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CHILD SHONA NOUN PREFIXES

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This article falls under the broad area of child language acquisition and it aims to present an analysis of the acquisition of Shona noun class prefixes. The data collection procedures involved fortnightly observation and audio-recording of the spontaneous speech of three children who were acquiring Shona as a mother tongue. The results of this investigation confirm findings from earlier studies and show that noun class prefixes are acquired in three partially overlapping stages. In the first stage, nouns are produced without class prefixes and as time progresses, in the second stage, they are produced with them but in the form of an onsetless vowel. In the third stage, nouns are produced with full and phonologically appropriate class prefixes. The empirical and theoretical findings of this investigation are expected to broaden and deepen our knowledge of morphology and the phonology-morphology interface in the context of child language acquisition. As there are few descriptive and theoretical studies on the acquisition of Shona, this research recommends more studies on this subject.

Keywords
Shona, noun class prefix, mother tongue, child language acquisition, stage, morphology

INTRODUCTION: NOUN CLASS PREFIXES AND GENDER IN BANTU

Languages generally classify nouns by gender or class (Katamba, 1993:234). Linguistic gender essentially is a grammatical rather than semantic classification of nouns. Katamba (1993: 235) notes that 'the phenomenon of noun classification is found in numerous Saharan African languages, native American languages and Australian languages. But in many of these languages the classification system does not have even the most tenuous semantic (sex) gender basis'. Nouns are assigned to different classes, often on a minimally semantic basis. Each class has a prefix associated with it, and commands its own distinctive set of agreement morphemes (Van der Spuy, 2010: 295). This can be illustrated by the form of the adjectival agreement morphemes in the following Shona examples, where the adjective {-refu} 'tall' is brought into agreement with nouns of different classes. The noun prefix and the adjectival agreement morpheme are italicised in each case:

(1a)	*va*komana *va*refu	'tall boys' (class 2)
(1b)	*chi*komana *chi*refu	'stout tall boy' (class 7)
(1c)	*zvi*komana *zvi*refu	'stout tall boys' (class 8)

(1d) *ka*komana *ka*refu ‘slim tall boy’ (class12)

Van der Spuy (2010) reports that, in the Southern Bantu literature, noun classes are identified according to either or both of two criteria: the form of the prefix, and association with a unique set of agreement morphemes which appear in adjectives, verbs, quantifies and other parts of speech relating to the noun. For example, Doke (1973: 36) observes that, in Zulu, nouns are divided into classes and class genders according to the form of their prefixes and of concordial agreement with them. This suggests that Doke sees the form of the prefix as the main criterion of putting nouns into noun classes. Similarly, Taljaard and Bosch (1988: 13) seem to see the prefix as primary because they say, ‘each noun belongs to a class which is characterized by a certain class prefix.’ Count nouns are associated with a particular singular-plural pair and non-count nouns are also said to belong to such pairs though they do not have number (Van der Spuy, 2010: 296).

It is worth noting that the word ‘gender’ is not the same as ‘class prefix’. According to Guthrie (1971: 29), the word ‘gender’ refers to the regular singular-plural pairing observable among the noun classes. For example, in Shona, nouns that take the class 7 prefix {chi-} in the singular take the class prefix {zvi-} in the plural, as *chikomana* ‘boy’, *zvikomana* ‘boys’. This is what is referred to as the gender 7/8 in Bantu grammars. A gender designation, therefore, is simply a short hand way of saying that a noun root takes a particular singular prefix and a particular plural prefix (Van der Spuy, 2010: 297).

It has been noted that, in Bantu languages, prefixes can either be derivational or inflectional (see Katamba, 1993). Mkanganwi (2002: 178) argues that all Shona suffixes are derivational, while all prefixes, as well as class affixes, are inflectional. Kosch (2011: 89) examines Northern Sotho singular and plural forms and observes that ‘the prefixes employed to mark number not only exhibit inflectional characteristics, but also productive derivational characteristics’. It is outside the scope of this article to pursue the debate on whether class prefixes are inflectional or derivational. As mentioned previously, this article pays special attention to their acquisition. It is important to examine the acquisition of Shona noun class prefixes because their presence in nouns is an obligatory morphological operation and this is, perhaps, why they are sometimes referred to as ‘grammatical morphemes’. Failure to inflect substantive stems with noun prefixes makes Shona ungrammatical. Hence, Taljaard and Bosch (1988: 88) conclude that the importance of the class prefixes also lies in the fact that they are employed in linking the noun to other words in a sentence by means of a concord. Demuth (2003) observes that children seem to acquire the Bantu noun class system with relative ease by the age of three, typically showing errors of omission, not errors of commission. This article, therefore, seeks to characterise the stages in which Shona noun class prefixes are acquired by children acquiring the language as a mother tongue. The following section briefly discusses previous studies conducted on the acquisition of Bantu languages.

