TOWARDS THE DEVELOPMENT OF AN ISIXHOSA ADAPTATION OF THE MACARTHUR-BATES COMMUNICATIVE DEVELOPMENT INVENTORY FOR TODDLERS

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COMPULSORY DECLARATION

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signature: Signed by candidate Date: 13 August 2018

Abstract

In this thesis, I draw on experiences of the isiXhosa segment of the pre-pilot research phase and first rural, toddler pilot for the adaptation of the MacArthur-Bates Communicative Development Inventory (CDI) into Southern African languages.[1] The adaptation stems from the growing dissatisfaction regarding the dearth of speech and language assessments and therapeutic tools currently available in South Africa for isiXhosa or other local languages (Pascoe and Smouse, 2012; Demuth, 2007). Such tools are of fundamental importance since failure to accurately diagnose communication difficulties hinders appropriate intervention. If improperly addressed, communication difficulties can hamper the essential development of literacy skills and academic success (see Shonkoff and Phillips, 2000). Reliable research on child language acquisition is thus critically needed in order to inform culturally and linguistically appropriate assessments that can lead to accurate diagnosis and treatment of communication disorders, and ultimately improve children's early childhood development trajectories.

Data from the pre-pilot and pilot study informs discussions about monolingual isiXhosa-speaking toddlers' lexical and grammatical acquisition. I furthermore discuss the need for the adaptation of such inventories to local circumstances, and I problematise the assumption that Western linguistic constructs, ontologies, and epistemologies are appropriate for the CDI exercise as applied to Bantu languages.

The findings of this study furthermore contribute to existing scholarship on how children acquire words and morphemes. Findings as such will be of use to clinicians and speech pathologists, especially in informing vital language and communication rehabilitation in early childhood development. I additionally hope that the results presented will inform cross-linguistic scholarship on child language acquisition, paving the way for future research as well as the creation of bi- and multilingual CDIs.

[1] See acknowledgements for the names and affiliations of the members of the team.

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The author declares no potential conflicts of interest with respect to the research, authorship, and/or publication of this thesis.

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List of abbreviations

AGR	agreement
ADJM	adjective marker
BNP	basic noun prefix
C	consonant
Cl.	Class
Cls	Classes
CDI	Communicative Development Inventory
CNJ	conjunctive
COP	copulative
DEM	demonstrative
DSJ	disjunctive
FUT	future
IMP	imperative
IV	initial vowel
MLR	Multiple Linear Regression
NEG	negative
NPx	noun prefix(es)
OLS	Ordinary Least Squares
OM	object marker
PM	possessive marker
PRED	predicative
PRS	present tense
PRST	presentative
PST	past tense
SES	socio-economic status
SM	subject marker
StatsSA	Statistics South Africa
SBJV	subjunctive
V	vowel
p1	1st person singular

Numerals following an abbreviation stand for the traditional numbering of the noun classes in isiXhosa (e.g. SC1 = subject concord of Cl. 1; PM3 = possessive marker of Cl. 3).

Numerals preceding an abbreviation indicate the demonstrative position (e.g. 1PRST = presentative of the 1st position).

Numerals before and after an abbreviation give the demonstrative position first and then the noun class (e.g. 3DEM2 = 3rd position demonstrative of Cl. 2).

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1 Introduction and background

1.1 Introduction

Research on child acquisition of Bantu languages (see Demuth, 2003 for a summary of work done on the topic and Section 2.4.2, below) has not so far led to the development of speech and language assessment tools that might result in linguistically focused interventions for the majority of children who speak a Bantu language – and, in this context, specifically isiXhosa – as a first language (Alcock et al., 2015; Pascoe and Smouse, 2012; Potgieter and Southwood, 2016; Gxilishe, 2008). Such interventions are necessary since communication difficulties can hamper academic success and the development of literacy skills, as well as increase children's susceptibility to low self-esteem and bullying (Pascoe and Smouse, 2012). Clinicians have an ethical responsibility to manage their clients in each client's first language, and therefore the "development of contextually relevant assessments and resources for speech language therapists working in [South Africa] is urgently needed" (Pascoe and Smouse, 2012: 471; see also Gxilishe, 2008).

This recognition that the way speech development is evaluated needs to be relevant and culturally appropriate is a global phenomenon evident in the increasing demand for cross-cultural assessments that fit these criteria (Carter et al., 2005). It is partly explained by the growth of multicultural, multilingual communities in previously largely monolingual countries, such as the United Kingdom. Consequently, it is now accepted that cultural variation must be acknowledged in order for non-biased speech and language therapies to be developed that have improved diagnostic accuracy and treatment outcomes (Isaac, 2002 in Carter et al., 2005: 386).

Internationally, speech development assessments have become sensitised to different languages and cultures.[2] In South Africa, though, a country with 11 official languages, English is the only language used on scientifically developed inventories that can be used to ascertain a child's ability to communicate.[3] Yet English in South Africa is a minority culture and language, spoken as a first language by only 9.6%

[2] See Chapter 2 as well as: https://mb-cdi.stanford.edu/adaptations.html.

[3] There are three standardised tests published for Afrikaans, but none has changed since 2007, according to Dr Frenette Southwood, and moreover they are not applicable to children under the age of 3 (personal communication, April 10, 2018).

of the population (StatsSA, 2011a). In addition, English is still viewed in this country as the benchmark for educational and economic success (Dyers, 1999; De Klerk, 2000; Stephen, Welman and Jordaan, 2004; Dalvit and De Klerk, 2005). The paradox, however, is that a failure to timeously address speech problems in the first language of a speaker may further delay access to English (Du Plessis and Louw, 2008) since there is often a transfer of skills, weak or strong, from the first language to the second language (Friedlander, 1990). The earlier the invention when a child does display speech and communication difficulties, the better the developmental outcome (Duyme, Zoyman, Tervo and Capron, 2011). If accurate diagnoses do not occur, appropriate intervention will further be delayed. Therefore, this study contributes to the urgent and crucial need for a development of child communicative development assessment tools in a South African language, namely isiXhosa.

1.2 AmaXhosa and IsiXhosa: the people and the language

IsiXhosa is spoken by eight million people in South Africa and is the second most widely spoken first language in the country (16% of the population; StatsSA, 2011a). IsiXhosa is predominantly spoken in the Eastern and Western Cape provinces. In Figure 1.1 below I provide a map of the Eastern Cape, which is the province from with an amaXhosa majority (78.8%; StatsSA, 2011a). Here I indicate with stars the villages of Xorha and Mbolompo, where data collection for the first pilot took place. The map also shows Cata, where pre-pilot data was collected. Rural settlements in the Eastern Cape still very much display the traditional lifestyle of the amaXhosa. Homesteads comprise of two or more rondavels,[4] subsistence farming is common, and often farm animals roam freely. Whilst these factors are explored in more depth throughout this thesis, for now it is suffice to say that whilst rural communities can appear to have a degree of bucolic charm and the people to practise *Ubuntu,*[5] they are also often poverty stricken, have high levels of unemployment, and remain geographically isolated from urban settlements and industrial hubs. The urban pre-pilot data collection sites are on the outskirts of the City of Cape Town in South Africa's Western Cape province and are not shown on this map.

[4] A rondavel is a traditional, circular African hut made of mud/clay bricks with a conical, thatched roof.

[5] *Ubuntu* is a notion of humanity that largely governs mutual exchange and concern for other people's and the community's wellbeing. It portrays the idea 'I am because you are'.

Source 1 http://southafricanresearcher.blogspot.co.za/2010/04/maps-of-south-africa-2.html

Figure 1-1 Map of the Eastern Cape, South Africa

IsiXhosa is a Southern Bantu, Nguni language[6] that falls in Zone S41, under Guthrie's classification of Southern Bantu languages (Gowlett, 2003). Given that the most substantial amount of work on child language acquisition in Bantu has been completed for Sesotho and isiZulu (correspondingly by Demuth and Suzman), this thesis will also regularly draw on acquisition data for these languages[7]. Sesotho and isiZulu are also a Southern Bantu languages and fall into Zone S33 and S42 respectively (Gowlett, 2003).

6 Nguni languages are those belgonging to Zone S40 (Gowlett, 2003).

7 This thesis also draws, to a lesser extent, on other cognate Bantu languages (see Section 2.4.2) and barring a superfluous detailed analysis of them all, any linguistic particulars/differences with isiXhosa are recognised in discussions where relevant. For a comprehensive consideration of Southern Bantu (Zone S), the reader is recommended to consult Gowlett's (2003) work in this regard.

