the three periods cited earlier. MacWhinney (ibid) gives the first period as that of impressionistic observation. This is a period when research on how language is acquired was based on a researcher recalling the events of early childhood as a method to explain the process of language acquisition. A passage from *The Confessions of St Augustine* (1952) shows how Augustine claims that he remembered how he had learned language.

This I remember; and have since observed how I learned to speak. It was not that my elders taught me words (as, soon after, other learning) in any set method; but I, longing by cries and broken accents and various motions of my limbs to express my thoughts, that so I might have my will, and yet unable to express all I willed or to whom I willed, did myself, by the understanding which Thou, my God, gavest me, practise the sounds in my memory. When they named anything, and as they spoke turned towards it, I saw and remembered that they called what they would point out by the name they uttered. And that they meant this thing, and no other, was plain from the motion of their body, the natural language, as it were, of all nations, expressed by the countenance, glances of the eye, gestures of the limbs, and tones of the voice, indicating the affections of the mind as it pursues, possesses, rejects, or shuns. And thus by constantly hearing words, as they occurred in various sentences, I collected gradually for what they stood; and, having broken in my mouth to these signs, I thereby gave utterance to my will. Thus I exchanged with those about me these current signs of our wills, and so launched deeper into the stormy intercourse of human life, yet depending on parental authority and the beck of elders. (Passage adapted from MacWhinney 2012:5)

The second period is similar to the diary approach given by Ingram (ibid). MacWhinney (ibid) refers to it as the baby biographies. An example of such a study is one by Charles Darwin (1877) in which he studied his son by documenting notes on naturalistic speech developments. From Darwin's research researchers gained insights about how they could build diaries, more so, it also had effects on the study of adult aphasia. The third period is the transcripts period. Development or advancement of any aspect emanates from understudying and understanding the limitations of an earlier version and the motivation to improve upon it. This is so in CLA research methods where the weaknesses of earlier methods resulted in new ones such as movement from impressionistic observation to transcripts. During the transcripts era tape recorders and transcripts of recorded data were introduced. The fourth period is the result of technological advancement in the research on child language. The coming of the computer has emerged as a possible answer to data processing and analysis. For instance the coming of the

Child Language Data Exchange System (CHILDES) project in 1981 saw a major shift in terms of how child language data are archived and analysed. This also ushered in the concept of a “shared data-base” (MacWhinney 2012). Although the current research is not using the CHILDES⁹ system, it is hoped that the data collected in this research will be added to the CHILDES database¹⁰. The fifth period is the connectivity era. This is linked to the coming of advanced machines with “built-in audio visual capabilities, and devices such as CD-ROMS and optical disks” (MacWhinney 2012) in the form of computers and cell-phones that have storage capacities that are comparable to that of computers. These new dispensations have resulted in smarter ways of capturing the naturalistic occurrences of child utterances, storing them and even sharing them with other researchers across the globe. For instance, the uploading of the current data on the CHILDES data base can be of benefit to acquisitionists and developmental researchers across the globe that might have an interest in Shona language acquisition. It can also be used for comparative purposes with the goal of contributing to the body of knowledge pertaining to universal grammar.

Many insights have been gained within the study of child language through the use of the methodologies and theoretical frameworks discussed by Ingram (1989) and MacWhinney (2012). The periods represented in Table 1 above are the source of the CLA advanced methods of today. The study of CLA has been revolutionized in various ways. From the tape recordings used during the large sample studies to the video-camera, smart phones, laboratory and sophisticated ways of measuring language production and analysing it through the use of

⁹ It was the desire of the researcher to use CHILDES for the capturing and analyzing of data but because of limited training and equipment the researcher could not use it. Efforts were made by communicating with Prof McWhinney but there is a need for intense training in the use of this software.

¹⁰ There is a need to support acquisitionists in African countries and equipping them with the necessary skills in the uses of the CHILDES system.

computers. It is from the historical methodologies that the development of computational tools which are designed to increase the reliability of transcriptions, automate the process of data analysis and facilitate the sharing of transcript data (MacWhinney 2012) have emerged. Earlier studies on child language have triggered debates and motivated studies to be done in European and non-European languages (Brown 1973 for English; Pye 1980 for K'iche'; Deen 2002 for Swahili; Pfeiler 2003 for Yucatec, Demuth 2007 for Sesotho) adopting various methods and approaches. The current study also benefits from these historical approaches in relation to methodology and theoretical orientation. This is because the review of the methods and approaches used in earlier studies is a help in identifying areas of improvement and those that are beneficial to the current study.

The current study focuses on the acquisition of morphology, specifically inflectional morphology. Morphology by nature encompasses inflection, derivation and composition. In Shona, inflectional morphology is prominent; hence it provides solid ground for research in child Shona morphosyntax. The focus on inflection is also because the languages of the world differ considerably with respect to the distinctions marked by inflectional affixes, and the typological types of inflectional systems they employ. These range from agglutinative inflectional systems to fusional and polysynthetic systems. Inflection is central to the morphological typologies of various languages. The typological variety brought about by inflectional systems has since given birth to an interest in cross-language investigation. The current study specifically focuses on the development of nominal and verbal inflection. It attempts to investigate the acquisition of inflectional morphology by children acquiring Shona as a first language. Owing to the complexity of Shona inflectional morphology, in addition to regular inflectional patterns, a child has to also acquire a large number of irregular patterns. The study specifically focuses on how

inflectional morphology interacts with syntax in child Shona. The study focuses on how Shona children acquire such a complex system, the factors that cause confusion, and the factors that affect the acquisition of morphosyntactic aspects. The study identifies the specific constraints that play a role in child Shona. Within the history of the study of child language the issue of the description of the development of different linguistic levels in children has been the fundamental focus. The current study, however, seeks to explain the development of child Shona morphosyntax using the constraint-based approach. This approach uses the knowledge that linguists already have about the different linguistic elements that build language and how they affect the development of language at various stages of acquisition. The current study seeks to identify the kinds of constraints that operate on the process of child Shona morphosyntactic development.

The study is centred on the two linguistic levels of morphology and syntax. This is because inflectional morphology is situated at the interface of morphology, syntax and phonology. Penke (2012:1) explains how morphology interfaces with syntax and phonology and states, “While inflection creates grammatical word forms, and thus is part of morphology, the grammatical information added typically exerts effects on other constituents in a construction and hence is effective on syntax.” The current study, therefore, delves into this intricate relationship of morphology and syntax in relation to child Shona.

Morphology is broadly understood as the study of the internal structure of words (Haspelmath 2002). A more elaborate description of morphology is given by Crystal (1991) who defines morphology as the branch of grammar which studies the internal structure or forms of words, primarily through the use of the morpheme construct. The morpheme is the primitive element of

morphology. Katamba (1993:20) defines a morpheme as the smallest, indivisible unit of semantic content or grammatical function which words are made up of. According to this definition the morpheme has two properties, that is, semantic and grammatical properties. The example below illustrates how these two properties¹¹ can make up a morpheme in a Shona noun.

- | | | | |
|-----|-------------------------|----|-----------------------|
| 1a. | chi-garo | b. | zvi-garo |
| | cl.7 (singular) - chair | | cl.8 (plural) - chair |
| | ‘chair’ | | ‘chairs’ |

In example 1a, *chi-garo* is made up of two meaningful¹² morphemes *chi-*, which has a grammatical function¹³, and the stem *-garo* which carries the semantic information of signifying the object ‘chair’. In 1b, the grammatical morpheme has changed its phonological structure to *zvi-* signifying plurality but the semantic/lexical morpheme has a constant phonological structure. The grammatical morpheme *inter alia* signals the grammatical information of number (i.e. singular or plural). The study focuses on the inflectional prefixes and their role within the morphosyntax of child Shona.

¹¹ Sometimes both properties manifest in the same morpheme e.g. class prefixes which grammatically indicate class gender and number, but also a semantic content, e.g. [-animate] or [+concrete].

¹² The meaning that *chi-* carries is noted in word context, since it is a grammatical, bound morpheme.

¹³ These are referred to as inflectional morphemes in this study.

Shona grammatical¹⁴ morphemes attach to lexical morphemes and are called affixes. These affixes assume two positions in relation to the lexical morpheme. They are prefixes when attached before the lexical morpheme and suffixes when attached at the end of the lexical morpheme.¹⁵ Affixes in any language are limited in number and are exhaustively listed; they are not generative. These affixes assume two functions, namely an inflectional or derivational function. In Shona these two functions are clearly assigned to each of the two types of morphemes. Mkanganwi (2002:38) says “in Shona all prefixes are inflectional and all suffixes are derivational”. The distinction made by Mkanganwi (*ibid*) is a significant observation. It then follows that terminal vowels and verbal extensions are derivational, while prefixal affixes such as those that indicate tense, aspect, mood, and negation affixes are inflectional in Shona. The observation by Mkanganwi (*op.cit.*) makes the distinction between inflectional and derivational morphemes clearly distinguishable in Shona. Despite this clear-cut demarcation that is evident in Shona and most other Bantu languages, the distinction between inflection and derivation is considered to be complex and constitutes a paradox within morphological theory. A number of scholars have worked on clarifying the distinction between the two, (e.g. Matthews 1974, Anderson 1982, Bauer 1988, Mchombo 1993/1999 and Haspelmath 2002). Mchombo (1993:187), for instance, regards the final vowel as inflectional and states that “...the final vowel appears to be inflectional: depending on the tense, aspect, the presence of negation, mood, etc”. In line with Mchombo’s views Mberi (2002:90) also argues that the final vowel is inflectional and not derivational as proposed by Mkanganwi (2002). According to Mberi (*ibid*) the final vowel is part of the verbal inflection because -e marks the subjunctive, potential and negative, -i

¹⁴ These are also known as functional morphemes.

¹⁵ Shona does not use infixes.

marks negation and -a is used with all other verb forms. In this study however the final vowel is regarded as derivational.

After many attempts by various scholars to make this distinction discrete, Katamba (1993:47) regards the distinction between the two as one of the most controversial issues in morphological theory, since there are a lot of debatable morphological patterns across languages that are neither clearly inflectional nor derivational. For example, Kosch (2011:89) notes that “the prefixes employed to mark number (in Northern Sotho) not only exhibit inflectional characteristics, but also productive derivational characteristics”. It is best to view the two from a continuum approach ranging from patterns that are clearly inflectional to those that are clearly derivational.

The current study aims to delve into the acquisition of inflectional morphology by children acquiring Shona as a first language (L1). It focuses on the theoretical explanation of the development of inflectional patterns in child Shona and how it interacts with syntax. Syntax is a branch of linguistics focusing on the arrangement of words and their relationships in sentences. Syntactic rules govern proper sentence structure. The study is interested in how children’s words (inflectional morphology of nouns and verbs) interact with syntax. Although the study is rooted within morphology and syntax the interaction with phonology cannot be overlooked since it can give insights into the constraints that are at play in the process of acquiring Shona morphosyntax. The phrase ‘child Shona’ is used to refer to the language of children. This contrasts with ‘adult Shona’ which refers to the language of adult Shona speakers. This is a way of recognising and appreciating children’s language as a language in its own right. This is because child Shona has its idiosyncratic forms and patterns which are different from those of adults. In the Shona society child language is referred to as *chicheche*. Since language develops from childhood to adulthood it follows that every language has two manifestations of its language, namely child and adult

language. It is from this perspective that this researcher uses the phrase ‘child Shona’ to show that *chicheche* is a form of Shona language that is confined to a specific period in the lifespan of a child born within the Shona speaking society. The period ranges from twelve months to sixty months. The use of *chicheche* within this age range is considered normal. Therefore, child Shona is viewed in this study as a legitimate grammar and not errors. Child Shona also captures the fact that children do not speak like adults, their speech differs in a systematic fashion from that of adults but it eventually becomes like that of adults. The equivalence of the phrase ‘child Shona’ has been used by acquisitionists to refer to children’s grammar of specific languages (see Davidson & Goldrick 2003, Kadenge & Sibanda 2011). There is continuity between child grammar and adult grammar. This is captured in the continuity hypothesis. The strong version of the continuity hypothesis as proposed by Pinker (1984) states that child language can only differ from adult language in ways that adult languages can differ from each other. The specific differences in the Shona grammars of children and adults can be captured by referring to child Shona and adult Shona. The weaker version of the continuity hypothesis postulates that continuity is the systematicity with which children gradually build a phonological system (Jakobson 1941/ 1968). The use of ‘child Shona’ vs. ‘adult Shona’ in this study is because the researcher assumes continuity between these two grammars of Shona. This is also the cutting edge approach in child language researches. In the optimality theory for instance, child phonology has the same elements as adult phonology. That means that it has a set of universal markedness constraints on outputs and computational principles to determine optimal input-output mappings (Prince & Smolensky 1993, Tesar & Smolensky 1998).

It is the goal of this research to explain the patterns of morphosyntactic acquisition from a theoretical perspective, an area that has not been looked into in child Shona acquisition. The

study also links findings on how Shona morphosyntactic aspects are acquired to linguistic theories. It focuses on the constrained view of the acquisition of child Shona morphosyntax.

1.2 RESEARCH PROBLEM

The research problem behind the current study arises from the contention that the focus of generative acquisition research where a description of what children produce is outlined is not complete without an investigation of what the children seem to know, but fail to systematically produce. This includes, in particular, the various missing elements that give early language its telegraphic quality – dropped pronouns, auxiliaries, inflections, determiners, and the functional architecture that supports these elements (Slobin 1973; Brown 1973; MacWhinney 2000).

The study of language acquisition can never be complete without linking it to linguistic theories in general (e.g. universal grammar, optimality theory and principles and parameters) and those on CLA in particular (e.g. maturational theory, dual mechanism, generative and usage-based theories). It is, therefore, the aim of this study to provide an appraisal of the CLA of Shona morphosyntax from a constraint-based approach. A constraint is an element factor or a subsystem that works as a bottleneck. It restricts an entity, project, or system (such as a manufacturing or decision-making process) from achieving its potential (or higher level of output) with reference to its goal. In the process of language acquisition it is assumed that constraints can be of a phonological, morphological, syntactic, semantic or prosodic nature. The constraints can also include processing as well as the determination of the frequency effects of input and age. These phenomena interfere with the child's efforts at achieving adult-like speech. Furthermore, there is very little literature available on Bantu languages on CLA in general and

that of Shona in particular. The majority of the literature on Bantu languages indicates that the acquisition of prefixes is problematic for children (Chiswanda 1994; Demuth 1992b; Kunene 1979; Suzman 1982, 1991; Connelly 1984, 1987 and Chimombo 1981). The findings from these studies have motivated the current research. A reasonable number of studies have been carried out on Southern Bantu languages. Of all the Southern Bantu studies of CLA done to date none has provided a constraint-based theoretical explanation of the acquisition of morphosyntax in the Shona language.

Most studies on CLA have been done on languages other than Shona, for example Zulu (Suzman 1982; 1991), Sotho (Connelly 1984; 1987), Swahili (Deen 2002) and Chichewa (Chimombo 1981). This has generated a situation wherein most of the information describing language acquisition in Shona is based on implicational universals. Implicational universals are those universal conclusions that are made based on conclusions in some languages but which can be discredited at any moment by the discovery of some contradictory results from the other languages (Cook 1988). As seen in the study done by Chiswanda (1994), Brown's (1973) general claim that demonstratives are acquired fairly late is refuted. In Shona demonstratives actually appear earlier. This position, in the current researcher's view, calls for an effort to establish the nature of CLA in each of the world's languages.¹⁶ It is this position that has triggered the current researcher's desire to explore the nature of child Shona morphosyntax.

1.3 AIM OF THE STUDY

This study intends to provide an exploration of child Shona morphology and explain its

¹⁶ There has been an extensive research into child language acquisition of the world's languages (e.g. English (Berko 1958), Luo (Blount 1969), Siswati (Kunene 1979), Italian (Bates 1979), Sotho (Connelly 1984), Hebrew (Berman 1981), Swahili (Deen 2002), Sesotho (Demuth 2007), Q'anjob'al Maya (Pedro 2010). It is plausible to have such researches as they contribute to a better understanding of language acquisition and language in general.

interaction with syntax. The study specifically focuses on the development of inflectional morphology. The focus on inflectional morphology is motivated by the fact that it forms the basis of Shona morphology that feeds into syntax. The study also intends to link child Shona morphosyntactic acquisition to linguistic theories. The current study is based on the fact that a theory of grammar is a necessary component in the explanation of L1 acquisition of the formal properties of grammar, such as syntax, morphology and phonology. Linguistic theories play no role in other aspects of acquisition, such as emotion regulation, which is a purely psychological matter which has to be accounted for in other ways. The results from the current study are expected to contribute to the knowledge of language acquisition universals and the acquisition of Shona morphosyntax.

1.3.1 Objectives

Some of the study's leading objectives are to:

- investigate the development of child Shona inflectional morphology
- explore how child Shona inflectional morphology interacts with syntax
- identify the constraints that interfere with the process of child Shona development
- account for the development of child Shona morphosyntax using linguistic theories

1.3.2 Research questions

According to Sunderland (2010:9) “research questions are the key to any empirical research project.” Mason (2002:20) also acknowledges the importance of research questions by clearly stating that “research questions are vehicles that you will rely upon to move you from your broader research interest to your specific research focus and project, and therefore their

importance cannot be overstated.” In order to achieve the goal of describing and explaining the development of Shona morphosyntax the following questions act as a guide:

- What is the nature of the inflectional morphology in child Shona L1 acquisition?
- How does the inflectional morphology of child Shona L1 interact with syntax?
- What kinds of constraints interfere with the process of Shona language development of morphosyntax?
- How do linguistic theories account for the development of child Shona morphosyntax?

1.4 JUSTIFICATION

As observed in the background of the study, little attention has been specifically directed towards the study of the acquisition of Shona as a first language (L1). Currently, Chiswanda (1994), Chapanga (2006) and Mudzingwa (2001) are the only ones to have conducted research on Shona child language so far. The paucity of research on child Shona L1 is a clear indication that there are still many areas that need to be researched within the same language. This is because child language acquisition is multifaceted, for instance, one can do research on phonology, morphology, syntax, semantics, pragmatics and various sociolinguistics aspects. This research is, therefore, worth undertaking since it hopes to contribute to the literature on child Shona language acquisition in general and the acquisition of morphosyntax in particular.

A reading of the literature in CLA on morphology from languages such as English (Berko 1958), Luo (Blount 1969), Siswati (Kunene 1979), Italian (Bates 1979), Sotho (Connelly 1984), Hebrew (Berman 1981), Tzotzil (de León 1999), Swahili (Deen 2002), Sesotho (Demuth 2007), Q’anjob’al Maya (Pedro 2010), encouraged my interest in the area of morphosyntax. The current

study seeks to show how child Shona morphology interacts with syntax and also explain child Shona from a constraint-based perspective. The study specifically focuses on inflectional morphology.

Literature on child language acquisition indicates that many of the studies are based on English, hence most of the hypotheses in the literature, for example, Slobin's Operating Principles (Ops), Nice's stages of acquisition and Stern and Stern's stages of acquisition, cited in Ingram (1972) are all based on English. If the focus on first language acquisition studies remains based upon only the well-known languages such as English for instance, conclusions that do not capture the general acquisition constraints in all languages (Deen 2002) may become inevitable. In 1987, the Linguistics Association of (SADC)¹⁷ Universities (LASU) Organising Conference resolved to encourage linguists to undertake studies in the CLA of languages other than English. Chimombo (1987:1), for example, says, "What is needed now is to identify the major (and eventually the minor) languages of this region and undertake research into the acquisition of each one." The call by Chimombo (ibid) is in line with the earlier comment stating that reliance upon the findings from other languages has generated a situation in which the information describing Shona language acquisition in particular or any other language which has not been researched, is based on implicational universals. More than two decades have passed since Chimombo's 1987 call and little has been done within the Zimbabwean context on CLA. This then calls for research into child Shona and also dictates that we come up with findings that are specific to it.

Chiswanda (1994) looks at meaning and some aspects of morphology, extremely briefly though. The study has triggered other studies on child Shona acquisition since it is the first study of

¹⁷ The acronym SADC refers to Southern African Development Community as it is known today.

Shona language acquisition.

Although there are studies of child language acquisition in other Bantu languages such as Sesotho (Connelly 1984), Siswati (Kunene 1979), Luo (Blount 1969), Sesotho (Demuth 1983, 2007) and Swahili (Deen 2002), there is a need to do further research on the acquisition of specific aspects within different Bantu languages. The results from other Bantu languages on the acquisition of first language provide a solid background for studying the acquisition of inflectional morphology in Shona child language.

This study can be of value since it is likely to make a significant contribution towards an understanding of the acquisition of the morphosyntax of Bantu languages in general, since little research has been done in that area. In addition, the study can serve as a database for designing a theory of acquisition in Bantu languages. The data collected in this research can be uploaded on the CHILDES database system and be readily available to other researchers for further studies. Those in the field of child language impairments (speech therapists) might also use this study as a reference in assisting or facilitating language rehabilitation and also use the findings to design a linguistic tool for speech therapy which is specific to Shona speakers. The findings of this research can be compared to child language studies or case studies of other languages for better understanding of the universal strategies and processes of CLA. It also contributes to the understanding of how specific constraints play a role in determining the shape of children's early utterances and how these develop over time. Furthermore, this work contributes to the literature on CLA in general.

1.5 CONCLUSION

The study attempts to investigate the development of inflectional morphology in child Shona. It specifically focuses on how inflectional morphology interacts with syntax and how specific constraints interfere with child Shona acquisition. The thesis comprises of the following six chapters: Chapter One is the introduction of the study. Chapter Two gives a literature review of studies on Bantu languages, the different propositions regarding the acquisition of inflectional morphology and a description of Shona morphology. Chapter Three gives an overview of the theoretical framework that guides this research. The prosodic constraints theory and the principles and parameter theory are discussed in this chapter as possible theories that can be inferred from, for the identification of child Shona constraints as revealed by the data. The methodology and tools that are adopted in the study are also discussed in this chapter. The chapter also gives a justification of the method used for data collection and analysis since there are a diversity of methods and tools to be chosen from in any child language study. Chapter Four presents findings of the study; it offers a description of child Shona inflectional morphology of nouns and verbs. In the same chapter a discussion of child Shona morphosyntax is given. Chapter Five discusses the possible constraints in child Shona based on the findings given in Chapter Four. The chapter also describes the constraints in reference to linguistic theories. Chapter Six is the overall conclusion of the whole study. It discusses the findings and recommendations pertaining to the research questions underpinning this study.

CHAPTER TWO: LITERATURE REVIEW

2.0 PREAMBLE

This chapter explores global views on the acquisition of languages and proceeds to look at the acquisition of Bantu languages before finally examining Shona child language acquisition (CLA) in particular. The literature review also looks at the different propositions regarding the acquisition of inflectional morphology. This study uses the constraint-based approach to explain the child Shona morphosyntax. It is, therefore, necessary to review studies that use a similar approach. In general, the review centres on fundamental issues that are raised in various studies carried out by acquisitionists in various languages across the globe. The abundance of data on first language acquisition is apparent, given the history of its study, which stretches as far back as 1876. Despite the fact that much has already been done there still remains a plethora of questions to be answered, languages to be studied as well as theories and concepts to be verified. The approach of this review, therefore, is to review studies that have relevance to the current study.

2.1 ACQUISITION OF LANGUAGES: GLOBAL VIEWS

2.1.1 From the past to the present

Historically the study of how children acquire language dates back to the year 1876. Three major periods marked the beginning of research in CLA. Ingram (1992) identifies these as:

- a. The diary studies (1876-1926)
- b. Large sample studies (1926-1957)
- c. Longitudinal language sampling (1957 to the present)

During the 1876 to 1926 period the studies that were done used the parental diary method of collecting data. The major studies of this period are Taine (1877), Darwin (1877), Stern and Stern (1907) and Leopold (1939 to 1949). These researches are characterized by parents who kept diaries of the developments of their child's language. The theoretical orientation of this period was behaviouristic. The approach used during this period was unsystematic and biased. However, the data were rich and the studies set the platform for insights into how children acquire language.

The large sample studies were characterized by the collection of large samples from a large number of subjects. The data were collected from a cross section of subjects. Unlike the parental diary period this period marked the beginning of systematic data gathering. For instance, the researchers chose children who had a common socio-economic background, age and gender. The theoretical orientation of this period was behaviouristic just as in the diary studies. The researchers were interested in describing rather than explaining the behaviour of children. This is the period where research on the age of emergence of certain linguistic elements was done. Examples of studies conducted during this period are Nice (1925), Poole (1934), Snow (1963) and Prather *et al.* (1975). There was a lack of precision on the method of data collection because of a lack of scientific recording equipment.

Longitudinal language sampling studies are characterized by systematic methodology. For instance, a child under study is visited at predetermined intervals for a reasonable length of time with the aim of collecting a representative sample of the child's speech behaviour. The theoretical orientation of this period is influenced by the nativist theory that regards language as

a complex mental phenomenon that is hierarchical in structure. The period is marked by the shift from being purely descriptive to using a theoretical approach in child language studies. An understanding of such studies is vital, for it taps into history, consequently shaping current and future studies in relation to methodology and also provides basic knowledge about the process of language acquisition. The periods discussed here are summarized in Table 1 section 1.1 under ‘Area of Investigation’.

2.1.2 Approaches to morphosyntax acquisition

Brown (1973)¹⁸ carried out the first detailed account of the acquisition of English morphemes. His approach entailed a chronological account of the acquisition of fourteen English morphemes (function words and inflections). The findings of his study provide knowledge about the timeline of the development of the fourteen English morphemes and it also propelled knowledge regarding syntax development. Brown’s main findings were that the children he studied acquired morphemes in a relatively similar order. The study was a drive towards identifying patterns that might be universal. Despite Brown’s focus on English, his study inspired other researchers to investigate the same phenomenon (Cazden 1968, de Villiers & de Villiers 1973 and Menyuk 1969). Lahey *et al.* (1992), state that the order of morpheme-acquisition is generally the same in various other languages.

Berko’s (1958) famous ‘wug test’ also shows similar results to Brown’s findings. Berko’s study tested children on the knowledge of rules underlying grammatical morphemes like plural, past tense and progressive *-ing* on nonsense words such as ‘wug’. The study utilized a test in which

¹⁸ It is only four decades ago that the first systematic account of the development of morphology was done.

children (pre- scholars and first graders) were given familiar words and nonsense words. The task was to supply the plural or past tense form of the same word. The results showed that children were operating from a set of morphological and phonological rules. This moved towards universal features that comprise Chomsky's Universal Grammar.

Paul and Alforde (1993) also noted that a similar acquisition order is found in children with specific language impairments in English. The study of child language is investigated through studying normally developing children or children with specific language disorders. The knowledge of these two approaches of studying child language aids our understanding of acquisition matters in children in general and also in administering speech therapy in children with specific language impairments. However, other researchers have found some variation among children in terms of the speed at which they acquired the morphemes. This variation in findings calls for a wider research in languages all over the world. In fact, in order to make a meaningful gain in knowledge and attain a deeper understanding of languages in general, and CLA in particular, it is important to do more cross-linguistic investigations. The wealth of inflectional systems that can be explored in Shona and the interfacing of inflectional morphology with other domains of cognition and grammar make this fertile ground for gaining an understanding of CLA.

Brown identified three possible variables to explain the order of acquisition, as follows:

- frequency of morphemes in parental speech
- syntactic complexity
- semantic complexity

However, none of these fully shows a direct relationship with the order of acquisition. Brown (1958) identified these as constraints that play a role in the acquisition of English morphemes. Steinberg and Sciarini (2006) suggest three principles that can explain the order of acquisition of morphemes namely:

- **Ease of observability of referent:** According to Steinberg and Sciarini (2006:13) this principle refers to, “whether an object, situation or event is or is not easily observed by the child”. This is said to be an important variable for learning and the more salient the object, situation or event the easier it is to be acquired.
- **Meaningfulness of referent:** According to Steinberg and Sciarini (2006) this refers to objects, situations or events that the child can relate to or are of interest. Such referents are learned faster and the converse is equally true.
- **Distinctiveness of the sound signal that indicates the referent:** Steinberg and Sciarini (2006:13) note that, “the greater the sound distinction involved, the easier it will be for a morpheme signal to be learned”.

Steinberg and Sciarini (2006) applied a psychological approach to describe the order of acquisition of the English morphemes whilst Brown (1973) used a linguistic approach. This is because CLA can be explained from both a psychological or linguistic perspective. A psychological approach seeks to describe the acquisition process in terms of the individual’s intent while the linguistic approach builds a structural description of child grammar based on similarities across individuals and languages. The merging of psychology and the linguistic approach gave birth to the discipline of psycholinguistics. Studies of CLA are usually classified as part of psycholinguistics.

One of the variables that Brown (1973) suggests as influencing the order and timing of the acquisition of morphemes is frequency of morphemes in parental speech. The variable of frequency has also been noted within the constructivist idea. Accordingly, units that occur more frequently within the environment of the child are acquired early. This is a possible constraint to

the process of CLA. Slobin (1985) also acknowledges the role of frequency in acquisition. Argus (2007:17) did a study of the acquisition of Estonian morphology. The main findings of the study indicate that “the input frequency of the linguistic elements plays a very important role in the acquisition of Estonian”.

2.2 ACQUISITION OF BANTU LANGUAGES

This section explores findings from previous studies on child language acquisition (CLA) in Bantu languages with the aim of identifying the common developments in morphosyntax. The focus on Bantu languages is because the current study is on Shona, a Bantu language. There are only a few studies that have been done on CLA in the Bantu languages. The dearth of research in the Bantu language, or in any language for that matter, deprives linguists of the knowledge that is vital for the understanding of language universals. Although research on CLA within Bantu languages is generally limited, the literature reveals that many of these language acquisition studies are from southern Bantu languages, with only two outside southern Africa¹⁹. The review looks at acquisition studies of these Bantu languages and highlights the linguistic areas that have been studied so far.

2.2.1 Zulu

Suzman (1980), in a study on the acquisition of the Zulu noun class system, observed her 23 month-old respondent use nouns in citation forms without noun prefixes, and with no segmentation errors. Suzman interpreted this as evidence that the child had knowledge of the

¹⁹ One study of an eastern Bantu language is done by Deen (2002) on Swahili and the other by Idiata (1998) on Sangu, a Gabonese language.

internal morphological structure of the noun. Suzman further attributed the absence of the noun prefix in citation forms to an overgeneralisation of the structure of Zulu vocative forms (the latter omit the pre-prefix). In syntactic configurations, the child deleted the first or second vowel within contiguous word boundaries. The child's use of prefixes was tied to a search for the correct phonological and syntactic context in which to use a noun prefix and a stem.

Suzman (ibid) observed an early emergence and mastery of classes 1a/2a, and 5/6. Classes 1a/2a contain primarily personal nouns and kinship terms; and class 5/6, though largely miscellaneous, contains nouns of common objects many of which are loanwords from Afrikaans and English. However, Suzman (ibid) notes that semantic coherence is not the only factor governing the early acquisition of class 1a/2a. The singular prefix of this class (u-) gets generalised to a non-human class; for example, *ungubo* instead of *ingubo* for 'blanket'. Other factors that Suzman (ibid) considers germane to the child's acquisition of noun classes include the things that the child encounters and interacts with in the environment, and the types of things the child begins to talk about. The findings from this study are likely to be enlightening since the current study looks at the development of inflectional prefixes in child Shona. The factors governing the early acquisition of inflection in certain noun classes in Zulu are to be considered for the current study.

2.2.2 Swati

Kunene (1979) studied the acquisition of Swati nominal morphology, with reference to noun class prefixes and nominal agreement (specifically the possessives and demonstratives). The data are drawn from two groups of children ranging in age from 25-42 months and 4½ – 6 years. The study utilised the spontaneous speech samples and informal elicitation sessions, respectively as methods of collecting data. Kunene (ibid), like Brown (1973), was primarily concerned with the

order of acquisition of morphemes, namely, noun prefixes, locative markers, subject/verb agreement, possessive agreement, and object/verb agreement.

The findings by Kunene (ibid), reveal that noun stems were acquired before their prefixes in the case of disyllabic and multisyllabic noun stems. On the other hand monosyllabic and vowel initial disyllabic stems, were acquired together with their prefixes. Kunene (ibid) notes that, the emergence of noun stems before prefixes lay in McNeill's (1970) distinction between function words (prefixes) and content words (stems). Kunene (ibid) ruled out tone and stress as possible factors in the acquisition of noun stems before prefixes. Tone and stress relate to prosody. Conversely, Demuth (2001) argued that prosodic constraints play a role in the morphological development of Spanish. It, therefore, means that there is a possibility of differences in terms of the role of prosody in various languages.

The children in Kunene's study used possessives to mark the number of the nouns without prefixes, prior to the emergence of noun prefixes, which among other things, indicate number. When prefixes finally emerged around 30 months of age, some nouns occurred with singular prefixes before their plural counterparts, and for other nouns the reverse was true.

Concerning the locative, which is marked on the noun by a prefix and a suffix, the suffix emerged before its prefixal counterpart. In verbs too, the recent past tense suffix emerged earlier than morphemes that occur prepositional to the verb radical. Kunene (ibid) attributed this early emergence of suffixes to the perceptual salience of postpositions expressed in Slobin's universal principles (Slobin 1973). Perceptual salience is a possible constraint in the development of Shona

inflectional morphology. Following is a summary of the acquisition order of morphemes including agreement markers as observed by Kunene (ibid):

- nominal stems and verb radicals
- some suffixal morphemes such as the locative and the past tense morphemes
- the possessive pronouns, especially 1st and 2nd person
- locative prefix (uncertain ordering)
- subject/verb agreement markers
- possessive agreement markers
- noun prefixes
- object/verb agreement markers

By the age of 4½-6 years, noun classes were not yet fully acquired, though agreement markers were more appropriately used. In contrast to the spontaneous data, there was more evidence of overgeneralisation from the experimental data. Most of the overgeneralisations involved prefixes, and there was little evidence for semantic overgeneralisation. Another notable discrepancy between experimental and spontaneous data concerns the singular and the plural prefixes. In spontaneous speech a child would use the prefixes of class 1/2 appropriately as in the example below:

2.	Singular umu-ntfu “person” um-tfwana “child”	Plural aba-ntfu “people” aba-tfwana “children”
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Yet when asked to render the plural forms of singular nouns in the experimental task the child used the class 1a/2a plural prefix. For example,

3.	bo-muntfu “people” bo-muntfwana “children”
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Kunene’s explanation for this discrepancy was that the experimental task probably tapped a different kind of ability from that reflected in spontaneous data. Evidence from experimental data

was interpreted to be task-specific. Although the study by Kunene (ibid) is centred on the order of acquisition of morphemes, it reports of noun stems acquired before their prefixes in the case of disyllabic and multisyllabic noun stems. This concurs with Suzman's (1980) observation in the study of Zulu.