PREVIOUS STUDIES ON THE ACQUISITION OF BANTU LANGUAGES

The acquisition of the Bantu noun class system has been a subject of considerable theoretical and descriptive discussion. There are a number of systematic studies that have been conducted on the acquisition of various grammatical aspects of different Bantu languages for three decades now (Kunene, 1979; Demuth, 1988; 1993; 2003). Kunene’s (1979) pioneering study examines the acquisition of the nominal morphology of Swati, focusing on noun prefixes and nominal agreement such as possessives and demonstratives. The data for the study were

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drawn from spontaneous speech samples and informal elicitation sessions with two children aged 2; 3-3 and 2; 11-3; 6 and an experimental study with three children aged 4; 6-6. For the purposes of this article, 2; 3 represents two years and three months, 2; 11 represents two years and eleven months, etc. Studies on the acquisition of the Zulu language examine its noun class system, agreement and the passive (Suzman, 1991). Another closely related investigation is the one that was undertaken by Tsonope (1987), who conducted a longitudinal study of two Tswana-speaking children, focusing on the noun class system and nominal agreement with possessives and demonstratives. These studies report that children acquiring Bantu languages have mastered the noun class and agreement system before the age of three and the competence with complex grammatical constructions and the grammatical tone systems is well under way (Demuth, 2003).

The amount of literature on the child language acquisition of Shona is very meagre. To date, two systematic studies, by Chiswanda (1994) and Mudzingwa (2001), have been conducted on the acquisition of Shona. Chiswanda (1994) undertook the first systematic investigation of the acquisition of Shona and presents a cross-sectional study of four children between twelve and twenty-five months who lived in the Glen Norah area of Harare. She extremely briefly deals with meaning and number and size of syllables in the children's utterances. Under semantics, she examines overgeneralisation, onomatopoeia and the use of action words for making demands. One of her major findings is that, contrary to Brown's general claim that demonstratives in Shona are acquired fairly late, demonstratives actually appear very early. Contrary to De Villiers and De Villiers' (1973) and Clark and Clark's (1977) claims that passives are acquired very late, in Shona, the passives appear in the speech of an eighteen months-old child, which is earlier than in English. Chiswanda also briefly looks at the substitution of phonemes, syllable omission patterns and the development of phrases and sentences. Her (1994) investigation is very general and does not give due attention to any of the aspects of Shona child language acquisition that she sets out to investigate.

Mudzingwa (2001) examines the phonological structures of early Shona words. He looks at the development of the phonological structures of his daughter over a period of two years. In collecting data, he used a parental diary which was complemented by fortnightly audio-recordings. The findings of his study show that, in each of the phases that he established, the adult word was adjusted in flexible ways in order to achieve a preferred pattern (template). It was observed that the phonological complexity of the structure of the child's words developed gradually, with reference to syllable count, syllable structures, variety of syllables across the word, permitted consonant co-occurrence patterns, within phases as well as across phases. According to Mudzingwa (2001), the development or growth of the phonological structures of the child's words came as a result of successive 'relaxations' or an overcoming of previous restrictions on the phonological complexity of the word. This was accounted for using the 'assimilation' and 'accommodation' concepts. He says that 'assimilation' was where the child 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 his analysis show that, during the earliest period of observation (i.e. 1; 3-1; 8), the word is the basic phonological unit around which the child organises her phonology and, around 1; 9, this gradually shifts to the syllable. Mudzingwa's (2001) study is valuable to the area of child language acquisition because it presents insights into the acquisition of most aspects of Shona segmental phonology. In addition, the corpus of data presented in Mudzingwa's (2001) longitudinal study can contribute towards the building of a database on

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the acquisition, not only of phonology, but also to the acquisition of Shona grammatical structures in general.

There are many insights that can be gained by applying the tenets of Optimality Theory (OT) to language acquisition data. This is important given the fact that, under OT, part of acquiring a language is acquiring the critical constraint rankings of that language. In this study we are indirectly informed by the generative grammar assumption that grammars of individual languages are variations of the same theme, the Universal Grammar (UG). By hypothesis, UG is innate rather than acquired, and hence it defines the range of possibilities within which natural languages fall. From this viewpoint, the study of first language acquisition becomes of crucial relevance to the study of natural language, as it may offer a window on the properties of UG, hence into the human language faculty (Kager, 1999: 296). OT assumes that UG defines a set of universal and violable constraints, as well as principles by which constraints interact. Individual languages differ along the dimension of constraint ranking. If grammars are essentially rankings of universal constraints, then acquiring a language must involve the acquisition of a language-specific hierarchy of universal constraints (Kager, 1999: 297). The focus is on how children rank and re-rank the constraints in adult grammar in order to come up with a grammar identical to that of the adults around them. It is clear that the difference between adult grammar and child grammar is due to a different ranking of constraints. The study will therefore throw some light on the differences between language-specific and language-universal aspects of child language acquisition.