In isiXhosa, isiZulu and Sesotho, like other Bantu languages, the noun class system (16 exist in isiXhosa, see Appendix A for a Noun Class table) governs an agreement system of concords "whereby any pronouns, determiners, qualifiers, and subject or object markers referring to a noun must be in agreement with that noun … or by the occurrence of a correlative concord in the adjective, possessive, or verb, for instance" (Gowlett and Dowling, 2015: 67).

The verb root in these languages has a number of positions for morphemes (prefixes and/or suffixes such as agreement, tense, derivational suffixes and mood (Gxilishe, de Villiers and de Villiers, 2007b).

For Zone S languages, the most basic syntactic pattern is Subject-Verb-Object [SVO] (Gowlett, 2003), but for stylistic and literary purposes, as well as emphasis, variations can exist (Gxilishe, de Villiers and de Villiers, 2007a; see also Demuth 1984). SVO is the word order used by Bantu language-speaking children prior to 2;6 years[8] (Demuth, 2003), starting around the age of 2 (Demuth and Suzman, 1997). Demuth (2003) notes that subject postposing in Sesotho starts strongly around the age of 2;6, however, increasing around the age of 3 when object markers are more consistently used. A similar pattern may be expected in isiXhosa. Specific grammar items considered in this thesis are explained and exemplified in more detail in Table 2-1 in Section 2.4.2. Additional commentary is also provided in Section 5.1.3 of results when I consider what linguistic considerations there are in adapting the CDI into isiXhosa. Any differences in linguistic particulars of Southern Bantu languages from which data is drawn are recognised when relevant.

1.3 Background to assessment procedures

1.3.1 Culture and testing

The background on isiXhosa discussed thus far provides a representation of why the culture and lifestyle of those for whom a test is created, cannot be ignored. In this vein, Carter et al. (2005: 386) start from the premise that

> the task of cross-cultural assessment is to identify and distinguish between behaviours that are universal, those that are culturally variable and those unique to the individual.

[8] Throughout the thesis ages are presented in the form years;months, for example, 1;6 = 1 year 6 months (18 months).

They take issue with the empiricist conceptual frameworks that lay behind early assessment tools and argue that there can be no such thing as 'culture-free' assessments that operate in "context-free clinical settings" (Carter et al., 2005: 386). They warn against the pitfalls of thinking that tests can simply be translated without reference to culture by citing the case of a particular tool that, when translated into Arabic, resulted in normal Sudanese adults gaining scores equivalent to those of brain-damaged United States adults (Carter et al., 2005). As also acknowledged by Cockcroft et al. (2015), this approach can contribute to perpetuating racist beliefs and discrimination.

1.3.2 Biases in assessments

Normative data in testing for cognitive ability remains mainly based on monolingual, reasonably affluent English first-language individuals: according to Cockcroft et al. (2015), these norms are still routinely applied to culturally and linguistically diverse individuals. This creates measurement problems for individuals from non-Western cultural, linguistic, and socio-economic backgrounds, including the majority of the South African population, whose speech is often assessed according to inappropriate standards, leading to biases in the developmental scores and hampering the role of professionals in the field (Gxilishe, 2008). In the course of an interview with Jane le Roux, a speech therapist and clinical educator at the Department of Health and Rehabilitation Sciences at the University of Cape Town, she referred to the growing dissatisfaction with the inappropriateness of some of the testing tools and explained how she would sometimes create ad-hoc assessments that were more culturally and linguistically appropriate (Le Roux, personal communication: March 2017).

When assessments are neither culturally nor linguistically appropriate, they are likely to exhibit either item or cultural bias, or both. Item bias occurs when the meaning of one or more items is not identical across cultures and can arise from the inapplicability of an item to a specific culture or from unsuitable item translation (Meiring et al., 2005; Byrne et al., 2009). If there is item bias in an assessment, it means that children's score differences do not necessarily correspond with differences in the underlying trait or ability (Meiring et al., 2005). Cultural bias occurs when, for example, assessments designed to measure communicative development in a particular language, actually test how much the speaker knows about particular items only experienced by English speakers living in a well-resourced society (Djiwandono, 2006: 83). The result can be assessments that identify "differences in background and experience, rather than fundamental psycholinguistic deficits" (Campbell et al., 1997: 523).

For similar reasons, Gutiérrez-Clellen and Simon-Cereijido (2007) acknowledge how specific language impairment[9] is more difficult to identify on standardised languages assessments in children whose backgrounds are not mainstream. This implies that they may score lower due to differences in background, despite having typical development (Gutiérrez-Clellen and Simon-Cereijido, 2007). These assessments therefore run the risk of "confusing 'difference' with 'disorder'" (Campbell et al., 1997: 519). Reliable research on child language acquisition is thus critically needed in order to inform culturally and linguistically appropriate assessments that can lead to accurate diagnosis and treatment of communication disorders and ultimately improve children's early childhood development trajectories.

1.4 Objectives and research questions

This study aims to describe isiXhosa-speaking toddlers' language acquisition and communicative development trajectories. To do so, I make use of:

1. Spontaneous speech data from three urban and three rural toddlers.
2. An initial adaptation of the isiXhosa CDI and family background questionnaire, that collects data on a twenty rural toddlers' vocabulary and grammatical development as well as family and health.

Information about the participants and data collection methods is supplied in Chapter 3. The results aim to inform further pilots for the isiXhosa CDI as well as to guide future assessment adaptations of isiXhosa, Bantu languages, and other languages and cultures not cognate to English. I also wish to provide a useful foundational resource that speech and language pathologists can use to enhance their understanding of isiXhosa-speaking children's communicative traits and communicative development specifically.

In order to operationalise these aims and objectives, the study considers the following three research questions, discussed in full in Sections 1.4.1-1.4.3:

1. Which socio-demographic factors affect variability in toddlers' vocabulary production?

[9] Specific language impairment is a language disorder that affects acquisition of grammatical inflection (Oostendorp, 2016).

2. What does the data reveal about lexical acquisition in isiXhosa-speaking toddlers?
3. What does the data reveal about grammatical acquisition isiXhosa-speaking toddlers?

Despite the relatively small sample size (N=20), Section A of the CDI questionnaire (see Chapter 3, where I discuss the CDI questionnaire as research tool) provides data about the toddlers' vocabulary production, which can be investigated for significant correlations with their socio-demographic background (see research question 1 and Section 1.4.1). However, for an analysis of data on individual vocabulary items' production, the sample size is too small. Furthermore, the production of certain grammatical items (as tested in the second part of the CDI), was also not investigated with regression analyses, specifically because it is not possible to compute an overall grammatical complexity score across or within sections of the grammar section, rendering a meaningful statistical analysis unfeasible. For these reasons, in order to investigate research questions 2 and 3, a descriptive analysis of lexical and grammatical acquisition for isiXhosa-speaking children is made (see Sections 1.4.2 and 1.4.3). Despite the different approaches used, they all contribute to different sides of the same story, namely: the nature of the development of toddlers' communicative ability.

1.4.1 Socio-demographic factors affecting variability in toddlers' vocabulary production

In Chapter 4, the first results chapter, I statistically analyse a number of socio-demographic and environmental factors that can affect variability in toddlers' vocabulary production. As such, I examine the contribution of the following factors on the variability in productive vocabulary in my Pilot 1 data set:

- Age of child
- Gender of child
- Mother's level of education
- Sibling as the secondary caregiver
- Whether the child is a twin
- Birth order
- Ear problems
- Crèche attendance
- Number of adults in the home
- Number of secondary caregivers

- Number of siblings
- Number of children in the home
- Household income

The factors listed above are the independent variables tested in a multiple linear regression analysis. As explained in Chapter 3, the independent variables in the model were adjusted based on an F-test of joint significance. Expressive/productive vocabulary is the dependent variable tested for. Note that expressive vocabulary and productive vocabulary are used as synonyms; expressive or productive vocabulary size thus refers to the number of lexical items a child can say.

1.4.2 Lexical acquisition in isiXhosa-speaking toddlers

The second results chapter (Chapter 5) considers the second research question posed above and concerns lexical acquisition in isiXhosa-speaking toddlers. At the outset, I consider which category of words is produced first and whether the data shows any lexical shifts and other phenomena that future adaptations, as well as speech and language pathologists, should be cognisant of. I then consider what linguistic and ontological considerations there are in adapting the CDI into isiXhosa and the implications for interpreting and analysing lexical acquisition.