The methodology that was used by Kunene (ibid) is informative to the current study since it uses the same approach. This current study will adopt the same methodology that was used by Kunene. It is also highly informative in terms of the results regarding the order of acquisition of morphemes as outlined in Kunene's research. The fact that spontaneous speech and experimental tasks yielded different results in Kunene's study calls for a more conscious approach to the methodology adopted in any study of child language and more so in the current study.

2.2.3 Sotho

Two studies have been done on Sotho, by Connelly in (1984) and Demuth in (1993a). These studies focused on the acquisition of noun morphology. Connelly's (1984) study examined the acquisition of noun morphology by four Basotho children. The study focused on the acquisition of noun class prefixes and the concordial system of the Sotho language. Connelly's participants ranged in age from 18 to 37 months at the outset of the study.

Connelly (ibid) found the acquisition of noun class prefixes and the concordial system to be relatively error free. He delineated four stages of acquisition of noun stems and prefixes:

	<u>Prefix</u>	<u>Stem</u>
Stage 1	absent	ill-formed
Stage 2	absent	well-formed

Stage 3	ill-formed	well-formed
Stage 4	well-formed	well-formed

Connelly (ibid) notes that there was some evidence, though not conclusive, that prior to stage 1 the children used some nouns as unanalysed monomorphemes, taking both the prefix and stem together as a ‘content word’ in speech. Connelly (1984:144) states that “what quickly follows then is a morphemic analysis on the child’s part”. Connelly attributes the lack of conclusive evidence concerning the status of nouns prior to stage 1 to the fact that at 18 months, Basotho children are already linguistically sophisticated. In fact, Connelly states that he missed the one-word stage.

According to Connelly (1984:144) noun stems are:

morphemically isolated and phonologically ill-formed [in the first stage] ... and stand in for the noun and its prefix. In the second stage, the noun stem performs the same role, confirming that morphological categories are motivating the child’s development.

In the third stage, shadow prefixes (place-holders) emerge and increasingly converge phonologically and morphologically on to the adult forms leading to the fourth stage. Connelly (ibid) interprets the occurrence of stems without prefixes as an indication that the child has segmented the word, separating form (prefix) from content (stem).

Noun suffixes and concords are in place before the prefixes are acquired. Connelly concludes, therefore, that contrary to the assertions by grammarians, noun prefixes do not trigger or govern the occurrence of the highly euphonic concords. Connelly found no evidence for semantic-based acquisition of class 1 nouns, something which is often cited as the most semantically coherent

class. Very little overgeneralisation of noun prefixes was observed. Connelly noted that Basotho children develop speech more rapidly than their Western counterparts. Comparing the mean length of utterance (MLU) of Basotho children to Brown's (1973) Adam, Eve, and Sarah as well as children in other studies, Connelly found that development that takes place between 12 and 17 months in Basotho children occurs between 19 and 27 months in Western children. As early as 25 months of age, Basotho children are already using motherese when talking to younger siblings, whereas other studies show the use of motherese to occur around 4 years of age for American children. Evidence for linguistic precocity in Bantu children is also documented elsewhere (Demuth 1983; Chiswanda 1994; Mudzingwa 2001). Researchers attribute this developmental precocity to child rearing patterns of Bantu children, who are, from infancy exposed to adult social and verbal interaction and very often the focus of attention. Such findings relate to the role of input from the adults in the process of language acquisition. However, the current study seeks to examine and explain how child Shona morphosyntax is governed by linguistic constraints through the use of linguistic theories.

Demuth (1993a) also investigated the acquisition of noun classes and agreement in Sotho by children ranging in age from 2½-3 years over a period of 12 months. She noted that the consistent use of full noun prefixes does not emerge until 2½-3 years of age, and this takes place with no overgeneralisation. Around the age of two, nouns of all classes frequently occur with no prefix. By three years of age children exhibit correct productive use of all singular and plural prefixes. As do adult Sotho speakers, children occasionally omit noun class prefixes of classes 5, 7, 8 and 10. Contrary to Kunene (1979), Demuth found some monosyllabic stems to occur without their prefixes when a possessive or demonstrative is used in conjunction with the noun.

Regarding agreement markers, Demuth (ibid) notes that at 2 years of age all pre-verbal morphology (subject-verb agreement markers, the focus marker, tense and aspect markers, object clitics) is collapsed into an intonational envelope rendered as [a] or [e], or is entirely omitted. Gradually pre-verbal morphology becomes differentiated, and at 25 months of age there is evidence for the overgeneralisation of the class 9/10 agreement system. Some of the apparent overgeneralisation could be attributed to articulatory difficulty with certain sounds. Demuth also notes that at this time a large proportion of the child's vocabulary comprises of class 9/10 nouns.

Overall, there is little evidence of the overgeneralisation of either prefixes or agreement markers, nor is there much evidence for the use of semantic criteria. Relating this observation to Kunene's experimental data, which showed overgeneralisation of noun prefixes, Demuth comments that Kunene's experimental subjects could have been performing a 'fit-the-paradigm task'. Demuth argues that children attribute to the noun and modifier a class feature and treat the entire phrase as 'some kind of prosodic or cognitive unit'. This is most likely due to the phonological transparency of the noun class prefixes and agreement markers.

The studies on the acquisition of Bantu languages reviewed above all depict a three-stage developmental path in the acquisition of noun prefixes. This can be summarised as follows:

- | | |
|-----------|------------------------------|
| Stage 1 | stems without prefixes |
| Stage II | place-holder vowel plus stem |
| Stage III | prefix plus stem |

Although these studies focused on other Bantu languages, such studies are relevant to this study, as I will draw ideas from their observations and findings for the development of this thesis. In light of the views of these scholars, it would be interesting to observe how the child Shona morphosyntax develops.

2.2.4 Tswana

A longitudinal study of child Tswana was conducted by Tsonope (1993). Two children aged 1; 11-2; 6²⁰ years and 2; 5-3 years participated in the study. The study focused on the acquisition of the noun class system and nominal agreement with possessives and demonstratives. Tsonope just like other studies mentioned earlier also notes a three-stage acquisitional pattern. Tsonope (1993:111) argues that the three-stage acquisitional pattern “rests on certain principles and heuristics children formulate.” A notable difference in Tsonope’s research are his views on form-content distinction as an explanation of the emergence of stems without prefixes as used by Kunene (1979), Connelly (1984) and Demuth (1988). Tsonope (1993:112) sees the form/content distinction as, “problematic since prefixes are not as devoid of meaning as the form/content distinction implies.” Tsonope argues that, children are not mature or learned enough to identify prefixes from stems in speech streams. The form/content distinction, according to Tsonope (1993:112), “...does not tell us why monosyllabic stems are acquired together with their prefixes.” Kunene (1979) also made the same observation. The current study proposes a various constraints approach to the explanation of child Shona.

²⁰1; 3 refers to the age one year and three months, while 1; 8 refers to the age one year and eight months.

2.2.5 Sangu

Idiata (1998) carried out a research on Sangu a Gabonese language. The study used data collected in a series of comprehension and elicited production experiments. The study examined the morphosyntactic aspects of noun class prefixes, nominal and verbal agreement.

2.2.6 Chewa

Chimombo (1981) conducted a research on the acquisition of negation by English/Chewa bilingual children and compared them to monolingual Chewa-speaking children. The age range of the participants was 1-2; 6 years.

Another study on Chewa was done by Chimombo and Mtenje (1989). The study focused on spontaneous speech interactions from three children between 1; 0 and 2; 6. They focused on the role of tone, syntax and semantics in the acquisition of the Chewa negation system.

2.2.7 Swahili

The first study on child Swahili acquisition was carried out by Deen (2002) who investigated the acquisition of inflectional prefixes in Swahili, an eastern Bantu language. The findings of this study reveal “that four clause types occur in the speech of all the children under study, with omissions diminishing with maturity:

- | | |
|-----------------------|---------------------------------|
| ➤ Agr – T – Verb Stem | Full Clause |
| ➤ Ø – T – Verb Stem | [-SA] Clause |
| ➤ Agr – Ø – Verb Stem | [-T] Clause |
| ➤ Ø – Ø – Verb Stem | Bare Verb Stem” (Deen 2002: xi) |

According to Deen (2002), of the four clauses, only full clauses and subject agreement (SA) clauses are grammatical in this non-standard dialect. Furthermore, tense (T) becomes obligatory

earlier than subject agreement, the omission of which persists until the latest data points. Deen (2002), notes that the data support the Agreement (Agr)-Tense Omission Model (ATOM) (Schütze & Wexler 1996) in showing that agreement and tense may be optionally and independently underspecified. This is similar to research findings in other Bantu languages discussed above. Deen (2002) makes an interesting observation in which he comments that the omission of Agr and T has effects on the occurrence of overt subjects, suggesting that the omission is not purely phonological, but rather is of a syntactic nature. This observation has an important bearing on the current study, which seeks to account for the interactions of morphology and syntax. The findings by Deen also indicate the interlacing of morphology and syntax systems even in child language.

2.2.8 Shona

Chiswanda (1994), Mudzingwa (2001) and Chapanga (2006) have conducted studies on the acquisition of Shona. The study of child Shona acquisition is relatively new, as evidenced by the dates mentioned above. The small number of studies is also an indication that the area is understudied. This is a matter of concern since knowledge of CLA of any language is a prerequisite to a better understanding of language developments in the context of bilingual language acquisition and education, change in language patterns of language acquisition and implications for the sustainability of indigenous languages in the African context and also the linguistic mechanisms that affect language acquisition as a way of laying the ground for speech correction in both adults and children who suffer from language impairment and loss.

Chiswanda (1994) did a cross-sectional study of four children aged between twelve and twenty-five months. She has brief discussions of various aspects in child language acquisition of Shona.

First she discusses children's utterances with specific focus on their meanings. The number and size of syllables in children's early utterances was also an area of focus. Under semantics, aspects of overgeneralization, onomatopoeia and the use of action words for making demands were investigated. One major contribution from Chiswanda (ibid) is that she refuted Brown's (1973) general claim (based on evidence from English) that demonstratives are acquired fairly late, for in Shona demonstratives actually appear earlier. Another major observation by Chiswanda (ibid) is that, contrary to the claims of Clark and Clark (1977) and de Villiers and de Villiers (1973), passives are acquired early. Chiswanda observed passives appearing in the speech of an eighteen month old child in Shona, which is earlier than in English (Horgan 1978), German (Mills 1985) and Hebrew (Berman 1985). In German and English the passives are reported to appear around four years and in Hebrew around eight years. Kirby (2010) associates the delay to the markedness of passives. Passives are less common in adult speech. Under phonology Chiswanda (ibid) looked at substitutions of phonemes, and syllable omission patterns. In syntax she analysed the development of phrases and sentences in a child acquiring Shona. Chiswanda's study focused on many and diverse aspects of CLA in Shona, but the meticulous analysis of the data was compromised, because the study was carried out over a very short period of time. Though the results shed light on the patterns of acquisition in Shona, they cannot be used to formulate rules of acquisition since the study lacks comprehensiveness.

Mudzingwa (2001) utilized the longitudinal method to explore the phonological structures of a child acquiring Shona as L1. Mudzingwa observed the development of the phonological structures of his daughter over a period of two years. The parental diary method of collecting data was used with the complement of fortnightly recordings. The findings of this study show

that, in each of the phases established, the adult word was adjusted in flexible ways in order to achieve a preferred pattern (template). It was observed that the complexity of the structure of the participant's words developed gradually, with reference to syllable count, syllable structures, variety of syllables across the word, permitted consonant co-occurrence patterns within phrases as well as across phrases. According to Mudzingwa (2001), the development in complexity was a result of successive relaxations of, or an overcoming of previous restrictions on the complexity of the word. This was accounted for through "assimilation" and "accommodation". According to Mudzingwa "assimilation" was where the participant adjusted the adult word so that it matched a particular template, whereas "accommodation" was where more complex words were accommodated as a result of overcoming or relaxing some previous constraints. The results of the analysis also showed that during the earliest period of observation (i.e. 1; 3 - 1; 8), the word was the basic phonological unit around which the child organized her phonology. At the age of about 1; 9 this gradually shifted to the syllable segment.

Mudzingwa's study is valuable to the area of Shona CLA since it contributes some valuable insights into the acquisition of aspects of Shona segmental phonology. It also contributes to the development of data on the acquisition of Shona phonology. Lastly the corpus of data collected in Mudzingwa's longitudinal study contributes towards the building of a database on the acquisition of not only phonology but the acquisition of Shona in general. This study uses data from Mudzingwa (2001).

Chapanga (2006) did a study on the forms and functions of questions in child Shona. The participant was a twenty-eight month old monolingual Shona speaker. The data for the study was

carried out over a period of four weeks using the elicitation method. The findings of the study reveal that yes/no questions were marked suprasegmentally and/or by postponed *here*. The WH-question formatives *-i*, *-ei*, *-pi* and *ani* are also observed in the study. *-ko* is also observed to be used in postponed positions for emphasis. The functional side of questions in child Shona as noted by Chapanga (2006) reveals that the yes/no questions asked for agreement or disagreement with the addressee. A look at the examples used by Chapanga also informs the current study about the possible utterances in child Shona. For instance, Chapanga (2006) gives the example of a child utterance, *atiiko mama?* ‘What have you said mum?’ The example indicates that the child omitted the consonant /m-/. This results in an inflectional morpheme with a dropped consonant. This is the segment that the current study focuses on.

2.3 PROPOSITIONS ON THE ACQUISITION OF INFLECTIONAL MORPHOLOGY

It is necessary to survey literature that offers propositions that aim to account for the acquisition of inflectional morphology. There are several propositions in literature that pertain to the acquisition of IM. The following are examples of such: the role of perceptual salience (e.g. Peters 1983; Slobin 1985; Kunene 1979), the dual mechanism approach (e.g. Pinker & Prince 1988; Pinker 1999), the single mechanism approach (e.g. Bybee 1985, 1995; Rumelhart & McClelland 1986; Tomasello 2000a/b, 2003) and the pre- and protomorphology approach (e.g. Dressler & Karpf 1995; Dressler 1997; Bittner *et al.* 2003).

2.3.1 The role of perceptual salience

The process of language acquisition is governed by perception and production amongst other factors. It is not possible to acquire or produce language without the ability to perceive it²¹. There has to be input in order for one to acquire language. On the other hand, perception without production does not materialize into language. The issue of perception is catered for within the 'nature-nurture' theories of language acquisition, where the two theories (nature-nurture) indicate that, for the process of acquisition to succeed input from the environment (which operates around perception) has to interact with Universal Grammar (henceforth UG)²². Perception (sounds of language) comes from the environment and production comes with the natural biological make-up of the human species. A child has to perceive sounds and the different combinations (i.e. words and sentences) that they form in order for the process of acquisition to succeed. Failed acquisition has been clearly manifested in children who were raised without language input, or very little exposure to it.²³ Studies of children with Specific Language Impairments (SLI) also reveal that the production of speech is impaired because of oral cavity disorders.

As mentioned before perception is one of the key components necessary for the process of language acquisition to take place. The role of perceptual salience has been the focus of many studies on child language. Perceptual salience refers to the phonetic substance, syllabicity and sonority of the morpheme. It has been argued in the literature that the perceptual salience of morphemes partially predicts the order of morpheme acquisition (Kunene 1979; Goldschneider

²¹ This applies to both first and second language acquisition.

²² UG is a Chomskyan concept which refers to the set of innate language ideas that comprises the language faculty. It is built around the idea that languages all over the world have certain similarities.

²³ Such children are referred to as wild or feral children. Examples of such are Genie (Curtiss *et al.* 1974), Isabelle (Brown 1958) and Chelsea (Curtiss 1988). More examples are described in Malson (1972).

& DeKeyser 2001). The rationale is that morphemes that are more perceptually salient are acquired before morphemes that are less perceptually salient. Besides the physical properties of morphemes, perceptual salience is defined in the acoustical terms of stress, fundamental frequency and amplitude (Leonard *et al.* 1997; Montgomery & Leonard 2006). Perceptual salience is a paralinguistic feature. It aids the process of language acquisition. Research demonstrates that perceptual salience is an important aspect in the process of language acquisition (Peters 1983; Slobin 1985; Kunene 1979). Studies generally reveal that forms with higher salience are acquired before those with low salience. This shows that those elements that have low salience pose constraints to the ability of a child to acquire certain linguistic aspects. This study, therefore, seeks to identify the morphological forms that have high and low salience with the aim of reviewing them as possible constraints within the process of Shona CLA. According to Terry (2009), in order to begin acquiring a lexicon and, subsequently, a system of inflection, children must begin by identifying words and other linguistically relevant units in the ambient speech stream. This is possible through perceptual salience where the child's attention is drawn to certain parts of input speech. Peters (1983) claims that perceptual salience plays an important role in the initial extraction of units from the speech stream. The manner in which Shona morphosyntactic aspects are acquired by children might be governed by perceptual salience. This study, therefore, looks into perceptual salience as a possible constraint to the acquisition of Shona morphosyntax.

2.3.2 The single-dual dichotomy approach in acquisition of IM

The process of language acquisition is based on mental processes. According to Chomsky (1965), humans are born with an innate knowledge of the principles of transformational

grammar. According to the nativists, the human child is born with a Language Acquisition Device (LAD) which is not found in any other living species, making language unique to human beings. Domain-specific structures within the mental structure allow children to identify and employ the complex grammatical rules of a language. Chomsky claims that the mental structure for language acquisition – ‘Universal Grammar’ – is programmed to recognize the universal rules that underlie the specific language that a child is exposed to. This is why a child has the capacity to acquire any language he/she is exposed to.

The acquisition of IM is linked to mental processes. Pinker and Prince (1988) proposed the dual-route theory in which one route is rule-governed and enables the formation of past-tense regular verbs for instance. A second route pertains to a memory system of irregular past-tense forms. Irregular forms of any linguistic aspect are, therefore, dependent on memory since there will be no regular rules that govern their forms. In principle this dichotomy attempts to capture the predictability of regulars and the fact that new ones are constantly being added. The dichotomy does the same for the unpredictability of irregulars. The production of an irregular past-tense form is only possible once the appropriate past-tense form has been learnt and memorized, and if it can be retrieved before the rule-governed route operating in parallel it produces an incorrect regularization. Dual-route theory maintains that over-regularization errors occur when the memory system is insufficiently developed to prevent the rule-governed route from overriding it. With experience, the memorization of infrequent inflections is consolidated and errors are reduced. The inflection that occurs most, for example, /ma-/ in Shona words such as *mazai* ‘eggs’ *mazuva* ‘days’, *maoko* ‘hands’, *mabhasikoro* ‘bicycles’, see Mabugu 1995), is established

as the default rule. The dual-route theory attempts to explain how child grammar is eventually mastered to the level of adult grammar.

In contrast to this hypothesis, the single-route theory (Rumelhart & McClelland 1986) proposes that regular and irregular inflections are produced by a single system that amasses all the inflections in a language. Accounting differently for over-regularization errors, the single-route theory asserts that memory resources become congested as numerous inflections are stored. This leads to ‘interference effects’, that is, similar words are confused and so, for example, the irregular verb ‘go’ is confused with other regular verbs with a similar phonological structure (e.g. mow, row, sew) and ‘goed’ is produced. With experience, the irregular verbs become more securely stored and are able to resist the interference effects of regular verbs.

2.3.3 Pre- and proto-morphology in acquisition of inflections

Research in various languages indicates that children omit grammatical morphemes at some point in the development of language. The issue of how and when children come to acquire grammatical morphemes has presented a challenge to the field since Brown’s (1973) influential work on the acquisition of grammatical morphology by Adam, Eve, and Sarah. Since that time there have been several proposals for how and why grammatical morphology might be missing from children’s early speech. Dressler and Karpf (1995) give the sequence of events leading to the acquisition of phonology and morphology. They demonstrate the interdependence between phonology and morphology. Dressler and Karpf (ibid) give three assumption stages to the acquisition of morphology. These stages are said to be also parallel to phonology²⁴. The three are pre-morphology (phonology), proto-morphology (phonology) and morphology (phonology)

²⁴ Dressler and Karpf (1995) looked at both phonology and morphology and they noted the parallel stages.

proper. According to Dressler and Karpf (ibid), the pre-morphology stage is when morphological operations occur but no system of grammatical morphology has yet dissociated from a general cognitive system. At this stage, therefore, the child has not yet detected any grammatical morphology. Dressler and Karpf (ibid) give the findings from the investigation of two Polish children which show violations of the principles of grammatical morphology.

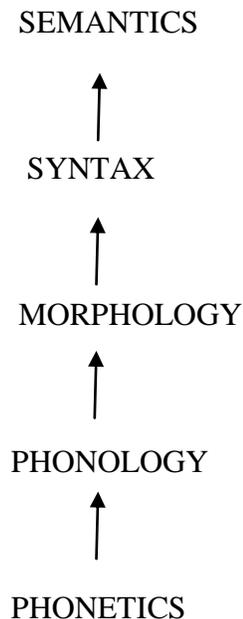
The second stage of protomorphology is a higher stage in terms of the development of morphology where the system of morphological grammar and its subsystem start to develop. Non-prototypical categories e.g. diminutives as a non-prototypical representative of derivational morphology should emerge early. The final stage is the emergence of proper morphology and the child's system qualitatively and quantitatively approaches the adult models.

2.4 SHONA MORPHOSYNTAX

The present study focuses on the acquisition of child Shona; however, for a meaningful analysis of child language it is necessary to have a clear understanding of adult language. This section therefore focuses on the morphosyntax of Shona, which is understood to be the adult competence in morphosyntax. To set the discussion of the morphosyntax of Shona in perspective it is important to have an overview of the morphology–syntax interface. The next section, therefore, focuses on the morphology and syntax of Shona, as it is necessary to draw on these descriptions in later chapters.

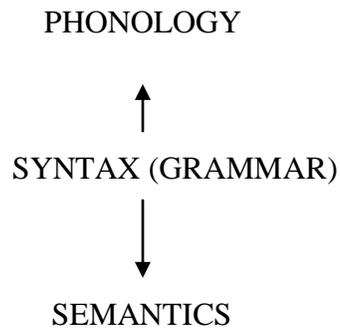
2.4.1 Morphosyntax

The units that make up language are related, linking to each other in intrinsic ways. Historically the relationship among these units has been discussed by American structuralists under the influence of Bloomfield. In his discussion on linguistic levels of analysis Bloomfield (1933) tackles this interrelation of the various levels of linguistic analysis and clearly shows how they are related. The linguistic levels of analysis are organized as follows:



However the methodology that guided the levels of linguistic analysis which is referred to as the strict order of discovery or discovery procedure, did not allow lower levels to refer to higher levels hence the level at the apex (semantics) would not be referred to at all. Chomsky (1957) then remodeled the levels of linguistic analysis by redirecting the methodology. In place of the strict order of discovery Chomsky developed a model of grammar with three levels called components. Chomsky reduced the linguistic levels to three, with syntax being the central component, which specified which structures are possible in a language. The other two

components are phonology (sounds) and semantics (meaning). The three components are represented in the diagram below:



As mentioned earlier, the linguistic elements are intricately related, hence it is impossible to make a clear distinction between levels and also difficult to determine the relationship between them. This is proved by the establishment of intermediate levels of morphophonology and morphosyntax which brings in the interface theory.

Although morphology and syntax are two distinct domains, they are related - hence the interface theory. There are two views on the role of the internal structure of words and their relationship to syntax. First, a theory of the morphology-syntax interface is a theory of how words and their internal structure, which is the traditional domain of morphology, relate to the structures generated by the syntax. The theory shows how words are special in ways that phrases are not, and that this 'specialness' calls for an architecture in which the derivation of words and the derivation of syntactic objects occur in different modules of the grammar. Second, it is also a theory of how the rules for deriving complex words relate to the rules for deriving syntactic structures. The theory of the morphology-syntax interface indicates the dependence of these two domains on each other.

2.4.2 Shona nominal and verbal morphosyntax

This section describes the morphosyntax of Shona focusing on inflections. As already stated, above, morphology and syntax relate in intrinsic ways thereby bringing out hybrid morphosyntax. Buell (2005) notes that there are two opposing views on the question of where morphology resides in the human language faculty. The lexicalist approach views morphology as a discrete linguistic component on par with syntax and phonology. In the opposing view, morphemes are composed in the syntax, and there is no discrete morphological component, as such. The latter view fits into the morphosyntax scenario where morphology and syntax are dependent on each other. The current study takes this view as it seeks to show how children manipulate the morphosyntax of Shona.

2.4.2.1 Shona nouns and nominal agreement

Nouns constitute a major word category in Shona and play a major role in syntactic analysis. The Shona noun is categorized into classes, depending on the characteristic features of its referent such as animacy, shape and gender, in other cases arbitrarily (Aikhenvald 2006; Katamba 2003). According to Meinhof (1948),²⁵ Bantu languages have a total of twenty-two (22) noun classes. However no single Bantu language expresses all the classes. Using Meinhof's numbering, Shona has 20 classes. According to Childs (2003:99), "A noun class system will consist of a complete division of all nouns in the language into a number of classes." The complete list of Shona noun classes is shown in Table 2 below:

²⁵ Meinhof is one of the first linguists to study African languages. He was a Germany linguist.

TABLE 2: Shona noun classes

Class Number	Prefix	Typical Meaning
1	mu-, mw-	singular: persons
2	va-	plural: persons (a plural counterpart of class 1)
3	mu-	singular: objects, plants (inanimate)
4	mi-	plural (a plural counterpart of class 3): objects, plants (inanimate)
5	sa-, ri-, Ø ²⁶	singular: inanimate
6	ma-	plural (a plural counterpart of class 5, 11, 21): usually fruits and vegetables
7	chi-, ch-	singular: diminutive, things
8	zvi-, zv-	plural (a plural counterpart of class 7): diminutive, things
9	N-, Ø, i-	singular: animals, things
10	N-, Ø, dzi-	plural (a plural counterpart of class 9, 11): animals, things
11	ru-, rw-	singular: no clear semantics
12	ka-	singular: diminutive connotations
13	tu-, tw-	plural (a plural counterpart of class 12): diminutive connotations
14	u-, vu-	singular: no clear semantics
15	ku-	verbal nouns – infinitives
16	pa-	locative meanings: proximity, relative location
17	ku-	indefinite locative or directive meaning
18	mu-	locative meanings : inside something
19	svi-	singular: persons – diminutive
21	zi-	Augmentative

²⁶ "Ø-" means no prefix.

The general noun formation in Shona is noun prefix (NP) plus (+) noun stem (NS). Class 15 is unique in that it comprises the infinitives, also called ‘verbal nouns’. The nouns in class 15 have an exceptional formation pattern because of being verbal in nature. They are formulated as follows; infinitive plus (+) verb root plus final vowel, e.g. ku (infinitive) + dy (verb root) + a (final vowel). Most of the noun classes are paired in the singular-plural pattern as shown in the table above. Class 9 and 10 are homonymous²⁷. Here the meanings are different on the basis of number. The pairs are usually patterned in such a fashion that the first number indicates the singular and the latter the plural: 1 and 2; 3 and 4; 5 and 6; 7 and 8; 9 and 10; 12 and 13. Class 11 nouns can be pluralized by affixing class 6 or 10 prefixes. Nouns in class 14 are abstract nouns. When they are in the plural, they generally fall into class 6. Classes 12 and 13 are purely diminutives²⁸ whilst class 7 and 8, besides being normal nominal prefixes, can also act as diminutives in some Shona dialects. Class 21 is augmentative. Classes 12, 13 and 21 do not have unique members but they have members from other classes which they diminish or augment. Classes 16, 17 and 18 are locatives. With the exception of the infinitives, diminutives, augmentatives and the locatives, all the other noun classes are simple nouns. Noun classes 7, 8, 12, 13, 16, 17, 18, 19, and 21 allow for more than a single prefix. These classes allow pre-prefixation where a class prefix is added to an ‘inflected nominal stem’ (Mudzingwa 2010). This pre-prefixation yields a sequence of class prefixes creating morphologically complex nouns. The forms with more than one prefix are shown below:

²⁷ In linguistics, a homonym is, in the strict sense, one of a group of words that share the same spelling *and* the same pronunciation but have different meanings.

²⁸ Diminutive prefixes are added to nouns to denote a small instance of what the noun denotes, often with some additional emotive content of endearment (Wierzbicka 1984, Jurafsky 1996).

- 4a. mu- sikana
CL1.SG girl
'girl'
- b. chi-mu-sikana
CL7.SG.Dimin.-CL1- girl
'short stocky girl'
- c. zvi-va-sikana
CL8.PL.Dimin.- CL2.PL-girl
'short stocky girls'
- d. ka-mu-sikana
CL12.SG.Dimin.-CL1.SG.-girl
'thin and sickly looking girl'
- e. tu-va-sikana
CL13.PL.Dimin-CL2.PL-girl
'thin and sickly looking girls'
- f. zi-mu-sikana
CL21.SG.Dimin-CL1.SG.-girl
'big stocky girl'

The noun in 4a has one prefix but it takes up other prefixes as shown in 4b - f. This yields a sequencing of prefixes. As noted by Mudzingwa (2010) the pre-prefix acts as a morphosyntactic head, because it controls agreement. The pre-prefix unit is acting as a single unit and only one prefix triggers agreement. The prefix /mu-/ in 4b does not control agreement, the example below illustrates this:

5a. Chi-mu-sikana chi-tsvuku cha-mhany-a
CL7.SG.Dimin-CL1.SG-girl CL7.SG- light CL7.PST- run-FV
'the short stocky light girl ran.'

b. *Chi-mu-sikana mu-tsvuku- a-mhany-a.
CL7.SG.Dimin-CL1.SG-girl CL1.SG- light CL1.PST- run-FV

Although the noun stem is prefixed with two prefixes, it is the outer one that controls agreement. An attempt to use the inner prefix to control agreement as shown in 5b produces unacceptable constructions.

According to Demuth (2003) Bantu noun classification systems are realized as grammatical morphemes rather than independent lexical items. Grammatical morphemes signal grammatical information and lexical morphemes carry most of the semantic content. The noun classes are morphologically realized as noun class prefixes and agreement markers. The Shona nouns function as part of a larger concordial agreement system, thereby contributing to syntactic morphology. The noun belonging to a given class may imply that all noun phrase constituents such as adjectives, pronouns and numerals are in agreement with the noun class prefix as shown in 6 below:

6a. **Mu**-kadzi mu-tema
CL1.SG-female CL1.SG-dark
'a dark woman.'

b. *Tu- kadzi mu-tema
CL13.SG-female CL1.SG-dark

The noun in 6a belongs to class 1 and the adjective used is in agreement with it because it takes up the prefix of class 1. In example 6b ‘tukadzi’ belongs to class 13 but the adjective belongs to class 1 and this gives an unacceptable form. Example 6a and 6b illustrate how the prefix acts as a morphosyntactic head in that it controls agreement. The prefixes that are listed in Table 2 above inflect the noun stem. The inflected noun stem triggers concordial agreement for class, number, and person. Inflected noun stems in the same class trigger the same concordial agreement. Inflected noun stems that lack an overt class prefix trigger agreement, just like those with an overt noun class prefix. The current study is interested in finding out how children manipulate the Shona nominal prefixes which act as morphosyntactic heads.

2.4.2.2 Shona verbal morphosyntax

According to Trask (2007:316) “the class of verbs is universal: no language has ever been discovered which lacked a distinct class of verbs”. Shona fits into this universal paradigm because it also has a distinct class of verbs. However there are language idiosyncrasies that define the Shona verb which are highlighted in this section. Ibrahim (1998:20) defines a verb as a base word that denotes action. The most prototypical verbs denote actions performed by an agent, such as run, sing, throw, hit and give. There are also verbs which denote state or occurrence, such as believe and hear. Shona has the verb as one of the major word categories. The verb in Shona is built around the verb root²⁹. The basic constructional pattern of a Shona verb is Verb Root (VR) +-Final Vowel (FV), the example below illustrates this.

7. famb- + -a
VR + FV
‘walk’

²⁹ The root and stem can overlap in specific contexts and under specific conditions, but normally the stem is understood to be a polymorphemic structure, consisting of a root (with or without extensions) plus a final vowel.

In Shona the verb root is the nucleus of the verbal formative. The verb root carries the fundamental semantics of the verb; it is the one that brings out the meaning. Crystal (1985) describes a root as the basic form of a word which cannot be further analysed without total loss of identity. Bauer (1983:20) defines a root as, "...that part of a word that remains when all affixes have been removed." It is the irreducible core of a word. Dembetembe (1987:100) states that, "... the verb root forms the nucleus, not only of the predicate, but of the whole sentence." This places the verb in a crucial position in shaping the sentence. The verb root in Shona is a bound morpheme which requires affixation in order to be meaningful. Syllabically it is incomplete and always ends in a consonant.

The Shona verb can be derived or underived. It can be derived from other word classes such as ideophones (Tafangombe 1997) and adjectives. The Shona verb takes various affixes. It is necessary to reiterate at this point that the study is focused on inflections and hence the description of the verb mainly centres on the inflections. The inflections in Shona are marked by prefixes whilst the derivations are suffixal (Mkanganwi 2002). It is also pertinent to note that the issue of the function of prefixes as inflectional and suffixes as derivational as observed by Mkanganwi is debatable as noted in Mberi (2002:58) who views the final vowel as, "...part of the verbal inflection, with the -e marking the subjunctive, potential and negative, the -i marking negation, while the -a is used with all other verb forms." Although the issue of the function of inflectional and derivational affixes in Shona is debatable, in this study the views of Mkanganwi are adopted since they seem to make a clear-cut distinction between the function of inflectional and derivational affixes in Shona. The controversy of the two morphological processes should also be dealt with as a matter of degree with some affixes being typically inflectional and others

derivational. It therefore follows that this study concentrates on the prefixal morphemes since they are inflectional in Shona. The traditional Bantu verbal complex is structured as follows:

8. (NEG-) SM-TMA-(OM-) ROOT (Ext1-Ext2...) - FV³⁰ (adapted from Childs 2003:103)

With reference to Shona all the elements preceding the root in the verbal complex given in (8) above are inflectional while those subsequent to the root are derivational. This is in line with Mkanganwi's (2002) observation. The inflectional morphemes as indicated in 8 above are the negation markers (NEG), subject markers (SM), tense, mood, aspect markers (TMA) and the object markers (OM). These morphemes fill in particular slots within the verbal complex and in a particular sequence. The sequencing cannot be altered.