Acquisition studies of Bantu morphology report very similar findings. First, it appears that both singular and plural noun class prefixes are segmented as separate morphemes early on: there are no cases of plural morphemes being added to singular stems, nor of noun class prefixes being incorrectly added to nouns that have no prefix (see Kunene, 1979; Demuth, 2003). Concerning the acquisition of noun class prefixes, studies report the following overlapping stages of development during the ages 2-3 (Demuth, 2003):

- No prefixes (full or partial noun stems)
- 'Shadow' vowel and nasal prefixes
- Full and phonologically appropriate noun class prefixes

In light of these observations, this study sought to examine the development of noun class prefixes in Shona. In order to achieve this goal, the following research question guided the study:

- What is the shape of noun class prefixes that 2-3 year-old children acquiring Shona as a mother tongue produce?

In order to address this research question, we examined the morphological structures of the words (nouns) that are produced by children acquiring Shona as a mother tongue and we also looked at how these structures reflect the strategies and/or operating principles that children employ when acquiring the morphology of a language. In the following section, we describe the data-gathering techniques that we employed in this research. We also justify the number of subjects used.

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DATA COLLECTION PROCEDURES

The findings that are presented in this article are based on the data that were collected from the speech produced by three children. The data collection procedures were primarily observational and/or naturalistic and they were the same for the three children. The data were collected through observing and tape-recording the spontaneous speech of the three children while interacting with family members in play situations with toys, balls and animals. A high quality Sanyo tape recorder, model VPC-S0870EX, was used. The use of a tape recorder has the advantage of collecting data as it occurs naturally, hence this data collection approach provides a '…linguistically accurate corpus of data' (Samarin, 1967: 8). Crystal (1987: 170) acknowledges the value of naturalistic data and says:

> if one is to undertake a language investigation it is imperative that he or she records each and every sound. This is important because more accurate insights can be gleaned from naturalistic data than data collected from controlled settings.

The data were collected in the home of each of the children and this was done to ensure that the data were collected in naturalistic settings (real life situations). They were collected over a period of six months. This time frame allows for developments in child language acquisition to occur and was considered to be adequate to gather a representative corpus of data on the acquisition of class prefixes.

The three children that we observed are Tatenda Hazangwi (2; 4), AnnaLois Sibanda (2; 6) and Tafadzwa Kurotwi (2; 9). We examined the speech of three children because this is the number that we could handle, given the available resources and time that is required for tape-recording. Longitudinal studies are generally case studies, with data collected from a single participant or at least a small number of subjects (Gass & Selinker, 1994). In addition, three generally is considered to be the absolute minimum number of children for one to make generalisations on child language acquisition. This study follows the methodologies that were employed in longitudinal studies by Braine (1963), Bloom (1970) and Brown (1973). The use of small sample sizes is common in longitudinal child language acquisition research on Bantu languages as epitomised by Kunene's (1979) and Tsonope's (1987) doctoral studies which used two children each, while Mudzingwa's (2001) Master's investigation used one child. Ingram (1989:21) is of the view that:

> if one child is chosen, we do not know if the child is typical or not; if two we do not know which of the two is typical and which is unusual; with three, we at least have the majority that can be used to make such a decision.

The choice of the age ranges for this research was mostly influenced by the suggested stages of child language acquisition by Stern (1924), Nice (1925), Braine (1963) and Brown (1973). In their stages of acquisition, these scholars agree that morphological markers begin to occur during the multiword stage, which begins around the age of two.

The three children who were chosen for this study share common demographic characteristics, that is, they all come from urban families, live in low density areas, are female and have almost similar socio-economic statuses. They are the only children in their families, and live with both parents and a maid (helper). Although the three children are

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acquiring Shona as their mother tongue, they are simultaneously acquiring English. This is because they live with people who are Shona-English bilingual who regularly use English in their everyday speech. The choice of female participants was not deliberate, but because these participants were the ones who were easily accessible to the researchers.

Tatenda was first tape-recorded when she was two and a half years old. She was very active and liked to talk much (though not as much as the other two), but her speech was a bit unclear during the familiarisation sessions. AnnaLois was two years and six months old when she was first tape-recorded. She talked a lot. Since she is one of the researchers' daughters, it was fairly easy for the researcher to take note of any minute phonological and morphological developments. Tafadzwa is the eldest of the three subjects in this research. She was two years and nine months old when she was first tape-recorded and was recorded for eleven sessions. The twelfth recording was missed because she had left Harare for a holiday with her parents.