1.4.3 Grammatical acquisition in isiXhosa-speaking toddlers

Chapter 5 also addresses the third research question, which focuses on the acquisition of grammar by isiXhosa-speaking toddlers. I specifically consider what it reveals about the age and manner of acquisition of noun classes, noun class prefixes, subject markers, identificative copulatives, object markers, adjective markers, possessive markers, possessive pronouns, prepositions and locatives, demonstratives and verb forms – tense (present, future, recent past), negation, and mood (subjunctive). See Table 2-1 of Section 2.4.2 for a literature review of first-language acquisition of these forms in Bantu.

1.5 Dissertation outline

The scope of the thesis is as follows: in Chapter 2, I present internationally- and locally-informed scholarship on child language acquisition. The methodological process followed in the initial adaptation

of the isiXhosa CDI, together with the methodology of my analyses, is described in Chapter 3. This chapter ends with a consideration of methodological limitations. In Chapter 4, I respond to research question 1.4.1 by statistically analysing the role of environmental and demographic factors on productive vocabulary of toddlers, and in Chapter 5 I descriptively consider grammatical and lexical acquisition in responding to research questions 1.4.2 and 1.4.3 respectively. Chapter 6 provides concluding remarks and recommendations.

2 Literature review

This chapter provides a synchronised analysis of literature from local and international studies, spanning diverse disciplines. The tendency to draw on international studies for languages and cultures not cognate to isiXhosa only highlights the need for more studies on first-language developmental norms for indigenous South African and Bantu languages. I thus draw on these studies to the extent that their findings can inform my understanding, methodology and reasoning, however, I problematise the tendency to over-rely on international studies for languages and cultures not cognate to isiXhosa when I address my research question on lexical acquisition (see Section 5.1.3).

I begin by reviewing literature on the instrument of focus, the CDI. There is an abundance of research conducted on CDIs worldwide with their reliability, validity, and developmental findings well-researched: American English (Dale and Fenson, 1996), British English (Hamilton, Plunkett and Schafer, 2000), Croatian (Kuvac, Cepanec and Kovacevic, 2009), Danish (Bleses et al., 2008), German (Szagun, Stumper and Schramm, 2009), Hebrew (Maital et al., 2000), Italian (Camaioni et al., 1991; Caselli, Casadio and Sanders, 1993), Japanese (Ogura et al., 1993), Kiswahili and Kigiriama (Alcock et al., 2015), Mexican Spanish (Dale and Fenson, 1996), New Zealand English (Reese and Read, 2000), Norwegian (Simonsen et al., 2013), Russian (Eliseeva and Vershinina, 2009), Swedish (Eriksson and Berglund, 1999), Turkish (Aksu-Koç et al., 2009), Xichangana, Xionga, and (Mozambican) Portuguese (Vogt, Mastin and Aussems, 2015.) For more information on the reliability and validity of CDI adaptations see also Fenson et al. (1994); Saudino et al. (1998); Duyme, Zorman, Tervo and Capron (2011); Fenson et al. (2000a); and Law and Roy (2008). There are over 60 adaptations of the instrument worldwide (Alcock et al., 2015), however, it is beyond the capacity of this thesis to present findings from all of them. Instead, I concentrate on reviewing literature that focusses on the way children learn words, including the effects that demographic factors can have on this acquisition. I lastly consider word combinations in child language acquisition and review scholarship on the grammatical acquisition of Bantu languages.

2.1 Testing communicative development: communicative development inventories

CDIs are parent-completed language development assessments that give a general indication of a child's communicative ability (Alcock et al., 2015). The CDI has two versions: an infant version (words and gestures) for children aged 8-15 months and a toddler version (words and sentences) for children

aged 16−30 months (1;4-2;6; the focus of this study). A CDI consists of a checklist of words or statements about a child's receptive and expressive communicative abilities. A parent or caregiver[10] is required to indicate which words, gestures or sentences their child can understand and use (Alcock et al., 2015).

The CDI is a cost-effective instrument, because it is based on the completion of a questionnaire. It allows development to be assessed based on the extensive experience of caregivers, which although prone to bias, is often more representative of a child's ability than a brief non-naturalistic, clinical interaction (Fenson et al., 2000a; Law and Roy, 2008). It is thus an especially useful tool to assess communicative and language development in children who are unused to interaction with unfamiliar adults, because it avoids the challenge of altered behaviour that could lead to an underestimation of their ability (Fenson et al., 1994; Labov, 1970 in Alcock et al., 2015: 763-764).

A study performed in the UK that compared children's CDI scores to their performance in a laboratory setting suggests that parents are in fact reliable in their estimates of their children's abilities (Schafer, Plunkett and Thal, n.d. in Hamilton, Plunket and Schafer, 2000: 691). This is in addition to Fenson et al.'s (1994) confirmation of the CDI validity in terms of the age of onset of significant milestones (e.g. emergence of word combinations) and the sequence in which skills are acquired. Thus the evident parallels between experimental literature and the grammatical measures attest to parents' ability to accurately report on their child's linguistic capabilities. Additionally, the question-and-answer format has the advantage of allowing both written and oral responses, which makes the inventory accessible to populations with limited literacy (Alcock et al., 2015).

A wide range of assessment and therapy materials (including CDIs) have been developed, but as pointed out in Chapter 1, there are very few speech and language assessments and therapeutic tools available in South Africa for isiXhosa or other indigenous languages (Pascoe and Smouse, 2012; Demuth, 2007). Duyme et al. (2011) write that the use of parent-completed questionnaires during paediatric consultations mean that 70-80% of children with developmental delays will be detected, compared to a detection rate of only 30% in their absence. As stated, the MacArthur-Bates CDI has been adapted for over 60 languages worldwide (Alcock et al., 2015), but until the development of the

[10] For the purposes of this thesis, the term 'caregiver' is used, unless otherwise specified, to capture the relation of a 'parent' or a 'primary caregiver'.

Kiswahili and Kigiriama CDI in Kenya (Alcock et al., 2015), Chichewa/Nyanja and Chiyao in Malawi, and Xichangana and Xironga from Mozambique (Vogt, Mastin and Aussems, 2015) there were no CDIs for Bantu languages. Alcock et al. (2015) find the validity and reliability of the Kenyan CDI to range from acceptable to excellent, enhancing the advantages of CDI use when direct language testing is impractical and children have multiple caregivers. This is particularly important since a fact of life for many South African children is that they do not consistently live in the same dwelling as their biological parents but instead have a series of different caregivers (often other relatives or older siblings). This arises from many factors, including "historic population controls, labour migration, poverty, housing and educational opportunities, low marriage rates, and cultural practice" (Hall, Meintjies and Sambu, 2014: 1).

CDIs are becoming increasingly useful as tools to study the role of genetic and environmental factors in language development (Law and Roy, 2008), and with reference to Maital et al. (2000: 3), the creation of the CDI will inform discussion around "vocabulary composition in typologically different languages [and] will shed light on discussions about the generalizability of claims based on English alone". Furthermore, the CDI is also proposed to be a promising tool for the essential development of bilingual assessments (Simonsen et al., 2013). The development of this monolingual isiXhosa CDI will specifically allow the generation of crucial development benchmarks that can be referred to in bilingual assessment creation and normative testing, since these culturally appropriate standardised assessment measures are currently severely lacking in South Africa (Gxilishe, 2008).

2.2 Theories of child language acquisition

Idiata (2005) states that one of the most significant controversies in developmental psycholinguistics today is the placing of cognitive and linguistic determinants in children's language acquisition, in particular, determining the place of universals and linguistic specifics in this process. To the extent of eliciting a framework that will have bearing on literature to follow, I will provide brief overviews of four common and prominent theories of language acquisition.

2.2.1 Behaviourist theories

Behaviourist theories are underpinned by the belief that all behaviour is the result of the formation of habits that are created in response to stimuli (Oostendorp, 2016). For language acquisition, this

translates to the importance of linguistic input as a driver of language acquisition. Two sub-theories were borne of behaviourism:

1. The theory that states that children's language is shaped through **reinforcement**: praise when they produce the correct language (positive reinforcement) and correction (negative reinforcement) when they produce the language incorrectly (Oostendorp, 2016). A criticism of this theory, however, is that research has shown that adults do not always correct children's incorrect grammar, often rather agreeing with the truth value of the child-utterance. Moreover, even when grammar is corrected, the child is not always successful in producing the correction (O'Grady, 2005).