In relation to the verb, some linguists refer to the Macro Stem and PreStem (Ngunga 2000) or Inflectional Stem (Myers 1990; Downing 1997). The Macro Stem in Bantu is the morphological domain which includes the object marker and the following stem.³¹ Buell (2005) describes the Macro Stem as having an obligatory verb stem, consisting of the verb root and any number of optional argument-changing suffixes. The Macro Stem may be preceded by at most one object marker and it must be followed by a final suffix. The object marker is the morpheme that comes immediately before the Inflected Verb Stem, and together they constitute the Macro Stem (Downing 2006). The Macro Stem is schematized by Buell (2005) as follows:

9. [(object marker)] [verb stem] [_final suffix]] macrostem

³⁰ The narration of the elements is offered in the abbreviations section.

³¹ A stem includes the root followed by any verbal extension suffixes, followed by the final vowel affix.

Buell (ibid) notes that evidence for the Macro Stem as a constituent varies across languages. Mudzingwa (2010) describes the Shona Macro Stem by providing its structure and the prosodic domain it maps on-to. In the following example, the Shona Macro Stem is in bold:

10. ndi **-cha-ri-vereng- a** bhuku
SM-FUT-OM-read-FV book
'I will read the book.'

Within the morphological domain of the macrostem, the object marker is part of the inflectional morphology but the verb stem is not part of it. The object marker is viewed as part of the inflectional morphemes, according to the observation made by Mkanganwi (2002). This is necessary because the concept of the macrostem compounds the verb stem and the object marker. The current study, however, focuses on the object marker and the verb stem as separate entities.

The morphemes that precede the Macro Stem carry grammatical information and are inflectional morphemes. These are the negation markers (NEG), subject markers (SM) and tense, mood, aspect markers (TMA). They make up the PreStem (Ngunga 2000) or the Inflectional Stem (INFL) (Myers 1990; Downing 1997). The PreStem (in bold) comes before the Macro Stem as shown in the example below:

11. **ha-ndi -cha-ri-vereng-** i/e³² bhuku
NEG-SM-FUT-OM-read-FV book
'I will not read the book.'

The variation in terminology does not carry any theoretical implications for the current study since the PreStem is still part of the inflectional morphology and hence is part of the focus of this study.

³² The difference in the final vowels -i/-e that is manifested in Shona negative forms is because negation spreads to the final vowel, a pattern found in other Bantu languages. Negation can be expressed by more than one inflectional marker in different positions (cf. Kosch 2006:162-164).

The subject marker is the first element in the verbal complex structure. It can, however, be preceded by a negative marker (see 8 above). Subject marking is obligatory. The marking of the subject morpheme is obligatory in all forms except the infinitive and affirmative imperative. The subject marker shows agreement with the subject in person, number and noun class membership.

The examples below illustrate this agreement:

- 12a. Tamiranashe **a-dy-a** sadza
Tamiranashe.CL1a SM-eat-FV sadza
'Tamiranashe ate sadza.'
- b. Va-komana **v-a-dy-a** sadza
CL2.PL-boy SM-ASP-eat-FV sadza
'The boys ate sadza.'
- c. Mbudzi **dz-a-dy-a** chibage.
CL10.PL-goat SM-ASP-eat-FV maize
'The goats ate the maize.'
- d. Zi-rume **r-a-dy-a** chibage.
CL21.SG-man SM-ASP-eat-FV maize
'The big fierce man ate the maize.'

The subject marker indicated in 12 above shows agreement with the respective subjects (*Tamiranashe*, *vakomana*, *mbudzi* and *zirume*). The status of the subject marker within Bantu languages has been debated on, following Bresnan and Mchombo's (1987) proposition or 'theory' that a subject or object affix on the verb is analyzed as a grammatical agreement marker when the associated noun phrase is an argument (subject or object), and as an incorporated pronoun when the associated noun phrase is a non-argument (topic or focus). Bresnan and Mchombo (ibid) studied the status of the agreement prefixes in Chichewa showing that the subject marker (SM) functions both as a pronoun as well as agreement, while Object Marking

(OM) is unambiguously pronominal. The proposition was adapted by Keach (1995) who applied it to Swahili, and came up with the same findings as those for Chichewa. However, in a different study done on a dialect of Swahili spoken in and around Nairobi, Deen (2002) concluded that the subject marker is an agreement marker and not pronominal. The current study approaches the subject marker in Shona as an agreement morpheme since it shares morphological features through a process of feature matching (or checking) with its subject as illustrated in 12.

The negative marker or morpheme appears in two different positions within the verb complex (Güldemann 1999). Negative markers can appear before the subject marker (SM) or after it. The negative marker *ha-* appears before the subject marker and it can appear simultaneously with *si-* (after the subject marker as shown in 13a below), while *sa-* and *si-* occur subsequent to the subject marker.

- 13a. Ha-ndi-si-ku-far-a nhasi.
NEG-SM-NEG-CL15.INF-happy-FV today
'I am not happy today.'
- b. Ha-ndi-far-i
NEG-SM-happy- FV
'I am not happy.'
- c. U-sa-mhany-a mumba
SM-NEG-run-FV house
'Do not run in the house.'

Lindfors (2003) describes tense as the systematic coding of the relationship between two points along the time axis. Tense is inflectional in Shona, it does not change the meaning of the word but rather specifies the time setting of the action. Tense is expressed by prefixes on the main

verb. The Shona verb regularly denotes tense except in tenseless modals such as the imperative. There are three basic tense affixes that are inflected on the verb, namely the present, future and past. The present tense affix denotes an action of the indefinite present tense. Apart from denoting the simple present tense, the tense affix also denotes the present continuous tense. This means that the action of the verb becomes a continuous action. The present tense morpheme (PrIM) in Shona is /-no-/. An example is given below:

14. Paurai a-**no**-far-a
Paurai SM- PrIM -happy-FV
'Paurai is happy.'

Bybee *et al.* (1994) prefer not to speak of the 'present' as tense. This is because one can argue that the present tense is not primarily a deictic temporal reference. What is referred to as 'present' actually covers various types of imperfective situations, with the moment of speech as the reference point.

The future tense morpheme (FIM) denotes actions that will take place in the future or are just about to take place. The future tense morpheme in Shona is /cha-/ as shown below:

15. Paurai a-**cha**-far-a
Paurai SM-FIM-happy-FV
'Paurai will be happy.'

The past tense affix denotes an action that occurred at an earlier point in time. The past tense morpheme (PIM) is /ka-/ in Shona as exemplified below:

16. Paurai a-**ka**-far-a
Paurai SM-PIM-happy-FV
'Paurai was happy.'

Finnegan (2002) defines aspect as an inflectional dimension on verbs that has to do with the internal temporal constituency of an event. Aspect can be expressed as imperfect (or progressive) when referring to incomplete actions and perfective for completed actions. The other oppositions of aspect are habitual and continuous, non-progressive and progressive.

The Shona verb is marked for mood. In the verbal complex the mood marker in Shona occupies the prefixal position. Mood is a special form assumed by the verb in order to mark some special manner in which that connection between a subject and predicate which every verb implies is viewed by the speaker. Various moods are recognized in Bantu languages, these are, the imperative, infinitive, indicative, subjunctive, participial, potential, conditional and contingent. Demuth (2003) laments the lack of knowledge on how children acquire mood despite the fact that two or three year olds use subjective or permissive questions. It is in the interest of this research to explore the acquisition of Shona moods and the constraints that operate on their acquisition. Shona moods are the hortative, imperative, subjunctive, relative, infinitive, indicative, potential, participial, conditional and consecutive (Mashiri & Warinda 1999). Some of the moods are described briefly below.

The hortative mood is used to suggest a course of action, to incite or to encourage with the meaning, ‘Let us...’ It is formed from the prefix ‘ha-’ or ‘nga-’, followed by the basic subject marker for the first person plural (‘ti’). The verb usually has the final vowels (FV) ‘-ei’. See the example below:

- 17a. **Ha-ti-far-ei**
 HM-SM.happy-FV
 ‘Let us be happy.’

- b. **Nga-ti-far-ei**
HM-SM.happy-FV
'Let us be happy.'

The imperative mood indicates a command or order. It can be in two forms namely: singular/informal or plural/formal. The singular is formed by simply using the verb stem on its own. The examples below are illustrative of this:

- 18a. Gara! 'Sit!' b. Taura! 'Talk!'

The plural (honorific/formal) version is the same as in example 18 above, but it has the final vowel 'i' as shown below:

- 19a. Garai! 'Sit!' b. Taurai! 'Talk!'

According to Chabata (2007:107), "...the indicative mood expresses statements in both affirmative and negative form." It is marked by a combination of different prefixes. In the affirmative the verb ends in the final vowel /-a/. The example below shows this clearly:

20. **Ndi-no-far-a**
SM-TAM-happy-FV
'I am happy.'

On the other hand the negative form has /-i/ as the final vowel as shown below:

21. Ha-ndi-far-i
NIM-SM-happy-FV
'I am not happy.'

The potential mood shows the probability of an action taking place. Chabata (2007) describes it as indicating possibility. The example below shows this mood:

22. Ndi-nga-far-a
SM-TMA-happy-FV
'I may be happy.'

The object marker is a verbal prefix. It agrees with an object. The object can either be overt or silent. Some scholars refer to them as 'clitics', 'concord', 'agreement', pronominal affixes, weak pronouns and or pronominal markers. Creissels (2001:1) labels object markers as pronominal markers, "...that correspond to a noun phrase in object function." As an example of object marking in Shona consider the following sentence:

- 23a. Ndi-cha-mu-on-a
SM- FIM-OM-see-FV (silent object)
'I will see her.'
- b. Ndi-cha-mu-on-a musikana wacho
SM- FIM-OM-see-FV (overt object)
'I will see the girl.'

The object marker encodes either person and number or noun class.

2.5 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER

This chapter reviewed three aspects in relation to the focus of the study. Firstly, previous studies on CLA of Bantu languages were reviewed. It was noted that most of the studies focused on

nominal morphology. The review of Bantu languages offered here is not exhaustive but it is hoped that it is adequate for the purposes of appreciating the trends of child language studies from a historical, present and futuristic perspective. Secondly, the chapter also reviewed literature that offers theories that aim at accounting for the acquisition of inflectional morphology. Particular attention was given to the role of perceptual salience, the dual and single mechanism and pre-protomorphology approaches. Finally, a brief description of Shona morphosyntax was given since the study contends Shona morphosyntax is the basis for a better understanding of how children acquire the morphosyntax of Shona. The next chapter considers the methodology and theoretical framework of the study.

CHAPTER THREE: THEORETICAL FRAMEWORK AND METHODOLOGY

3.0 PREAMBLE

The preceding chapters introduced the area of research and reviewed the relevant literature. This set the basis for the research in terms of delimiting the area of investigation and zeroing in on the specific elements to be investigated. The literature review reveals that this study is not exploring a new area. The review paves the way in terms of the direction in child language studies and the aspects related to morphosyntax in Shona in general and CLA in particular. The set objectives for the study as stated in Chapter One are worth repeating here. These are to:

- investigate the development of child Shona inflectional morphology
- explore how child Shona inflectional morphology interacts with syntax
- identify the constraints that operate on the process of Shona language development
- account for the development of child Shona morphosyntax using linguistic theories

In order to achieve these set objectives it is necessary to apply a theoretical framework that is envisaged to allow the researcher to have insights in relation to the child Shona data. There are various accounts of the course of CLA. These can be traced back to the basic nature versus nurture debate on how children acquire knowledge of language, the “Meno” dialogue by Plato being the forerunner to the discussions or theories on the issue of the gap between experience and knowledge. A number of theories are generated from the nature-nurture debate on how knowledge is acquired not only within language development but in any cognitive domain for that matter. The origins of language acquisition theories have been discussed prior to the other

theoretical frameworks in this study, since they lay the dichotomous approach that is within language acquisition theories. The prosodic constraints theory developed by Demuth (1995, 1996) and Demuth and Fee (1995) is referred to in this study since it postulates constraints as possible explanations for the development of child language. The theory postulates that the early omission of grammatical morphology in children is due to rhythmic production constraints. Besides the prosodic constraints theory, the principles and parameter theory by Lasnik (1991) and the optimality theory by Prince and Smolensky (2004) are used. It is envisaged that these theories will assist the researcher in the process of data analysis, and the interpretation and discussion of the findings. The methods that are used to source data are also described in this chapter.

3.1 LANGUAGE ACQUISITION AND THEORIES

A theory is some kind of tested and established truth against which research can be tested. According to Crain and Thornton (1998) three factors that models of language acquisition must address *inter alia* are (i) the knowledge children accrue (ii) the input children receive (primary linguistic data) and (iii) nonlinguistic capacities of children to form and test generalizations based on the input. The theories that are discussed here take into cognisance these fundamental factors in an attempt to explain the gap between knowledge and experience. The nurture approach (also known as behaviourism, experience-dependent, usage-based) propounded by Skinner 1957 and nature approach (also known as nativism, generative)³³ by Chomsky 1959, form the basic dichotomies within language acquisition theories. The usage-based approach is linked to construction grammar (see Tomasello 2003) while the nativist approach anchors on the principle assumptions of generative grammar (Chomsky 1972). The usage-based and generative

³³ The terms usage-based and generative are preferred for this study.

approaches are discussed as a prelude to the theoretical frameworks that are adopted for the current study.

Chomsky's theory for formal syntax gave birth to the generative account of CLA. The generative approach attempts to account for language acquisition. The basic assumption of the generative approach is that children's grammar is constrained by an innate system. This system is the universal grammar³⁴. It is found in all children regardless of the language they are exposed to. According to Sugisaki and Snyder (2006), the properties of UG constrain the course of language acquisition from the very beginning of life (cf. Crain & Thornton 1998). The properties of UG work in all human languages, that is, child and adult language. Pinker's (1984) continuity assumption also holds these assumptions. The continuity assumption suggests similarities in the form of principles and constraints between child and adult language (Pinker 1984:7).

According to UG, children's ability to acquire a language is genetically determined. This is because they have 'hardwired tools' which are referred to as the language acquisition device (hereafter LAD). The generative approach postulates the reality of the language faculty and the fact that it is biologically endowed. Evidence of the reality of the language faculty is seen in cases of damage to the brain causing language deficit, resulting in aphasia³⁵. The generative approach is a hybrid approach, which balances the notion that for language to develop there is both the inborn capacity and the input from the environment. Chomsky labels these as externalized and internalized language (commonly referred to as E-language and I-language

³⁴ UG is responsible for language acquisition despite all variations and constraints in the learning conditions. UG explains why language acquisition happens in a very short space of time and in stages which are similar across languages.

³⁵ Neurologists agree that some areas of the brain are involved in speech planning and comprehension. Two areas are identified- Broca's and Wernicke's area. These are named after the neurologists who first identified these areas.

respectively). Powell (2005: ii) states that “Chomsky maintains that E-language such as English, German and Korean, are mere ‘epiphenomena’, a body of knowledge or behavioral habits shared by a community.... I-language is a mental object which is biologically/genetically specified and equates to language itself.” According to Chomsky (1986:20), in the externalized approach, “the construct is understood independently of the properties of the mind.” The LAD is, therefore, part of the I-language approach. It is important to note that though the ideas of LAD have been superseded by the principles and parameters theory³⁶ (henceforth PPT), which postulates that some language features are universal (e.g. all languages are said to have verbs for instance). The LAD is more of a language acquisition approach while the PPT is more of a general linguistic theory that can be applied to child language. The PPT also assumes that other features “... involve grammatical differences between languages which include parametric variation” (Peccei 2006:115). For example, Japanese sentences are of the structure subject-object-verb (SOV) order whilst Shona has subject-verb-object (SVO) order. It then follows that according to PPT in the process of acquiring language, children identify the correct parameter which is the grammatical rules of the language they are acquiring. The assumption is that the children identify these parameters from the speech of adults, which is the interaction of E-language and I-language. This implies that a child acquiring Japanese, for instance, will have a parameter set for SOV while for Shona it will be SVO. This also implies that the child has to match the E-language with I-language. If the child discovers a match then the grammatical rule will be adopted. However, the process of acquisition is not as clear-cut. There are a lot of other constraints that are at play in order for certain grammatical rules to be grasped by the child. For instance, the assumptions of

³⁶ PPT was largely formulated by the linguists Noam Chomsky and Howard Lasnik (1993). PPT is a modification of Government and Binding theory (for more see Chomsky 1981: Lectures on Government and Binding). PPT is within the generative tradition of phrase structure grammar.

both the generativists and usage-based approaches can be considered as relevant for the acquisition process to be fruitful. Neither of the two can independently explain the development of language, nevertheless, they complement each other.

The concept of the LAD and UG is what distinguishes the generative approach from the usage-based approach which postulates that children learn languages item by item when exposed to a language (cf. Tomasello 2000a). The usage-based approach relies more on the external inputs making the approach extrinsic based, while the generative approach relies on the hardwired tools which are inborn making it an intrinsic approach. However, although the proponents of the generative approach believe that input from adults is necessary for language development they contend that by itself such input is not adequate. On the other hand, the usage-based approach is premised upon the belief that adult input is necessary and sufficient to support the acquisition of a first language. According to Tomasello (2000a:156), "...children imitatively learn concrete linguistic expressions from the language they hear around them, and then - using their general cognitive and social-cognitive skills - categorize, schematize and creatively combine these individually learned expressions and structures to reach adult linguistic competence." The debate between these two approaches emanates from the 1957 nature-nurture debate mentioned earlier, where nature relates to any inborn capacities and structures that children are born with. Nurture relates to what children gain from experience which is usage-based (also known as empiricists). These two approaches are the broad perspectives on language acquisition. As mentioned earlier an understanding of how children acquire grammar is significant in explaining linguistic theoretical assumptions. The theories are put forward in an attempt to explain CLA to answer

questions raised by Chomsky (1981) regarding the ‘knowledge of language’. The three fundamental questions are:

- What constitutes knowledge of language?
- How does such knowledge develop?
- How is such knowledge put to use?

The generative and usage-based approaches on language acquisition are the basics of theoretical approaches to language acquisition. These gave rise to a plethora of approaches that attempt to explain the acquisition of various language aspects. As already noted, the phenomenon of language acquisition is complex, as evidenced by the number of theories that have been put forward by various scholars from many varied disciplines such as education, psychology, linguistics and communication. The complexity of understanding language acquisition also emanates from the fact that it develops so swiftly with little effort from the child and in an efficient manner, and it all takes place within a very short period of time.

3.1.1 Principles and Parameters Theory (PPT)

PPT is a version of a UG theory. PPT is designed to account for universal and particular grammars. UG is the theory of the starting point in human linguistic knowledge and is described as a set of principles and parameters. Lasnik (1991) describes principles as constraints or negative statements about how human language is organized. The principles and parameters model was first outlined in Chomsky’s lectures on government and binding (LGB) in 1981. The parameters define the boundary conditions on the child’s task, which is to choose among a wide range of parameters with competing values (which are ideally binary). The PPT is based on the idea of making a distinction between the invariants of human language (principles) from the major points of cross-linguistic variation (parameters). Principles and parameters reflect the innately determined characteristics of the human mind. The PPT is an attractive theory to explain

language acquisition because it offers theoretical concepts and mechanisms which, cater for both similarities and diversity among languages. The goal that Chomsky (1986) had in modeling UG was to “model specific mental capacities which enable humans to process the highly complex structures of language” (Meisel 1994:11). This implies that Chomsky’s approach is mentalist. The parameters also describe the role of input in acquisition. The primary linguistic data that the child is exposed to act as stimuli to set each parameter at one or another of its predetermined values. The stages of language acquisition which the child goes through represent the stimulation and realization of a particular parameter value(s). These can be either correct or incorrect in comparison to target grammar. If the parameter value is incorrect it has to be reset at some later point on the basis of relevant input data. When there is the resetting of parameters it marks the movement from one stage to another. Resetting marks the development towards the target grammar. For instance, a child acquiring Shona might move from *umo* to *gumbo* ‘leg’. The resetting of parameters explains the transition from one stage to another. This implies that each stage in the acquisition process is constrained by the parameter space of UG. Resetting can be said to be an act of bridging the gap between experience and knowledge.

PPT offers a model of how language acquisition could proceed under the constraints set by the linguistic environment. According to Hyams (2011:14), “...the parameter theory considerably broadened the application and explanatory potential of linguistic theory to acquisition research.” The contribution of linguistic theory towards a better understanding of language acquisition is indisputable; on the contrary, language acquisition is pivotal to application of linguistic theory. Language acquisition can contribute to grammatical theory and the reverse is equally true. Pinker (1984:7) notes that “the child’s grammatical rules should be drawn from the same basic rule

types, and be composed of primitive symbols from the same class, as the grammatical rules attributed to adults in standard linguistic investigations.” The implication is that during the process of language acquisition a child produces structures and uses mechanisms that conform to the principles of UG. In the process of acquiring a language a child is faced with abstract linguistic rules and representations to deal with (acting as constraints). UG consists of a system of parameters. The child has a task to set or reset these parameters at the appropriate values for the target language. In the process, the child is faced with constraints that hinder the production of the targeted utterance. According to Hyams and Wexler (1993), one of the assumptions within the output omission model (OOM) is that children omit certain linguistic items because of a constraint on output. Children may drop subjects such as full lexical noun phrases or pronouns because of a constraint on output. The child might be constrained by the size of the output. Bloom (1991) explains that a lexical subject imposes a greater processing load than pronouns. This implies that the size of the targeted subject is a possible constraint on the output. Therefore omitting the subject imposes a lighter load. Slobin’s operating principles can also be invoked to support the idea of lessening the output load by omitting the subject. Slobin (1985), notes that the processing load is greatest at the beginning of a sentence and hence children tend to omit words or parts of words that occur at the beginning of a sentence.

The PPT as mentioned before is an attractive theory which can be referred to in answering two of the questions raised by Chomsky and repeated here:

- What constitutes knowledge of language?
- How does such knowledge develop?

The first question taps into the bodies of knowledge of a native speaker. This is catered for by the concept of principles and parameters. Since children begin to acquire language at a very

young age, understanding what children know as they acquire a specific language may provide an answer to the first question. The second question can be dealt with by research into language acquisition.

3.1.2 Prosodic Constraints Theory

One of the theories that this study adopts in order to test the research findings of the current study is the Prosodic Constraints Theory which was developed by Demuth (1995, 1996) and Demuth and Fee (1995). The theory emanates from the proposal that children's early omission of grammatical morphology is due to rhythmic production constraints (e.g. Gerken *et al.* 1990, Gerken 1991, Gerken & McIntosh 1993, and Demuth 1994). The rhythmic production constraints theory postulates that stressed (strong) (S) syllables and the unstressed (weak) (w) syllables that follow them form trochaic feet structures. These play a role in determining the syllables that are likely to be omitted or retained in children's speech. Demuth gives *banana* as a word which has the syllable pattern wSw. It is envisaged that the second and third syllables would be produced while the initial weak syllable is deleted. If the initial weak syllable could combine with a stressed syllable from a preceding word it forms trochaic feet³⁷. Demuth (2001) views the rhythmic production constraints approach as being limited in terms of its applicability to cross-linguistic differences in morphology. It seems to account for the age group of 2; 6 to 3; 6 in languages like English which are stress timed. The prosodic constraints approach appears to fill this gap. The prosodic constraints theory offers an explanation of how children eventually move to a more adult-like morphological grammar. It can account for syllable omission and the emergence of grammatical morphemes. The current study focuses on the development of

³⁷ Feet refer to the rhythmic units that make up words. They can be one or more syllables. In each foot one syllable is stronger than the other and the stronger syllable is the head of the foot.

morphosyntax in child Shona and the prosodic constraints theory is envisaged to aid the process of data analysis and interpretation.

The development of the Prosodic Theory by Demuth and Fee (1995) is based on the insights that are drawn from the Prosodic Hierarchy by Selkirk (1984), Nespor and Vogel (1986) given below:

24. Pw (Phonological Word)

|

Ft (Foot)

|

s (Syllable)

|

m (Mora)

From the Prosodic Hierarchy given above Demuth and Fee (1995) identified four stages. These stages are based on the acquisition of English and Dutch prosodic words. The stages are given below:

25. Stages in the Development of Prosodic Words

Stage I. Core Syllables - CV

No vowel length distinctions

Stage II. Minimal Words/Binary Feet

a. Core Syllables - (C) VCV

b. Closed Syllables - (C) VC

c. Vowel length distinctions - (C) VV

Stage III. Stress-Feet

a. One Stress-Foot per word

b. Two Feet per word
Stage IV. Phonological Words
Extrametrical syllables permitted

According to Demuth (1996:40) each of the four stages represents both “a lower and upper bound on the form that a child’s words take at a particular stage of development.” Demuth (ibid) explains this further stating that at stage I the child’s grammar is prosodically ‘constrained’ to produce no more than one syllable. This also applies to stage II where the child cannot produce more than a binary foot (either bisyllabic foot CVCV) or monosyllabic bimoraic foot (CVV or CVC) and stress-feet at stage III.

The current research envisages the benefits of using the Prosodic constraints theory since it links with the thrust of this study of explaining child Shona from a constraint-based approach. Although the theory provides a guide to the explanation of the development of language it is limited in the sense that it only concentrates on prosody. A more general theory of constraints is envisaged to give a global explanation. This research proposes that a constraint-based theory which incorporates nature and nurture approaches yields a better explanation. Such a theory derives from the fact that despite the child being biologically designed to acquire language, constraints determine the linguistic aspects that develop at any given period. The constraints that are at play in child language acquisition come from the mental capacity, physical maturity and input from the environment.

3.2 DATA COLLECTION METHODS

This chapter describes the methodology used to collect the child Shona data, the children who participated, the materials used and data analysis procedures. The research is qualitative. Literature reveals that at one point the use of the qualitative approach was not given high regard.

However, within language and education there has been a methodological shift towards a preference for qualitative approach. A distinction is usually made between quantitative (nomothetic) and qualitative (hermeneutic) research. The two approaches are different; hence each has its own idiosyncrasies. However, the two are not mutually exclusive. The choice of the qualitative approach in this study is dependent on the type of research questions that guide it. The questions demand descriptive answers and this ties in well with the purpose of the study. Qualitative approaches are more often associated with an interpretive, humanistic orientation, ontology of multiple realities, a non-objectivist epistemology and a naturalistic non-manipulative methodology (Guba & Lincoln 1994). The current study fits into this description provided by Guba and Lincoln. It is important to note that the data collection method is based on naturalistic environment which does not give room to manipulation of results. The data collection method is also designed to be friendly for the participants who are minors and are at a delicate age.

Collecting data from children is an exigent task which requires an appropriate method design and a lot of patience. Researchers in the field of CLA use three basic methods for collecting data, namely observing naturalistic speech (also known as spontaneous speech), semi-structured elicitations and experiments. In the naturalistic speech approach researchers observe and record children's spontaneous speech behaviour (O'Grandy & Dobrovolsky 1992:400). This involves the recording of on-going communicative events, for example, play time and meal time. In semi-structured elicitations researchers encourage speech production or imitation in a controlled style, which allows the researcher to target particular aspects of linguistic knowledge. This is usually used in very young children and it supplements naturalistic speech and experiments. Conversely, the experiments take various forms depending on the concept under investigation. However,

generally, experiments have systematic control of variables (properties of participants and stimulus of materials). The procedures are standardized in order to obtain reliable data. Experiments also give a limited range of response options.

In this study the researcher uses two methods to collect child Shona data, namely the naturalistic speech and elicitation. This is because the two methods complement each other and this in turn enhances the quality of the data. Each of the methods adopted in this study has its strengths and weaknesses as discussed below.

According to the naturalistic speech method, children are observed using language in natural settings. This method is easy to use since a child's spontaneous use of language is recorded in familiar and comfortable surroundings usually in their own home or at play with friends. It is the closest linguistic representation of how language is used in context by children. It is a child friendly method of collecting data since it does not demand the child to perform tasks. The naturalistic speech that is used in this study is envisaged to yield an accurate representation of child Shona data. The data collected through spontaneous speech has the potential to reveal the frequency of occurrence of certain linguistic phenomena and is useful for analysis in terms of a variety of linguistic phenomena ranging from phonology to syntax. The method is not age dependent since it can be used with any age group. It has shortcomings, however, because low frequency linguistic phenomena (for example morphemes and morphosyntactic constructions) may be difficult to collect. It is also difficult to tell what a child's mental grammar will accept as grammatical. The data have low comparability capabilities. Although this method has its

weaknesses, the researcher uses it since it can yield the data that is required for this study and it is also complemented by the elicitation method.

Although this study is primarily based on recordings of natural speech, it also requires the elicitation method. Relying on naturalistic speech alone makes it impossible to determine why a particular inflection is absent, for instance. Research has shown that children tend to omit nominal and verbal inflections (see for example Kunene 1979, Suzman 1980, Connelly 1984 and Deen 2002); children also tend to produce verbal inflection for 1st and 3rd person plural (as in Poeppel & Wexler 1993, Wijnen & Verrips 1998). These observations could intimate the absence of an inflectional morpheme due to the lack of linguistic ability or exposure. In order to have informed evidence the researcher makes use of specially designed tasks to elicit linguistic data for the phenomenon under study using the elicitation method. The elicitation method is appropriate for young children of around two years of age and it yields results that can be comparable. The researcher can manipulate the elicitation process in order to get at the linguistic phenomena under investigation. For example data for low frequency phenomena can be obtained. The data are also analysable for different phenomena. In this procedure of collecting data the children are shown pictures designed to prompt them to produce certain morphosyntactic constructions. For instance:

- a picture of a single item is shown to a participant prompting the participant to say what it is.
- a picture with multiple entities is used in another context and the participant is asked to say what is in the picture.

The elicitation method is used in the current research to elicit children's processing of singular and plural nouns³⁸. The children were shown pictures and various familiar objects within their homes and were asked to name them. The objects were singular and plural. The task required the children to supply the name of the object in the singular and in the plural.

The children's age range was two years (2; 0yrs) to three years two months (3; 2yrs). The choice of this age range is based on the fact that the developmental stages of language acquisition state that at the age of about two children begin to produce two-word strings. These two-word strings mark the emergence of syntax.³⁹ According to a longitudinal study that was carried out by Mudzingwa (2001) the emergence of two-word strings begins around two years, in child Shona. The ages of these children were considered mostly because of the nature of the desired data which is known to emerge around the same age (as explained in footnote 38). The total number of recordings indicated in the table below is inclusive of the elicited production. The details about names, age range for each child, and total number of recordings are shown in Table 3 below:

³⁸ Only nouns were used because the elicitation task was used as complementing the natural data.

³⁹ It has been noted that at the age of about eighteen months a child's language changes in two ways. Vocabulary growth increases; the child begins to learn words faster, and will keep on learning new words through adolescence (Clark 1993; Pinker 1984). At this juncture primitive syntax begins, with two-word strings such as *all wet, I sit, papa away, mommy juice*, these two-word strings do not have inflections and functional words. de Villiers and de Villiers (1978b:69) call it the telegraphic speech, while Nice (1925) calls it the early sentence stage though the differences in terminology do not have any theoretical implications. At this stage, children design so-called pivot grammars.

TABLE 3: Name, age range, total recordings

CHILD NAME	AGE RANGE	TOTAL RECORDINGS
TAD⁴⁰(boy)	2; 0-2; 6	12
ARI(girl)	2; 6-3; 0	12
JOH(boy)	2; 5-2; 11	12
CAR(girl)	2; 0-3; 0	24

The data were collected systematically over a period of six months. The recording sessions for each child were between thirty to forty minutes long. The recordings were done fortnightly and at times when the children were most likely to be interacting with family or caregivers, for example during meal, bath or play times. The collected speech was transcribed soon after the recording session. The context of the recordings was also noted. Context is an important aspect in child language data collection since it helps in determining the targeted production. Keller-Cohen (1978:454) notes that context helps, "...in interpreting, explaining and predicting behaviour in language acquisition."

The choice of the children is because they share almost similar socio-economic, ethnic and linguistic backgrounds. The ages of these children were considered mostly because of the nature of the desired data. TAD lives with his family in Harare. The family is made up of parents, two siblings and a caregiver. The family uses Shona as their home language, although there are instances where English is used. TAD has an extroverted personality. ARI lives with her parents, one sibling and a caregiver. Although the family's home language is Shona, the use of English is also noted. In and around the family circle, ARI has an extroverted personality. Her primary interactants are the family members. She feels uncomfortable interacting with unfamiliar people.

⁴⁰ For ethical reasons the names of the children are coded using three letters.

JOH also lives with his parents, two older sisters and a maid. JOH is a highly expressive energetic boy. CAR's speech was recorded for two years by her father. CAR lived with her parents and a caregiver. Since the father collected the data, it made her comfortable; hence the data is as natural as it can be. The researcher chose to use data from this previous study because it was collected over a long period of time in a naturalistic environment by a parent who is a researcher in child language. The data hence provide a rich source of child Shona data (Mudzingwa 2001). All four children speak Shona; however, the children's varieties are different. This is because Shona is not homogeneous as noted by Chabata (2003:2), "...every language is characterized by a variation in expression." It is also difficult to identify children with parents and caregivers who share the same variety. The researcher does not consider that the differences in varieties spoken can in any way affect the findings of the study.

3.3 DATA ANALYSIS

The data collected for this study was transcribed from the audio recordings and analysed. The child utterances are transcribed on separate lines. The adult Shona (which is the target for the child) and the English gloss are also given. Every utterance produced by each child is given a morpheme-to-morpheme analysis. The IMs identified in the child's utterance are coded for function in the examples given. The omitted morphemes are indicated by Ø. The surrounding context of the child in terms of the previous and following utterances and field notes from the recording session were used to determine the intended meaning. If the intended meaning was not clear to the researcher and if the adults present could not elucidate the meaning, it was coded unclear and excluded from the analysis. The data analysis involves coding parts of speech in the children's utterances. This is done so as to determine and identify different morphosyntactic

structures of child Shona. The sentence below is an example of how the children's sentences are coded for the purposes of analysis:

26. TAD (2; 2): $\text{ʃiʃi } \emptyset - \emptyset - \emptyset - d - a \emptyset - inga$.
 TARGET: sisi **ndi-ri-ku-d-a** **ʃ**-ingwa
 MMA: CL1a.sister SM-aux-INF- want-FV \emptyset -i-bread
 GLOSS: Sister, I want bread.