The children's utterances were audio-recorded using a high quality tape recorder and low noise tapes in order to capture the children's utterances clearly. The observation and tape-recording sessions were held at fortnightly intervals. Each tape-recording session lasted twenty to thirty minutes. The recordings took place at each of the three children's homes where the children typically engaged in verbal communication with their families. The collection of data in natural environments (in the children's homes) enabled the children to communicate (talk) freely. The audio-recordings were made where there was no background noise and where there was little or no reverberation. After the tape-recording, the tapes were dated, numbered and safely kept together with their transcriptions.

The data analysis was done by breaking the children's words into their smallest morphemic units. This is because the focus of this study was on the development of noun class prefixes. It must be noted that the morpheme is the smallest meaning-bearing element of an expression and the meaning can either be abstract or concrete (Katamba, 1993). Therefore, in doing a morphological analysis of the words produced by the children under investigation, we identified different types of noun prefixes and we classified them according to the lexemes that they attach to, that is, nouns. This enabled us to identify patterns in the data.

A BRIEF OVERVIEW OF SHONA NOUN CLASS PREFIXES

This section provides a background to the analysis of data. As part of the analysis of the morphological structure of the children's noun class prefixes, their words are compared to adult forms. This enabled us to establish the ways in which the children's forms differ from those of their models, that is, adult speakers of Shona in their environment. In Shona, a noun is made of a noun prefix and a noun stem as shown below:

(2a) mu + komana
'class 1-boy'
'boy'
(2b) va + komana
'class 2-boy'
'boys'

Examples (2a) and (2b) show that, in Shona, the nominal class 1 is the singular of the nominal class 2. The Shona noun class prefix is marked in nouns and it is an obligatory

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category. In addition, like all other grammatical morphemes in Shona, a noun class prefix is a bound morpheme. Phonologically, in Shona, noun class prefixes come in three prosodic shapes, namely, CV, V and /ø/ (zero). All the noun class prefixes encode number, gender and semantic information. The table below illustrates the classification of Shona nouns and the forms of the noun class prefixes (NPs):

Table 1: Shona noun class prefixes

Class	NPs	Example	Gloss
1	mu-	mu-sikana	girl
1a	ø-	ø-baba	father
2	va-	va-sikana	girls
2a	va-	va-Kadenge	Mr Kadenge
3	mu-	mu-ti	tree
4	mi-	mi-ti	trees
5	ø-	ø-gumbo	leg
6	ma-	ma-kumbo	legs
7	chi-	chi-sikana	stout girl
8	zvi-	zvi-sikana	stout girls
9	ø-	ø-mbudzi	goat
10	ø-	ø-mbudzi	goats
11	ru-	ru-sikana	ugly girl
12	ka-	ka-sikana	young girl
13	tu-	tu-sikana	young girls
14	u-	u-ra	intestines
15	ku-	ku-dya	food
16	pa-	pa-chi-koro	at the school
17	ku-	ku-chi-koro	at school
18	mu-	mu-chi-koro	inside the school
21	zi-	zi-gadzi	huge woman

Table 1 shows the pairing that Shona nouns go into because of the number inflectional marking. It shows that only twelve of the nominal classes pair out directly into six singular/plural linkage sets, that is, the plural morpheme of a singular noun is found in the class immediately following it. As Table 1 shows, the singular class 1 nouns have their plurals in class 2 and those of class 3 have their plurals in class 4 and so on. In Shona, there are three singular classes that do not have a similar pattern in terms of singular/plural linkage and these are singular nouns of classes 11 and 21. Some plural morphemes of class 11 nouns are in class 6, while others are in class 10. For example, the plurals of the class 11 nouns *ruwoko* 'hand' and *ruwa* 'district' are *mawoko* 'hands' and *maruwa* 'districts' in class 6 respectively and the plural form for class 11 *rukukwe* 'sleeping mat' is *hukwe* 'sleeping mats' in class 10. Class 21 nouns are marked for plurality by the class 6 morpheme. Thus, the plural forms of *zigadzi* 'huge woman' and *zinzeve* 'huge ear' in class 21 are *mazigadzi* 'huge women' and *mazinzeve* 'huge ears' in class 6 respectively. Classes 3 and 11 contain mass and abstract nouns like class 3 *mukaka* 'milk' and *muto* 'soup' and class 11 *rugare* 'good living' and *rudo* 'love'. The members of class 1a, 5, 9 and 10 are marked by the significant absence of a syllabic prefix and they are considered as zero prefix (ø). These words are put in their respective classes on the basis of concordial agreement.