2. The theory that that states that children's speech is driven by **imitation** of the language stimulus in their environment; they listen to and repeat what they hear. It is argued that imitation should be viewed as an intentional process, which helps children internalise new information and rules and not merely mindless mimicking (Lantolf and Thorne, 2006 in Oostendorp, 2016: 228). This theory also has shortcomings, however, in that children make grammatical errors that adults do not make as well as display capability to produce structures for which there is no evidence of input (Fromkin, Rodman and Hyams, 2018). Imitation moreover does not account for children's ability to learn and understand language spoken to them, even when they cannot produce it, because of neurological or physiological reasons (Fromkin, Rodman and Hyams, 2018).

2.2.2 The innateness hypothesis/nativism

Borne out of the shortcoming of behaviourism, innateness gives greater prominence to the internal mental structure of the brain (Oostendorp, 2016). Chomsky, the most influential theorist in this tradition, believes that the ability to learn language is genetically predisposed: that humans are designed to learn language just as they are designed to walk; and just as they are not taught to walk, neither are they *taught* language (Oostendorp, 2016). He believes that as individuals mature, cognitive structures, which interact with grammar and provide the conditions for language use, are constructed (Chomsky, 1998).

Chomsky (1967: 7; 2005: 4) insists on a 'core theory of language' – a 'Universal Grammar' – that is, that general acquisition strategies are adopted universally: all children are born with knowledge of universal language learning principals (Chomsky, 1995: 16-17). Connelly (1984) stipulates that this means that the acquisition of noun morphology, as well as inflectional morphology more generally, are acquired by strategies that stem from the universality of mental capabilities on the part of the child. This implies that language acquisition occurs independently of the language being acquired (Idiata, 2005). Chomsky (2005: 4) asserts that the Universal Grammar provides firstly, a structured inventory of possible lexical items and secondly, a "means to construct from these lexical items the infinite variety of internal structures that enter into thought, interpretation, planning, and other human mental acts".

Despite not being taught rules of a language explicitly, children are nonetheless able to work out rules intuitively to successfully acquire language. This builds on an argument called 'the poverty of stimulus' since children seem to know more about language than what their environment exposes them to (Chomsky, 1995: 16). Chomsky (1967) hypothesised about a Language Acquisition Device, which is triggered when a child is exposed to favourable language conditions, assisting them in the acquisition process. Chomsky (2005) thus proposes the term language 'growth' may be more appropriate than language 'learning', the latter holding misleading connotations.

The innateness hypothesis is criticised, however, on the grounds that it focusses too heavily on syntax acquisition but does not explain acquisition of semantics. Moreover, it over-emphasises the mental and cognitive aspects of acquisition without focusing enough on how the mental system and environment interact in acquisition (Oostendorp, 2016). A complex theory building on from this theory is Slobin's Operation Principals, in which the ideas of Peters, MacWhinney and Pinker are incorporated. Whilst not discussed in this thesis, edifying scholarship on the relevance of Slobin's Operating Principals in Bantu languages is provided by Connelly (1984).

2.2.3 Social interactionism

Social interactionism is an alternative theory to the innateness hypothesis that emphasises the importance of child-caregiver interactions in language acquisition processes, minimizing the important of the Language Acquisition Device and rather stressing the role of the Language Acquisition Support System (see Oostendorp, 2016: 230; King, 2006: 228 in Oostendorp, 2016: 230; see also Harris, Golinkoff and Hirsh-Pasek, 2011). An example of social interaction is baby talk or 'motherese' (Fromkin,

Rodman and Hyams, 2018: 423; see Connelly, 1984 for a discussion on the use of motherese by Basotho parents). Whilst research suggests that children respond favourably to linguistic input in this way, it has been shown that it is not essential to the language acquisition process (Oostendorp, 2016).

In support of this theory, Ziesler and Demuth (1995) study the impacts of input frequency for Sesotho-speaking children aged 2;1. The child with the higher frequency of noun input produces more nouns overall. Social interactionism has been said, however, to emphasise the role of conversation (over and above language input in general), although this has been criticised on the grounds that findings that concluded as such focused too heavily on vocabulary learning and not on how children learn syntactic rules (Oostendorp, 2016).

Zawada and Ngcobo (2008) test whether the order of class acquisition, as noted by Suzman (1991), is due to the higher frequency of these noun classes in adult speech (i.e. not only child-directed speech). They measure frequency on overall language rather than only in child-directed speech for practical reasons given the corpus available to them and the fact that there is no reason to believe that the frequency would necessarily differ. Literature suggests children learn language not only from being consciously taught it by their caregivers but also from simply overhearing it (Floor and Akhtar, 2006). Thus Zawada and Ngcobo's (2008) method of measuring frequency should not compromise their results that Cls 9, 1, 1a, 15, 3 and 5 occur in that order of frequency in isiZulu adult speech; corroborating Suzman's (1991) findings from child-directed speech and pointing towards the significance of exposure to language input over and above child directed speech as absolutely critical for children to acquire vocabulary (Huttenlocher et al., 1991).

2.2.4 Theory of linguistic determinants

In the language acquisition process, the theory of linguistic determinants gives weight to the influence of the language to be acquired (Idiata, 2005), that is, acquisition strategies are *not* independent of language. Idiata (2005: 85) cites recent studies on languages other than English – for example, French (Bassano, 1998, 199), Korean (Gopnik and Chio, 1990, 1995), and Chinese Mandarin (Tardif, 1996; Gelman and Tardif, 1998) to support the idea that the language being acquired does affect children's lexical development (specifically the types of words they know). Idiata (2005) moreover shows that through comparing child acquisition of NPx in Bantu languages, the early influence of the language to be acquired is relevant to the acquisition process.

Idiata (2005: 84) identifies 'bootstrapping' as one such linguistic determinant. The theory of bootstrapping suggests that syntactic, semantic or prosodic linguistic information can provide a link to access more complex linguistic forms (Kail, 2000, in Idiata, 2005: 84). Syntactic bootstrapping suggests that clues to the meaning of an unknown verb are provided by information from a known noun and its associated structural position with respect to the unknown verb (Gelman, 1990 in Idiata, 2005: 84), that is, syntactic cueing of word meaning (Pinker, 1994) or the acquisition of meaning from form (Gleitman et al., 1988). Semantic bootstrapping refers to the process in which children use information conveyed by events and objects to grasp the semantics of words and structures (Pinker, 1984 in Idiata, 2005: 84; Pinker, 1987; 1995; see also Steedman, 1994; Bloom, 2000), that is, semantic cueing of syntax (Pinker, 1994). Prosodic bootstrapping, on the other hand, promotes the view that speech signals provide clues for the discovery of underlying syntactic organisation in utterances and undiscovered structural patterns in the target languages (Morgan and Demuth, 1996 in Idiata, 2005: 84; Gleitman and Wanner, 1982; Peters, 1986; Hirsh-Pasek, Tucker and Golinkoff, 2014).

The theory of linguistic determinants predominantly influences my analytical and descriptive approach in the thesis. This is not to say that I do not believe that: 1) separate theories may have different roles to play for different types of acquisition, (i.e. social interactionism may play a strong role in children's lexical acquisition and vocabulary production, whilst linguistic determinants may more strongly influence grammatical acquisition); or that 2) more than one theory may play a role in an acquisition process. The nature of this study, however, does not allow for a close examination of the role of certain theories, like social interactionism and behaviourism or, for example, the role played by bootstrapping in the theory of linguistic determinants.

2.3 Vocabulary acquisition and important considerations

According to Huttenlocher et al. (1991), understanding how vocabulary development occurs is important since it constitutes children's initial achievement as language learners, and as Chomsky (1993 in Bloom, 2000: 9) maintains, problems in vocabulary acquisition are akin to problems in the acquisition of other aspects of language. Literature suggests that by 4.5 months children start recognizing the sound of their own name and by 0;6 begin to segment phonological and sound segments that comprise a word (since oral language does not come with spaces between the words as does printed text; Harris, Golinkoff and Hirsh-Pasek, 2011). At this age, they are likely to turn around if someone calls their name, and evidence suggests they have started to learn some words receptively

(Tincoff and Jusczyk, 1999 in Harris, Golinkoff and Hirsh-Pasek, 2011: 50). By 0;8 babies are acting on statistical cues termed 'transitional probabilities' that allow them to identify that certain syllables are more likely to be heard together than others, for example, 'pre' and 'tty' and 'ba' and 'by' but not 'tty' and 'ba' since they also hear 'pretty flower' or 'pretty hair' (Harris, Golinkoff and Hirsh-Pasek, 2011: 50). Anchor words, such as the child's own name or 'mommy', are also helpful to the child in beginning to distinguish new words (Harris, Golinkoff and Hirsh-Pasek, 2011: 50).