The child utterance is represented by the three-letter code (e.g. TAD). The age at which the utterance was produced is given after the three-letter code. The targeted utterance is also given followed by a morpheme-to-morpheme analysis. The English gloss is given. The morphemes are coded as shown in the example below:

TABLE: 4 Morpheme codes

MORPHEME CODE	MEANING
RIM	Reduced inflectional morpheme
VR	Verb root
FV	Final vowel
OIM	Object inflectional morpheme
SIM	Subject inflectional morpheme
NPr	Noun prefix
NS	Noun stem
PIM	Past inflectional morpheme
FIM	Future inflectional morpheme
PrIM	Present inflectional morpheme
INF	Infinitive
Neg	Negative

In 26 TAD produced an utterance which has a noun *sisi* functioning as the subject, the verb *da* and a noun stem *-inga* functioning as an object. Although the utterance has all the components of a sentence the IMs are omitted. The subject marker, tense, the infinitive morphemes (CL15) are all omitted. The class 7 noun class morpheme is reduced. Every utterance produced by the children was coded in this way.

After the children's utterances were coded, they were analysed. The manner in which the children's utterances were coded facilitated the process of data analysis. The process of data analysis involves the use of theoretical frameworks which are based on the principle of constraints in child grammar. These are the prosodic constraints theory which was developed by Demuth (1995, 1996) and Demuth and Fee (1995), the principles and parameter theory by Lasnik (1991) and the optimality theory by Prince and Smolensky (2004). The theories are used as part of data analysis so as to illuminate core issues in the development of child Shona morphosyntax.

3.4 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER

This chapter has discussed the theories that are assumed to be relevant in the discussion and analysis of language acquisition in general and child Shona morphosyntax development in particular. A brief reflection of the debate on nature versus nurture on cognitive knowledge is executed and it was shown that it formulates the basis of the direction of language acquisition theories. Examples of theories that rest on the assumptions of each (see Tomasello 2003 - construction grammar and Chomsky's universal grammar/principles and parameters) are discussed. Theories that are closely linked to the explanation of development of morphosyntactic concepts have been discussed namely the prosodic constraints theory by Demuth (1995, 1996), the principles and parameter theory by Lasnik (1991) and the optimality theory by Prince and Smolensky (2004). A review of these theories reveals that a more general theory of constraints is envisaged to give a global explanation. Therefore, a constraint-based theory which incorporates nature and nurture approaches yields a better explanation.

The chapter also described the data collection methods that are used within researches of CLA and the ones that are used in the current research. A brief background of the participants is provided. The chapter also highlights the data analysis procedure which is shown to be guided by three theoretical frameworks. The subsequent chapter presents the findings on nominal and verbal inflection in child Shona.

CHAPTER FOUR: INFLECTIONAL MORPHOLOGY IN CHILD SHONA

4.0 PREAMBLE

The main focus of this chapter is to initiate the process of data analysis by establishing the nature of inflectional morphology in child Shona. It intends to describe the development of child Shona focusing on noun and verb inflection. The analysis of the inflectional morphemes is restricted to these two lexical categories because it is not possible to analyse all the lexical categories of Shona, considering the scope of this study. The focus on nouns and verbs gives the researcher ample time and space to pay attention to concepts that give insights into the development of inflectional morphemes in child Shona.

The chapter consists of two sections, the first of which presents the description of the structure of nouns and verbs in relation to IMs as produced by children in this research. The second section explores how the structure of these nominal and verbal inflectional morphemes links with child Shona morphosyntax. The chapter hopes to give insights into the nature of inflectional morphology in child Shona. These insights are essential for the contributions to the knowledge of Shona language structure and how it is processed. Two questions guide the composition of this chapter, namely:

- What is the nature of the inflectional morphology in child Shona L1 acquisition?
- How does the inflectional morphology of child Shona L1 interact with syntax?

In order to answer these two questions the various forms of nouns and verb inflectional morphemes produced by children in this study are analysed.

The examples that are used in data analysis are coded as indicated in Chapter Three. The children's utterances are coded in such a manner that it is easy to determine and identify different morphosyntactic structures in child Shona. Adult Shona grammar is used as the benchmark for the target morphosyntactic constructions, hence the use of 'child Shona' (which refers to the grammar of children who are in the process of acquiring Shona and have not yet reached adult competence.) The full presentation of the children's utterances is provided in the appendices.

4.1 CHILD SHONA NOUN AND VERB INFLECTIONAL MORPHOLOGY

The data collected in this study show that the nature of child Shona inflectional morphology is different from that of adult Shona. This supports the maturational hypothesis which states that early grammar differs from adult grammar in that children younger than 2; 6 (years; months) lack functional categories (see Lebeaux 1988; Platzack & Holmberg 1989; Platzack 1990; Ouhalla 1991). According to Borer and Wexler (1987:124), "...certain principles mature. The principles are not available at certain stages of a child's development, but only become so at a later stage." This is because children are not born competent in comprehension and the production of language, but the grammar develops gradually towards the adult form. In other words children are not born using language. The assumption, therefore, is that there is a transitional period from child to adult Shona morphosyntax. The aim of this section, therefore, is to provide an analysis of child Shona morphological structures with reference to the noun and verb as found in the data collected. The fact that child grammars are different from adult grammars, is shown in other studies that focused on the nature of inflectional morphology in children's grammars. Legendre (2006:803) provides supporting evidence that "an English

speaking child tends to produce non-adult like forms once they are at the ‘two-word’ stage which is around eighteen to thirty months.” The question here is: how does child Shona noun and verb inflectional morphology differ from adult Shona? This study views the utterances produced by children as ‘child Shona grammar’ (or *chicheche* as it is referred to by Shona speakers) as opposed to errors. This implies that the utterances that are produced by children are considered as a form of grammar that is unique to children, hence the label child Shona. The analysis of child Shona inflectional morphology is partitioned into two for the purpose of this study, that is child Shona noun and verb inflectional morphology. These two sections are descriptive in nature. They describe the nature of child Shona nouns and verbs as produced by children in this study.

4.1.1 Child Shona noun inflectional morphology

This section gives a description of the nature of nouns that are found in child Shona grammar as evidenced from the data collected for this study. The data reveal that the structure of child Shona nouns differs in various ways from those of adult Shona. This section, therefore, describes the structural characteristics of child Shona nouns with specific reference to the IMs. As highlighted earlier the prefix morphemes in Shona are considered to form Shona inflectional morphology. The possible Shona noun IMs are those that mark for number (singular/ plural), honorific, plural, diminutives, infinitives and augmentatives. Accordingly, the basic Shona noun is bi-morphemic. The inflectional morpheme carries the grammatical information of the Shona noun while the stem signals the semantic information. The grammatical information that is signaled by the inflectional morpheme includes number and gender⁴¹.

⁴¹ Gender in Bantu languages means the nouns are paired in singular/ plural pairings. According to Iorio (2011:47) “gender in Bantu should not be confused with the traditional notion of natural gender; that is the assignment of masculine, feminine and/or neuter gender as observed in Latin or other Romance languages for instance.”

The analysis of child Shona data in this research reveals that the noun IM is omitted⁴². The morphological structure of the noun in child Shona assumes two structural characteristics, namely a prefix and a stem. The prefix is an IM while the stem carries the lexical content of the noun. There is evidence of omission of the IMs, resulting in the production of bare stems. In Brown's (1973) study of the acquisition of fourteen English morphemes this is referred to as the 'telegraphic stage', and is said to be a universal feature of child language. Evidence here from Shona contributes to the knowledge of the universality of telegraphic speech in child grammar. This is because the data in this study show that at some stage in the development of Shona morphosyntax children omit noun IMs. Child Shona reveals access to lexical morphemes prior to IMs. For example:

27a. ARI (2; 6): Ø-pishwa **Ø-f**⁴³olo
 TARGET: nda-piswa mu-soro
 MMA: SIM⁴⁴-VR.burn-FV CL3-head
 GLOSS: my head is burnt

b. ARI (2; 6): Ø- Ø- Ø- d-a Ø -enda **Ø-Ø-kojo**⁴⁵
 TARGET: ndi-ri-ku-d-a ku-end-a **ku-chi-koro**
 MMA: SIM.aux-INF-VR.want-FV go CL17.Loc -CL7 NPr- NS.school
 GLOSS: I want to go to school.

c. CAR (2; 2): Koθi Ø-Ø-Ø **Ø-goma**
 TARGET: Kosi ari mu-gomba
 MMA: Kosi .CL1a aux CL18.Loc-pit
 GLOSS: Corsi is in the pit

⁴² Although the children omitted IMs it should be noted that there are other developments that are taking place in terms of morphosyntax. Children, for instance, omit IMs but produce nouns with IMs in consecutive utterances.

⁴³ Phonetic symbols are used in combination with regular practical orthography to highlight a difference in pronunciation.

⁴⁴ SIM represents subject inflectional morpheme

⁴⁵ The noun or verb being analysed is in bold.

- d. CAR (2; 2): mama Ø-Ø-Ø **Ø-Ø-goΘa**
 TARGET: mama vaenda **ku-ma-girosa**
 MMA: mother .CL1a go CL17.Loc-CL6.NP-NS.shop
 GLOSS: Mom has gone to the grocery shop.
- e. JOH (2; 5): aenda **Ø-fikana** kumba kwavo
 TARGET: musikana aenda kumba kwavo
 MMA: CL1-girl SIM-go-FV CL15-home her
 GLOSS: the girl went to her home
- f. JOH (2; 5): kame **Ø-foyo**
 TARGET: ndikame **mu-soro**.
 MMA: comb CL3NP.NS.head
 GLOSS: Comb my hair.
- g. TAD (2; 5): waona **Ø-tʃipifi** iyi **Ø- Ø oko?**
 TARGET: waona **ma-chipisi** ari **mu-ruoko** here?
 MMA: see CL6.NP-NS.chips in CL18.Loc-hand
 GLOSS: Did you see the chips in my hand?

In the children's utterances in examples (27a-g) above the bolded noun stems are produced without the required IMs. The children produced bare stems such as {-fɔlo}, {-kojo}, {-goma}, {-goΘa} {-fikana}, {-tʃipifi} and {-oko}. These child Shona nouns are bare because they do not satisfy the structural requirements of the Shona noun. The prefixes {chi-} for *chikoro* 'school', {ku-; ma-} for *kumagirosa* 'grocery shop', {mu-} for *musoro* 'head', {mu-} for *mugomba* 'in the pit', {mu-} for *musikana* 'girl' and {mu-, ru-} for *muruoko* 'in hand' are omitted. Although the child Shona nouns in example 27a-g do not have the IMs they remain meaningful. This is because in Shona the noun stem carries the semantic content, while the omitted IMs carry the grammatical information. The grammatical information brings about the well-formedness of Shona nouns and morphosyntactic structure of the sentence. This brings in an interesting perspective in which the child produces the segment that carries meaning and omits the grammatical information. The semantic content is central to the success of communication. The

question then is: how does the child relate to the meaningfulness of the noun stem since the child is still in the process of understanding Shona grammar? Does the child have knowledge of the form-content distinction? As pointed out by Brown (1973), De Villiers and De Villiers (1978b) and Kunene (1979) the form-content distinction can be used to explain the fact that children tend to produce lexical morphemes without grammatical content. One explanation that can be proffered in order to explain such data is that of frequency of occurrence in adult speech of the noun stem vis-à-vis that of the IM. The frequency of occurrence is, therefore, a possible constraint⁴⁶ in the process of language acquisition. Slobin (1979) predicted the deletion of IMs' initial syllables. Shona nouns are obligatorily inflected and omission of IMs brings about a form that is not complete in terms of the demands of the grammar of Shona. The IM {mu-} that is omitted in 27a, c, e, f and g has the same phonological structure but has different grammatical roles to play. The {mu-} of example 27a and f belongs to the Shona noun class 3 which denotes (mainly) inanimate objects, 27c and g are of class 18 which denotes location while that omitted in 27e belongs to class 1 for singular persons. The child might be constrained by the phonological structure of this IM and the various functions associated with it. The children may be confused by the different functions and to simplify, they drop it.

Child Shona nouns are characterized by substitution of one IM with another which is different in form. In a study of the acquisition of person and number within the verbal domain in early Greek, Doukas and Marinis (2012:20) refer to the substitution of one form for another as, "error of form". The IM segment in child Shona is substituted by a different phonological segment. Although the substituting segment meets the requirements of the Shona syllable, in terms of its canonical structure, it is not the same inflectional morpheme in adult Shona. This is because in

⁴⁶ The frequency constraint is discussed in detail in Chapter Five section 5.5.

28a-e [tʃ-] in adult Shona is substituted by a [ʃ] and [θ] this shows that the children are simplifying instead of producing an affricate composed of a stop and fricative they go for the fricative, while in 28f-g, [zi-] is substituted by [ʒi-] as indicated below:

- 28a. CAR (2; 5): ndipe ʃi-bage
 TARGET: ndipe tʃi-bage
 MMA: give me **SIM.CL7-NS**
 GLOSS: give me green maize
- b. CAR (2; 5): ʃi-bage
 TARGET: tʃi-bage
 MMA: **CL7-NS**
 GLOSS: green maize
- c. CAR (2; 6): ʃi-mota iʃo
 TARGET: tʃi-mota
 MMA: **CL7-NS**
 GLOSS: small car
- d. CAR (2; 6): ʃi-mana
 TARGET: tʃi-mɲana
 MMA: **CL7-NS**
 GLOSS: small child
- e. ARI (2; 7): θi-kojo
 TARGET: tʃi-koro
 MMA: **SIM.CL7-NS**
 GLOSS: school
- f. CAR (2; 8): ʃaba ʋabvarura ʒi-pepa
 TARGET: ʃaba ʋabvarura zɪ-pepa
 MMA: father SM-torn **CL8**-paper
 GLOSS: father has torn pieces of paper
- g. JOH (2; 5): ukuona ʒi-gaba ʒishoma
 TARGET: uri kuona zɪ-gaba zɪshoma
 MMA: SM-aux INF-see **CL8**-container OM-few
 GLOSS: you can see the containers are few

In the above examples the IM in child Shona grammar is different from that of adult Shona. The difference is in the phonological segment of the noun IM, specifically the consonant. In relation

to satisfying the requirements of the Shona syllable there is evidence that the children produced the noun with the canonical structure of the Shona syllable. The Shona syllable is simple and it can be CV or V. According to Myers (1990:220), “Shona syllables are all open, there are no long vowels or diphthongs, and at the onsets consist of either a single consonant, or a consonant followed by a glide.” In 28a-d the C of the IM [tʃ-] for the nouns *chibage*, *chimota* and *chimwana* is substituted by [ʃ], while in 28e the C of the same IM is substituted by [θ-]. The difference in form of the substituting consonant indicates the possibility of individual variation amongst children in terms of their utterances and capabilities. In 28f-g the C of the IM [zi-] is substituted by [zi-]. [tʃ-] is an affricate while [ʃ] is a sibilant fricative and [θ] is a non-sibilant fricative. Affricates are produced when a stricture of complete closure is released slowly to end up with a fricative release. According to Mudzingwa (2001:75), “Shona affricates are either homorganic or semi-homorganic” implying that the stop and fricative are produced at the same place of articulation. Affricates differ from fricatives in terms of their manner of articulation. Affricates and sibilant fricatives are complex consonants since they are produced with two articulatory gestures. However, it has to be noted that complexity of consonants is a matter of degree, it is not absolute. Non-sibilant fricatives are simple consonants.

Examples 28a-d and 28e reveal that CAR substituted an affricate with a sibilant fricative, while ARI substituted the same with a non-sibilant fricative. There is a difference in the two consonants that the children use to substitute [tʃ-] a voiceless alveo-palatal affricate sound. [ʃ] is a voiceless alveo-palatal sibilant while [θ] is a voiceless inter-dental non-sibilant. The place of articulation of the two substituting consonants differs; however, [ʃ] approximates the place of articulation for the sound that is being substituted while [θ] is produced at a different place of

articulation. It is however interesting to note that the substituted sound and the substituting sounds are all obstruents. They share the phonetic property of constricting the airflow through the vocal tract. The children might be aware⁴⁷ of the nature of [tʃ-] but because of constraints fail to produce it. They, however, produce sounds that share the same phonetic property with the target sound. This is a hint to the assertion that children are aware of the intended sound but they are constrained.

Of interest to note is that [θ] is not part of the Shona phoneme inventory. However, the child uses it to substitute [tʃ-] which is a Shona phoneme. This shows that children are creative and not passive participants in the process of language acquisition as postulated by the behaviorist theory founded by Watson (1930) in the 20th century. The child is capable of making linguistic judgments about production of linguistic units. The child is even explorative and can “shop” for sounds from the phonologies of other languages.

Nominal IM in child Shona are produced with the vowel segment only, the consonant is omitted. In terms of the syllable structure of Shona the children produced IMs that have vowels only. Mudzingwa (2010) notes that the Shona noun class prefix (referred to here as an inflectional morpheme) comes in three prosodic shapes namely CV, V and Ø. The typical prosodic shape of the Shona IM is CV. Hyman (2005) posits that CV is the canonical prosodic shape for Bantu noun class prefixes. Mudzingwa (ibid) also notes that all Shona noun class prefixes that have phonological content are CV except for class 14 which has a V noun class prefix. The typical

⁴⁷ Comprehension is reported to precede production in child language. This is a probable evidence to support that indeed comprehension precedes production.

structure of the Shona syllable is illustrated in Figure 1, while Figure 2 represents the child syllable of the IM:

FIGURE 1: Typical Shona syllable

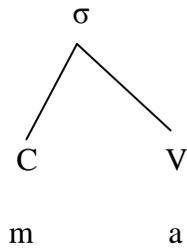
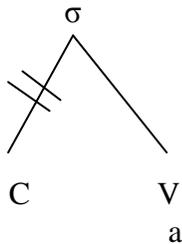


FIGURE 2: Child Shona syllable



The vowel in the Shona syllable is obligatory. It marks the peak of the syllable. Figure 3 below shows the V-shape syllable.

FIGURE 3: V-shape syllable



The children produced IMs which do not have the required consonants in order to satisfy the CV structure of the intended IM as compared to those in adult Shona syllables. The IM's structure is

minimized. According to Kadenge and Sibanda (2011) the construction in which the child produces an IM without the consonant element is called a partial noun prefix. It is partial in the sense that the vowel is produced but the consonant is omitted. This results in onsetless vowels instead of a canonical Shona syllable shape consisting of an onset (margin) and a nucleus (obligatory centre). Example 29 below illustrates some of the nouns in which the children produce reduced IMs (in the form of a V-syllable only).

- 29a. JOH (2; 5): -azhala Øa-vhu
 TARGET: yazara **ma**-vhu
 MMA: it is full **RIM**⁴⁸-soil
 GLOSS: it is full of soil
- b. JOH (2; 6): Øa-futa yamhamha
 TARGET: **ma**-futa a-mhamha
 MMA: **RIM**-body lotion for mother
 GLOSS: mum's body lotion
- c. TAD (2; 4): -da kusuka Øa-pureti
 TARGET: ndirikuda kusuka **ma**-pureti
 MMA: I want to wash **RIM**-plate
 GLOSS: I want to wash plates
- d. CAR (2; 7): -da gezha Øa-woko
 TARGET: ndirikuda kugeza **ma**oko
 MMA: I want to wash **RIM**-hand
 GLOSS: I want to wash my hands
- e. JOH (2; 7): Øa-pushi
 TARGET: **ma**pushi
 MMA: **RIM**-sandals
 GLOSS: sandals
- f. JOH (2; 9): -da Øa-hewu
 TARGET: ndirikuda **ma**hewu
 MMA: I want **RIM**-hewu
 GLOSS: I want mahewu

⁴⁸ RIM represents reduced inflectional morpheme.

The above examples reveal that children dropped the consonants of the IM resulting in nouns that have a minimised IM, in the shape of an onsetless vowel. In terms of the development of the IM this seems to be a stage above the production of nouns without the IM. At this stage the IM is beginning to emerge in the form of a vowel. The onsetless vowel is acting as a 'placeholder', in anticipation of the emergence of the full IM with the typical syllable structure. According to Connelly (1984) this onsetless vowel is an amorphous segment. It is an IM but it lacks the full solid form of the Shona IM. The production of the onsetless vowel as a placeholder can be interpreted as the signal that the child has satisfied the requirements of the noun prefix but is not yet able to produce the correct form, i.e. the full noun prefix, due to constraints. The children reduce the size of the syllable to a single vowel in order to minimize the size of the IM and, therefore, ease production. The interesting fact about the examples given in 29a-f is that the omitted consonant is part of the plural IM {ma-}. The omission of /m/ is observed in both natural and elicited data.

Shona class 1a, 5, 9 and 10 nouns are characterized by noun class prefixes that lack phonological content and hence are zero prefixes (\emptyset). There is no significant presence of a syllabic prefix. There are instances where children in their production of nouns that belong to these classes omitted the consonants in the first syllable of the noun. Morphologically the nouns of class 1a, 5, 9 and 10 are composed of a zero prefix plus a stem. These nouns are irregular as they are different from most of the nouns in Shona. The examples below show instances where children produce the nouns of these classes omitting the initial consonant of the noun.

- 30a. TAD (2; 0): bata **Ø-oto**
TARGET: bata **moto**
MMA: catch CL9.fire
GLOSS: catch the fire
- b. JOH (2; 5): **Ø-ota** yangu
TARGET: **mota** yangu
MMA: CL9.car mine
GLOSS: My car.
- c. TAD (2; 8): **Ø-ipo** iyo
TARGET: **sipo** iyo
MMA: CL9.soap. Demonstrative
GLOSS: There is the soap.

The omission of consonants in nouns of class 1a, 5, 9 and 10 is interesting because as noted in nouns with the prosodic shape CV the children omitted it totally or produced a V shaped IM. In the nouns that do not have a marked IM the children omitted the consonants in the first syllable of the noun. This may give a hint in terms of the constraints that the child faces during the process of acquisition. Since the omission occurs on the initial syllable of the nouns it might show that the children are targeting the production of the end unit of the noun and avoiding the initial consonants. This is a deletion strategy which seems to be frequent in the children's utterances. On the other hand this might be an indication of the overgeneralization of the deletion rule.

As noted in instances discussed so far there is a tendency to reduce the size of the IM by omitting the consonants. On the one hand, the children also omit the whole inflectional morpheme and hence minimize the size of the noun. On the other hand, they substitute certain consonants. All these strategies are used so as to ease production because during language acquisition the children are faced with certain constraints that hinder the production of certain linguistic

elements. The child Shona nouns that have been discussed so far show that the IM occurs in the initial position of the noun. Grammatical modifications take place at the prefix position in Shona nouns. There is evidence in the nouns that are produced by the children in this study that the prefix position is a non privileged position. This is because all the modifications to the adult Shona nouns by the children take place in the IM position. Trubetzkoy (1939) proposes that certain prominent positions lend themselves more readily to maintaining contrasts among particular kinds of features and/or segments. Following this proposal by Trubetzkoy it follows that we expect that within the Shona noun there are certain positions that are more resistant to modification than others because of the environment in which they occur. Casali (1996) proposes a family of position-sensitive constraints which favour preservation of features in certain prominent morphosyntactically or prosodically defined positions. These positions include:

- Word initially
- In a lexical (content) word/morpheme
- In a stressed syllable and
- In a geminate segment

In the case of the child Shona noun the content morpheme is preserved, while the initial segment of the noun is modified. This is interesting because the unit which the children preserve carries the semantics of the Shona noun while the IMs carry the grammatical information. Casali (1996:21) acknowledges that languages “frequently support a greater variety of contrasts in roots than in affixes.” Within the bi-morphemic structure of the Shona nouns the children tend to target the IM position which is word initial.

4.1.2 Child Shona verb inflectional morphology

The previous section set out to describe child Shona noun inflectional morphology. The current section is sequential to the previous one as it describes child Shona verb morphology. Nouns and

verbs are central to the grammar of children since they form the pivot of their vocabulary. However, in terms of the order of acquisition there is evidence from studies that nouns are acquired earlier than verbs (Macnamara 1972; Nelson 1973; Huttenlocher 1974; Kako 2004). It is not in the interest of this research to delve into the debate of the order of acquisition of these two lexical categories but to describe their form. The description given here of child Shona verbs is based on verbs extracted from utterances made by the children in this study. A brief review of the structure of the adult Shona verb is essential in order to help in the understanding of child Shona. The description of child Shona verbs is done so as to appreciate the child Shona grammar and hence it is not perceived as erroneous or deviant. The basic Shona verb structure has a verb root and a final vowel (see 2.4.2.2). The verb can be inflected by various IMs depending on the syntactic structure in which it occurs. In the description of verb morphosyntax in general it is important to make a distinction between finite and non-finite verbs. Finite verbs can take up tense IMs. In adult Shona for instance the verb stem *-gara* 'sit' is finite since it can take up tense IMs such as present, past and future. On the contrary non-finite verbs such as Shona class 15 infinitives and participles are not tensed. In adult Shona, therefore, tense is only inflected on finite verbs. The possible IMs for the Shona finite verb are negation, subject, tense, mood, aspect and object markers. The Shona verb paradigm has a very rich morphology. Given this nature of the morphology of the Shona verb it means there are a number of slots⁴⁹ for the IM depending on the context in which the verb is used. Since the study is focused on IMs the description of the child Shona verbs focuses on these IMs. These IMs precede the root; therefore, elements that come after the root are not discussed in this study and are a potential area for further research.

⁴⁹ According to Mberi (2002:71) a verb slot system refers to the fixed positions in which we find the various types of affixes that are attached to the verb root.

Child Shona verbs have various morphological structures, some of which are similar to those of nouns. The child verbs are produced without IMs, RIM or with substitution of consonant segments. Since the Shona verb takes various IMs it means that verbs are morphologically more complex than nouns. As a result it is assumed that the child acquiring Shona is faced with a more complicated task in processing verbs. The question is, ‘what is the nature of child Shona verbs’? This is an essential question since the assumption is that by virtue of the Shona verb being highly morphologized, it is most likely to present processing constraints. Child Shona verbs are characterized by bare stems as noted in the example below:

- 31a. CAR (2; 0): **Ø-pind-e**
 TARGET: ndi-pind-e
 MMA: SIM-get in-FV
 GLOSS: May I pass?
- b. ARI (2; 7): **Ø- Ø-d-a Ø-end-a** nadedhi
 TARGET: ndi-no-d-a ku-end-a nadedhi
 MMA: SIM-PrIM-want-FV INF-go-FV with daddy
 GLOSS: I want to go with daddy.
- c. TAD (2; 0): **Ø- Ø-kam-e?**
 TARGET: ndi-ku-kam-e?
 MMA: SM-INF-comb-FV
 GLOSS: should I comb your hair?
- d. JOH (2; 6): mhamha **Ø- Ø- Ø-uy-a**
 TARGET: mhamha va-va-ku-uy-a
 MMA: mother SIM- Asp-INF-come-FV
 GLOSS: mother is coming.
- e. JOH (2; 8): mhamha **Ø-p-e-w-o**
 TARGET: mhamha ndi-p-e-w-o bepa rangu
 MMA: mother SIM-give-enclitic-FV paper mine
 GLOSS: mum gives me my paper.
- f. TAD (2; 5): **Ø- Ø- Ø -d-a** mvuwa

TARGET: ndi-ri-ku-d-a mvuwa
MMA: SIM-aux-INF-want-FV water
GLOSS: I want water.

- g. ARI (2; 0): Ø- Ø- d-a fupu
TARGET: ndi-no-d-a supu
MMA: SIM-PrIM-want-FV soup
GLOSS: I want soup.

The data indicate instances in which children produced verbs without the expected IMs. The data in example 31a-g indicates that the verb is not inflected and that it is bare. The production of bare verb stems reveals a similar phenomenon with child nouns which are produced with the noun stem only. The data in 31a-g indicates that the child Shona verbs do not satisfy the morphological requirements of the adult Shona verb. The Shona verb takes a greater variety of inflectional morphemes. The children are, therefore, faced with the task of processing and producing large constructions. In order to communicate the children omit segments in the target word. Deen (2011) acknowledges that omission occurs because children have limited processing capacity.

There are various verb IMs that are omitted in each of the utterances given in 31a-g. The omitted IMs are in 31a and e, the first person subject {ndi-}; 31b first person subject {ndi-}, present tense{-no-} and infinitive {-ku-} IMs; 31c the first person subject {ndi-} and infinitive {-ku-} IMs; 31d second person subject {va-}, aspect{-va-} and infinitive{-ku-} IMs; 31f the first person subject {ndi-}, auxiliary{-ri-} and infinitive {-ku-} and in 31g the first person subject {ndi-} and present tense {-no-}. The subject IM is one of the omitted morphemes by children in this study. The subject IM in Shona verbs agrees with the subject of the sentence. The subject IM agrees with the noun or pronoun subject. For example, in the adult Shona examples given below there is agreement between the noun and the subject IM inflected on the verb.

- 32 a. **Mukomana** akadya sadza. 'The boy ate sadza.'
- b. **Vakomana** vakadya sadza. 'The boys ate sadza.'
- c. **Iye** akadya sadza. 'He ate sadza.'
- d. **Ini** ndakadya sadza. 'I ate sadza.'

According to Langacker (1991) a prototypical subject is a noun phrase (NP). In adult Shona the form of the subject inflectional morpheme (SIM) is determined by the subject. The subject has to agree with the SIM in gender and number. The instances in which child Shona utterances omitted the IM indicate that they fall short of the expected verb form. In 31a-c and f-g the researcher used context to determine the target utterance. This is because the utterances, if taken out of context, do not refer to any subject. The children omitted the first person SIM in these utterances. In 31d and e JOH produced utterances in which the subject NP is present but there is no SIM to show agreement. The examples below are more instances in which children produce the noun subject but omit the SIM for agreement.

- 33a. TAD (2; 4): sisi **Ø-Ø-Ø** kiken
 TARGET: sisi va-ri-ku-kichen
 MMA: sister SIM-aux-Loc-kitchen
 GLOSS: sister is in the kitchen
- b. TAD (2; 4): dhedhi **Ø-yi- Ø-toya** Ø-ingwa
 TARGET: dhedhi mu-ri-ku-tor-a chingwa
 MMA: dad SIM-aux-INF-take-FV bread
 GLOSS: dad are you taking bread?
- c. ARI (2; 6): gogo **Ø-enda** kupi
 TARGET: gogo va-end-a kupi
 MMA: grandmother- SIM-go-FV where
 GLOSS: where did grandmother go?

- d. ARI (2; 6): **Ø-enda** kwaMutare here
TARGET: va-end-a kwaMutare here
MMA: SIM-go-FV to Mutare did
GLOSS: did grandmother go to Mutare?

The subject noun and SIM in child Shona seem to be in complementary distribution. This might be because the child is trying to manage the size of the unit of production. In a study on Sangu, Idiata (1998) also notes that the subject markers are in complementary distribution with tense/aspect markers. This complementary distribution of certain morphological markers phenomenon is also noted in child Shona morphosyntax as mentioned above and evidenced by examples in 33a-d. In 33a-d the utterances by the children indicate that they did not produce the SIM to show agreement with the subject noun. This might be a possible indication of morpho-phonological constraints on the children's output forms. The child opts to use the subject noun but because of the morphological complexity associated with the Shona verb in terms of identifying the correct IM the child omits the SIM. In example 33a the child uses the subject noun *sisi* 'sister' but does not produce any IM as expected on the verb. In 33a the verb is not produced at all, hence it is omitted. The assumption is that the child is aware that the noun *sisi* captures the important information that communicates about the subject and hence omits the inflections. In 33b, c and d, the SIM is omitted.

The SIM in child Shona is also produced in the form of a reduced syllable. The form of the SIM does not satisfy the syllable structure that is seen in adult Shona. The children tend to drop the consonants of the target SIM. A similar pattern can be noted in the case of child Shona nouns in 4.1.1 and as exemplified by Fig 1-3 under the same. There are two possible explanations for such utterances. Firstly, the children are not aware of the honorific inflectional morpheme as expected in adult Shona (see Chapanga 2006). The children seem to be more familiar with the use of the second person singular. The honorific IM agrees with a subject indicating respect. According to Agha (1998) the term honorific serves many other interactional agendas, such as control and domination, irony, innuendo and masked aggression besides being used for respect. In Shona the honorific phenomenon can be expressed by an inflectional morpheme of class 2a of the Shona nouns. Secondly, the child might be faced with phonological constraints and hence drops the consonants, a similar pattern seen with child Shona nouns. The children's utterances below are illustrative:

- 34a. JOH (2; 6): ko mama **Øa**-ngu **Øa**-yipi
 TARGET: ko mama wangu varipi
 MMA: question mother OIM-poss SIM-question
 GLOSS: where is my mother?
- b. CAR (2; 3): **Øa**-peya
 TARGET: rapera
 MMA: SIM-finish-FV
 GLOSS: It is finished.
- c. CAR (2; 3): mama **Øa**-tenga
 TARGET: mama vatenga
 MMA: mother SIM-buy-FV
 GLOSS: mother bought something.
- d. ARI (2; 6): mhamha **Øa**-ruka nani
 TARGET: mhamha **ma**-rukwa nani
 MMA: mother SIM-plait who
 GLOSS: who plaited you mother?

- e. ARI (2; 7): dhedhi **Øa-uya**
 TARGET: dhedhi va-uya
 MMA: dad SIM-come
 GLOSS: Dad has come
- f. JOH (2; 8): dhedhi **Øa-enda Ø** basa papi
 TARGET: dhedhi va-enda kubasa kupi
 MMA: dad SIM-go Loc-work where
 GLOSS: where did dad go to work?
- g. ARI (2; 7): **Øa-ruka** naauntie Ø-saluni
 TARGET: ma-rukwa naauntie ku-saluni
 MMA: SIM-plait by aunt Loc salon
 GLOSS: were you plaited by aunt at the salon
- h. TAD (2; 5): gogo **Øa- Ø-uya** nafekulu zulo
 TARGET: gogo va-ka-uya nasekuru zuro
 MMA: grandmother. SIM-PIM-come with grandfather yesterday
 GLOSS: grandmother came with grandfather yesterday

One of the omitted morphemes in child Shona verb morphology is the object marker. The object inflectional morpheme (OIM) is an obligatory inflectional morpheme. However, in child Shona it is omitted in some utterances as shown below:

- 35a. CAR (2, 2): Bubo **Ø- Ø-Øik-a**
 TARGET: Dibo a-ndi-tsik-a
 MMA: name SIM-OIM-step-FV
 GLOSS: Dibo has stepped on me.
- b. CAR (2, 4): Magi **Ø- Ø-rov-a** apa
 TARGET: Magi wa-ndi-rov-a apa
 MMA: Magi SIM-OIM-beat me here
 GLOSS: Magi you beat me here.
- c. CAR (2, 5): gayikuni **Ø- Ø-rum-a**
 TARGET: garikuni ra-ndi-rum-a
 MMA: Turkey SIM-OIM-bite-FV
 GLOSS: the turkey has bitten me.
- d. TAD (2, 9): ini ndobva **n Øa- Ø -mhany-ir-a**
 TARGET: ini ndobva nda-i-mhany-ir-a
 MMA: I then SIM-OIM- run-APPL-FV
 GLOSS: I will then run to the car.