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Hypothetically, this wide range of class prefixes can be a challenge to a child acquiring Shona, since there is need to map out the morphosyntactic position of each of these morphemes. However, the results of this study demonstrate that the child is neither challenged nor vexed by this array of morphemes. The following section presents the findings of this investigation.

DATA ANALYSIS: CATEGORIES IN THE DATA

In analysing data, we observed that noun class prefixes that were produced by the children under investigation have different phonological structures (shape) and we placed the words into three different categories on the basis of the differences. The term 'category' is used in this article to refer to a set of words that have noun class prefixes that are similar in structure. The three categories are: Category 1: No noun class prefixes, Category 2: Partial noun class prefixes and Category 3: Full noun class prefixes.

Category 1 words are characterised by the omission of the noun class prefix. The words do not have noun class prefixes in contexts where they are required to have them in line with the requirements of Shona grammar. Category 2 shows the beginning of the emergence of noun prefixes. It indicates a step up in the development of noun class prefixes. While in Category 1 words do not have noun class prefixes, in Category 2 part of the targeted prefix begins to emerge in the form of an onsetless vowel. In this category, children omit the consonant of the target noun class prefix in their speech – suggesting that the prefixes that are produced at this stage do not have sufficient phonemic content.

The third category is the one in which a word is produced without any 'errors' and resembles the morphological and phonological structure of the adult form. This means that the words consist of both the noun class prefix and the content or lexical morpheme (prefix and stem). In other words, at this stage, the target noun class prefix is supplied correctly. The following section describes the features of Category 1 words.

CATEGORY 1: NO NOUN CLASS PREFIXES

Category 1 words are the first or earliest step in the development of Shona noun class prefixes. The fact that noun prefixes are not appearing means that, at this stage, they have not yet been acquired. This is not an idiosyncratic feature of children acquiring Shona as a mother tongue because studies by Connelly (1984), Demuth (1993) and Kunene (1979) indicate that the omission of noun prefixes is the earliest stage in acquiring the morphologies of Bantu languages. Table 2 below shows the children's words that were produced without noun class prefixes and the targeted adult words, which have noun prefixes.

Table 2: Children's words without prefixes

Child form	**Omitted prefixes**	**Adult form**	**Gloss**
-chairo	mu- (class 3)	mutsvairo	broom
-koro	chi- (class 7)	chikoro	school

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-shona	mu- (class 3)	mushonga	medicine
-ana	mu- (class 1)	mwana	child
-riwo	mu- (class 3)	muriwo	vegetables
-bage	chi- (class 7)	chibage	maize

Table 2 shows that, in Category 1, children's words are made up of lexical morphemes only. For example, children's word forms such as {-chairo}, {-shona}, {-koro}, {-ana}, {-riwo} and {-bage} are produced without class prefixes, which are {mu-} for *mutsvairo* 'broom' and *mushonga* 'medicine' and {chi-} for *chibage* 'maize' and *chikoro* 'school'. Only stems of these words are appearing in child speech. Though meaningful, these lexical morphemes lack grammatical information for them to be syntactically acceptable. This gives us ample evidence that lexical morphemes are acquired first before grammatical morphemes. Kunene (1979) observes that children have morphologised nouns, producing more semantically content stems early on; ruling out the possibility that either penultimate lengthening or the high tone on the noun class prefixes contributes to the production of bare nominal stems at the initial stages of acquisition. Shona-speaking adults do not omit noun class prefixes in their casual speech – suggesting that children are not provided with input that includes prefix-less nouns. De Villiers and De Villiers (1978: 69) describe words that are produced with lexical morphemes without class prefixes as telegraphic speech. The adjective 'telegraphic' is an apt metaphor because adults produce similar sentences under conditions where words cost a lot of money such as in telegrams, short message services and classified advertisements.

Examples in Table 2 also show that children store lexical morphemes as whole words, leaving out class prefixes. Thus, the lexical morphemes that are produced by the children are not assigned grammatical information of number and class. This means that, when retrieving the stored lexical morphemes, the children do not assign them any prefixes since they perceive them as complete words.

Words in classes 1a, 5 and 9 were produced without grammatical morphemes. Words in these classes share a common morphological feature; that is, they do not have marked class morphemes. It is interesting to note that the children produced nouns belonging to these classes holistically without segmenting them. This is partly because the words that are in these classes are free morphemes. This shows that children do not haphazardly segment the words that they hear. Examples of words in classes 1a, 5 and 9 which were holistically produced by the children are *Mutare* (class 1a), *gogo* 'grandmother' (class 1a), *zai* 'egg', (class 5), *basa* 'work' (class 5) and *mota* 'car' (class 9).