For this first year of life comprehension may lead production, meaning that it is easier for infants to store and understand words than it is to produce them (Fenson et al., 1994). Comprehension of words is largely learned through experiencing familiar routines with contextual cues and gesture (Fenson et al., 1994). While questions regarding gestures do not appear on the toddler version of the CDI, these non-verbal communicative signals are nevertheless considered important predictors of a child's ability to learn new vocabulary (Rowe and Goldin-Meadow 2009 and Rowe, Özçaliskan and Goldin-Meadow 2008 in Vogt, Mastin and Aussems, 2015). Also, if caregivers pick up on their infants' gestures and talk about what the child is referring to with his/her body language, they are indirectly assisting with the vocabulary learning (Harris, Golinkoff and Hirsh-Pasek, 2011).

Children start to replace babble with word-like sounds around the age of 0;10, with their first proper words appearing around the age of 1 (O'Grady, 2005; Oostendorp, 2016; Bloom, 2006; Huttenlocher et al., 1991). Between the ages of 1 and 1;6 children produce one-word utterances (Oostendorp, 2016). Word learning is facilitated through explicit instruction (caregivers pointing to objects in front of the child and naming them), but Bloom (2000) points out that, at the best of times, children's parents only point out reference words 70% of the time. This leaves 30% of cases in which no such naming occurrence occurs, which is where the social interactionism theory and exposure to language play an important role.

Just as almost any social issue is multifaceted, presenting various dimensions that include sociological, political, linguistic and economic factors, and ignoring the interaction of these factors would be to undermine and restrict the power and value of any outcome to a problem to be solved; ignoring the multifaceted dimensions of language acquisition will moreover hamper the viability of assessments and rehabilitative measures. Accordingly, I now consider the role of socio-demographic and other factors in the language acquisition process. These factors are: the role of socio-economic status (SES) and culture, the role of sibling and multiple secondary caregivers, the role of gender, the role birth

order may play, the effect being a twin, the effect of ear problems, the role of crèche attendance, and the role of multilingual abilities on language acquisition.

2.3.1 The role of SES and culture

To contextualise the ensuing literature in a South African context, it is important to note that most monolingual isiXhosa-speaking children are raised in either rural or urban settings, or straddle both worlds. Low and high SES is present in both rural and urban settings in South Africa, ruling out any mutual exclusivity between geographical location and SES. I believe it is also important to note that what constitutes a high SES for a typical monolingual isiXhosa-speaking family may be considered a low SES for a typical English- or Afrikaans-speaking family (see StatsSA, 2017), a lingering inequality inherited from the apartheid era. Above a certain income level, however, English tends to become more and more prevalent (De Klerk and Gough, 2002). Children in an isiXhosa family earning in the upper quintile are unlikely to be monolingual: parents would most likely teach them English from a young age with the intention of enrolling them at English-speaking schools. Deumert (2010: 18) calls this the "middle classes' persistent use of English". I therefore argue that SES needs to be considered in relative terms, together with the language exposure for children that accompanies it, for the purposes of a monolingual isiXhosa CDI.

Most child language professionals (such as speech pathologists) in South Africa are serving the majority of the South African population, which is low SES (Van Dulm and Southwood, 2013 in Potgieter and Southwood, 2016: 2), but currently they cannot state with confidence whether a lower vocabulary score than the age appropriate norm is due to developmental and not contextual issues (Potgieter and Southwood, 2016). Thus there is a need for a measure of lexical development developed by South African linguists and professionals and piloted in this country that acknowledges the different realities faced by different children (Potgieter and Southwood, 2016) and does not assume them to be a homogeneous group. It is important that the isiXhosa CDI does not bias low SES and rural children as this could not only impact the validity of the CDI but would also deny child language professionals information regarding age-appropriate norms, regardless of a child's SES or geographical location.

The subsequent review considers the role of culture, as well as how other CDI adaptation researchers have handled measuring SES in their studies, in order to provide a benchmark from which to inform my methodology and analysis.

Carter et al. (2005: 390) refer to the observation made by Mbise and Kysela (1990) that in many cultures children do not "engage in prolonged dyadic play with adults", spending much of their time in polyadic play with siblings or other children. Statistics South Africa [StatsSA] (2018a) reports that the environment in which children grow up plays an important role in cognitive and psychosocial development. Many South African children are raised in rural areas by grandparents or other relatives[11] who seldom have time to play with the children sent home to be brought up by them. One grandmother – who had to feed and clothe three grandchildren, aside from a full daily domestic regime that included maintaining a vegetable garden – told us that her eldest grandchild had only started speaking when she sent her to the local crèche: *Ndandingenaxesha lokuthetha naye mna* 'I had no time to speak to her'. According to data published by StatsSA (2018a) children in "mostly black African families receive suboptimal stimulation". It is reported that 31% are not encouraged to imitate daily activities, and when pointing at objects and asking questions, 35.2% are not responded to. As Bloom (2000: 59) observes, parents pointing out the names of objects is not universal: "In some cultures, this sort of ostensive labelling does not occur, and if children waited for adults to name objects that they were attending to, they would wait forever".

In a paper on the Mozambican[12] adaptation of the CDI, Vogt, Mastin and Aussems (2015: 2) term such an observation, a rural-urban 'lifestyle difference' as rural communities geared towards subsistence farming often expect children to help in daily activities, stimulating motor development above language development. Connelly's (1984) commentary presents another view, however. He suggests that Basotho children develop language earlier than English-speaking children, because the custom of carrying a child on the mother's back means that it is carried into every social situation that the mother enters and "is also frequently the focus of social and verbal interaction" (Connelly, 1984: 122). Interestingly, Mowrer and Burger (1991) also suggest that the reason isiXhosa-speaking children acquire phonemes earlier than English-speaking children do is due to the fact that isiXhosa infants may be exposed to more intense verbal stimuli than their English-learning peers.

Even so, Vogt, Mastin and Aussems (2015: 2) state that children from lower SES are spoken to less frequently, receiving little encouragement in the form of cognitive development and are more likely to

[11] A high proportion of South African children reside in the provinces with larger rural populations, and nearly two thirds live in the poorest 40% of households (Hall, Meintjies and Sambu, 2014: 90).

[12] Mozambique is a country bordering South Africa and shares many similar socio-economic realities.

be addressed in, what the authors term 'the negative voice'. In Mozambique, studies find that rural children receive five times less child-directed utterances than urban children, and 50% of the rural utterances were in the negative voice compared to only 31% of urban utterances (Vogt, Mastin and Schots, 2015 in Vogt, Mastin and Aussems, 2015: 2). Similar high levels of the negative voice are observed in rural Kenya (LeVine et al., 1996 in Vogt, Mastin and Aussems, 2015).

Vogt, Mastin and Aussems (2015) highlight what is portrayed above: that differences in socio-economic status can be good predictors for vocabulary development (Fernald, Marchman and Weisleder, 2013; Hart and Risley, 1995; Hoff, 2003, all in Vogt, Mastin and Aussems, 2015: 2). Many Western language assessments are geared towards mid to high SES contexts, and this usually causes children of a low SES background to fare poorly by standardised vocabulary measures. These realities of suboptimal stimulation for South Africa children, regardless of the language they may be exposed to, need to be taken into account.

2.3.1.1 Measuring SES: maternal education

Studies have shown that mothers with relatively less education and who are economically disadvantaged may talk less frequently to their babies in comparison with educated and affluent parents and that children of the former produce less speech[13] (Cohen and Beckwith, 1976 and Schachter, 1979 in Huttenlocher et al., 1991: 237). Vogt, Mastin and Aussems (2009: 9), citing Hart and Risley (1995) and Rowe, Özçaliskan and Goldin-Meadow (2008) state that "highly educated mothers tend to talk more to their children, use more positive feedback, and accompany their speech more often with gestures that may help the children to identify the intended referents for words". Educated mothers are observed to use a less directive and more interactional style with their children, which is supportive of language acquisition, since they often use questions which elicit conversation (Bee, van Egeren, Streissguth, Nyman and Leckie, 1969; Farran and Haskins, 1980; Heath, 1983; Hess and Shipman, 1965; Hoff-Ginsberg, 1991; Schachter, 1979, all in Potgieter and Southwood, 2016: 3). It may be that mothers with post-secondary education may also have larger vocabularies than those with lower levels of education (Goldberg et al., 2008 and Paradis, 2009 in Potgieter and Southwood, 2016: 3). Thus maternal education can affect both input quantity and quality (Paradis, 2011 in Potgieter and Southwood, 2016: 3). Moreover, Chen and Li (2008) find that a mother's education is an important

[13] These studies only examined children's talkativeness and thus their findings cannot be used to conclude differences in vocabulary *size.*

determinant of child health, even when household income, number of siblings, health environment, and other socio-economic variables are controlled for. Their findings, based on a large sample of adopted children in China, established that the main effect of maternal education on child health is through post-natal nurturing (Chen and Li, 2008). Whilst this study by Chen and Li does not consider communicative health specifically, one would expect the correlation to be the same.