- e. JOH (2, 5): **a- Ø-keng-w-a** mangwana
TARGET: a-ndi-kenga masakati
MMA: SIM-OIM-scratch afternoon
GLOSS: he scratched me in the afternoon.

The Shona object inflectional morpheme (henceforth OIM) occupies the position immediately before the root in the inflected verb. OIMs in Shona are licensed only when the object being marked has been mentioned in previous discourse. The OIM indicates that there is an object to which the action is directed. In the data presented in example 35a-d the OIM slot is not occupied. The children omit the OIM. The omitted OIM is {ndi-} which agrees with first person nouns in class 1 and {-i-} agrees with class 9 nouns. The OIM occupies the prefix position within the Shona verb morphology and hence it is subjected to modifications of elements that occur before the verb root. Similar to the case of noun inflectional morphology, the children also truncate the verb by omitting the OIM. In all the examples cited in 35a-d the OIM is obligatory. The OIM that is omitted by the children is established by examining the context of production. This is because the context in which these constructions are produced demands that there be an OIM.

One of the inflectional morphemes that can possibly be a prefix to the Shona verb is the negative inflectional morpheme (NIM). Instances in which children used the NIM are given in 36 below.

- 36a. CAR (2, 0): **Ø- Ø-gon-i**
TARGET: ha-ndi-gon-i
MMA: NIM-SIM-can-FV
GLOSS: I cannot.
- b. ARI (2, 7): **Ø-a- Ø-si-kunwa** noti itonhorwa
TARGET: ha-ndi-si-ku-nw-a nokuti iri kutonhora
MMA: NIM-SIM-neg-INF-drink-FV because it is cold
GLOSS: I am not drinking this water because it is cold.

- c. ARI (2, 7): **ha-n- Ø-i-si-ku-d-a** kuja
 TARGET: ha-ndi-si-ku-d-a kudya
 MMA: NIM-SIM-neg-INF-want-FV INF-eat-FV
 GLOSS: I do not want to eat.
- d. ARI (2, 9): tete Tendai **Ø-u-sa-ndi-vhar-ir-e** dhoo rangu
 TARGET: tete Tendai mu-sa-ndi-vhar-ir-e dhoo rangu
 MMA: aunt name SIM-NIM-OIM-close-FV door mine
 GLOSS: Aunt Tendai do not close my door.
- e. ARI (2, 9): **ha-ndi- Ø- Ø- Ø-on-i**
 TARGET: ha-ndi-si-ku-va-on-a
 MMA: NIM-SIM-NIM-INF-OIM-see-FV
 GLOSS: I cannot see her.
- f. ARI (2, 10): **Ø-a-ndi- Ø-d-a Ø-enda ku- Ø-koro**
 TARGET: ha-ndi-si-ku-d-a kuenda kuchikoro
 MMA: NIM-SIM-NIM-INF-want-FV to go to school
 GLOSS: I do not want to go to school.
- g. ARI (2, 11): **ha- Ø- Ø-ku-d-a** kugara
 TARGET: ha-ndi-si-ku-d-a kugara
 MMA: NIM-SIM-NIM-INF-want-FV to sit
 GLOSS: I do not want to sit.
- h. TAD (2, 6): **Ø-a-ndi-gon-i** kuvhurira
 TARGET: ha-ndi-gon-i kuvhura
 MMA: NIM-SIM-able-FV open
 GLOSS: I cannot open.

The data in 36a-h is a representation of child Shona negative formations. The children omitted the NIM as in 36a, where two IMs are omitted and one of them is a NIM {ha-} and the other a SIM {ndi-}. These two are affixes and they both occupy the prefix position. The children seem to be applying the strategy of truncating the Shona adult verb by omitting the prefixes. In adult Shona the NIM {ha-} can appear simultaneously with {-si-} or {-sa-}. In a case where these occur simultaneously {ha-} appears before the SIM while {-si-/-sa-} occur subsequent to the SIM. In example 36b ARI produced a negative formative verb in which the consonant /h/ is omitted and produced the vowel /-a/ only. In the same utterance however ARI produced the

NIM {-si-}. In terms of position {ha-} occurs in the initial position of the Shona verb while {-si-} occurs closer to the root. Contrariwise in another utterance ARI at 2; 9 produced the NIM {ha-} but omitted {-si-}. Such an utterance is an indication that the child is aware of the NIM but due to constraints it is omitted.

Adult Shona has three basic tense inflectional morphemes (henceforth TIM) that are inflected on the Shona verb. These are the present (PrIM), future (FIM) and past (PIM). The TIMs are {-no-}, {-cha-} and {-ka-} respectively. The data show that at a stage when children were producing bare stems the TIMs were some of the morphemes that were omitted. See the examples below:

37a. TAD (2; 5): **Ø- Ø-d-a Ø-takurwa**

TARGET: ndi-no-d-a ku-takurwa
 MMA: SM-PrIM-want-FV INF- carry
 GLOSS: I want to be carried.

b. ARI (2; 7): **nda- Ø-on-a** tireni nezuro

TARGET: nda-ka-on-a tireni nezuro
 MMA: SM-PIM-see-FV train yesterday
 GLOSS: I saw a train yesterday.

c. CAR (3; 0): pa-nda-**ka**-nyor-a mangwana

TARGET: pa-ndi-cha-nyor-a mangwana
 MMA: loc CL16-SM-FIM-write tomorrow
 GLOSS: Where I will write tomorrow.

d. JOH (2; 11): gogo **Ø- Ø-uy-a** nafekulu zujo

TARGET: gogo va-ka-uy-a nasekuru nezuro
 MMA: grandmother SIM-PIM-come-FV with grandfather yesterday
 GLOSS: Grandmother came with grandfather yesterday.

e. JOH (2; 11): dhedhi **nda- Ø-piswa** netiipoti iyo

TARGET: dhedhi nda-ka-piswa netiipoti iyo
 MMA: father SIM-PIM-burn teapot
 GLOSS: Dad that teapot burnt me.

The utterances that are produced with TIMs are those in which children use the PIM. In the case of bare verb stems the children omitted TIM among other omitted morphemes. The children produce utterances that can only be understood through context, bodily gestures and lexical items that signify the time of the event. In 37b the omitted PIM {-ka-} indicates past tense. The use of the lexeme *nezuro* 'yesterday' makes it easy to understand the time that ARI is referring to. It should be noted that the intended TIM is {-ka-}. Without the lexeme *nezuro* 'yesterday', the sentence can satisfy the requirements of adult Shona sentence.

In 37c CAR uses a lexical item indicative of a future action but makes use of a PIM. In terms of filling the prefix slots, the child satisfactorily does that but there is a contradiction between the PTM and the word *mangwana* 'tomorrow'. The use of the contradictory TIM brings about semantic ungrammaticality. This is an interesting phenomenon in child Shona because it brings out the concept of the link between semantics and syntax. The two components contribute to the ultimate grammaticality of the Shona sentence. Example 37c clearly indicates that there is need to meet the demands of syntax and semantics since the two components interface to bring out grammaticality in Shona sentences.

In 37d and e the target TIM which is the PIM {-ka-} is not used at all. This might be because amongst the three tenses in Shona, the present is more appealing to child Shona since it is the default tense. Also the input does not always contain past and future TIM since these are more complex. Context is used in order to understand child utterance in 37e. In 37d the use of the adverb of time *zuro* 'yesterday' was used by the researcher in order to understand the target utterance.

The verb in Shona can be finite or nonfinite (see section 3.1.2). Nonfinite verbal nouns are housed in class 15 of the Shona noun classes (cf. Table 2). It is interesting to observe that the children in this study produce these nonfinite verbs without violating the no-tense rule on nonfinite verbs. This is an indication that the children are operating within the morphological rules of Shona. The nonfinite verbs are distinct from their finite counterparts; they are marked by the infinitive morpheme {ku-}. The infinitive morpheme {ku-} is inflectional in that it is a prefix (refer to Chapter Two for insights on this). The infinitive morpheme is one of the IMs that the children dropped from the nonfinite verb as shown in the examples below.

- 38a. TAD (2; 5): nu- Ø Ø-da Ø-puti
 TARGET: ndi-ri **ku**-d-a ma-puti
 MMA: SM-aux INF-want-FV CL6-popcorn
 GLOSS: I want popcorn.
- b. TAD (2; 3): mhamha Ø- Ø- Ø- da dhaka
 TARGET: mhamha ndi-ri-**ku**-d-a dhaka
 MMA: mother SM-aux INF-want -FV clay
 Gloss: Mother I want clay.
- c. JOH (2; 7): Ø- da Ø-mbogalawo futi
 TARGET: nd-o-da **ku**-mbo-gara-w-o futi
 MMA: SM-PTM-want INF- ASP - sit-clitic-FV again
 GLOSS: I want to sit also.
- d. TAD (2; 5): Ø-da Ø-isa Ø-homwe Ø-kupa
 TARGET: ndo-da **ku**-is-a mu-homwe ndo-kupa
 MMA: SM-PTM-want INF-put-FV CL17.Loc-pocket SM-PTM-give
 Gloss: I want to put in the pocket then I give you.
- e. ARI (2; 7) Ø-a- Ø-isha apa
 TARGET: ndo-da **ku**-isa apa
 MMA: SM-PTM- want INF-put here
 Gloss: I want to put it here.

The data above show that the children omitted the infinitive morpheme on nonfinite verbs of class 15 and did not use any tense on them, hence they did not violate the morphological rule of

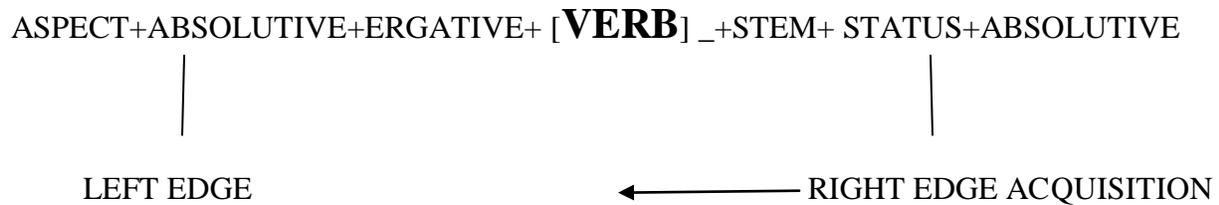
Shona. This is an indication that the children are setting the parameters of Shona. According to Chomsky (2012:240) “Parameters, it is assumed, are built into the acquisition mechanisms. They might be biological in nature (built into the genome), or due to other factors, (those that Chomsky labels “third factor”) contributors to acquisition/ growth mechanisms.” Parameters play a crucial role in the process of language acquisition, since they are the indicators that the child is taking input from the environment, through perception, and will set the parameters according to the morphosyntactic rules of Shona, for instance. However, this is not a conscious decision. There are various inputs that are responsible for this process of language acquisition to take place.

It should be noted that the data that are discussed here overlap in terms of the structure of the nouns and verbs produced by the children. I use here data that indicates that the children also have instances in which they use the infinitive morphemes. The utterances in which the infinitive is used by the children are shown in the examples below:

- 39a. JOH (2; 10): **Ø**-da **KU**⁵⁰tenga **Ø**-fizhiti yangu tuu.
 TARGET: ndoda ku-tenga ma-firiziti angu maviri.
 MMA: SIM-PIM-want INF-buy CL6-freezits mine two
 GLOSS: I want to buy two freezits for myself.
- b. ARI (3; 0): daddy **Ø**- da **KU**-tora bhuga angu
 TARGET: daddy ndo-da ku-tora bhurugwa rangu
 MMA: father SIM-PIM-want INF-take pant mine
 GLOSS: Daddy I want to take my pant.
- c. JOH (2; 5) **Ø**-da **KU**-toya imwe
 TARGET: ndo-da kutora imwe
 MMA: SIM-PIM INF –take another
 GLOSS: Father I want to take another one.

⁵⁰ The infinitive morpheme in the child’s utterance is in upper case and bolded.

41. Mayan verb template:



This is similar to child Shona verbs acquisition of IMs. There is evidence of right edge acquisition. This is because children omitted the IMs and produced the verb stem without the IMs.

4.2 ELICITATION RESULTS

The basic method for data collection in this study is the observation of children using Shona in a natural setting. The researcher also used the elicitation method in order to elicit the use of plural inflections on nouns. Only nouns were elicited for the use of the singular and plural morphemes. The aim was to elicit for the manner in which the children use the IM for nouns in Shona. Elicitation was used as a complementary method that can assist the researcher to have informed findings by using a specially designed task to elicit for the use of IM on nouns. Three of the four children in this study participated in the elicitation task⁵². The elicitation task involved the use of elicitation cards. The elicitation cards had pictures of single items and multiple items. The pictures were shown to each child in the study and the child was asked to say what was in the picture. Children were also asked to name items in the surrounding area and to give the plural interpretation. The tables below show the results from the elicitation task.

⁵² The data for the fourth participant in this research is only available in the form of data that was collected in the natural setting. The data was adopted from Mudzingwa 2001.

TABLE 5a-c: Elicitation task data

a. Name of child: ARI

SINGLE	PLURAL	GLOSS (SINGLE / PLURAL)
bhutsu >bhutsu ⁵³	bhutsu dzese idzi tuu > bhutsu	shoe/s
muriwo >muriwo	miliwo > miriwo	vegetable/s
njimbe >nzimbe	njimbe > nzimbe	sugar cane
igedhi > gedhi	igedhi > magedhi	gate/s
mota >mota	mota dzese imota > mota	car/s
pegishi > pegisi	tuu > mapegisi	peg/s
ishonga > mushonga	ishonga > mishonga	medicine
ishawu > sawu	mashawu > masawu	fig/s
woko > ruoko	tuu > maoko	hand/s

b. Name of child: TAD

hembe > hembe	hembe > hembe	clothes
liwo > muriwo	----- ⁵⁴ > miriwo	vegetable/s
kapu > kapu	akapu > makapu	cup/s
banga > banga	banganga > mapanga	knife/ves
patata > patapata	----- > mapatapata	slipper/s
chayiyo > mutsvairo	----- > mitsvairo	broom/s

⁵³ The child utterance is on the left and in bold while the adult/target is on the right.

⁵⁴ ----- indicates that the child did not give a response.

shipo > sipo	shipo tuu/ dzese > sipo	soap/s
shipunu > sipunu	tuu > masipunu	spoon/s
goti > mugoti	----- > migoti	cooking stick/s
vhalo > chivharo	----- > zvivharo	lid/s
bhaketi > bhaketi	tuu > mabhaketi	bucket/s

c. Name of child: JOH

fiziti > firiziti	fiziti > mafiriziti	freezit/s
gubhu > chigubhu	zvigubhu > zvigubhu	jerrycan/s
wuwa > ruwa	aruwa > maruwa	flower/s
muti > muti	muti > miti	tree/s
gedhi > gedhi	gedhi > maghedhi	gate/s
mapoposi > poteto	mapoposi > mapoteto	potato/es
zhai > zai	azhai > mazai	egg/s
aputi > maputi	aputi > maputi	popcorn/s
asawa > sawu	masawa > masawu	fig/s
apushi > pushi	mapushi > mapushi	sandal/s

The elicitation task produced interesting results that are closely linked to the observations made on data collected in natural settings. A number of patterns also emerged in the way the children used the noun IM. There is the use of the lexical/numerical plurals in place of the IM (see Table 5). The use of *tuu* ‘two’ is used as a way of marking plurality. The nouns *ruoko* ‘hand’, *pegisi*

'peg', *sipunu* 'spoon', *sipo* 'soap' and *bhaketi* 'bucket' are pluralized by the use of the numerical quantifier two. Two of the three children made use of the quantifier whilst the other child never used it. ARI when asked to give the plural form of *bhutsu* 'shoes' used both the numerical quantifier and the enumerative as shown below:

- 42a. ARI: *bhutsu dzese idzi tuu*
TARGET: *bhutsu*
GLOSS: shoes
- b. ARI: *mota dzese imota*
TARGET: *mota*
GLOSS: cars

Although the children do not use the adult Shona plural IM on the respective nouns discussed above there is evidence that the children understood the concept of pluralisation and marked it using lexical and numerical plurals. The use of *dzese* 'all' and *tuu* 'two' is indicative of the fact that the children understand the concept of plurals. However, there might be possible constraints that are operating against the use of plural IM. Interestingly the nouns *bhutsu* 'shoes', *mota* 'car' and *sipo* 'soap' are marked by zero IM for plural. This means that the morphological and phonological structures of these nouns are similar in their singular and plural forms. These have irregular plural formations. This makes them marked nouns in that they do not conform to the usual morphological structure of Shona plurals, where nouns take up IM to indicate plurality. This is assumed to be a possible reason for the children to be using the lexical and enumerative plurals. The other assumption that can be taken into consideration is that the children are aware that these nouns do not take a plural IM. However, a look at similar nouns that do not take IMs in adult Shona shows that the children are aware of the morphological rule that is operating on these nouns. The nouns *nzimbe* 'sugarcane' and *hembe* 'dress' belong to noun class 9 of the

Shona noun class list and they do not take plural IMs. The plurals are realized when the nouns are used in a sentence. Out of context the singular and plural forms are similar.

The nouns *ruoko* ‘hand’, *pegisi* ‘peg’ and *sipunu* ‘spoon’ are also pluralized by the use of the lexical and numerical words. The children seem to have avoided the use of the plural IM {ma-}. This is interesting because {ma-} is one of the frequently used plural morphemes in Shona (cf. Mabugu 1995, Kadenge & Sibanda 2011). The fact that the children did not use {ma-} on these particular nouns to indicate plurality might indicate that the children have not figured out the appropriate IM for these specific nouns but have grasped the concept of pluralisation and use lexical plurals instead.

One pattern that is observed in the natural data is the omission of IMs on nouns and verbs. The elicited data also have utterances in which children omit the IM as shown in the examples below.

	Child utterance	Target	Gloss
43a.	Ø-gedhi	magedhi	gates
b.	Ø-woko	ruoko	hand
c.	Ø-liwo	muriwo	vegetables
d.	Ø-chayiyo	mutsvairo	broom
e.	Ø-goti	mugoti	cooking stick
f.	Ø-vhalo	chivharo	lid
g.	Ø-gubhu	chigubhu	jerrycan

The children omit the IMs {ma-, ru-, mu-, chi-} as shown in the above examples. They omit the IM and produce bare stems; this pattern is also noted in the natural data. In example 43 there is an indication of preference of the disyllabic word except for 43d in which the child produced a trisyllabic word. The IMs that are omitted here belong to various noun classes, an indication that the children are not omitting the IM of one particular noun class. The omitted IMs have different

phonological structures. Interestingly one child gave the IM for the plural of *chigubhu* ‘jerrycan’ but in its singular form the child produced it without any IM. This might be because the family members frequently refer to *zvigubhu* ‘jerrycans’. This is because in the area in which this child resides, there is a water shortage and hence the use of the word *zvigubhu* when they fetch water.

Another pattern that is seen in the elicitation task is the dropping of the consonant of the IM. The children dropped the consonant and used the vowel only. This means that instead of a CV IM they produced a V IM. The examples below are indicative of instances in which children produced such.

	<i>Child utterance</i>	<i>Target</i>	<i>Gloss</i>
44a.	Ø-akapu	makapu	cups
b.	Ø-aruwa	maruwa	flowers
c.	Ø-azhayi	mazai	eggs
d.	Ø-aputi	maputi	popcorn

In example 44a-d the children drop the consonant /m/ and produced the vowel /a/ which is part of the IM {ma-}. There is a possibility that this marks a transitional stage from a stage where the IM as a whole is omitted to the use of a vowel which is part of the targeted IM. This pattern is noted in previous studies on Bantu and is referred to as the ‘shadow vowel stage’ according to Demuth (2003:5) while Kadenge and Sibanda (2011:39) refer to the same as a ‘partial noun prefix’. Although Chapanga (2006) was studying question formation in Shona, the findings also reveal the dropping of the consonant /m/. The children might be using the rule of dropping the consonant in the IM. For an extensive discussion of the partial vowel stage see section 4.1.1 on natural data. However, it has to be reiterated that the use and emergence of the various patterns

discussed in this study are not a clear-cut process but are characterized by overlap where in one case the child produces a particular IM and in another the same is omitted.

There are instances in which TAD (see Table 5b) does not give plural nouns but is able to name the items in their singular form. However, when asked to give the plural, the child does not respond. The child might not have been aware of the plural forms of the nouns in question or did not understand the demands of the task. This is because the competence of the children is still developing. In instances where TAD attempted to supply the plural form the child preferred to use numerical and enumerative lexicals *tuu* 'two' and *dzese* 'all'(see Table 5b). In 45,4% of the responses the child did not give the plural form. The child kept quiet, something that might be an indication that the child was not ready to use plural forms.

The elicitation results indicate that the patterns that are noted in natural data are also present. The children, however, use lexical and numerical plural in elicitation data. This indicates that the children omit the IM owing to other constraints because when asked to supply plural items the children understood the demands of the task. This finding is interesting as it supports the fact that children perceive and understand the grammatical rules but are not competent to produce them due to various constraints that will be operating against the attempt to produce the target forms.

4.3 CHILD SHONA MORPHOSYNTAX

The study focuses on the nature of inflectional morphology of child Shona nouns and verbs. Inflectional morphology plays a major role in adult grammars. In the case of child grammars it is seen as a reflection of the progress in the development of children's competence in the target language. Inflectional morphology is situated at the interface of morphology and syntax.

Inflection is responsible for the grammaticality of word forms and thus is part of morphology. On the other hand the grammatical information which is added through inflection has effects on constituents in the construction and hence is effective in syntax. Mugari (2013:151) states that in “Bantu languages, the subject and object marker on a verb cross-references the verbs and arguments by agreeing in person, number, noun class and gender.” This indicates that there is a relationship of elements that are in the Shona sentence. According to (Trask 1993:12), “the appearance of one item in a sentence in a particular form requires a second item which is grammatically linked with it to appear in a particular form.” Trask here is reflecting on the concept of agreement that is brought about by the use of IMs (in the case of this study for instance) and this makes the use of IMs for agreement purposes a morphosyntactic phenomenon.

In Shona the IMs are bound to lexical morphemes. It is assumed by this researcher that because the IMs are bound the children will acquire them as one unit. However, the opposite is true where children are producing utterances in which the IM is absent. The children are, therefore, showing their capacity to separate IMs from lexical morphemes. The fact that children are producing nouns and verbs without the IM indicates that they acquire the IMs separately from the lexical morphemes. This makes the child Shona sentences to be void of IM in nouns and verbs. These omissions of IMs in contexts in which they are obligatory exert a missing link among constituents within the child sentence. The IMs on nouns and verbs interact to produce sentences that are grammatical. The omission of IMs in utterances made by children results in morphosyntactic structures shown below:

- 45a. CAR (2; 0): Ø-dona
TARGET: nda-donh-a
MMA: SIM.TIM-fall-FV
GLOSS: I fell.

- b. CAR (2; 2): mama Ø-Ø-fema (two word structures: noun + verb)
 TARGET: mama ari ku-chem-a
 MMA: mum – aux-INF- cry-FV
 GLOSS: Mother is crying.
- c. TAD(2; 5): mhamha Ø-Ø-Ø-da dhaka
 TARGET: mhamha ndi-ri-ku-d-a dhaka
 MMA: mum SIM-aux-INF- want –FV mud
 GLOSS: Mother I want mud.
- d. ARI (2; 4) Ø-Ø-Øabaya uyu
 TARGET: ndo-da-ku-bay-a uyu
 MMA: SIM-TIM-want-INF-shoot-FV this one
 GLOSS: I want to shoot this one.

The child Shona morphosyntactic structures shown in 45a-d above, show that the IMs are omitted. In 45a the child produces an isolated word while in 45b there are two words while 45c and d have three words each. Although these examples are different in terms of their constituents they all lack certain morphological inflections as indicated by Ø. This can be explained as a way of simplifying constructions by using economic forms. Radford (1990) and Vainikka (1994) analyse root infinitives⁵⁵ as bare VPs lacking functional projection. The omission of tense and agreement IMs results in forms that are infinitive but used in contexts that require finite forms.

There is a remarkable uniqueness in child Shona morphosyntax as revealed in 4.1. The role of inflectional morphology in adult Shona is to create grammatical word forms and the grammatical information added “typically exerts effects on other constituents in a construction and hence is effective on syntax” (Penke 2012:1). In adult Shona the importance of IMs lies in the fact that they are used to link the nouns with other words in a sentence by means of a concord. Although

⁵⁵ According to Phillips (1996) “Root infinitives are default verb forms which young children use in root clauses, where they are generally not possible in the target language.”

child Shona nouns and verbs are not fully developed they contribute to the nature of child Shona morphosyntax. Nouns and verbs are pivotal to general sentence construction. Child Shona makes use of these pivotal constituents of the sentence. There are no child Shona utterances in which the IM is produced in isolation (without being inflected on either a noun or verb lexical component). The children, however, produce lexical components without the target IMs. In terms of adult Shona sentence structures the children's utterances have the nouns and verbs that take up the grammatical function of being subject and object.

Although the children produced sentences with the expected syntactic categories they lack IMs which are the panacea to Shona morphosyntax since they link the syntactic categories within the sentence. For instance the IM on the noun which is a subject determines the IM on the verb. This is because Shona is a head-marking language with some exceptional instances of dependant marking. There is evidence from the children's utterances that nouns and verb stems are produced before IMs. According to the Principles and Parameters theory some language features are universal and nouns and verbs are such. All languages have nouns and verbs. Child Shona reveals that children seem to be aware of the universality of noun and verb stems, because they occur prior to IMs (see Siswati: Kunene, 1979; Zulu: Suzman, 1980; Sesotho: Connelly, 1984; Setswana: Tsonope, 1987; Sesotho: Demuth, 1988, 2003; Isangu: Idiata, 1998).

The morphosyntax of child Shona shows that the children rely on certain nouns and verbs for their sentence construction. Child Shona shows preference to pivot words. These are words that children often use in their utterances. The verb *da* 'want' is noted to be a pivot word in the child Shona data collected in this study. The children made common use of the pivot word without

IMs and with IMs. Braine (1976) refers to these as pivot schemas or pivotal constructions. The pivotal schema in child Shona combines the verb *da* ‘want’ with nominal and infinitival complements. The table below illustrates the child Shona pivotal schemas.

TABLE 6: Child Shona pivot schemas

<i>da</i> ‘want’ + infinitive	<i>da</i> ‘want’ + nominal
ndoda + geza	ndoda + tawuyo iyo mati
ndoda + kukojoba	mama ndoda + tʃinga
ndoda + kuma	ndoda + tʃinga tʃangu tʃose
ndoda + kubejeka mana	da + mvula iyoyo
ndoda + kuma tii	nuda + puti
ndoda + kuvata	da + ahewu
ndoda + kuvata nemnjana wangu	da + kadhi angu
ndoda + kusuka	da + rimwe njimbe
ndoda + kusunga	
ndoda + kumhoresa	
da + kutoya imwe	
da + kusuka apuyeti	
banga da + isha dovi	
da + kuona zhandinoita	
da + kuisa kokoyeti	
da + kutenga asikiyimu	
da + mbogalawo	
da + kutenga fiziti	

The pivot schemas in Table 6 are centred on the verb *da* ‘want’. The verb *da* is either inflected or uninflected. The verb *da* is mostly used with infinitival complements and less with nominal complements. In some cases there are IMs that are omitted but there is a combination of words which is indicative that syntax is in place. This can be an indication that syntax precedes morphology, and is, therefore, an area for further research. The verb *da* is used correctly in terms of the morphosyntax of Shona. This is because the children used it as a complement. There are no instances in which the children used the verb *da* without a complement. This is another indication that the children adhere to the principles of syntax. The children rather omit the IM and supply the complements. The verb *da* is a complement-taking verb. In child Shona the verb *da* occurs with nominal and infinitival complements as shown in Table 6 above. The pivot schemas are a syntactic template for children acquiring language as they build complex structures from these schemas. The pivotal schemas can start as two words and gradually develop into larger structures. The development of child Shona syntax is one area that requires further research. The use of the verb *da* as a pivot can also be associated with the fact that the child still depends on adults for a lot of things and hence it frequently occurs in their discourse. Tomasello (1992) also notes that verb argument construction in children’s utterances is organized around specific verbs.

4.4 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER

The data is analysed over two chapters, namely this chapter and Chapter Five. The current chapter initiates the process of data analysis by establishing the nature of noun and verb inflectional morphology in child Shona. The description is based on the utterances collected from the four children in this study. Both natural and elicitation data are used. The child Shona

utterances are described with a focus on the two lexical categories of nouns and verbs. The focus of the descriptions of child Shona morphosyntax is on IMs attached to the Shona nouns and verbs. The findings are that the child Shona IMs attached to the nouns and verbs are different in form from the adult forms. Child Shona nouns and verbs are produced without IMs, with reduced forms or substituted forms with the wrong IMs. The next chapter is devoted to a discussion of the possible constraints in child Shona based on the findings and descriptions of the child noun and verb morphosyntax. It also links child Shona morphosyntax to linguistic theoretical perspectives.

CHAPTER FIVE: CONSTRAINTS IN CHILD SHONA

5.0 PREAMBLE

The preceding chapter initiated the process of data analysis by establishing the nature of noun and verb inflectional morphology in child Shona. The current chapter seeks to discuss the possible constraints in child Shona based on the findings given in chapter four. A constraint as defined by the *Oxford advanced learner's dictionary* (2014) (2014) is a limitation or restriction. As stated in Chapter One, the current study aims to provide an appraisal of child Shona morphosyntax from a constraint-based approach. Constraints are element factors that act as a bottleneck. They restrict an entity, project or system from attaining optimal potential with reference to its goal. In the case of children acquiring any language, comprehension precedes production. Hence in terms of speech production the child, in some instances, is aware of the target utterance but is restricted because of constraints. In the context of child Shona a constraint is a limitation to the production of adult Shona structures resulting in child grammar (also known as *chicheche* in Shona society). The researcher uses knowledge of Shona linguistic structure to identify and explain possible constraints in child Shona. CLA does not take place in a haphazard manner but it follows a systematic pattern. As noted by Lust (2006:2) "A regular course of acquisition is generally followed, one not determined by changes in the environment..." The fact that CLA follows a systematic pattern has resulted in acquisitionist tapping into universal grammar to search for possible explanations for the manner in which language develops in children across the language divide. The fact that children produce phonologically, morphologically, semantically and syntactically different utterances from those of the target

adult grammar shows that child grammar is unique. In a study carried out by Mudzingwa (2001) efforts to make Caroline produce [*dokta*] ‘doctor’ were fruitless after the child repeatedly uttered [*dotika*]. Mudzingwa (2001:180-1) notes that,

“When Caroline produced the utterance, [*Hopu hande nevana vedu kwaḁotika*] “Hope, let us go with our babies to the doctor”. The researcher asked Caroline the question, [*muri kujenda nevana kwaḁotika*] “Are you taking your babies to the doctor?” the word [*dotika*] “doctor” was said in a very slow and deliberate way. Caroline realized that the researcher had not said the word [*dokta*] “correctly” that is in an adult like manner. She responded with an emphatic no, and proceeded to say out the utterance in a way that she felt was the appropriate way...However, Caroline still produced [*dotika*] in place of [*dokta*]. The interchange was repeated four times with the child still not satisfied with the researcher’s pronunciation of [*dotika*]. She tried to produce the adult word [*dokta*] herself, only to produce [*dotika*], again and again. She was only satisfied when the researcher reverted to pronouncing the word [*dokta*].”

This interchange documented by Mudzingwa (2001) shows that children are able to perceive and comprehend differences in their utterances from those in adult utterances, in this case, [*dotika*] and [*dokta*], but because of constraints they cannot produce the intended utterance. Berko and Brown (1960) describe the phenomenon where children deny their own pronunciation as the fish-phenomenon. Where a child pronounces the word fish as [fis] instead of [fiʃ] but at the same time rejects his own pronunciation when uttered by an adult (Smith 1973). Fikkert (1994) states, that children’s productions are a reflection of phonological competence rather than of limited performance abilities. However, these productions give the external evidence of the constraints that the child is facing in the process of language acquisition. Therefore, in this study the researcher assumes that production data reflects children’s competences and constraints. The fish-phenomenon on the contrary shows that limited performance ability is not a reflection of constraint on perception. Perception and production are two distinct phenomena. Fikkert (1994:4) argues that, “If performance limitations are reflected in the phonology, for instance, as constraints on perception and articulation, the distinction between competence and performance is meaningless.” Within linguistics competence is manifested in performance. It, therefore, means that the failure by children to produce certain elements is an indication of constraints on

competence. However, the fish-phenomenon indicates that performance constraints are not competence constraints. A psycholinguistic approach assumes that perception reflects competence, while in production competence is obscured by performance constraints. As indicated earlier, this study assumes that children's productions reflect their competences and constraints.

The data gathered from children in this study show variability in terms of the form of the inflectional morphemes (IMs) on nouns and verbs. In some instances the IM is absent and in some it is present but phonologically inadequate. The variability in production of the IM in child Shona is largely due to linguistic constraints which can be phonological, morphological, syntactic, semantic or prosodic. Demuth (2006) argues that the variability of grammatical morphemes in children's speech is systematic and predictable. Demuth (ibid) also links the variability to linguistic constraints on phonological/prosodic competence. The constraints that are discussed here are based on the data collected from the four children in this study. The constraints are discussed in terms of IMs on nouns and verbs only.