Scholars such as Brown (1973), De Villiers and De Villiers (1978) and Kunene (1979) have used the form/content distinction in explaining why children produce lexical morphemes first. Shona morphology, like any other Southern Bantu morphology, shows that the language's words have a form/content distinction, of which the noun class prefixes are devoid of any intrinsic, specific meaning whilst the lexical morphemes carry concrete meaning. The fact that lexical morphemes carry the main meaning of a word can be given as the justification for the occurrence of words consisting of lexical morphemes without prefixes in the first stage of language acquisition.

What is striking about the behaviour of children at this stage of language acquisition is that it reflects highly ranked constraints in adult grammar. Some phonological processes tend to

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affect segments in nonlexical morphemes like class prefixes while those in lexical morphemes such as roots and stems are not affected. It has been observed that vowel hiatus, which is a heterosyllabic sequence of vowels (*$V_1.V_2$) is a dispreferred configuration in many languages of the world. Hiatus resolution strategies consistently target vowels in nonprivileged positions (Casali, 1996). Vowels occurring in privileged positions are preserved. Vowels occurring in lexical morphemes (roots and stems) are in privileged positions while those in prefixes are in nonprivileged positions. For example, in Shona, hiatus resolution strategies such as glide formation, secondary articulation and vowel deletion target the vowel of the prefix and retain the vowel of the lexical morpheme (Kadenge, 2010a), as shown in the examples given below:

	Glide formation	
(3a)	/ù + á^{ŋ}gù/	[wá^{ŋ}gù]
	‘class 1-mine’	
	‘mine’	
(3b)	/ì + á^{ŋ}gù/	[já^{ŋ}gù]
	‘class 9-mine’	
	‘mine’	
	Secondary articulation	
(4a)	/mù + àná/	[m^{w}àná]
	‘class 1-child’	
	‘child’	
(4b)	/tù + àná/	[t^{w}àná]
	‘class 13-child’	
	‘children’	
	Vowel elision	
(5a)	/mù + òtó	[mòtó]
	‘class 3-fire’	
	‘fire’	
(5b)	/ʧì + òtó	[ʧòtó]
	‘class 7-fire’	
	‘fireplace’	

Examples (3a) and (3b) show that the prefix vowels /u/ and /i/ are realised as [w] and [j] respectively when followed by a vowel-initial stem. The vowel of the stem is not affected by this process – suggesting that the stem or lexical morpheme is a privileged position in a word. The same applies to (4a) and (4b), in which the vowel of the prefix is realised as the secondary articulation of the preceding consonant while the vowel of the stem remains intact. The vowel is turned into secondary articulation when it is preceded by a consonant because complex onsets (consonant sequences) in Shona, such as [mw] are not permissible (Kadenge, 2010c). In (5a) and (5b) the vowel of the prefix is neither turned into glide nor realised as secondary articulation, but is deleted and this is accounted for by the fact that a sequence of labial labialised consonants and labial vowels (*$C_{Labial}{}^{w}V_{Labial}$) (cf. 5a) and palatalised consonants (*C^{j}) (cf. 5b) are inadmissible in the language. Kadenge (2010b) makes similar observations for Nambya. These processes show that there is a general tendency in language processing to maintain the structure of lexical morphemes (structure retention). This could explain why children have the option of omitting prefixes in the initial stages of language

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acquisition. As time progresses, the child gradually manages to map out the syntactic function of the grammatical morphemes and lexical morphemes will slowly be assigned grammatical information in speech. The following section analyses the morphological structure of Category 2 words which show the beginning of the emergence of noun class prefixes.

CATEGORY 2: PARTIAL NOUN CLASS PREFIXES

While in Category 1 the words that are produced do not have class prefixes, the ones that are produced in Category 2 show that children inflect the lexical morphemes with a partial prefix. The noun prefix is partial because it is made up of an onsetless vowel instead of a canonical Shona syllable shape consisting of an onset (margin) and a nucleus (obligatory centre). This shows that, at this stage, children have not yet mastered the full phonemic and/or syllabic structures of the noun prefixes which resemble those of adult words, but, as mentioned earlier in this article, are beginning to inflect the lexical morphemes with prefixes – suggesting that they have acquired the appropriate rule for assigning grammatical markers to lexical forms to come up with well-formed words.