In the adaption of the CDI in New Zealand, when SES was measured by maternal education level, for the toddler CDI, Reese and Read (2000: 264) find that "mothers with lower education levels gave higher estimates of their children's vocabulary levels, even though no significant differences as a function of maternal education were later obtained when children's language was tested via standardised measures". Reese and Read (2000: 265) suggest that:

> Mothers with less education might instead conflate expressive and receptive vocabulary when filling out the CDI:WS [words and sentences]. Even though the instructions on the CDI:WS form clearly request that parents should only tick words that their children actually use, mothers with less education may be less likely to follow these instructions as carefully.

Fenson et al. (1994) similarly indicate that low SES and less-educated mothers have a tendency to overestimate their children's receptive ability and Vogt, Mastin and Aussems (2015) similarly posit this may be due to difficulties in understanding the instructions. Despite their discussions focusing on receptive abilities, it is included since the reporting strategies of mothers is of consequence.

Fenson et al. (1994) measure SES using Hollingshead's (1965) index of SES, which awards a score based on the education levels and occupation of a child's parents. In the data set from toddlers, only vocabulary production shows a correlation with SES but exhibits the usual, expected correlation between SES and language skill. However, these effects as are "exceedingly small, even when statistically significant" (Fenson et al., 1994: 83). Fenson et al. (2000b) similarly report lower scores for children from low-income families but warn that it is unclear whether this is due to a slower pace of language development or underestimation or incomplete reporting by caregivers.

In the construction of the Oxford CDI, Hamilton, Plunkett and Schafer (2000) match a child's postcode to a census data base, however, they do not find any bearing of SES on vocabulary score (Hamilton,

Plunkett and Schafer, 2000). In the Israeli adaptation, SES is measured by both maternal education level and location (the authors finding this a better prediction of SES than location; Maital et al., 2000), but the authors find that SES scores are unrelated to lexical and grammatical development. In the Mozambican adaptation, SES is also determined by maternal education level (Vogt, Mastin and Aussems, 2015). Whilst it is not a significant predictor of receptive vocabulary size, maternal education level is positively correlated with expressive vocabulary size. The authors find that maternal education levels are lower in rural areas, which means that location in Mozambique actually seemed the best indicator of expressive and receptive vocabulary size.

For the purposes of my research, I choose not to rely too heavily on strategies that measure SES by location to inform my methodology and analysis. Since the toddler pilot I use takes place only in rural areas, I find it most appropriate to use maternal education level as an indicator of relative SES, as in the New Zealand and Mozambique adaptations of the CDI, taking any potential influences on reporting strategies into account. This measure is moreover appropriate since, as stated by Lehohla (2010), female headed households are the norm in South Africa, and therefore children are primarily raised by women.

2.3.2 The role of sibling and multiple secondary caregivers

Studies have found that the degree of language input (whether it be related to SES or not) is not the only factor predicting vocabulary growth in children. Vogt, Mastin and Aussems (2015) and Alcock et al. (2015) take note of the fact that in many African communities children may experience multiple caregivers, often siblings and that this may have a bearing on children's language development. The authors find that having a sibling as a secondary caregiver negatively influences expressive vocabulary size, with children (aged 1-2;1) who were reported as having a sibling as a secondary caregiver showing slower vocabulary development and producing 18% fewer words than a child with a primary caregiver or adult secondary caregiver only (Vogt, Mastin and Aussems, 2015). Vogt, Mastin and Aussems (2015) note that despite the effect being small, it is in line with findings from Harkness (2009, in Vogt, Mastin and Aussems, 2015: 11), who shows that children growing up in rural Kenya who socialise more with siblings have smaller vocabularies than those who socialise more with their mothers. For the Mozambican study, the coefficient on having an adult as a secondary caregiver is negative but not statistically significant (Vogt, Mastin and Aussems, 2015).

2.3.3 The role of gender

Huttenlocher et al. (1991) cite numerous studies to support their claim that a child's gender is not a significant predictor of vocabulary growth after the age of 2. They refer to some research suggesting that girls initially know more words than boys, because mothers tend to speak more to girls than boys (Cherry and Lewis, 1978; Halverson and Waldrop, 1970 in Huttenlocher et al., 1991:237). But, their own research (Huttenlocher et al., 1991) does not support this view: they argue that whilst girls in the 1;2-2;2 age group show greater vocabulary acceleration than boys, there is no statistical relevance to the amount of tokens a child received from its mother with the child's gender.

Fenson et al. (1994) examine the effect of gender on word production of children aged 1;4-2;6 but conclude that the variation due to gender is relatively small compared to the variation as a whole and accounts only for 1.9% of differences, whereas age, for example, accounts for 46%. The authors find that girls are more likely to begin combing words sooner than boys, but by the age of 2;4 the vast majority of both genders are likely to be doing so. Females score higher than males on mean length of utterance and sentence complexity, but all results are only significant when the entire age group is considered and are not significant when individual ages are analysed. These results, although modest, can be expected since hormonal differences may play a role in brain maturation and "gender differences are associated with a well-documented array of cultural factors that could play an important role in behavioural development" (Fenson et al., 1994: 117). These findings with regard to gender as a predictor of vocabulary development are echoed in Reese and Read's (2000) findings from the New Zealand adaptation.

In the Mozambican adaptation, which considers children aged 1-2;1, it is found that being female is positively correlated with expressive vocabulary size but that the effect is relatively small (Vogt, Mastin and Aussems, 2015). On the other hand, in the Norwegian adaptation of the CDI, Simonsen et al. (2013) find stronger gender differences (regarding expressive vocabulary size and grammatical complexity within the toddler age group) than prior studies. Ogura et al. (1993), in the Japanese adaptation, find that after the age of 1;6, girls produce more words than boys. They do not clarify, however, whether this is due to a larger vocabulary size or simply due to talkativeness.

Eriksson, et al. (2012) provide a synthesis of published data assessed with adapted versions of CDIs to consider the role of gender in emerging language skills in ten non-English European languages across

13,783 children between the ages 0;8 to 2;6. They find that despite variation in language skills between language communities, girls are slightly ahead of boys in early communicative gestures, productive vocabulary, and in combining words, with differences increasing with age except in the combing words section, which showed ceiling effects at 2;6 (Eriksson et al., 2012). The most variation in combining words occurred between 1;7 and 2;3 (Eriksson et al., 2012). Their findings suggest that this gender difference stems from robust factors that do not change between language communities (Eriksson et al., 2012). Eriksson et al. (2012) argue that despite gender differences being often assumed to be of no importance, due to the fact that they only explain 1% of variation in children's early language skills, by the age of 2 it accounts for a difference of 57 spoken words. When viewed this way, they stipulate that a difference of this size may have important implications in screening for language delay since it either suggests that:

1. one gender is more 'vulnerable' and in need of special interventions, and thus unisex norms should be kept, or
2. unisex norms will result in more false negatives for girls and more false positives for boys, and thus different norms should be used – although this would make screening costly and may be disadvantageous towards girls "in the sense that it is worse to be in need of help but not receive it than to receive help without needing it" (Eriksson, et al., 2012: 340).

2.3.4 The role of birth order

According to Law and Roy (2008), birth order effects in existing literature are small. Fenson et al. (1994) find a small but reliable negative effect of birth order, suggesting that laterborns when compared to firstborns are at a slight developmental disadvantage with regard to word production, word combinations ,and mean length of utterance. Fenson et al. (1994) do, however, acknowledge that other literature (Zajonc, Markus and Markus, 1979 and Oshima-Takane, Goodz and Derevensky, 1992 in Fenson et al., 1994) suggests less consistent results/non-existent effects of birth order on early behavioural development. Reese and Read (2000) similarly find that birth order did not uniquely contribute to toddlers' vocabulary.