5.1 PHONOLOGICAL CONSTRAINTS

There is evidence in literature that phonological/prosodic constraints dominate the process of language acquisition as compared to morphological or semantic constraints. One reason for this is that phonological constraints play a role in the shape of words in general and IMs in particular (for instance the dropping of a consonant in an IM has a phonological effect on the structure of child Shona nouns and verbs) and in turn these have an effect on child Shona syntax. Phonological constraints contribute to the omission of consonants and the production of vowels

only. In the process, certain phonological segments are substituted with simplified ones (see Pye 1983 for Quiche Mayan, Fikkert 1994 for Dutch, Pater 1997 and Demuth 2001 for English).

5.1.1 Word structure (number of syllables) constraints

The omission of the IM in child Shona can be linked to word structure constraints. The omission of the IM is variously construed to be due to rhythmic prosodic constraints (e.g. Gerken *et al.* 1990; Gerken 1991; Gerken & McIntosh 1993; Demuth 1994). Shona is a morphologically rich language making it potentially complex to acquire for the child since there is a lot of mapping of morphemes that the child has to deal with. Although IMs form part of the morphology of the word, the IMs are built up using phonological forms. Coincidentally, IMs are also syllables in Shona. All IMs in Shona, therefore, are syllabic. This means that all Shona morphemes are prosodically recognized as syllables. A syllable constitutes a string of sounds including one peak. The syllable in Shona is a prosodic unit which is a result of rhythmic production. In Shona a word is made up of at least two syllables, that is, word > σ 2 in Shona (making it disyllabic). Syllable boundaries in Shona coincide with morphemic boundaries as in [mu-], [va-], [mi-], [chi-] etc. Interestingly, morphemic boundaries are one and the same with IMs and syllables. Mutonga and Shumba (2011:20) note that "...Shona words can be exhaustively divided into sequences of syllables." The net effect of the dropping of the IMs is that when this happens syllables are dropped each time. In example 46a-d⁵⁶ the IM on the nouns is dropped.

- 46a. ARI (2; 6): Ø-p-i-shw-a Ø-**folo**
TARGET: nda-p-is-w-a **mu-soro**
MMA: SIM-VR.burn-causative-passive-FV CL3-head
GLOSS: My head is burnt.

⁵⁶ This example is first cited in Chapter Four and repeated here for clarity purposes.

- b. ARI (2; 6): Ø- Ø- Ø- d-a Ø -enda **Ø-Ø-kojo**⁵⁷
 TARGET: ndi-ri-ku-d-a kuenda **ku-chi-koro**
 MMA: SIM.aux-INF-VR.want-FV go CL17.Loc -CL7 NP- NS.school
 GLOSS: I want to go to school.
- c. CAR (2; 2): Koθi Ø-Ø-Ø **Ø-goma**
 TARGET: Kosi ari mu-gomba
 MMA: Kosi .CL1a aux CL18.Loc-pit
 GLOSS: Corsi is in the pit.
- d. CAR (2; 2): mama Ø-Ø-Ø **Ø-Ø-goθa**
 TARGET: mama vaenda **ku-ma-girosa**
 MMA: mother.CL1a go CL17.Loc-CL6.NP-NS.shop
 GLOSS: Mom has gone to the grocery shop.
- e. JOH (2; 5): aenda **Ø-fikana** kumba kwavo
 TARGET: **musikana** aenda kumba kwavo
 MMA: CL1-girl SIM-go-FV CL15-home her
 GLOSS: The girl went to her home.
- f. JOH (2; 5): kame Ø-foyo
 TARGET: ndikame **mu-soro**
 MMA: comb CL3.head
 GLOSS: Comb my hair.
- g. TAD (2; 5): waona **Ø-tʃipifi** iyi Ø- Ø oko?
 TARGET: waona **ma-chipisi** ari **mu-ruoko** here?
 MMA: see CL6.chips in CL18.Loc-hand
 GLOSS: Did you see the chips in my hand?

The targeted nouns vary from being disyllabic to trisyllabic, to multisyllabic. The children's utterances seem to indicate that they preferred to produce disyllabic nouns. The production of truncated nouns and verbs in preference to disyllabic forms is an indication of phonological constraints. The table below shows the difference in noun structures between child and adult Shona.

⁵⁷ The noun or verb being analysed is in bold.

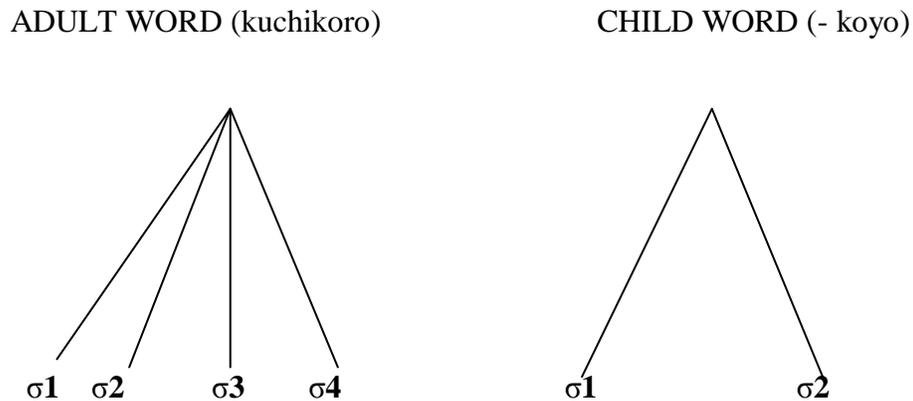
TABLE 7: Child (2; 2 -2; 6) vs. adult noun structures (# of syllables)

Child noun	# of syllables	Target adult noun	# of syllables
a. -koyo	σ2	kuchikoro	σ4
b. -goθa	σ2	kumagirosa	σ5
c. -soyo	σ2	musoro	σ3
d. -chipisi	σ3	machipisi	σ4
e. -oko	σ2	muruko	σ5

In the nouns presented in Table 7 above the children produce nouns with two syllables regardless of the number of syllables in the target noun. They omit syllables from multisyllabic nouns and verbs. The target nouns, *kuchikoro*, *kumagirosa* and *muruko* are preprefixed. This pre-prefixation yields a sequence of class prefixes that create morphologically complex nouns. The nouns are marked with two inflectional morphemes which the children omit in order to maintain the disyllabic noun structure that they seem to be comfortable with at this stage. The data, therefore, show that children are constrained in terms of the number of syllables in the target adult Shona nouns. Instead, for instance, of producing a quadri-syllabic noun the child produces a disyllabic one. It might, therefore, be that the children are constrained by word structure in terms of the number of syllables, hence the dropping of IMs. This situation comes about because there are more syllables to process and produce. It can further be argued that the omission of the

IMs (syllables) is a way of simplifying the words and promoting ease of production. The figure below illustrates the structure of the adult and child word.

FIGURE 4: Adult word vs. child word



It is evident from the two representations above that the child word is structurally different from that of the adult word. The omission of the various IMs in the nouns and verbs produced by the children results in a word which is smaller than the target. The children reduce the size of the nouns and verbs by omitting IMs. The fact that the Shona IM is syllabic means that the children also face prosodic constraints associated with the syllable in the production of nouns and verbs.

Inflections in Shona are marked by prefixes whilst the derivations are suffixal (Mkanganwi 2002). This means that all IMs in Shona are prefixal. Therefore, from the nouns and verbs produced by the children the IMs that are omitted are prefixal. These are the inflections of the noun and verb stems. In effect, the children, therefore, retain the stems and omit the prefixes. It would appear, on the basis of the patterns in the data, that the children are at stage two with

reference to stages in the development of prosodic words identified by Demuth and Fee (1995). This is a stage when children cannot produce a word which is more than a binary foot. The children's grammar is prosodically 'constrained' to produce no more than two syllables. At this stage the children have to and are dealing with word structure constraints.

The same pattern is observed in the production of verbal structures. Example 30 a-e (see Chapter Four) shows that the children seem to prefer the disyllabic structure in the verbs that they produce. The IMs that are omitted vary from those of the noun to those of verbs. In this case the IMs that mark the subject, tense and infinitives for instance are omitted. The table below shows the structure of verbs produced by children vis-à-vis adult verbs in relation to the number of syllables.

TABLE 8: Child vs. adult verb structures (# of syllables)

Child verb	Number of syllables	Target adult verb	Number of syllables
a. -pinde	$\sigma 2$	ndipinde	$\sigma 3$
b. -enda	$\sigma 2$	kuenda	$\sigma 3$
c. -kame	$\sigma 2$	ndikukame	$\sigma 4$
d. -uya	$\sigma 2$	vavakuuya	$\sigma 5$
e. -pewo	$\sigma 2$	ndipewo	$\sigma 3$

In the utterances in which the children omit the IM for nouns and verbs the pattern reveals that the children prefer the disyllabic structure as evidenced in Table 7 and 8. The children are, therefore, constrained by word structure in terms of the number of syllables. Mudzingwa (2001)

also noted the phenomenon of syllable deletion resulting in disyllabic words. However, Mudzingwa was focusing on phonological acquisition. In this study syllable deletion is viewed as a phonological constraint that has an effect on the nature of morphosyntax in child Shona. In Shona the IMs are unstressed and it is possible that the children delete unstressed syllables (cf. Ingram 1992, Fee & Ingram 1982, Smith 1973). The omission of syllables is a complex phenomenon. It is complex in that it does not follow a universal pattern both within languages and across languages. Research in various languages shows variability in the syllables that children omit. In some cases the unstressed syllables are the ones vulnerable to omission (see Allen & Hawkins 1980; Wijnen *et al.* 1994). Other researches link the omission of syllables to the rhythmic properties of the ambient language (Demuth 1996, Fee 1995).

5.1.2 Articulation constraints

Articulation plays a role in the production of child Shona IMs in nouns and verbs. In an investigation Fikkert and Levelt (2004) found that in the early stages of acquisition, words consisted of consonants and vowels that shared place of articulation features, where the vowels are dominant. They also found that in subsequent stages, the vowel could first be specified independently from the consonants and also that later the consonants in a word could have different places of articulation. In the Fikkert and Levelt study (*ibid*) the children tended to have a preference for specific places of articulation in specific prosodic positions. This is an instance of place of articulation constraints. In this study articulation constraints are evident in those cases where children fail to produce the target phonological segment. The children produce IMs with a different consonant from that of the target adult Shona. The consonant of the target IM is substituted as shown below:

- 47 a. $\text{ʃibage} > \text{tʃibage}$ “green mealie”
 b. $\text{Øikoyo} > \text{tʃikoro}$ “school”
 c. $\text{ndʒimbe} > \text{nzimbe}$ “sugarcane”
 d. $\text{ʒigaba} > \beta\text{z igaba}$ “containers”
 e. $\text{ʒigubu} > \beta\text{z igubu}$ “jerrycan”

The consonants /ʃ/, /Ø/ instead of /tʃ/, /ʒ/ instead of /βz/, /ndʒ/ instead of /nz/ are produced. The children substitute consonants that form part of the IM. The substitution of consonants is one strategy that is noted in the development of Shona phonology (see Mudzingwa 2001). The constraint that is in operation here is the articulation constraint. The replacement of the consonants in example 47 is a way of simplifying complex consonants. The child is constrained by the complexity of the consonants /tʃ/, /βz/, and /nz/. In 47b the consonant /Ø/ is not part of the Shona phoneme inventory but the children use it to substitute consonants that are too ‘complex’ for them to produce. This indicates that the children have the capacity to be creative. The omission of consonants is an indication of articulation constraints on the part of the child. In terms of production, consonants are more complex than vowels. Owens (1988:393) alludes to the complexity of consonants as compared to vowels. This is because consonants and vowels have different manners of articulation. Consonants have a greater degree of constriction than vowels. In phonological terms consonants are less sonorous while vowels are typically the most sonorous part of the syllable. Acoustically consonants are less prominent than vowels. Vowels are more intense than the consonants that surround them. This might be a possible reason why children omit the consonants in IMs. The children omit certain consonants and thus produce vowels only. This means that in terms of the syllable structure of Shona the consonants, whether “simple or complex, are [-SYLLABIC] and function as margins” (Mutonga & Shumba 2011:19). The consonants in the Shona syllable are optional in V-structure syllables. However, in the cases where the children omitted the consonants they were obligatory. The IM produced by the

children, therefore, is not typical in terms of the syllable structure of Shona which is a CV one. The examples below illustrate cases in which the children omit consonants and produce the vowel only.

- 48a. ARI (2; 6): -azhala **a**-vhu
TARGET: yazara **ma**-vhu
MMA: it is full **RIM**-soil
GLOSS: It is full of soil.
- b. JOH (2; 7): Ø-**a**-futa yamhamha
TARGET: **ma**-futa amhamha
MMA: **RIM**-lotion mother
GLOSS: Mum's body lotion.
- c. JOH (2; 6): -da kusuka **a**-pureti
TARGET: ndi-ri-ku-d-a kusuka **ma**-pureti
MMA: SM-aux-INF-want-FV INF- wash CL6 **RIM** -plate
GLOSS: I want to wash plates.
- d. TAD (2; 4): -da gezha **a**-woko
TARGET: ndi-ri-ku-d-a kugeza **ma**-oko
MMA: SM-aux-INF-want-FV INF-wash CL6 **RIM**-hand
GLOSS: I want to wash my hands.
- e. ARI (2;5): -**a**-pushi
TARGET: **ma**-pushi
MMA: CL6 **RIM**-sandals
GLOSS: Sandals.

The consonant /m-/ is part of the plural morpheme. In the data given above the children consistently omit this consonant. The fact that the children produce a vowel and omit the consonant can be assumed to be an indication of the emergence of the target IM. Children tend to acquire words that name things in their immediate environment. This is revealed in the given data in which the children are shown to use nouns that take the plural IM {ma-} in all the examples identified in the data. The plural IM {ma-} is one of the most frequently used plural

IMs in Shona, thus rendering it more accessible to children. However, what is striking about the data is that the children opted to drop the consonant /m/ which forms part of the plural IM {ma-} and yet they produce it in other environments. This might be because some constraints are governed by the context of occurrence of the consonants and morphosyntactic operations. In this case although the children could produce /m/ elsewhere, they fail to produce it when it is part of an IM. This might be because the children acquire nouns in segments where they start by acquiring the stem then the IM. The consonant /m/ is notably one of the first consonants that children acquire; this is because it is a bilabial sound. Bilabial sounds are front sounds and, therefore, are easily acquired. The omission of /m/ in the examples given in 48 cannot be ascribed to articulation constraints only, but can also be due to phonotactic constraints. Crystal (1980:292) defines phonotactics as a term that refers to the sequential arrangement of phonological units that occur in a language. The child might still be figuring out the correct speech sounds to combine in order to form the correct IM. The nouns and verbs seem to be built from the right edge towards the left. The production of the vowel /-a-/ before /m-/ supports the view that children acquire morphological structure from the right to the left. However, the children are constrained in terms of the articulation of the IM. It is important to note that the language acquisition trajectory is not neat. There are various constraints that are potentially involved in the process. The right to left progression of acquisition in Shona nouns and verbs may also be used to explain the emergence of the IM in the form of a vowel only without the consonant. The fact that children produce /m/ elsewhere can be an indication that they have acquired /m/ as a phonological category but because they have to figure out the interactions of the phonotactics and morphosyntactic processes of Shona the articulation of the segment is constrained. This is because the segment is realized here as part of a morpheme. The production

of the IM in the form of a vowel only is also evidence that children are building the IM in a ‘piecemeal’ fashion. Radford (2000) acknowledges that language acquisition involves incremental feature-building. The notion of incremental feature-building therefore insinuates that the more robust and primitive aspects of a language are acquired before the more abstract aspects (e.g. morphemes) of a language.

5.2 MORPHOLOGICAL CONSTRAINTS

In Shona noun and verb morphological structure inflections are to a larger extent prefixal. This contradicts with a proposal that there is a universal preference to add inflections to the end of words rather than the beginning (Ramscar 2013). The Shona inflectional morphology, therefore, contradicts the universal expectations. The positioning of IMs plays a role in acquisition. Ramscar (2013:378) suggests that, “prefixes provide little information about the unique identity of words and actually serve to delay the arrival of uniqueness point information” (cf. Marslen-Wilson 1987 and also Balling & Baayen 2012). Accordingly, this makes prefixes less communicatively efficient than suffixes. The manner in which Shona inflects nouns and verbs, therefore, espouses morphological constraints, based upon research in the literature. The literature⁵⁸ reveals that “suffixes facilitate language learning as well as language processing in particular with regards to marking the grammatical root words” (Ramscar 2013:378). In an artificial grammar learning task St Clair *et al.* (2009) found that markers learned as suffixes led to better learning of the relationship between marker words and category words than markers learned as prefixes. Taking this assumption into consideration, Shona inflectional morphology poses constraints to the child acquiring the language. Shona makes use of both prefixing and suffixing. The noun in Shona makes more use of prefixing while verbs use both prefixing and

⁵⁸ See Hawkins and Gilligan 1988, St Clair *et al.* 2009.

suffixing. Morphology is also abstract which might be a potential constraint to the process of language acquisition.

Morphological headedness is a possible constraint to the process of language acquisition. The process of child language acquisition is a process of creating a mental lexicon or word formation. Morphological heads are key in word formation processes in general (Revithiadou 1999). It is assumed that morphological heads have a role in the process of language acquisition. According to Tzakosta and van de Weijer (2005:1) “Morphological heads are morphemes that determine major grammatical class.” Williams (1981), states that the affix which determines major lexical class membership is the head, while other parts of a morphological structure are non-heads. In terms of a morphologically complex word Williams (ibid) states that the head is the right hand member of that word. This rule is controversial in terms of its applicability universally. However, the data in child Shona indicate a preference of the right hand rule. In the case of nouns it is the noun stem which is preserved and there are no cases in which the children produced the IM without the morphological head (noun stem). From a constraint-based approach it therefore means that headedness is a constraint. Left edge morphemes are not produced while right edge morphemes are more likely to be produced. Morphosyntactic heads act as constraints. In the case of Shona the IM which is also the prefix acts as a morphosyntactic head. Even in the case of pre-prefixation it is the pre-prefix which acts as a morphosyntactic head in the sense that it controls agreement.

5.3 SEMANTIC CONSTRAINTS

One of the possible constraints that lead to the omission of IM is the semantics of the morphemes within the target word. Shona nouns and verbs have elements that are semantically more

meaningful than others. The Shona noun and verb are made up of lexical, inflectional and derivational morphemes. The lexical morphemes are semantically more meaningful, making them the semantic heads, while inflectional and derivational morphemes are non-heads. The data in this study show that children almost always produced lexical morphemes in cases where IMs were omitted. The assumption, therefore, is that semantic headedness plays a role in the omission processes found in the utterances of child Shona. According to Tzakosta and van de Weijer (2005), semantic headedness refers to the tendency to preserve the semantic core of expressions (or words). In child Shona data there is an indication that children preserve the lexical morphemes in their utterances while dropping the IMs. The children show faithfulness to the lexical morphemes (semantic head). According to Tzakosta and van de Weijer (ibid), the case in adult language is that “faithfulness to the root is always more strictly enforced than faithfulness to the affixes” (cf. McCarthy & Prince 1995; Kager 1999). Child Shona reveals instances in which children truncate nouns and verbs while being faithful to lexical and IM boundaries. The constraint that is assumed to be in operation here is a semantic constraint, where children preserve the semantic head and dropping the non-head. This constraint can be working in tandem with the frequency of lexical morphemes vis-à-vis that of IMs. The frequency constraint is discussed under section 5.6.

5.4 VISIBILITY AND PERCEPTUAL SALIENCE CONSTRAINTS

The elicitation tasks show that children produce lexical plurals and not morphological plurals. Lexical plurals make use of lexemes while morphological plurals make use of the IMs to express plurality. In the elicitation task the children identify nouns and give their plural formatives. It is in this task that the children use lexical plurals. See the example below:

49. **ARI** a. *bhutsu dzese idzi tuu*-‘all of these two shoes’
b. *mota dzese imota*- ‘all these are cars’
c. *tuu*- ‘pegs’
d. *tuu*- ‘hands’

50. **TAD** a. *shipo tuu*- ‘soap’
b. *tuu*-‘spoons’
c. *tuu*- ‘bucket’

The data given in 49 and 50 above are representative of instances in which the children use lexical plurals. Two children made use of lexical plurals, i.e. TAD and ARI. The use of a lexical plural was in an appropriate context for the nouns *bhutsu* ‘shoe’, *sipo* ‘soap’ and *mota* ‘car’ as these do not take morphological plurals. The nouns ‘buckets’, ‘spoons’, ‘pegs’ and ‘hands’ are used with lexical plurals also. These take the plural IM {ma-}. The use of lexical morphemes is considered appropriate in the utterances in which they are used. However, the elicitation tasks show that the children tend to overgeneralise the use of lexical plurals. This is because in some of the cases there are more than two items and yet the children refer to them as two. The researcher assumes that the children opt to use the lexical plurals in the context where they are unable to conceptualise the plural morpheme. The nouns *bhutsu* ‘shoe’, *sipo* ‘soap’, *mota* ‘car’ are borrowed from English. These nouns do not take up a specific IM to indicate plurality. The singular and plural forms are homonymous. The singular and plural forms of these nouns are phonologically and morphologically similar. There is no distinction in their form. The plural forms are only discerned by referring to morphosyntax. This means that to a child who is acquiring Shona there is a visibility constraint on irregular forms. The input does not provide the IM to mark plurals. The use of the lexical plurals on the nouns ‘pegs’, ‘spoons’ and ‘hands’ can be seen as a strategy of handling irregular nouns. The researcher assumes that this is because of the high visibility of lexical plurals as compared to IMs. The children show that they have

understood the demands of the task because they supply the noun in its singular form and when asked for the plural they use the lexical plural. The children's ability to supply the lexical plural forms is an indication that they have mastered the concept of plurals.

5.5 FREQUENCY OF IMS IN INPUT AS A CONSTRAINT

Linguistic elements can have a high or low frequency of occurrence in speech. The IMs of Shona tend to have a low frequency of occurrence compared to lexical morphemes. The researcher assumed that the frequency of occurrence of linguistic elements has constraining effects on the perception and consequently the production of speech in child Shona. Shona is an agglutinative language characterized by heavy prefixing and suffixing. The various prefixes and suffixes attach to lexical morphemes. A particular lexical morpheme can be inflected by various IMs depending on the context in which it is used. The lexical morpheme is a constant variable while the IM is the changing variable. The lexical morpheme, therefore, has a high frequency of occurrence compared to that of the IM. For instance, the verb stem *-enda* 'go' can take the IMs {a-, va-, ma-,ta-, nda-, ra-, zva-, cha-, dza-, twa-, ka-}. All these IMs are possible inflections that can be attached to the verb stem *-enda*. A selection of any of these IMs triggers the use of the lexical morpheme. In terms of frequency the lexical morpheme is most likely to occur more in input language, however it occurs with different IMs attached to it. The child, therefore, perceives more of the lexical morpheme and most likely stores it as an uninflected morpheme. On the other hand the child is faced with the number of morphemes that has to be sorted out according to the context. Peters (1997:187) notes that the number of morphemes in any language is too large for a child to acquire at once. In Shona for instance the number of possible morphemes competing to be attached to one lexical morpheme is large. This is because of the typological nature of Shona. The number of morphemes and the frequency of their occurrence in

input language present a constraint to the child who is acquiring Shona. The child has a big task of identifying the appropriate IM to attach to the lexical morphemes. This is the reason for the child making a selection and focusing first and foremost on those morphemes that are frequent and salient (Slobin 1992). The more frequently the child perceives a particular morpheme the higher its chances are of being produced by the child. Fikkert (1994) acknowledges the effect of frequency in language acquisition by noting that frequent items are more likely to appear early in children's output. The ability to perceive morphemes from the input language is noted very early in children's life. Children are aware of the sound patterns of their language, for example, before they can speak. This suggests that perception precedes the ability to produce. They acquire sophisticated information about language, sound combination patterns and about which sounds are frequent by simply listening to language. According to Beckman and Edwards (2000) and Pierrehumbert (2003) acquisition is guided by frequencies in the target lexicon. Zamuner (2005), however, intimates that frequency and 'universal' markedness are not easily distinguishable since they share same patterns.

Frequency constraints are evidence of usage-based language acquisition. This is because frequency constraints are linked to the input from the environment. According to Tomasello (2003:61) "the linguistic skills that a person possesses at any given moment in time result from her accumulated experience with language across the totality of usage events in her life." Here the acquisition of language is linked to skills acquired from usage events. Tomasello (ibid) also notes that the accumulated linguistic skills are subject to entrenchment processes because of repeated uses of particular expressions across usage events, abstraction due to type variation in constituents of particular expressions across usage events.

5.6 CONSTRAINTS AND LINGUISTIC THEORIES

5.6.1 Constraints in child Shona from an Optimality Theory perspective

Optimality theory (OT) is a constraint-based theory (Prince & Smolensky 1993, papers in Kager *et al.* 2004) which is different from the rule-based theories proposed in *Sound Patterns of English* (SPE) by Chomsky and Halle (1968). The two theories are different in terms of how output is achieved. “In SPE the output is constructed by step-by-step application of rules, in OT the output is chosen from a range of options by means of output constraints on input-output relations” (Fikkert 1994:13). OT does not restrict input but all explanation is due to constraints on output form and the input-output relation. Fikkert (*ibid*) notes that the assumption is that children and adults have similar input. The fact, however, is that they only differ on their output. However, the input may be similar but it is an undisputable fact that the constraints that govern the conceptualization, formulation and articulation of children’s and adults’ input are different.

According to OT constraints are of two dimensions. There are markedness constraints and faithfulness constraints. Markedness constraints aim at minimizing the degree of markedness in output forms. Markedness refers to unusual or difficult forms, while unmarked forms are common or regular. Markedness can be observed at different linguistic levels such as phonology, morphology and semantics. Mutonga and Shumba (2011:42) note that, “...what is marked or unmarked is for some structural distinctions not an arbitrary formal choice, but rooted in articulatory and perceptual system.” Faithfulness constraints aim at faithfully producing the input structure. In the case of child language the children’s output indicates their faithfulness towards the adult output. To a child acquiring Shona, for instance, the desire is to be faithful to adult

Shona. However, there are constraints that hinder the faithful production of adult Shona. Markedness and faithfulness constraints are often in conflict, and hence, constraints are violated. When children start the process of language acquisition, markedness constraints tend to outrank faithfulness constraints. This markedness is not arbitrary but is rooted in the articulatory and perception system (cf. Smolensky 1996, Gnanadesiken 2004). As language acquisition progresses, children's output is marked by the presence of marked outputs and faithfulness to adult language. This is because the children re-rank the constraints.

One aspect of child Shona that can be explained from the OT perspective is the morphosyntax. Legendre's (2006) views on the development of French inflectional systems are here pertinent for explaining child Shona morphosyntax. Morphosyntax is a hybrid term that insinuates the interface between morphology and syntax. The morphological rules that operate on nouns and verbs interact with sentence structure. As noted by Legendre (2006) child language syntax comes in when children begin to produce verbs. The OT is used here to discuss the morphosyntactic forms in child Shona. Legendre (2006:821) alludes to two conflicting constraints which are:

- Sentences should show tense and agreement
- Sentences should not be so complicated

The sentences that the children in this study produce show that they are simplifying utterances and aligning to the constraint, which states that sentences should not be complicated. The aspects that have the potential to complicate child Shona morphosyntax are assumed to be IMs. This is because there are various IMs and the child has to figure out which one to use depending on the context. The use of IMs, therefore, is avoided by children since it complicates the sentence. Another constraint is that the child is faced with the assigning of tense and agreement at the same time. Legendre (2006) also points out that sentences should not be so complicated as to realise

both tense and agreement. Tapping into OT the constraints penalizing morphological structure are stated as follows:

Markedness constraints

*AFFIX: No affix

* AFFIX2: No pair of affixes

The *AFFIX constraint is violated by any candidate structure that has an affix (or IM) or agreement in prefix or suffix position with respect to the verb root. In Shona most verbs are marked since they are inflected. The IM on the Shona noun and verb is obligatory. To the child who is acquiring the morphosyntax of Shona the forms that demand IMs are marked. The constraint *AFFIX is, therefore, only satisfied by nonfinite verbs. As alluded to earlier, the finite and nonfinite verbs are distinguished from one another by tense inflection. Finite verbs are tensed while nonfinite verbs are not tensed. In Shona nonfinite verbs fall into class 15 of the Shona nominal classification. For example *kugara* ‘to sit’ is nonfinite while *gara* ‘sit’ is finite. The constraint *AFFIX, therefore, can only be satisfied by nonfinite verbs in Shona which do not have a tense morphological structure. Conversely, the constraint *AFFIX2 is violated by any verbal form with two distinct affixes (Legendre 2006:821). Legendre (ibid) defines these dual affixations as structures that have both tense and agreement. These structures are potential constraints in child Shona since they demand dual IMs. To the child this is a complicated sentence and children simplify structures in order to ease production. The other constraints that can be referred to in the explanation of child Shona morphosyntax are faithfulness constraints:

- a. PARSET: Parse tense
- b. PARSEA: Parse agreement

The faithfulness constraints parse tense and parse agreement limit differences between what is intended by the speaker (input to optimization) and what is expressed (output to optimization). The faithfulness constraints require the output to be similar to the input. In child Shona the output has to have properties of adult Shona. The need for faithfulness in child Shona morphosyntax conflicts with markedness constraints.

5.6.2 Constraints in child Shona and maturational theory

The development of child Shona morphosyntax is governed by the maturity of the child. This is because language acquisition is biologically determined. The process of language acquisition does not take place in a haphazard manner. The stages of language acquisition are evidence that language acquisition takes place according to a biological clock. Maturation constraints are constraints that are based on the assumption that children's language development is governed by maturity. Maturation constraints are informed by a maturational hypothesis which states that, early grammar differs from adult grammar in that children younger than 2; 6 (years; months) lack functional categories (Félix-Brasdefer 2006). Child Shona forms discussed in Chapter Four are evidence that at certain stages there are principles that will be in operation and gradually these disappear, paving the way for adult Shona forms. This happens as the child matures in a wide range of systems. Borer and Wexler (1987:124) note that, "certain principles are not available at certain stages of a child's development, and they are available at a later stage." The maturational hypothesis indicates that language production is at some stage constrained because the child will not have reached a certain stage of development. Maturation theory has two versions, the weak and the strong hypothesis. The weak hypothesis argues that in child grammar the knowledge of the IMs emerges gradually, stemming from a bare stem, for instance, a bare noun or verb phrase and eventually acquires the inflectional morpheme resulting

in an inflectional phrase. Under the weak hypothesis the full inventory of IMs which is found in adult grammar is absent in children's early grammar (Clahsen 1990; Meisel & Müller 1992). The weak hypothesis reflects a view of acquisition of syntactic knowledge under which the developing grammar gradually approaches adult grammar by slowly adding IMs. The other version of the maturational constraints is known as the strong continuity hypothesis or SCH (Lust 1999). The SCH has a contrastive view to the weak version. According to the SCH, functional structure, for instance, IMs and the functional categories are available from the beginning of acquisition and conform to universal grammar. In child Shona there is evidence of the weak hypothesis. There is no full agreement in early child Shona. Pizzuto and Caselli (1992) support the weak hypothesis in their study of Italian. They show that the full agreement system in Italian is not acquired early. Children in their study produced few plural forms and many singular affixes.

5.6.3 Constraints in child Shona from the perspective of the dual mechanism model

Children acquiring language engage in language processing activities. Levelt (1989) names three broad processes namely conceptualization, formulation and encoding. Conceptualisation is when a speaker considers what to say. Formulation is when the speaker translates the conceptual representation into a linguistic form. Execution engages detailed phonetic and articulatory planning. It is not within the scope of this study to delve into the details of these processes but even a cursory explanation helps to understand the activities that children engage in when processing language. The children in this study produced forms that showed a separation of morphological entities, that is, IMs and stems. One model can be referred to in order to explain

the separation of morphological entities in Shona. As noted earlier, this research seeks to account for the development of child Shona morphosyntax using linguistic theories. The dual mechanism model can be used here to explain the phenomena identified in child Shona. The fact that the children were able to separate the IMs from lexical morphemes is an indication that they have a certain level of conceptualisation of Shona grammar. According to Galasso (2004:99) children use their instincts to separate stems from IMs. Their instincts are surely informed by the experience that the child gains from interacting with the grammar of a language. A child who is acquiring Shona is assumed to have knowledge of the stem before engaging affixes. This is because the stems are produced without inflections at first. In time and over time children gain access to morphosyntactic knowledge. The child is gradually able to figure out that there is a need to inflect the stem. The attainment of this ability goes in hand with the maturation of other systems. This is because language acquisition is not capsulated but it interacts with other cognitive systems. The dual mechanism proposes two modes of language processing. It reflects inherent qualitative distinctions found between:

- i. Regular verb inflectional morphology (where rule-based stems and affixes form a large contingency) and
- ii. Irregular constructions (where full lexical forms seem to be stored as associative chunks).

The scope of the dual mechanism model can be expanded to cover the overall grammatical development of child language. The language faculty is hypothesised to consist of a dualistic modular structure made up of two basic components namely:

- i. A lexical component (responsible for formulating lexical entries (words))

- ii. A computational component (structured along the lines of algorithmic logic-Chomsky's sense of being able to generate rule-based grammar).

Therefore, according to the dual mechanism model the language faculty provides two ways of symbolic representation (Pinker 1999, Clahsen 1999).

5.7 GENERAL OVERVIEW OVER CHAPTER AND PRELUDE TO NEXT CHAPTER

This chapter discusses the notion constraints in child Shona. The constraints are based on the input-output phenomenon, that is, where input is what children get from adult Shona while output is child Shona. The data that are discussed in Chapter Four indicates that child Shona is different from adult Shona and it is assumed that it is because of constraints. The constraints are identified by analyzing child Shona data and using knowledge of Shona linguistic structure. Theoretical assumptions from various theories are also inferred. The basis of the constraints that are discussed here is Shona linguistic structure. The discussion of the various constraints is preceded by a description of the fish-phenomenon. This is done so as to inform the reader about the gap between the input and output in child Shona. Phonological constraints are identified and discussed. These are word structure (number of syllables) and articulation constraints. The positioning of Shona IMs and morphological headedness are the morphological constraints discussed in this chapter. The lack of semantic content of the IM is viewed as a constraint. This is because the lexical morpheme is retained while the IM is omitted in child Shona nouns and verbs. The lexical morphemes are semantically more meaningful making them the semantic heads while the IMs are nonheads. Another constraint that is discussed in this chapter is frequency of occurrence of an element in the input. The elements with a high frequency are those that are retained in child Shona while the elements with low frequency are omitted. The

constraints are also discussed in light of three theories namely the optimality theory, maturational theory and the dual-mechanism model. Insights from these theories benefited the view of child Shona from a constraint-based approach. The chapter shows that the optimality theory, for instance, being a constraint-based theory, is beneficial to a discussion of child Shona constraints. The optimality theory's markedness and faithfulness constraints are shown to be relevant in the explanation of child Shona. The phonological, morphological and semantic constraints that are discussed in this chapter, for instance, are based on markedness. The next chapter offers the conclusion and recommendations.