Table 3: Omission of consonantal onsets in noun class prefixes

Child form	Omitted consonants	Adult form	Gloss
-inga	ch [ʧ]	chingwa	bread
-ikoro	ch	chikoro	school
-afuta	m [m]	mafuta	lotion
-apegi	m	mapegisi	pegs
-ota	m	mota	car
-ainini	m	mainini	aunt
-ipunu	s [ʧ]	sipunu/chipunu	spoon
-epa	b [ɓ]	bepa	paper

Table 3 shows that, in Category 2, the children omit the consonantal onset part of the syllable structure of the prefixes and the word-initial consonants of other free lexical morphemes. For example, in the word *chingwa* 'bread' (CV.CV), which is produced as *ingwa* (V.CV) by children, the onset [ʧ] has been dropped, leaving the onsetless vowel [i] functioning as the noun prefix. The remaining word-initial onsetless [i] is used as a 'place holder'. Connelly (1984) describes such 'place holder' segments as amorphous and generalised entities that show that the child has marked the obligatory presence of a noun prefix without yet being able to produce the correct form. In terms of Chomsky's (1986) internalised-language (I-language) versus externalised language (E-language) dichotomy, we conclude that, at this stage of child language acquisition, children have developed the internalised language which is being poorly reflected on the surface as externalised language.

The phonological process that seems to be in operation at this stage is consonant omission. It seems the children drop consonants in order to facilitate ease of articulation. Owens (1988: 393) explains the consonant omission process by highlighting the difference in complexity between consonants and vowels and he says that the former are more phonologically complex than the latter. While the consonants are dropped for phonological reasons, the impact is on the production of noun prefixes. For example, the dropping of 'ch' [ʧ] in

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chingwa (bread) to come up with *ingwa* in child speech results in an ill-formed prefix. As a result, the word becomes phonologically incomplete. It can also be argued that children drop the consonants because they are the optional elements in syllable structure while the vowels are retained because they are obligatory constituent of the syllable.

It is also interesting to note that the omission of consonants does not result in the modification of the remaining vowel of the prefix. For example, after the deletion of the [ʧ] sound of the prefix 'chi' (class 7) in *chikoro* 'school', the vowel of the prefix maintains its original shape [i]. The omission of consonants is not restricted to morphologically complex words (words with more than one morpheme) but is also extended to free morphemes. For example, the word *mota* 'car', which is morphologically simple (one morpheme), is realised as *ota* in the children's speech. In this case, the word initial 'm' has been deleted though it is not part of a prefix. We showed that, in Category 1, children did not drop word-initial consonants of free morphemes, but at stage 2 they did. This is a typical case of overgeneralisation because a process which applies to morphologically complex words is extended to the production of free morphemes. The following section examines the morphological structure of Category 3 words.

CATEGORY 3: FULL NOUN CLASS PREFIXES

This section deals with the final development of class prefixes. At this stage, children produce words that are similar to adult words. They produce full and phonologically appropriate prefixes, as shown in Table 4 below.

Table 4: The production of full noun prefixes

Child form	Adult form	Gloss
chi + ngwa	chingwa	bread
chi + oto	choto	fire place
mu + ana	mwana	child
va + ana	vana	children
ma + bhuku	mabhuku	books
ma + pepa	mapepa	paper
ma + kumbo	makumbo	legs
ma + sikati	masikati	good afternoon
mu + soro	musoro	head

Table 4 shows the full realisation of noun prefixes in the speech of children acquiring Shona as a mother tongue. At this stage, the noun prefixes are correctly produced and appropriately assigned to their lexical morphemes. The children have acquired the obligatory rule of assigning class prefixes to nouns.

CONCLUSION

This article set out to examine the early morphological structures of nouns in the spontaneous speech of three children acquiring Shona as a mother tongue. It has been shown that the

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acquisition of noun class prefixes occurs in three overlapping stages. The first stage is marked by the absence of prefixes and the second stage is characterised by the partial appearance of noun class prefixes in the form of an onsetless vowel, while the third stage shows complete mastery of their production and appropriate assignment to lexical morphemes – suggesting that children have some knowledge of the shape of specific noun class prefixes from an early age. The order of acquisition is shown below:

(6) No marking > dummy or shadow prefix > well-formed noun prefix

It is remarkable that the acquisition of noun class prefixes is so similar across Bantu languages. We, however, observed that there is a tendency of overlapping these stages, where a child masters the production of a particular aspect and at later stages regresses to an earlier stage of language development. A follow-up article will examine the acquisition of Shona suffixes and tone. We recommend more studies on the acquisition of other grammatical structures of this language such as syntax and semantics and we hope that the results will feed into comparative research on child language acquisition. A comparison of the acquisition of Bantu languages offers an extremely rich area of research, providing insights not only into how language is learned, but also the impact that language learning may exert on processes of historical change (Demuth, 2003). This kind of research may require the use of OT since its analytical architecture is mainly suitable for linguistic variation. Individual differences among children learning the same language or among children learning different languages, like dialectal variation, could be a result of different ranking of universal constraints.