2.3.5 Twins

Given that there are two sets of twins in my study, I offer a brief review of the literature regarding vocabulary acquisition and twins, mainly to point out factors that may have to be considered. Thorpe

(2006), for example, conveys that most scientific studies of twins show that when compared to single-born children, twins, and specifically twin boys, have higher rates of language delay. Reasons include that mothers of twins may more often experience depression, thus reducing responsiveness sensitivity; twin children may have less individually focussed attention (although this may also be true of having other siblings in general); and twin children are more likely to spend time with a sibling of the same developmental level. Her findings confirm that language delay in twins is prevalent, although mild (Thorpe, 2006). Most literature on CDIs does not consider the topic of twins, but Saudino et al. (1998) check the validity of parent-based assessments of the cognitive abilities of toddlers aged 2, using 43 sets of twins. Despite measuring non-verbal cognitive ability, the authors find that the inclusion of twins does not pose a serious problem for their data, thus allowing them to pool it for subsequent analysis.

2.3.6 Ear problems

Whilst children suffering from some medical conditions (such as Down's Syndrome and meningitis) need to be excluded from data sets for analysis, all CDI literature considered for this thesis reports that children with reported ear problems are not excluded from the data sets. In Fenson et al.'s (1994) data set 4.3% of children had repeated ear infection and Fenson et al. (2000a) similarly retain children with repeated ear infections in their data set. Hamilton, Plunkett and Schafer (2000) do not exclude children with 'glue ear', and Vogt, Mastin and Aussems (2015) report that the 75 children in their sample with hearing problems did not differ significantly from the rest of their sample with regard to reported scores on expressive vocabularies. Lastly, Simonsen et al. (2014) similarly do not exclude children with limited hearing due to frequent ear infections.

2.3.7 The role of attending a crèche

The CDI literature is markedly quiet on the topic of crèche attendance. Writing on the Hebrew CDI, Maital et al. (2000) report that 43.6% of their sample attends 'Group Child Care', however, they unfortunately do not explore the effects on this in any detail. The importance of attending a crèche is epitomised by my own experience of the child whose grandmother reported that she only began speaking once she attended a crèche. It is apparent that this attendance occurred too late, however, and on the whole, in South Africa close to half of the children from lower household-income quintiles do not attend any educational centre (StatsSA, 2018a). "Children in poor households may thus start

life at a disadvantage and can fall further behind their more advantaged peers throughout their lifecycle" (StatsSA, 2018a). This sentiment unambiguously highlights the important role of early childhood development centres and crèches. In this vein, Martinez, Naudeau and Pereira (2017), in studying the importance of preschool attendance on child development in extreme poverty conditions in Mozambique, find that those who attend crèche experience gains in both cognitive and communicative development.

2.3.8 The role of multilingual abilities on language acquisition

Developmentally, bilingual language learners exhibit differences in vocabulary development to monolingual language learners, for example, they are slower in each language (Bialystok et al., 2010 in Potgieter and Southwood, 2016: 2). When counting the number of items that the child produces or comprehends in both languages, however, it can be said that bilingual children develop language skills similarly to monolingual children (Junker and Stockman, 2002 and Pearson, Fernández and Oller, 1993 in Vogt, Mastin and Aussems, 2015: 2). Just as there is a need for monolingual assessments, there is a need for bilingual or even trilingual assessments to be created by the Southern African CDI team,[14] since as Potgieter and Southwood (2016: 1) conjecture, "[bilingual children] are being misdiagnosed with language impairment and word finding disorder, when in reality they may be typically developing bilinguals who, given sufficient time and exposure, would catch up with their monolingual peers".

Potgieter and Southwood (2016) test the performance of developing trilingual speakers and find that when SES and age are controlled for, trilingual children's proficiency in their exposure-dominated language is not significantly different from the monolingual control group, but their proficiency in the additional two languages is behind that of the monolinguals. With regard to grammar, however, Law and Roy (2008) posit the grammatical abilities of bilingual children to be separately acquired in each language (as the US and Spanish version of the CDI find).

2.3.8.1 Implications for monolingual vocabulary assessments

August, Shanahan and Escamilla (2009: 436) note that "bilingualism, not monolingualism, is now the global norm" and argue that although this is a fact, monolingualism still tends to be privileged as if it were the norm. The issue of whether South African children are largely monolingual or multilingual is

[14] See acknowledgements for the names and affiliations of the members of the team.

contested. For example, Heugh (2002) argues against Deumert's (2000) view that South African schools are largely multilingual and contends that the vast majority of teachers are monolingual (Heugh, 2002), although she does not say the same of the children. In the same article, she concedes that children in South Africa have "multiple proficiencies" in a variety of languages (Heugh, 2002: 188).

I believe the multilingual contexts that South African children may find themselves in may have influence on monolingual language, as Deumert (2010: 20) deftly captures:

> space organises and defines patterns of multilingualism, sociolinguistic norms, repertoires and identities. Locality and urban space thus have the potential for semiotisation and interact with other indicators of social stratification.

Brookes and Legkoro (2014) write that urban male youth language varieties (often called *tsotsitaal*) have become a widespread phenomenon of urban South African township life. I would expect, for example, the language of these male youth street social networks to form part of the language and lexicon that an urban isiXhosa-speaking child is exposed to, since scholars such as Ntshangase (2002) and Makhudu (2002) are of the view that these varieties are being taken up by the general population as emerging languages. These languages stem from the youth's desire to create a social status and identity (Brookes, 2014) that supersedes their SES. It would therefore be misguided to disregard the role that exposure to languages and their varieties plays, whether stemming from SES or other exogenous factors. Despite this study being rural based, the above points to the important role that language exposure plays, and moreover it would be naïve to disregard that geographically mobile people from the cities return periodically to rural areas where their language will play an influencing role in shaping rural language and child input. Indeed, Deumert, Inder and Maitra (2005) suggest that rural-urban migrants maintain strong ties with their rural families through regular visits.

Calteaux (1996) notes that children may be exposed to lexical adoption from other African languages too, due to migration and intermarriage, with the result that a child's home language can be that of either the mother or the father, although it generally ends up being the mother's due to contact time spent with the child. Most often parents make a conscious decision about which language to use in the home, although sometimes middle class African language speakers use English as a lingua franca (Calteaux, 1996).

Bylund (2014) acknowledges that younger generations of isiXhosa speakers are growing up using more English than ever before. This means that infants and toddlers may be hearing more English (from

parents and older siblings or, for the more economically privileged, from English children's books read out to them by caregivers). But the fact that, as Posel and Zeller (2016) report, English as a second language is acquired through education and labour markets rather than the home suggests that when English lexical items are used by young isiXhosa-speaking children, they are considered to be isiXhosa words and not English ones (like *idrink* for 'drink' and *iruf* for 'roof'). Bylund's observation may be true even for children who have had no exposure to English[15] as a second language, and such words as *iruf* and *idrink* therefore need to be incorporated into the monolingual CDI (see Demuth, 2000 on the incorporation of loan words into noun classes). This process of language change due to language contact is by no means a new phenomenon[16] (see Koopman, 1999), and Demuth (2003) draws attention to children's role in solidifying the developments of language change.

Contemporary translanguaging theory promotes movement away from naming languages and compels linguistics to consider fluid ways in which language is used (García, 2013). From this point of view, using labels that assign certain lexical items to either 'English' or 'isiXhosa' can re-impose colonially defined language boundaries and restrict understanding of linguistic realities and the dynamic nature of languages (García, 2013; see also Dowling and Krause, 2018). As the adaptations of the CDIs stand, it would be tricky at this stage to do away with named languages, but I urge future adaptors and language pathologists to be aware of the multilingual reality of South African children and the fluid way in which language is used – that is, even if parents raise their children to be monolingual isiXhosa speaking, lexical items of other named languages may be incorporated into a 'monolingual isiXhosa' child's lexicon.

When a child has lexical exposure to another language that is not used fluidly within the isiXhosa language to a frequent enough extent, a monolingual CDI unfortunately cannot account for this fact. Thus just as there is a need for monolingual assessments, there is a need for bilingual or even trilingual assessments to be created by the Southern African CDI team. Notwithstanding the manifold linguistic skills observed in South African children, the goal of my current research is to create norms for monolingual children. By so doing I hope I can eventually combine monolingual CDIs of different

[15] This is in line with Deumert's (2010) finding that isiXhosa maintenance (monolingualism) is more strongly correlated to the concentration of isiXhosa speakers in a given area rather than to economic factors.