CHAPTER SIX: CONCLUSION

6.0 PREAMBLE

This chapter is mainly concerned with producing an overview of the findings made in the whole study. It interweaves the findings made in the study as a whole. The contributions of the current research to child language in general and child language studies in Shona in particular are outlined. The chapter also offers recommendations for further research.

6.1 RESEARCH FINDINGS

The study has examined child Shona nouns and verbs in terms of the IMs associated with them. The nature of child Shona nouns and verbs is different from adult Shona. It is obvious that the two grammars are different but how they differ is not so obvious. The variation between child and adult Shona is constrained by principles of Shona grammar. The study has also exposed the nature of child Shona morphosyntax with particular reference to nouns and verbs. The analysis of child Shona data in this study indicates that noun and verb IMs are omitted while lexical morphemes are retained. The IM in child Shona is phonologically different from the target IM. This is because the children are constrained and hence use substitution in order to try to be faithful to the input grammar which is adult Shona. The IM is substituted by a different phonological segment. The noun and verb IMs are produced in the form of a reduced syllable, with the consonant dropped and the vowel retained. The verb is more complex in terms of its morphology, hence it takes various IMs. The findings indicate that these IMs are also omitted by the children. Noun and verb inflectional morphology is pivotal to the development of

morphosyntax. The morphosyntax of child Shona is based on the pivotal constituencies of the sentence. These pivots are the nouns and verbs that are used by the children.

The identification of possible constraints is based on the fish phenomenon. The fish phenomenon gives backup evidence that children's comprehension precedes production. The constraints that operate on the process of child Shona are identified as being phonological, morphological, semantics, visibility and frequency of IMs in input. The constraints were identified using the patterns in the data. The phonological constraints identified are of two types, that is, word structure and articulation constraints. The word structure constraints are defined on the basis of the dropping of the whole IM yielding mostly disyllabic structures. Word forms in which the children dropped the IM were usually trisyllabic or quadrisyllabic and the children dropped the IMs in the target word resulting in disyllabic forms. It is because of this pattern that the constraint has been identified as word structure in terms of the number of syllables. The syllables also exhibit certain prosodic features and are hence, at the same time, prosodic constraints that restrict child Shona production of nouns and verbs. Articulation constraints are based on the children's noun and verb productions that are inflected by the IM, but the phonological form of the IM has a consonant segment that is different from that in adult Shona. These forms are identified as simplifications of the IM. The children substitute the complex consonant segment with a simpler one for the purpose of ease of production. In articulation there are segments that are complex and those that are simple. For instance, vowels are simple to articulate while consonants are complex. The substituting consonant shares similar features with the substituted consonant. The morphological constraints that are identified are based on the morphology of Shona. The positioning of the IM is discussed as a possible constraint in child Shona. This is

because the IMs in Shona are prefixal. Prefixes do not have much weight in terms of the unique identification of words. Rather they delay the understanding of the words. The inflectional morphology of Shona, therefore, is seen to espouse morphological constraints in child Shona. Semantic constraints are also identified. In cases where the IMs are omitted and the lexical morphemes are produced the basis for semantic constraints is laid. The children preserved the semantic head and omitted the nonheads. The effects of input on output are discussed under the frequency constraint. The elements with a high frequency in input are those that the children tend to retain in the cases where IMs are dropped. The input frequency of the linguistic elements plays a very important role in the acquisition of Shona. The visibility of elements is also a constraint with elements that are easily identifiable being the ones that are preferred in child Shona.

The constraints are also discussed in line with three theories namely the optimality theory, maturation theory and the dual mechanism model. These theories are used to discuss the constraints phenomenon in child Shona. The OT for instance provides the faithfulness and markedness constraints as the two broad constraints. The researcher used these to explain the disparity between child Shona and adult Shona. The OT shows that markedness is a constraint. In child language the simplification of consonants and the omission of IMs is because the children are responding to the markedness constraints. Maturational theory is also used as a constraint-based theory in which the age of the child acts as a constraint. The maturational hypothesis indicates that language production is at some stage constrained because the child will not have reached a certain stage of development. This is evident in the data discussed in this

study where the children's production is seen to have developed from a one word stage with little or no inflections at all. The IMs gradually begin to emerge.

The study used a constrained-based approach to explain child Shona morphosyntax. This research showed that a constraint-based theory which incorporates nature and nurture approaches yields a better explanation. Such a theory derives from the fact that despite the child being biologically designed to acquire language, constraints determine the linguistic aspects that develop at any given period. The constraints that interfere with the process of child language acquisition come from the mental capacity, physical maturity and input from the environment.

6.2 RECOMMENDATIONS

There is still more to be done in child Shona studies. In Zimbabwe child language studies are still in their infancy despite their potential to inform linguistic theories. A comparative research of child language of the language varieties in Zimbabwe is important because it has a potential to fill some empirical and theoretical gaps. Whereas this research focused on the acquisition of morphosyntax, future researches could investigate the development of other linguistic aspects such as derivational morphology, syntax and semantics. Further natural and experimental data collection and analysis is recommended since it can enrich the body of knowledge in the field of child Shona in particular and child language acquisition in general.

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APPENDIX 1: CAR (2; 0-3; 0)

adult shona	child shona	gloss	age
kurura	kujuja	undress	2; 0
nama	nama	meat	2; 0
ndipinde	pine	may i pass	2; 0
tʃikoro	kojo	school	2; 0
batani	batani	button	2; 0
Vara	vaja	close	2; 0
Bvisa	biea	remove	2; 0
Poto	poto	pot	2; 0
gumbo	gumo	leg	2; 0
bazi rawuja	baŃi huja	the bus has come	2; 0
Sori	eoji	sorry	2; 0
hande kubazi	hane baŃi	let's go to the bus	2; 0
tora hembе	toja meme	take the dress	2; 0
Kiji	kiji	key	2; 0
Tiji	tiji	tea	2; 0
ndikurure burugwa	kujuje buba	remove my pants	2; 0
ndaɗona	ɗona	i fell	2; 0
fari ndipewo	faji powo	fari may i have	2; 0
mɲama	mana	child	2; 0
hona mɲama	hona mana	see child	2; 0
Spunu	punu	spoon	2; 0
handigoni	goni	i can't	2; 0
kwana	kana	enough	2; 0
hona huku	hona huku	see the chicken	2; 0
kosi ari mugomba	koɛi goma	corsi is at the pit	2; 0
mati arikutʃema	mati oema	mati is crying	2; 0
mama ndirikuda poridzi	mama pojiŃi	i want porridge	2; 0

mira ndimuke	mija muke	wait, let me wake up	2; 0
mira	mija	wait	2; 0
garikuni	gajikuni	turkey	2; 0
<u>h</u> embe	<u>m</u> eme	shirt/dress	2; 0
ndipowo spunu	powo punu	may i have a spoon	2; 0
ndimirireyi	mijje	wait for me	2; 0
tʃigubu	gubu	calabash	2; 0
nditoreji baba	tojeji baba	take me father	2; 0
<u>h</u> ona fari	<u>h</u> ona faji	look, fari	2; 0
ʃamɲari	ʃamaji	friend	2; 0
ʔajiwa baba	ʔajiwa baba	no father	2; 0
<u>h</u> omɲe	<u>m</u> ome	pocket	2; 0
<u>b</u> urugwa	<u>b</u> ujuga	pants	2; 0
Sofa	fofa	sofa	2; 0
Sofi	fofi	sophia	2; 0
fifi	ɸifi	fish	2; 0
mati <u>h</u> uja	mati <u>h</u> uja	mati, come	2; 0
mija <u>m</u> ama	mija <u>m</u> ama	wait, mom	2; 0
<u>b</u> urugwa <u>r</u> adedi	<u>b</u> ujuga <u>d</u> edi	daddy's trousers	2; 0
Sefu	fefu	surf	2; 0
sipo ʔiripi	oipo jipi	where is the soap	2; 1
mati toja	mati toja	mati, take	2; 1
Toraji	tojaji	take	2; 1
<u>h</u> endeji kumba	<u>h</u> eneji kuma	let's go home	2; 1
ɲepa	nepa	lie	2; 1
Tembi	temi	tembi	2; 1
Jogati	jogati	yoghurt	2; 1
Speja	peja	spare	2; 1
ndirikuda kugarawo	gajawo	let me sit	2; 1
<u>h</u> ona bepa	<u>h</u> ona bepe	look, paper	2; 1

<u>h</u> andidi sisi	<u>h</u> anini <u>f</u> ifi	i don't want, sister	2; 1
zimuto <u>?</u> aripi	<u>m</u> utu jipi	where is Zimuto?	2; 1
mira ndibate	mija bate	let me touch	2; 1
ndignore <u>?</u> apa	noje <u>?</u> apa	do i write here?	2; 1
ndipindewo	pinewo	may i pass	2; 1
sisi mawuja	oioi mawuja	sister, have you come?	2; 1
Pasi	paoi	ground	2; 1
<u>b</u> uda baba	<u>b</u> uda baba	get out father	2; 1
mati <u>?</u> ajenda kumagrosa	mati gooa	mati has gone to the shops	2; 1
ndiberekewo	bejekewo	please carry me	2; 1
ndikurureji	ku:jeji	undress me	2; 1
mira nditambe	mija tame	wait, let me play	2; 1
mija ndibike	mija pike	let me cook	2; 1
<u>h</u> okojo	<u>h</u> okojo	watch out	2; 1
<u>h</u> ona tamba	<u>h</u> ona tama	look, i can play	2; 1
baba vakero	baba wakejo	caro's father	2; 1
<u>h</u> akuna	<u>h</u> akuna	there is nothing	2; 1
tambo	tamo	rope	2; 1
<u>n</u> ama baba	<u>n</u> ama baba	meat father	2; 1
baba <u>b</u> iji	baba <u>b</u> iji	bee's father	2; 1
mafuta <u>?</u> ajo	puta <u>?</u> ajo	body jelly	2; 1
Tete	tete	aunt	2; 1
<u>n</u> ora	moja	write	2; 1
papi <u>m</u> ama	papi <u>m</u> ama	where, mom?	2; 1
Spunu	punu	spoon	2; 1
tʃetʃi	oœi	church	2; 1
<u>b</u> omba	<u>b</u> oma	bomb	2; 1
<u>h</u> uja tate	<u>h</u> uja tate	come lets sleep (baby talk)	2; 1
Sefu	œfu	surf	2; 1
ndikurureji	kejeji	undress me	2; 1

babamukuru	baɓakuju	uncle	2; 1
tiza mama	tiəa mama	run away mum	2; 1
Tsuro	eujo	hare/rabbit	2; 1
dzima moto	Ōima moto	extinguish the fire	2; 1
?unorowa nababa	jowa baba	you will be beaten by father	2; 2
baɓa hona maronda	baɓa hona mamona	father look at the wounds	2; 2
tora spunu	toja punu	take the spoon	2; 2
sekuru huja	ʃekuju huja	uncle, come	2; 2
madzoka kutʃikoro	Ōoka Ōikojo	you are back from school	2; 2
priska ?iripi	pika jipi	where is prisca	2; 2
dibo anditsika	buɓo əika	dibo has stepped on me	2; 2
mama vajenda kumagirosa	mama goəa	mom has gone to the grocery shop	2; 2
madzoka	Ōoka	come back	2; 2
toraji tepi	toja peti	take the tape-recorder	2; 2
hona huku	hona huku	look at the chickens	2; 2
ndaɗona apa	ɗona ?apa	i fell down, here	2; 2
mama ari kutʃema	mama ʃema	mom is crying	2; 2
sori mati	əoji mati	sorry mati	2; 2
mira nditore	mija toje	wait, let me take	2; 2
ndikwire bazi	kije baŌi	should i board the bus?	2; 2
hamuna burugwa	muna bujuba	there are no pants	2; 2
Pasi	paəi	ground/floor	2; 2
hamuna hembe	muna heme	there is no dress	2; 2
sija dibo	ʃija dibo	leave, dibo	2; 2
mageza gumbo	geŌa, gumo	you washed my leg	2; 2
mama kosi	mama koəi	mom, corsi	2; 2
tʃipho huja	pupo huja	chipo, come	2; 2
mati ndipowo	mati powo	mati, may i have	2; 2

tate mati	tate mati	lets sleep mati	2; 2
<u>burugwa</u> riripi	<u>bu</u> juga jipi	where are the pants	2; 2
kujuje sisi	kujuje <u>o</u> iei	undress me, sister	2; 2
<u>da</u> ja ṭf̣iborani	<u>da</u> ja bojani	pump the borehole	2; 2
tora batani	toja <u>ba</u> tani	take the button	2; 2
<u>be</u> bu mati	<u>be</u> bu mati	carry me mati	2; 2
ndabajiwa ʔapa	baʔajiwa ʔapa	i have been pricked here	2; 2
ndipowo nama	powo nama	may i have meat	2; 2
kiji tora	kiji toja	take the key	2; 2
handeji kumba mama	henei kuma mama	let's go home mom	2; 2
baʔa vari kufamba na <u>bo</u> bo	baʔa fama <u>bo</u> bo	father is walking with bob	2; 2
pedzera	pe <u>o</u> eja	finish	2; 2
ka <u>do</u> ma	ka <u>do</u> ma	kadoma	2; 2
mama ndipinde	mama pine	mom may i pass	2; 2
majiguru	majiguju	aunt	2; 2
baʔa ndimirire	baʔa mijije	father, wait for me	2; 2
tawuro	tawujo	towel	2; 2
<u>ha</u> pana	<u>ha</u> pana	there is nothing	2; 2
<u>M</u> oro	<u>mo</u> jo	hello	2; 2
unorowa naʔaʔa	jowa ʔaʔa	you will be beaten by father	2; 2
tamba <u>di</u> bo	tama <u>di</u> bo	play dibo	2; 2
ndipowo <u>ma</u> ma	powo <u>ma</u> ma	may i have mom	2; 2
baʔa akero	baʔa akejo	caro's father	2; 2
<u>ho</u> na <u>bo</u> bo	<u>ho</u> na <u>bo</u> bo	look, bob	2; 2
ndivharire ʔaʔa	vajije ʔaʔa	close for me father	2; 3
mugeẓeyi	muge <u>o</u> eji	bath him/her	2; 3
rasa marara	ja <u>o</u> a majaja	throw away rubbish	2; 3
baʔa tojaji tepi	baʔa tojaji peti	father take the tape	2; 3
kumba ke <u>du</u>	kumba ke <u>du</u>	to our house	2; 3

hona mombe	hona mome	see the cattle	2; 3
Tione	tione	let's see	2; 3
?akavata	wata	sleep	2; 3
handidi <u>mama</u>	handidi <u>mama</u>	i don't want mom	2; 3
kwefa mazino	kefa maŌino	brush your teeth	2; 3
ndimirirewo	mijjewo	wait for me	2; 3
ndapfeka napukeni	pfeka napukeni	i have put on a napkin	2; 3
hona mufoŋga	hona mufoŋga	look at the medicine	2; 3
ndoda kugeza	ndoda geŌa	i want to bath	2; 3
ndikwefe	kefe	should i brush?	2; 3
<u>mama</u> gadzira makumbo	<u>mama</u> gadzija mukombo	mom remove your legs	2; 3
<u>don</u> gi ?iri	<u>don</u> gi ?iji	there is the donkey	2; 3
<u>ban</u> ana	<u>ban</u> ana	banana	2; 3
ŋamŋari huja titambe	ŋamaji huja tambe	friend, come let's play	2; 3
kumba kwauo	kumba kauo	at their home	2; 3
kwefa mazino	kefa ino	brush (your) teeth	2; 3
mati ndipowo	mati powo	mati may i have	2; 3
<u>d</u> ifl	<u>d</u> ifl	dish	2; 3
magi huja	magi <u>h</u> uja	magi, come	2; 3
kombi jawuja	kombi jawuja	the kombi has come	2; 3
<u>hand</u> igoni <u>mama</u>	<u>hand</u> igoni <u>mama</u>	i can't mom	2; 3
ndoda kukoro <u>ba</u>	ndoda kuko <u>jo</u> ba	i want to scrub	2; 3
ndaneta	ndaneta	i am tired	2; 3
mati ?apinda mugomba	mati gomba	mati has gone into the pit	2; 3
ndipe banga	ndipe baŋa	give me the knife	2; 3
ndaneta baba	ndaneta baba	i am tired father	2; 3
titambe tose	titambe tose	should we play together?	2; 3
<u>ban</u> ana rapera	<u>ban</u> ana peja	the banana is finished	2; 3
<u>don</u> gi riri mugomba	<u>don</u> gi gomba	the donkey is in the pit	2; 3

baba ndimirirewo	ba̱ba mijijewo	father, wait for me	2; 3
ndipe mufoᅇga waᅇgu	ndipe mufoᅇga waᅇgu	give me my medicine	2; 3
<u>mama</u> gadzira ᅇapa	<u>mama</u> gaŃ ija ᅇapa	mum correct here	2; 3
<u>handigoni</u> kubata ᅇini	<u>handigoni</u> kubata ᅇini	i can't hold	2; 3
ndipe ndikwefe mazino	ndipe kefe oino	give me so that i brush my teeth	2; 3
vata <u>mama</u>	wata <u>mama</u>	sleep, mom	2; 3
ndimirirewo nditore <u>butsu</u>	mijijewo toje <u>butsu</u>	wait for me whilst i take shoes	2; 3
Tenisi	tenioi	tennis	2; 3
<u>hande</u> kumba kweᅇu	<u>hande</u> kumba keᅇu	let's go to our home	2; 3
ndipe spunu jaᅇgu	ndipe punu jaᅇgu	give me my spoon	2; 3
sekuru tora <u>banana</u>	fekuju toja <u>banana</u>	uncle, take a banana	2; 3
sija ndirume	oija jume	let me bite	2; 3
<u>burugwa</u> raᅇona	<u>bujuga</u> ᅇona	the plant has fallen	2; 3
<u>bora</u> ranᅇu riripi	<u>boja</u> jaᅇgu jipi	where is my ball	2; 3
tate <u>mama</u>	tate <u>mama</u>	lets sleep mom	2; 3
fari <u>hona</u> <u>mama</u> wangu	faji <u>hona</u> <u>mama</u>	fari look at [my] mom	2; 3
ba̱ba hona <u>huku</u>	ba̱ba <u>hona</u> <u>huku</u>	father, look at the chickens	2; 3
rumbi <u>huja</u>	jumbi <u>huja</u>	rumbi come	2; 3
mᅇjana weᅇu	mana weᅇu	our baby	2; 3
ndoda kumᅇa	ndoda kuma	i want to drink	2; 3
kwasviba mati	kaᅇiba mati	its dark, mati	2; 4
<u>bvisa</u> ᅇapa	<u>bvia</u> o ᅇapa	remove from here	2; 4
Mᅇari	maji	God	2; 4
koroba magi	kojoba magi	scrub, magi	2; 4
waguta sadza	waguta oaŃa	are you full?	2; 4

tawuro ranġu	tawujo jaŋġu	my towel	2; 4
hembe jaŋiba	hembe jaŋiba	the dress is dirty	2; 4
hande kutfikoro	hane tfikojo	let's go to school	2; 4
tikwire basikoro	tikije baikojo	should we ride the bicycle	2; 4
memo ndikweje	memo keje	memo, scratch me	2; 4
hamuna sadza	hamuna eaŌa	there is no sadza	2; 4
totengesa muriwo	tengeea mujiwo	we are selling vegetables	2; 4
totengesa matomati	tengeea tomati	we are selling tomatoes	2; 4
magi wandirova ŋapa	magi jova ŋapa	magi you beat me her	2; 4
waguta	waguta	are you full	2; 4
famba zakanaka	famba zakanaka	go well	2; 4
ŋakoroba magi	ŋakajoba magi	magi has scrubbed	2; 4
mufambe zakanaka	mufambe zakanaka	go well	2; 4
ndiŋajire	ndiŋajije	can i sweep?	2; 4
ŋatima mŋana	ŋatuma mana	she has sent the child	2; 4
hapana mama vakero	hapana mama kejo	caroline's mom is not around	2; 4
basikoro	baikojo	bicycle	2; 4
tikwire tese	tikije teee	should we ride together?	2; 4
memo ŋora	memo moja	memo write	2; 4
ndawana majiguru	ndawona majiguju	i have seen aunt	2; 4
titambire	titambije	can we welcome?	2; 4
ŋinowawa	ŋinowawa	it is bitter	2; 5
teŋgesa	teŋgeea	sell	2; 5
hona hembe jaŋġu	hona hembe jaŋġu	look at my dress	2; 5
mama ndipowo spunu	mama ndipowo sipunu	mom, give me the spoon	2; 5
ndiyurire sisi	ndiyujije oi	open for me, sister	2; 5
tiende mama	tende mama	should we go mom?	2; 5
magi wandirova	magi wandijowa	magi beat me	2; 5

ndoda fifi	ndoda fifi	i want fish	2; 5
simukaji zenu <u>mama</u>	imukaji zenu mama	stand up mom	2; 5
ndiri kuuvaiwa ?apa	ndiji kuwawiwa ?apa	it is itching here	2; 5
ndiyurire sofa	ndivujije eofo	remove the sofa for me	2; 5
teŋga mati	teŋga mati	buy, mati	2; 5
kufeni	kufeni	cushion	2; 5
tŋiŋgwa <u>mama</u>	tŋiŋga <u>mama</u>	bread mom	2; 5
muri kuporeji	muji kumojeji	what are you writing	2; 5
<u>mama</u> uagara pasofa	<u>mama</u> gaja fofa	mom has sat on the sofa	2; 5
<u>hona</u> maŋoŋe	<u>hona</u> mafofe	look at the ants	2; 5
ndiri kutŋka <u>huku</u>	ndiji kutŋa <u>huku</u>	i am afraid of the chicken	2; 5
ndoda nama	ndoda nama	i want meat	2; 5
baba <u>hona</u> ?ipya	baba <u>hona</u> ?ipa	look at the sugarcane, father	2; 5
<u>dibora</u> ?awuja baba	<u>diboja</u> ?awaja baba	dibora has come, father	2; 5
?unopenŋa mati	penŋa mati	you are crazy, mati	2; 5
tŋibage	ŋibage	maize	2; 5
ndipe tŋibage	nipe ŋibage	give me green mealies	2; 5
ndipe <u>myura</u>	ndipe <u>buja</u>	give me water	2; 5
?unopenŋa <u>mama</u>	penŋa <u>mama</u>	you are crazy mom	2; 5
garikuni randiruma	gajikuni juma	the turkey has bitten me	2; 5
mira fari	mija faji	wait, fari	2; 5
ndipindewo sisi	pinewo eiøi	may i pass sister	2; 5
bata ?apa	bata ?apa	hold here father	2; 5
baba uakero ndipowo	baba kejo powo	caro's father, may i have	2; 5
tambo jaŋgu	tambo jaŋgu	my rope	2; 5
<u>hande</u> kukadoma	<u>hande</u> kadoma	let's go to kadoma	2; 5
tawuro riripi	tawujo jipi	where is the towel?	2; 5
<u>moro</u> tambu	<u>mojo</u> tambu	hello tambu	2; 5

tennga <u>mama</u>	tennga <u>mama</u>	buy mom	2; 5
ndatengegwa <u>hembe</u> <u>namama</u>	ndatengega <u>hembe</u> <u>namama</u>	mom bought a dress for me	2; 5
ɖumbu riri kugwadza	ɱumbu jiji kuwadza	the stomach is painful	2; 5
<u>hona</u> mɱana	<u>hona</u> mana	look at the child	2; 5
rumbi <u>huja</u> titambe	jumbi <u>huja</u> tambe	rumbi come let us play	2; 5
ndirase <u>butsu</u>	jase <u>butsu</u>	throw away the shoe	2; 5
<u>mama</u> <u>hona</u> sekuru	<u>mama</u> <u>hona</u> sekuru	mom, look at uncle	2; 5
ndipe ndijore <u>buku</u>	ndipe ndijore <u>buku</u>	give me so that i write in the book	2; 5
majiguru ndibereke	majiguru bejeke	aunt, carry me	2; 5
ndipe <u>bora</u> nditambe	ndipe <u>boja</u> nditambe	give me the ball so that i play	2; 5
<u>baba</u> vakero <u>hona</u>	<u>baba</u> wakejo <u>hona</u>	caro's father look	2; 5
ngwaraji ʔakwira mumuti	ngajaji ʔakija muti	ngwaraji has climbed up the tree	2; 5
gwaya riripi	gaya jipi	where is the guava?	2; 5
ʔimna mazowe	ʔima mazowe	drink mazoe orange crush	2; 6
baŋga raŋgu	baŋga jaŋgu	my knife	2; 6
rakaʃiba <u>begi</u> repu	jakaʃiba <u>begi</u> jepu	your bag is dirty	2; 6
bereka mɱana tijende kumba	bejeka mana tende	i carried my child, ready to go home	2; 6
<u>hande</u> kutʃiborani	<u>hande</u> kutʃiborani	let's go to the borehole	2; 6
mɱana wedu <u>mama</u>	mana wedu <u>mama</u>	it is our baby mom	2; 6
kiji jabiwa	kiji jabiwa	the key was stolen	2; 6
zakawoma ʔizi	zakawoma ʔizi	this is difficult	2; 6
musikana	muoikana	it's a girl	2; 6
ngwaraji <u>huja</u> pano	ngajaji <u>huja</u> pano	ngwaraji come here	2; 6
maŋwana	maŋgana	tomorrow	2; 6
nzimbo jaŋgu	dzimbo jaŋgu	my place	2; 6
ʔajenda kumba kwake	ʔajenda kumba kake	s/he has gone to his house	2; 6
nzeŋga ʔiwe	dzeŋga ʔiwe	dodge, you	2; 6
ndiri kuɖaja tʃiborani	ndiji kuɖaja	i am pumping the	2; 6

	tʃibojani	borehole	
ndodā kubereka mḡana	ndodā kubejeka mana	i want to carry the baby	2; 6
ndaberekwa namama	ndabejeka namama	i was carried by mom	2; 6
ndodā kumḡa tiji	ndodā kuma tiji	i want to drink tea	2; 6
ndapfeka hembē	ndapfeka hembē	i have put on clothes	2; 6
ndodā kuvata	ndodā kuvata	i want to sleep	2; 6
ndamorosa jonasi	ndamojōea jonaēi	i greeted jonasi	2; 6
baba vasuka mota	baba ōuka mota	father has cleaned the car	2; 6
ndikurure hembē	ndikukuje hembē	undress me	2; 6
handigoni mama	handigoni mama	i can't mom	2; 6
ndakasēḡa dōmbo	ndakaēḡa dōmbo	i am carrying a stone	2; 6
ndiri kunzwa gumbo	ndiji kunōa gumbo	my leg is painful	2; 6
kwaḡiba mama	kaḡiba mama	it is dark mom	2; 6
vakaḡunura baba	wakaḡunuja baba	father is awake	2; 6
muka tidzge tʃibagwe	muka tidzge tʃibage	wake up let's eat maize cobs	2; 6
nditḡagirewo buku	nditḡagirewo buku	search for a book for me	2; 6
mama ḡawuja	mama ḡawuja	mom has come	2; 6
vari kukreḡi	aji kukeḡi	she is at the crèche	2; 6
ndabajiwa nemunzwa	ndabajiwa nemunza	i have been pricked by a thorn	2; 6
tʃimota ḡitfo	ḡimota ḡifo	the small car	2; 6
tʃimḡana	ḡimana	the small child	2; 6
ndapiwa matʃipisi	ndapiwa matʃipisi	i was given chips	2; 7
ndipeji tsono	ndipeji tsono	may i have the needle	2; 7
ndaperekedza mama	ndapejekedza mama	i accompanied mom	2; 7
gumbo riri kugwadza	gumbo jijikuwaŌa	the leg is painful	2; 7
hande ḡunondipa kapu	hande ḡunondipa kapu	let us go so that you give me the cup	2; 7
ḡutḡarowa nababa	ḡutḡarowa nababa	father will beat you	2; 7
tʃiji ḡitʃi baba	ḡiji ḡitʃi baba	what is this father?	2; 7
tora tepi mati	toja tepi mati	take the tape mati	2; 7

tafadzwa ?ari kutfema	tafadza ?iji kutfema	tafadzwa is crying	2; 7
ma?o?e ?anorama sisi	ma?ofe ?anojuma sisi	aunts can bite, sister	2; 7
mazijita, henyu vuzimuto	mazijita, heju vazimuto	thank you mr. zimuto	2; 7
ndoda tawuro ?iro mati	ndoda tawujo ?ijo mati	i want that towel mati	2; 7
t?indipa ndipore <u>b</u> uku ran <u>g</u> u sisi	t?indipa ndipoje <u>b</u> uku ran <u>g</u> u sisi	give me so that i write my book, sister.	2; 7
muka ?undipfekedze <u>b</u> urugwa ran <u>g</u> u	muka ?undipfekedze <u>b</u> ujugwa ran <u>g</u> u	rise so that you help me put on my pants	2; 7
<u>b</u> visa makumbo munzira	<u>b</u> visa makumbo munzija	remove your legs in my way	2; 7
?urikutfeka t?iji	?uji kutfeka t?iji	what are you cutting?	2; 7
ndojenda man <u>g</u> wana	ndojenda man <u>g</u> ana	i will go tomorrow	2; 7
<u>h</u> embe jakafiba	<u>h</u> embe jakafiba	the dress is dirty	2; 7
ndiri kutengesa maputi	ndiji kutengesa maputi	i am selling maputi	2; 7
?atfatengewa	?atfatengewa	they will be bought	2; 7
ndamunima zin <u>u</u> zan <u>g</u> u	ndamunima zin <u>u</u> zan <u>g</u> u	i didn't give him/her my things	2; 7
butsu dzan <u>g</u> u dzabiwa sisi	ma <u>b</u> utsu ?an <u>g</u> u ?abiwa sisi	my shoes were stolen	2; 7
josi ?anogara kumusoro	josi ?anogaja kumusojo	she stays at the top	2; 7
<u>m</u> ama v <u>a</u> ri kut <u>g</u> aga <u>b</u> utsu pasi pemub <u>e</u> da	<u>m</u> ama v <u>a</u> ji kut <u>g</u> aga <u>b</u> utsu pasi pemub <u>e</u> da	mom is looking for shoes under the bed	2; 7
ndava bvunza <u>m</u> ama vake	ndava bvunza <u>m</u> ama vake	i asked her mom	2; 7
ndavanima poridzi	ndavanima poridzi	i did not give her porridge	2; 7
ndinovatiza pamuti mbuja vako iwe mati	ndinovatiza mbuja vako? iwe mati	i will run away from your aunt mati	2; 7
ndibvise ma <u>b</u> uku <u>h</u> ere <u>m</u> ama	ndibvise ma <u>b</u> uku <u>h</u> eje <u>m</u> ama	should i remove the books mom?	2; 7
<u>h</u> ande kut <u>f</u> iborani nafaji	<u>h</u> ande kut <u>f</u> iborani nafaji	let us go to the borehole with Fari	2; 7
t?impana	t?impana	small child	2; 7

<u>mama</u> ndoda tŋingwa	<u>mama</u> ndoda tŋinga	mom i want bread	2; 7
ndoda kuvata nemhana wanŋu	ndoda kuvata nemhana wanŋu	i am sleeping with my baby	2; 7
mama ndipfekedzeji masoksi ŋakanaka	mama ndipfekedzeji masokisi ŋakanaka	mom let me put on nice socks	2; 7
ndatevera netsoka	ndateveja netsoka	i followed by foot	2; 7
kapu jani ŋiri mugomba reŋu	kapu jani ŋiji mugomba jeŋu	whose cup is in the pit?	2; 7
tiri kuwatŋa hembе dzeŋu	tiji kuwatŋa hembе dzeŋu	we are washing our clothes	2; 7
baŋa hona hembе jaŋgu	baŋa hona hembе jaŋgu	father, look my clothes	2; 7
pitikoti jaŋgu	pitikoti jaŋgu	my petticoat	2; 7
sketi jaŋgu	siketi jaŋgu	my skirt	2; 8
kusanati	kusanati	at sanyati	2; 8
<u>mama</u> vuri kuseka	<u>mama</u> vajikuseka	mom is laughing	2; 8
prisika ŋatora heti	prisika ŋatoja heti	prisca took a hat	2; 8
mama ndipowo spunu	mama ndipewo sipunu	mom may i have a spoon?	2; 8
hembе jakabvaruka	hembе jakabvajuka	the dress is torn	2; 8
direzi ranŋu ŋiri	dijezi ranŋu ŋiji	this is my dress	2; 8
ndoda kusukira musinŋi	ndoda kusukija musinŋi	i want to wash in the sink	2; 8
mhanan wanŋu ŋanotŋema	mana wanŋu ŋanotŋema	my baby is crying	2; 8
hona trakita	hona tajakita	see the tractor	2; 8
ndaŋika ŋini	ndaŋika ini	i have arrived	2; 8
ndayura do:	ndayura do:	i have opened the door	2; 8
yananayi huja titambe	yananayi huja titambe	yananayi come let's play	2; 8
baŋa vanŋu vajenda kutŋikoro	baŋa vanŋu vajenda kutŋikoro	my father has gone to school	2; 8
ndadzga banana	ndadzga banana	i have eaten a banana	2; 8
ndoda kumoresa murunŋu wanŋu	ndoda kumoresa murunŋu wanŋu	i want to greet the white person	2; 8
ndiri kugeza mhanan wanŋu	ndiri kugeza mana	i am bathing my baby	2; 8

	wan̄gu		
nditsajire mumba	nditsajire mumba	can i sweep in the home?	2; 8
ndipe spunu	ndipe sipunu	give me the spoon	2; 8
ḅaba ḥonaji t̄sina	ḅaba ḥonaji t̄sina	father, look at the dirt	2; 8
ʔanovava	ʔanovava	it is bitter	2; 8
ndoda kusun̄ga dzuzi ndega	ndoda kusun̄ga dzuzi ndega	i want to tie the jersey on my own	2; 8
mama v̄ari kuseka	mama v̄aji kuseka	mom is laughing	2; 8
muḍuḍu wani ʔujo fansi	muḍuḍu wani ʔujo fansi	whose motor-bike is that fransi	2; 8
ḥande kumagrosa	ḥande kumagirosa	let's go to the shops	2; 8
ʃangu dzamama	ʃangu dzamama	mom's shoes	2; 8
maji kero vat̄fadzoka v̄onditora	maji kero vat̄fadzoka v̄onditora	caro's mom will come back and get me	2; 8
ḅaba v̄abvarura zipepa	ḅaba v̄abvarura zipepa	father has torn pieces of paper	2; 8
ndayara mabatani	ndayara mabatani	i have closed the buttons	2; 9
masokisi ʔaripi	masokisi ʔaripi	where are the stockings?	2; 9
z̄pera mama	z̄pera mama	it is finished mom	2; 9
ḥembe jan̄gu ʔiji	ḥembe jan̄gu ʔiji	my shirt is this one	2; 9
ḥandit̄fazijite mama	ḥandit̄fazijite mama	i won't do it again	2; 9
mama handid̄i kujenda	mama handid̄i kujenda	i don't want to go	2; 9
ḥona z̄aita ḅaba	ḥona z̄aita ḅaba	look, it has worked father	2; 9
ḅurungwa rake ʔiri mama	ḅurungwa rake ʔiri	here is her pant mom	2; 9
musadonza ḅaba	musadonza ḅaba	don't pull father	2; 9
ndiberekese m̄jana	ndiberekese mana	help me carry my baby	2; 9
ndoda kugara pat̄feja	ndoda kugara pat̄feja	i want to sit on the chair	2; 9