REFERENCES

BLOOM, L. 1970. *Language development: Form and function in emerging grammars*. Cambridge, Mass: MIT Press.

BRAINE, M. 1963. On learning the grammatical order of words. *Psychological Review*, 70(1):323- 48.

BROWN, R. 1973. *A first language: The early stages*. Cambridge, Mass: Harvard University Press.

CASALI, R. 1996. *Resolving hiatus*. New York: Garland.

CHISWANDA, R. 1994. First-language acquisition in Shona. Research report. Harare: University of Zimbabwe: Department of Linguistics.

CHOMSKY, C. 1986. *Knowledge of language: Its nature, origins and use.* USA: Praeger Publishers.

CLARK, HH. & EV CLARK. 1977. *Psychology and language*. New York: Harcourt Brace Jovanovich.

CONNELLY, MJ. 1984. Basotho children's acquisition of noun morphology. Doctoral thesis. Essex: University of Essex.

CRYSTAL, D. 1987. *The Cambridge encyclopedia of language.* Cambridge: Cambridge: University Press.

DEMUTH, KA. 1988. Noun classes and agreement in Sesotho acquisition. In Barlow, N & CA Ferguson (Eds), *Agreement in natural languages: Approaches, theories and description*. Stanford: CSLI. 305-321.

DEMUTH, KA. 1993. Aspects of Sesotho language acquisition. Doctoral thesis. Indiana: Indiana University.

DEMUTH, KA. 2003. The acquisition of Bantu languages. In Nurse, D & G Phillipson (Eds), *The Bantu languages*. Surrey, England: Curzon Press. 209-222.

DE VILLIERS, JG & PA DE VILLIERS. 1973. A cross-sectional study of the acquisition of grammatical morphemes. *Journal of Psycholinguistics*, 2(2): 267-78.

DOKE, CM. 1973. *Textbook of Zulu grammar*. Johannesburg: Longman.

GASS, SM & L SELINKER. 1994. *Second language acquisition: An introductory course*. New York: Routledge.

GUTHRIE, M. 1971. *Comparative Bantu: Volume 2*. Farnborough: Gregg.

INGRAM, D. 1989. *First language acquisition: Method, description and explanation*. Cambridge: Cambridge University Press.

KADENGE, M. 2010a. Hiatus contexts and hiatus resolution strategies in Zezuru. *Southern African Linguistics and Applied Language Studies*, 28(1):1-11.

KADENGE, M. 2010b. Some segmental phonological processes involving vowels in Nambya: A preliminary descriptive account. *The Journal of Pan African Studies*, 3(6):239-252.

KADENGE, M. 2010c. Complexity in phonology: The complex consonants of simple CV-syllables in Zezuru. *Southern African Linguistics and Applied Language Studies*, 28(4):393-408.

KAGER, R. 1999. *Optimality theory*. Cambridge: Cambridge University Press.

KATAMBA, F. 1993. *Morphology*. London: Macmillan Press.

KOSCH, I. 2011. Descriptive issues of derivation and inflection in Sesotho sa Leboa (Northern Sotho) with particular reference to 'number'. *Southern African Linguistics and Applied Language Studies*, 29(1):89-96.

KUNENE, E. 1979. The acquisition of SiSwati as a first language: A morphological study with special reference to noun prefixes, noun classes and some agreement markers. Doctoral thesis. Los Angeles: University of California.

MKANGANWI, KG. 2002. Shona (derivational) morphology: An observation in search of a theory. *Zambezia*, 29(2):174-190.

MUDZINGWA, C. 2001. Phonological structures in early Shona words. MPhil thesis. Harare: University of Zimbabwe.

NICE, M. 1925. Length of sentences as a criterion of child's progress in speech. *Journal of Educational Psychology*, 2(16):370-379.

OWENS, RE. 1988. *Language development. An introduction*. New York: Macmillan.

SAMARIN, J. 1967. *Fieldwork: A guide to fieldwork.* New York: Rinehart and Winston.

STERN, W. 1924. *Psychology of early childhood up to sixth year of age*. New York: Holt

SUZMAN, S. 1991. Language acquisition in Zulu. Doctoral dissertation. Johannesburg: University of the Witwatersrand.

TALJAARD, PC & SE BOSCH. 1988. *Handbook of Zulu*. Pretoria: Van Schaik.

TSONOPE, J. 1987. The acquisition of Setswana noun class and agreement morphology, with special reference to demonstratives and possessives. Doctoral dissertation. Buffalo: State University of New York.

VAN DER SPUY, A. 2010. Generating Zulu noun class morphology. *Language Matters*, 41(2):294-314.

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