ʔajiwa fonera ʔini	ajiwa foneraji ʔini	no phone me	2; 9
ndakumura dzimṅe dzakaṣiba	ndakumura dzime dzakaṣiba	i have removed the dirty one	2; 9
ndarukwa namama	ndarukiwa namama	i have been pleated by mom	2; 9
sadza raḃikwa namama	sadza raḃikiwa namama	sadza has been cooked by mom	2; 9
ʔanoteṅgwa nanani	ʔanoteṅgewa nani	who buys them?	2; 9
zaṅgu zaḃawanda	zaṅgu zaḃawanda	mine are many	2; 9
bviswa nadedi	bvisiwa nadedi	be removed by father	2; 9
ndarumiwa nemaṣoṣe ʔajo	ndarumiwa nemaṣofe ʔajo	i have been bitten by ants	2; 9
woda kurukwa zaḃajita ʔini	woda kurukiwa zaḃajita ʔini	you want to be pleated just like me	2; 9
makumbo ʔaṅgu ʔini	magumbo ʔaṅgu	my legs	2; 9
majiguru ʔinzwaji	majiguru ʔinzaji	aunt listen	2; 9
ziri kupi dedi	ziri kupi dedi	where are they dad?	2; 9
nditṣagireji mari jaṅgu	nditṣagireji mari jaṅgu	look for my money	2; 9
ndizo here mama	ndizo here mama	is it correct mom?	2; 9
handisati ndapedza	handisati ndapedza	i am not yet through	2; 9
taji famba paji baḃa	taji famba paji baḃa	where were we walking father?	2; 9
baḃa hamundirovi ndikatora bora	baḃa hamundijovi ndikatora bora	father you are not going to beat me if i get the ball	2; 9
mambondibatireji nzeve jaṅgu	mambondibatireji nzeve jaṅgu	why did you touch my ear?	2; 9
ndamuka haṅgu	ndamuka haṅgu	i am fine	2; 9
ndine masokisi	ndine masokisi	i have socks	2; 9
mati ndibvise tirauzi	mati ndibvise	mati, remove my trousers	2; 9

	tirawuzi		
ndarukwa <u>namama</u>	ndarukiwa <u>namama</u>	my hair was pleated by mom	2; 9
ndakuwadzwa nedo:o	ndakuwadziwa nedo:o	i was hurt by the door	2; 9
sadza ra bi kwa namati	sadza ra bi kwa namati	the sadza was cooked by mati	2; 9
fransi ndipe mutsajiro wan <u>gu</u>	furansi ndipe mutsajiro wan <u>gu</u>	fFransi give me my broom	2; 10
tiri kumagirosa na <u>dedi</u>	tiri kumagirosa na <u>dedi</u>	we are at the grocer's shop with my dad	2; 10
zajita <u>mama</u>	zajita <u>mama</u>	it is okay mom	2; 10
zakanana here baba	zakanana here baba	is it beautiful?	2; 10
?iviksi <u>jamama</u>	?ivikisi <u>jamama</u>	its mom's vicks	2; 11
mapegisi ?aripi <u>mama</u>	mapesigi ?aripi <u>mama</u>	where are the pegs mom?	2; 11
pikitfa jangu ?iripi <u>mama</u>	pikitfa jangu ?iripi <u>mama</u>	where is my picture mom?	2;11
<u>hamuna</u> tjingwa <u>here</u>	<u>hamuna</u> tjingwa <u>heje</u>	is there no bread?	2; 11
kujenda newe kumba	<u>handidi</u> kujenda newe kumba	i don't want to go with you home	2; 11
?uri kutfeka	?uri kutfeka	you are cutting	2; 11
<u>mama</u> vari kutfikoro	<u>mama</u> vaji kutfikojo	mom is at school	2; 11
ndiberekese mjana wangu	ndiberekese mjana wangu	help me carry my baby on my back	3; 0
<u>hope</u> <u>hande</u> nevana vedu kwadokta	<u>hope</u> <u>hande</u> nevana vedu kwadotika	hope lets go with our children to the doctor	3; 0
<u>hembe</u> jangu	<u>hembe</u> jangu	my dress	3; 0
<u>huja</u> pano	<u>huja</u> kuno	come here	3; 0

mati ?andituka <u>mama</u>	mati ?andituka <u>mama</u>	mati scolded me	3; 0
hanzi <u>h</u> ujaji nah <u>o</u> pu	<u>h</u> anzi <u>h</u> ujaji nah <u>o</u> pu	hope says come here	3; 0
ndoda kumbow <u>t</u> fa <u>b</u> urugwa rangu	ndoda kumbow <u>t</u> fa <u>b</u> urugwa rangu	i want to wash my pants	3; 0
tojenda kwad <u>o</u> кта	tojenda kwad <u>o</u> tika	we go to the doctor	3; 0
jekiseni rino gwadza	jesikeni rino wadza	an injection is painful	3; 0
ndoda kutamba <u>n</u> odo	ndoda kutamba <u>n</u> odo	i am playing	3; 0
priska huja pano	priska huja pano	prisca come here	3; 0
pandakapora nezuro	pandakapora man <u>g</u> wana	where i wrote yesterday	3; 0
masokisi an <u>g</u> u ?aripi	masokisi an <u>g</u> u ?aripi	where are my socks?	3; 0
ndageza mu <u>v</u> iri w <u>an</u> gu	ndageza mu <u>v</u> iri w <u>an</u> gu	i bathed my body	3; 0
pitikoti jan <u>g</u> u ?iripi tambu	pitikoti jan <u>g</u> u ?iripi tambu	where is my petticoat tambu?	3; 0
ndatengewa <u>b</u> utsu	ndatengewa <u>b</u> utsu nadedi	i was bought some shoes by dad	3; 0
<u>y</u> araji do:	<u>y</u> araji mama	close the door mom	3; 0
t <u>f</u> ando panze ?apo	t <u>f</u> ando panze ?apo	it is cold there	3; 0
baba <u>v</u> ari kuverenga <u>b</u> uku	baba <u>v</u> aji kuverenga <u>b</u> uku	father is reading a book	3; 0
dirin <u>g</u> i rangu r <u>i</u> pi ?iwe mati	dirin <u>g</u> i rangu r <u>i</u> ripi ?iwe mati	where is my drink, mati?	3; 0
wabika sadza <u>f</u> oma mati	wabika sadza <u>f</u> oma mati	you have cooked sadza that is not enough, mati	3; 0
ndibate t <u>f</u> ibaketi here <u>m</u> ama	ndibate t <u>f</u> ibaketi here <u>m</u> ama	should i hold the small bucket mom	3; 0
ndawona musikana kut <u>f</u> et <u>f</u> i	ndawona musikana	i saw a girl at the church	3; 0

	kutfeſti		
mukomana ʔatora tʃigubu tʃedu <u>dedi</u>	mukomana ʔatora tʃigubu tʃedu <u>dedi</u>	the boy took our calabash dad	3; 0
mafuta ʔaᅇgu ʔapera	mafuta ʔaᅇgu ʔapera	my vaseline is finished	3; 0
wandimirira <u>here</u>	wandimirira <u>here</u>	have you waited for me?	3; 0
<u>handidi</u> kutamba newe mati	<u>handidi</u> kutamba newe mati	i don't want to play with you mati	3; 0
hona treni mati	hona treni mati	look at the train mati	3; 0
ndisimudzewo <u>dedi</u>	ndisimudzewo <u>dedi</u>	lift me up please dad	3; 0
<u>hona</u> prisca ʔujo	<u>hona</u> prisca ʔujo	look at prisca	3; 0
<u>mama</u> ndipowo spunu	<u>mama</u> ndipowo spunu	mom may i have a spoon	3; 0
<u>huku</u> japinga mugomba	<u>huku</u> japinda mugomba	the chicken has gone into the pit	3; 0
<u>mama</u> ndoda tʃingwa tʃangu tʃose	<u>mama</u> ndoda tʃinga tʃangu tʃose	mom i want all my bread	3; 0
baba uawuja nazimuto	baba uawuja nazimuto	father came with zimuto	3; 0
zakakuwomera	zakakuwomera	it's difficult for you	3; 0

APPENDIX 2: JOH (2; 5- 2; 11)

adult shona	child shona	gloss	age
mafuta	afuta	body jelly	2;5
musikana aenda kumba kwavo	aenda sikana kumba kwavo	the girl has gone to her home	2;5
yazara mavhu	azhala avhu	it is full of soil	2;5
hona ndawana mahabhurosi	hona ndawana mabhuyosi	look i have found the mulberries	2;5
hunza mvura	hunza mvula	bring me water	2;5
ndinoda kutora imwe	da kutoya imwe	i want to take another one	2;5
uri kuona zvigaba zvishoma	ukuona zhigaba zhishoma	you can see the containers are few	2;5
ifoni yani iyi	ifoni ani iyi	whose phone is this?	2;5
isipo iyi	ishipo iyi	its bathing soap	2;5
mira ndikuisire	miya nikuisiye	wait and let me put it for you	2;6
chinhu chekuisira mapotetozi	chinhu chekuishiya matotoposi	a container for potatoes	2;6
toenda monday kuchikoro	toenda monday kuchikoyo	we will go to school on monday	2;6
zvedu zvakawandisa	zhedu zhakawandisa	ours are many	2;6
ndinoda kusuka mapureti	da kusuka apuyeti	i want to wash the plates	2;6
banga ndoda kuisa dovi	banga da isha dovi	i want to use the knife to spread the peanut butter	2;6
iwe musikana ari kupi	iwe mushikana akupi	where is the girl?	2;6
ndiri kutamba	nutamba	i am playing	2;6
iwe ndinorova iwewe	iwe ndowowa iwewe	i beat you	2;6
ini ndinonzi baba patie	ini ndonzi baba patie	i am called baba patie	2;6
baba vangu vanogadzira mabhasikoro kubasa	baba vangu vanogadzira mabhashikoyo kubasha	my dad repair bicycles at work	2;7
wapuhwa nani?	puhwa nani	who gave you?	2;7
uri kuda kuona zvandinoita here?	da kuona zhandinoita	do you want to see what i can do?	2;7
ndinoda mvura iyoyo	da mvula iyoyo	i want that water	2;7

ndati tora mavhu	ndati toya avhu	take some soil	2;7
inyama	inama	it is meat	2;7
mupfekedzei bhutsu	mupfekejeyi bhuchu	put on his shoes	2;7
mhiripiri	piripiri	chilli	2;7
rapera	apeya	the drama is over	2;7
ndiri kuda maputi	nu da puti	i want popcorn	2;7
ndipe kuno	ipe kuno	give it to me	2;7
mama vatenga	mama atenga	mom has bought bread	2;7
daddy hona ndege yangu	daddy hona dege yangu	daddy see my aero plane	2;8
imbwa ndaiona	ingwa ndaiona	i have seen the dog	2;8
hona bhasikoro	hona bhashikolo	look, a bicycle	2;8
sipunu	shipunu	spoon	2;8
hona magirazi	hona magazhi	look, spectacles	2;8
shumba	huma	a lion	2;8
hona munhu akashama	hona munhu asina kupfeka dumbu	look the person is naked	2;8
iyu yakudonha	iyu akudonha	its falling	2;8
ndege ndege ndege	dege dege dege	aero plane! aeroplane! aeroplane!	2;8
inyama ,inyoka	inama , inoka	it is meat, it's a snake	2;8
mota yadady vangu	mota yadady vangu avo	my daddy's car	2;8
daddy hande kumashure	daddy hande ashure	daddy flip the pages backwards	2;8
daddy tsvagai katuni mhani imi	daddy chagayi katunu mhani imi	daddy can you look for a cartoon	2;8
daddy ndinoda kutsvaga katunu	daddy akuchaga katunu	daddy i want to look for a cartoon	2;8
ndinoda kutenga aisikirimu	da kutenga aishikimu	want to buy an ice cream	2;8
ndinoda mahewu	da ahewu	i want mahewu	2;9
gumbo, ruoko	kumbo, woko	leg, hand	2;9
uyu abvisa hembe	uyu abvisha hembe	this one has removed clothes	2;9
ndinoda kuisa colgate	da kuisa kokoti	i want to put tooth gel	2;9
ndinokupa mhani	okupa mhani	i will give you	2;9
aaaa nderadaddy wangu	aaaa radaddy wangu	aaa it is for my daddy	2;9
daddy ndibvisirewo ndoda kuisa apa	daddy ibvishirewo da kuisha apa	daddy can you remove this for me, i want to put it here	2;9
matenga kupi daddy	atenga kupi daddy	daddy, where did you buy?	2; 9

kumashops	kushops	at the shops	2; 9
dzapera	apeya	it is finished	2; 9
haikwane iyi	kwane iyi	it's not fitting	2; 9
ndoda kutenga mafiriziti angu maviri	da kutenga fizhiti yangu tuu	i want to buy my freezits	2; 10
rimoti iyo iri patebhuru	imoti iyi ipatebho	the remote is on the table	2; 10
ndoda kutenga one	atenga one	i want to buy one	2; 10
bhegi ririkupi	bhegi ikupi	where is the bag?	2; 10
ndoda kudzosea zvazvangazvakaita	adzosea zazazakaita	i want to it put it back as it was	2; 10
vanonditengera maaisikirimu nemadhiringi nemachipisi	vanonditengera maikimu nemadhiringi nemachipisi	he buys ice cream, drinks and chips for me.	2; 10
handigoni kudzikisa	handigoni kudzikisa	i cannot bring it down.	2; 10
ndipe chibage	ndipe mabage	can i have green mealies?	2; 10
ndipe bhutsu.	ndipe bhutsu	give me the shoes.	2; 10
ndinokuteverai kutauni.	noteyayi kutauni.	i will follow you to town	2; 10
ndakapihwa kapu iyi nagogo wekwamutare	kapu pihwa nagogo wemutare	this is a cup which I was given by my grandmother who stays in mutare.	2; 10
mirai ndipfeke bhutsu.	mira ndipfeke bhutsu.	wait i want to put on my shoes.	2;10
ndine makore tu.	ndine makore matu,	i am two years old.	2;10
ari kuramba kundipa bhutsu.	akuramba ndipa bhutsu	she is refusing to give me the shoes.	2;10
iri kupisa mhamha.	ipisa mhamha.	mother, it is hot.	2; 10
yakutonhora mhamha.	itonhora mhamha.	it is now cold.	2; 10
ndiri kuifuridza kuti isapise.	ndiri kuyi fuyidza kuti ishapishe.	i want it to be cold.	2; 10
handidi mazai sitereki.	handidi zai sitereki.	i do not like eggs a lot.	2;11
ndaguta zai renyu iri riri kushata futi.	ndaguta zhai yenyu iyi yashata futi.	i am full; the egg does not taste good.	2;11
muuye nechokoleti	muuye nekokoyeti	bring me a chocolate.	2;11

yangu.	yangu.		
handidi kuenda kumba kwenyu.	handidi enda kumba kenyu.	i do not want to go to your house.	2;11
haa kure kubhini.	haa kuye bhini.	the bin is far.	2;11
sekuru vauya nagogo nemota.	sekuru auya nagogo nemota.	grandfather came with grandmother in a car	2;11
tirikuenda kumusha nebhazi.	tiyikuenda kumusha nebhazi.	we are going to the village by bus.	2;11
musikana anditorera bhora.	musikana atoya bhoya.	the girl took my ball.	2;11
ndiri kuda kuona gogo.	ndikuda kuona gogo.	i want to see grandmother.	2;11
ndipfekedze bhebhi here?	ndipfekedze bhebhi?	should i dress the baby?	2;11
ndiri kuenda kubhedhurumu.	ndinoenda kudhedhirumu.	i am going to the bedroom.	2;11
ndirikuya, ndirikuya mhani	ndikuya, ndikuya mhani	i am coming	2;11
varikumba.	vayikumba.	she is at home.	2;11
handichagoni kukwira	handichagoni kukwira	i cannot get in.	2;11
handisi kumbotaura ini	handikumbotaura ini.	i am not talking.	2;11

APPENDIX 3: TAD (2; 0- 2; 6)

adult shona	child shona	gloss	age
shiri!	shili!	bird!	2; 0
yazara	yazhala	it is full	2; 0
ndibvisirewo	bvisha	remove it for me	2; 0
bata moto	bata oto	catch the fire	2; 0
yazara, haisati mhaniwee	yazhala, aisati mhaniwee	it is full, no it is not yet full	2; 0
yabvaruka	abvayuka	it is torn	2; 0
tora bhuku	toya bhuku	take the book	2; 0
vauya daddy vangu	auya daddy wangu	my dad is back	2; 0
apedza	apedza	she is through	2; 0
simukai	shumukai	stand up	2;1
ndoda kuisa muhomwe, ndokupa	da isa homwe, okupa	i want to put in the pocket, wait i will give you	2;1
mazvita henyu baba (singing)	azhita henyu baba (singing)	thank you father(singing)	2;1
paivapo tsuro nagudo	aapo chulo nagudo	once upon a time there was hare and baboon	2;1
ndiri kuda poriji.	ndida poyiji	i want porridge.	2;1
ndimirirewo.	miyiyewo.	wait for me.	2;2
sisi vari kukicheni.	sisi kikeneni	sister is in the kitchen.	2;2
fafi ndirikuda chingwa.	fafi da ingwa.	fafi i want bread	2;2
vaenda babamukuru	enda bamkuyu	daddy is gone	2;2
wakuenda	aenda	you are going	2;2
unoda kuita sei	tasei	what do you want to do?	2;2
usabate	sabate	don't touch	2;2
daddy masvosve	daddy ashoshe	daddy small ants	2;2
ari kumba kwavo	akumba kwavo	she is at their home	2;2
mhamha ndiri kuda dhaka	mhamha da dhaka	mama i want some clay	2;2
huya uone	haone	come and see	2;2
nditakurewo.	takurewo.	carry me please.	2;3
dhedhi mune mota here?	dhedhi une zhamu?	dad do you have a car?	2;3
bhebhi wangu.	bhebhi yangu.	my baby (referring to	2;3

		a doll)	
dhedhi muri kutora chingwa here?	dhedhi uyi toya ingwa?	dad are you taking bread?	2;3
iwe unonzi mbudzi nemombe	iwe unonji mbuji nemombe	you are called goat and cattle	2;3
ndoda kumbogarawo futi	da mbogalawo futi	i want to sit also	2;3
hona nzara	hona njala	look at the nails	2;3
ndokukuvadza mupfanha	ndokukwaja mupfanha	i will hurt you my young brother	2;3
ndirikuda kuvhurirwa machipisi.	ndiruda vhuwa chipisi.	i'll want you to open the chips for me	2;4
ndakuvadzwa apa	ndakadza apa.	i am hurt here.	2;4
ndirase mupi (kupi)?	ndirase papi?	where should i dispose it?	2;4
ndirase mubhini here?	ndirase pabhini here?	should i dispose it in the bin?	2;4
chabuda muhomwe	chabuda muhome	it came out of the pocket	2;4
daddy nditakure	daddy nditakuye	daddy can you carry me	2;4
daddy ndivhurire dovi	daddy ivhuyiye dowi	daddy open the peanut butter for me	2;4
mama vauya	mama auya	mom is back	2;4
ichi ndechadaddy ichocho	ichi adaddy iyoyo	this one is for daddy	2;4
ririkunaka jemu	unaka jemu	the jam is delicious	2;4
rako iro	lako ilo	that one is for you	2;4
daddy ndinoda dovi	daddy da dowi	daddy i want some peanut butter	2;4
ndinoda kugeza maoko	da kugezha aoko	i want to wash my hands	2;4
ndoda mvura	da mvuya	i want some water	2;4
ndezyabhebhi.	ndezyabhebhi.	it's for the baby.	2;4
ndafonerwa nagogo masakati.	ndafona gogo nezuro.	grandmother called in the afternoon.	2;4
ndirikuda kuenda kuchikoro.	ndida enda koro.	i want to go school.	2;4

ndirikuvaviwa apa.	ndavava apa.	it is itching here.	2;5
geza maoko aya.	geza maruoko aya.	wash these hands.	2;5
gogo musandivharire dhoo rangu.	gogo usandivharire dhoo yangu.	grandmother do not close my door.	2;5
dhedhi vaenda kubasa kupi?	dhedhi aenda basa papi?	where is dad working?	2;5
mhamha yeukai anditorera siwiti yangu	mhamha yeukai anditorera shuwiti yangu	mum yeukai took my sweet.	2;5
tirikuenda kumusha here?	tiyikuenda musha here?	are we going to the village?	2;5
unobiwa nembavha	unobiwa nemabavha.	you will be stolen by the thieves.	2;5
ndakarohwa naticha svondo rapera.	ndarohwa naticha kukoro nezuro.	i was hit by the teacher last week.	2;5
ndirikuda kudyiswa poriji nadhedhi.	da kudya nadhedhi.	i want dad to feed me.	2;5
ndirikuda sipunu iyi	ndirikuda mapunu iyi.	i want this spoon.	2;5
isipunu yenyu here mhamha?	ipunu yako here mhamha?	is this your spoon?	2;5
mhamha yeukai andiruma.	mhamha yeukai andirumira.	mum yeukai has bitten me.	2;6
handisikuda kuenda kuchikoro.	andida enda kukoro.	i do not want to go to school.	2;6
dhedhi vaenda kumusha.	dhedhi aenda musha.	dad has gone to the village.	2;6
mainini nakai ndirikuda mvura.	ainini akai da mvuya.	aunt Nakai i want water.	2;6
sekuru huyai pano.	sekuru uya pano.	uncle come here.	2;6
ndiribho	ibho	i am fine	2;6
ikatunu rapera	ikatunu apeya	the cartoon is over	2;6
dhedhi vauya.	dhedhi auya.	dad has come.	2;6
mhamha kundi andiseka.	mhamha kundi andisekera.	mum kundi laughed at me.	2;6
uri kundisekerei?	undisekei?	why are you laughing at me?	2;6

uri kunditarisirei?	unditarisei?	why are you looking at me?	2;6
arimo here mapepa mubhegi umu?	munawo here mapepa?	are they papers inside the bag?	2;6
mhamha ndipeiwo mutsvairo ndirikuda kutsvairawo.	mhamha ndipewo chairo da chairowo.	mum give me the broom, i also want to sweep.	2;6

APPENDIX 4: ARI (2; 6- 3; 2)

adult shona	child shona	gloss	age
handisikuda	hasikuda	i do not want	2;6
ndapiswa musoro	apishwa sholo	my head is burnt	2;6
ndoda kuisa apa	aisha apa	i want to put it here	2;6
ndoda kubaya uyu	abaya uyu	i want to	2;6
irikupi sipika	ikupi shipika	where is the speaker?	2;6
mazepi angu aripi	azhepi angu ayipi	where are my zapnax?	2;6
ndoda kuona munhu apiswa	ona munhu apishwa	i want to see the person who was burnt	2;6
chipepa changu	chipepa changu	my paper	2;6
imba hombe.	imba ihombe.	a big house.	2;6
ndoda kuona munhu apiswa nemagechi	ona munhu apishwa neagechi	i want to see a person who has been burnt by electricity	2;6
ko kuvimba ari kupi	ko vimba akupi	where is kuvimba?	2;6
ndoda kuendawo	akuendawo	i want to go as well	2;6
ayo mafiriziti ari apo	ayo afizhiti ayi apo	there are the freezits	2;6
firiziti iri rapera	apeya ifizhiti iyi	the freezit is finished	2;6
mwari wamasimba ose	mwayi wamashimba oshe	the God of all powers	2;6
hunza bhora rangu	hunza bhora rangu	bring my ball	2;7
mabhora maviri iwayo	tuu bhora iyi	those are two balls	2;7
mabhora maviri fay	bhora two fay	these are two balls fay	2;7
ndipe bhora rangu	ndipe bhora kangu	give me my ball	2;7
mazepi awo	azepi ako	those are zap snacks	2;7
batai zvinhu zvangu	batai zhinhu zhangu	keep my things	2;7
daddy isai muhomwe	daddy isa homwe	daddy put it in your pocket	2;7
ndoda kuita weti daddy	aita weti daddy	i want to urinate daddy	2;7
tami adya mafuta.	tami adya mafuta.	tami ate body jelly	2;7
handisvibi	handisibi	i will not be dirty.	2;7
talent hande tinotamba uko	talent hande tamba uko	talent let us go play there	2;8
ndikandire bhora talent	kandire bhora talent	throw the ball at me talent	2;8
bhora riri kupi	bhora ikupi	where is the ball?	2;8
hunza bhora iroto	hunza bhora iyoyo	give me that ball	2;8
huya titambe tese kunashe	tambe teshe kunashe	come let's play together kunashe	2;8
ndoda kutambawo daddy	atambawo daddy	daddy, i want to play also	2;8
hunza kabhora kangu	hunza kabhora kangu	give me my ball	2;8
dhedhi havana foni.	dhedhi hana foni.	dad does not have a	2;8

		phone.	
imombe	mombe.	that is a cow	2;8
handidi	handidi	i do not want	2;8
huya uone clara	haone cara	clara, come and see	2;9
ndiwe ani	we ani	who are you?	2;9
chirikunaka	unaka	it is delicious	2;9
faith na dorcas ava	faith nadorcas uyu	here is faith and dorcas	2;9
ibhutsu	bhutsu	that is a shoe	2;9
ko ichi chii?	ko ndiani?	what is this? (referring to a cow)	2;9
hembe iyi yakafanana neyani?	hembe yafanana naani?	whose dress does it resemble?	2;9
ndarukwa	ndaruka ndaruka	i have been plaited	2;9
madya bhahhogamu	wadya bhahhogamu	did you chew the bubblegum?	2;9
mazepi	azhepi	zap snacks	2;9
tipushei daddy	tipushei daddy	daddy push us	2;9
daddy ndibvisirewo apa	daddy bvisirewo apa	daddy can you remove this here	2;9
takaipa talent	akaipa talent	we are clever(slang)	2;9
jamba	jamba	jump	2;10
madisc	madisc	discs	2;10
hatidi	hatidi	we do not want	2;10
mama vauya	mama auya	mom is back	2;10
ndiani uyu	ndani uyu	who is this?	2;10
daddy ndoda kuitawo	daddy aitawo	daddy i want to do also	2;10
irikupi mota	ikupi mota	where is the car?	2;10
ndoda imwe nzimbe	da rimwe njimbe	i want some more sugarcane	2;10
aiwa ndapihwa	aaa apuhwa	no i have been given	2;10
ndinoda kuuya.	ndinoda kuuya.	i want to come.	2;10
mhamha ndirikuda chingwa	mhamha da chingwa	mum i want bread	2;10
musadzime laiti.	usadzime laiti.	do not switch off the light.	2;10
ndiri kuenda kubhedhurumu	ndinoenda kudhedhirumu	i am going to the bedroom	2;10
huya ndikurakidze mubhedhurumu mangu	uya nikurakidze dhedhurumu rangu	come i will show you my bedroom	2;10
daddy imi isai foni muhomwe	daddy imi isa foni homwe	daddy put the phone in the pocket	2;10
huya utore heti	atoye heti	come and take the hat	2;10

ndiisei kudenga kune imbwa	ndiisei kudenga kune huhu	put me up where the dog is	2;11
ndiisei mudenga mune magetsi	ndiisei kudenga agetsi	put me up where there is electricity	2;11
daddy isai heti yangu mudenga	daddy isa heti kudenga	daddy put my hat up	2;11
mudenga umo	denga iyo	up there	2;11
ndirikutsvaga mwana wangu	ndikuchaga mwana wangu.	i am looking for my baby	2;11
sisi ndiyani agura chinhu changu.	sisi ndiyani aguka chinhu changu.	sister who broke my thing?	2;11
toga haasati ageza.	toga haashati ageza.	toga has not bathed as yet	2;11
mhamha ndoda chingwa.	mhamha ndoda chingwa.	mum i want bread.	2;11
ndaakuenda kuna maikundi.	ndakuenda kuna maikudi	i am going to kundi's mom place.	2;11
ndagona	agona	i got it correct	2;11
sevheni	fezheni	seven	2;11
huyai vana tino	huyai atino	come tino and company	2;11
hunzai makadhi angu	hunzai akadhi yangu	give me my cards	2;11
daddy hunzai makadhi	daddy hunzai makadhi	daddy can you bring my cards	2;11
ndoda makadhi angu	da akadhi angu	i want my cards	2;11
madzihwa	adzihwa	mucus	2;11
chimukai	chimukai	wake up	2;11
oyi makadhi ese	oyi akadhi eshe	here are the cards	2;11
hunza makadhi edu	hunza kadhi yedu	give us our cards	2;11
nditakureiwo daddy	takure daddy	daddy carry me	2;11
mapushi adembuka	adembuka pushi	the slippers are torn out	2;11
tino abvarura makadhi evanhu	tino abvayuka kadhi rewanhu	tino has torn somebody's cards	2;11
ndisimudzewo	isumudze	carry me	3; 0
ndiitewo	itewo	can you do me	3; 0
daddy nditakurewo kusaidhi uku	daddy takurewo saidhi uku	daddy carry me on this side	3; 0
isai muhomwe makadhi edu	isai homwe makadhi edu	put our cards in the pocket	3; 0
huyai titambe	huyai titambe	come and let us play	3; 0

hunza masokisi angu	hunza sokisi angu	bring me my stockings	3; 0
rabvaruka kadhi iri	abvaruka kadhi iyi	the card is torn out	3; 0
nditambe ndega	titambe ndega	let me play alone	3; 0
ndipfekedzei bhutsu	ndipfekejeyi bhuchu	put my shoes on	3; 0
hunzai makadhi angu maviri	hunzai kadhi angu two	give me my two cards	3; 0
musoro wangu	sholo angu	my head	3; 0
rimwe iri kadhi	limwe ili	here is another card	3; 0
ndoda kudzika daddy	ajika daddy	i want to get down daddy	3; 0
chirikupi chinhu changu	chikupi chinhu changu	where is my thing?	3; 0
nderangu firiziti	ndeyangu fizhiti	it is my freezit	3; 0
ndoda kupfeka pushi	apfeka pushi	i want to put on my shoe	3; 0
daddy ndifuridze nepapi	daddy afuridze nepapi	where do I blow daddy?	3; 0
daddy ndoda kutora bhurugwa rangu	daddy da kutora bhuga angu	daddy I want to take my pant	3; 0

APPENDIX 5: ELICITATION DATA

adult shona	child shona	gloss
Elicitation (ARI-2;6)		
mafiriziti	fiziti	freezits
maruva	awuwa	flowers
Miti	muti	trees
mapotetozi	mapoposi	potatoes
maputi	aputi	maputi
ndinoda kugadzira sadza nesupu	da kugajiya sadza neshupu	i am preparing sadza and soup
zvigubhu	zhigubhu	bottles
adzoka	ajoka	he/she has returned
magedhi	gedhi	gates
mazai	azhayi	eggs
masawu	asawa	sour fruits
ko mama vangu varipi	ko mama angu ayipi	where is my mother?
mapushi	apushi	sandals
ibanana	banana	banana
Elicitation(JOH-2;7)		
mama vaenda kubasa	mama aenda kubasha	mom has gone to work
bhutsu	bhuchu dzese idzi two	shoes
poto	ibika	pot
magedhi	igeedhi	gates
makapu	kapu two	cups
muriwo	miliwo	vegetables
nzimbe	njimbe	sugarcane
mota	mota dzese imota	cars
mapegisi	pegishi two	pegs
ndinoda one toothpick	da one tutupiki	i want a toothpick
ndinoda rhaisi	da haisi	i want some rice
imwe mota yaenda	imwe mota aenda	the other car has gone
ndinoda kutambisa dovi	da tambisha dowi	i want to use peanut butter
ndinoda kugeza maoko	da gezha aoko	i want to wash my hands
hande uko ndinogeza	hande uko gezha	let's go there and wash my hands
mushonga	ishonga	medicine
masawu	ishawu	sour fruits

zhivharo	chivhayo	lids
ndinoda mapichisi maviri	da pikichi two	i want two peaches
nditakurewo ndakuda kudonha	nditakulewo da kudonha	carry me i am about to fall
maoko	woko two	hands
chipunu	bika avheji	spoon
Elicitation: (TAD 2 ;4)		
hembe	hembe	clothes
muriwo	liwo	muriwo
mapanga	banganga	knives
mutsvairo	chayiyo	sweeping broom
zvipunu	shipunu two	spoons
bhurashi	bhashi	brush
mugoti	goti	wooden spoon
ndinoda bhora	da bhoya	i want a ball
makapu	akapu	cups
mapatapata	patata	slippers
sipo	shipo dzese/ two	soaps
ndinoda kugeza maoko	da gezha awoko	i want to wash my hands
marasa	asha	did you throw it away?
dhishitauro	dhishitawu	dish towel
chivharo	vhalo	lid
mabhaketi	bhaketi	buckets
muti	muti	tree
mapotetozi	mapoposi	potatoes
maputi	puti	popcorn
madzoka	ajoka	you are back