[16] It is in fact the very process that lead to the adoption of clicks in isiXhosa from Khoisan languages (Demuth, 2003).

languages (for example isiXhosa and South African English) to create a mixed inventory and re-pilot the combined version to create CDIs for bilingual or, eventually, multilingual, children. A monolingual CDI is the first step in this process since even children who are going to become multilingual by school-going age may still be monolingual in the young age cohort that the CDI is designed to serve. Ultimately, the implication is that a monolingual CDI may need to include lexical items from other languages in order to align it with the kind of speech used by South African children.

2.4 Combining words and grammatical acquisition

I begin by reviewing universal literature on the subject of word combinations and grammatical acquisition and then progress to a more detailed consideration of child language acquisition of isiXhosa and Bantu language grammar and morphology specifically. The acquisition of Bantu languages has been well studied (see Section 2.4.2 for a summary as well as Demuth, 1988, 1996, 1998; Demuth, Faraclas, and Marchese, 1986; Mowrer and Burger, 1991; Demuth and Weschler, 2012). However, for the purposes of this study I present findings only as far as they are relevant to the grammatical construction of isiXhosa and applicable to the age cohort and the grammar items tested on the toddler version of the isiXhosa CDI. For example, despite the extensive literature on passive acquisition, I will not review these works given that the passive is not a construction assessed on the CDI, for reasons to be discussed under methodology in Chapter 3, Section 3.3.1.2.

2.4.1 Word combinations

Whilst learning words for concrete objects (nouns/content words) may be easier for children (Hirsh-Pasek and Golinkoff, 2006 and Golinkoff and Hirsh-Pasek, 2008, both in Harris, Golinkoff and Hirsh-Pasek, 2011: 51) and are acquired first (Ringler, 1978 in Huttenlocher et al., 1991: 238), invariably children need to begin making use of other parts of speech in order to speak about relations and events. Children need to learn how to use verbs, spatial relation terms and logical connectors appropriately to produce complex sentences (Harris, Golinkoff and Hirsh-Pasek, 2011). A certain number of lexical items need to be acquired before children can produce multi-length utterances, though, thus it is not surprising that children acquire grammar only some months after they do vocabulary (Huttenlocher et al., 1991).

Fenson et al. (1994) argue for the inclusion of a 'Combining words' section on toddler CDIs: word combinations, they say, are an important aspect of linguistic growth that set the stage for other syntactic and semantic developments. The succeeding section on the CDI on complex sentence forms, focuses more on children's grammatical acquisition. Fenson et al. (1994) state that the typically developing child will produce word combinations between the ages of 1;6 and 1;8. At first, however, these may be non-productive combinations (multiword utterances that are not single words from the child's point of view; Fenson et al., 1994) and speech will be 'telegraphic'; that is, speech that is devoid of inflectional, tense, plural and agreement marking but in which content words are common (O'Grady, Dobrovolsky and Katamba, 1997: 447). From the ages 2-2;6, however, grammatical acquisition becomes apparent and children begin to use basic inflections and function words[17] in their sentences (Fenson et al., 1994).

Fenson et al. (1994) and Caselli et al. (1993) also find a strong correlation between vocabulary size and grammatical development of children from the age of 1;4-2;6, a correlation corroborated by Simonsen et al. (2013). Interestingly, vocabulary size is shown to be a more powerful predictor of grammatical development than age or gender (Law and Roy, 2008). In child acquisition of Hebrew, a language which, like Bantu languages, is rich in derivational and inflectional morphology, relations among vocabulary, grammatical complexity, and the three longest utterances as reported by parents on the Hebrew CDI show uniformly strong associations "suggesting that, at the toddler stage, vocabulary growth and early grammar are highly related" (Maital et al., 2000: 18).

2.4.2 Grammatical acquisition

It is beyond the scope of this thesis to discuss the acquisition of all isiXhosa grammar items, and I restrict the analysis to: firstly, grammatical items that appear on the grammar section of the CDI and

[17] Function words are words that express grammatical relationships with other words in a sentence, contributing to syntax rather than meaning (cf. content words).

secondly, grammatical items that will be explored in the results of this thesis.[18] This primarily reflects on the work on the acquisition of Bantu languages, namely:[19]

1. IsiZulu (Suzman, 1991, 1996, 1999),
2. Siswati (Kunene, 1979),
3. IsiXhosa (Gxilishe de Villiers and de Villiers, 2007a, 2007b; Gxilishe, 2008; Smouse et al., 2012),
4. Sesotho (Connelly, 1984; Demuth, 1988, 1992, 2003; Demuth and Ellis, 2010; Ziesler and Demuth, 1995),
5. Setswana (Tsonope, 1987, 1993),
6. Chishona (Sibanda, 2014),
7. Chichewa (Chimombo and Mtenje, 1989), and
8. Isangu (Idiata, 1998, 2005).

IsiZulu and Siswati are closely related to isiXhosa, all three being Nguni languages spoken in South Africa and Swaziland. Sesotho and Setswana are closely related Sotho languages (Demuth, 1992) spoken in South Africa (Sesotho and Setswana), Lesotho (Sesotho and some Setswana), Botswana (Setswana) as well as some part of Namibia and Zimbabwe (Setswana).[20] Chishona is spoken in Zimbabwe as well as some parts of Zambia and Botswana.[21] Chichewa is spoken in Malawi as well as parts of Mozambique, Zambia and Zimbabwe,[22] whilst Isangu is a Bantu language of Gabon,[23] also spoken in parts of Equatorial Guinea. Despite Isangu and Chichewa not being Southern Bantu languages, due to the grammatical cognateness and structural similarity of Bantu (Suzman, 1996), one

[18] Phonology will be discussed to the extent that it influences grammatical and morphological acquisition, but I do not provide a review on the acquisition of phonology and the age certain aspects of isiXhosa or other Bantu language phonology is acquired, *per se*. See Demuth (2003) for a summary.

[19] The majority of this scholarship has been longitudinal case studies of a limited number of children for each language. The maximum number of children considered is 11, by Gxilishe, de Villiers and de Villiers (2007a). The minimum considered is two (Kunene, 1979; Tsopnope, 1987).

[20] Information on Sesotho: https://www.ethnologue.com/language/sot and Information on Setswana: https://www.ethnologue.com/language/tsn

[21] Information on Chishona: https://www.ethnologue.com/language/sna

[22] Information on Chichewa: https://www.ethnologue.com/language/nya

[23] Information on Isangu: https://www.ethnologue.com/language/snq

can expect them to follow a similar acquisition trajectory to Southern Bantu languages. That being said, in line with the theory of linguistic determinants, Demuth (2003) proposes that different linguistic details (even within the Southern Bantu languages) do play a role in the acquisition of respective morphemes, therefore playing a central role in any cross-linguistic analysis and discussion on cognitive vs. linguistics determinants (in for this thesis or otherwise). Where relevant, these linguistic particulars are recognised.

For ease of reading, I use a table format to organise the literature on grammatical acquisition by grammatical item and age of acquisition, further subcategorizing sections into findings by author. I then provide a more detailed discussion of acquisition processes.

Table 2-1 Acquisition of relevant grammatical items in Bantu languages

Grammatical item	Examples	Age of acquisition
Noun classes In the majority of Bantu languages, there is a gender prefix, called a noun prefix (NPx) that marks singularity/plurality and determines into which class that noun will fall. A NPx is a grammatical morpheme that generally marks a noun for singular or plural and for semantic content. Noun classes have their own set of agreement markers that are often phonologically similar to the NPx.	Cl. 1 (singular/exclusively personal) *um- ntwana* NPx1-child Cl. 2: *aba-ntwana*(children)[24] NPx2-children	Cl. 1a: before 2 Cl. 2a: no data Cl. 1: before 2 Cl. 2: between 2 and 2;6 Cl. 3: poorly represented in children's speech Cl. 4: poorly represented in children's speech Cl. 5: before 2 Cl. 6: between 2 and 2;6 Cl. 7: by age 3 Cl. 8: between 2 and 2;6 Cl. 9: before 2 Cl. 10: between 2 and 2;6 Cl. 11: poorly represented in children's speech Cl. 14: poorly represented in children's speech Cl. 15: poorly represented in children's speech (Sources: Suzman, 1991, 1999)
Noun Prefixes (NPx) The shape of the NPx in isiXhosa is VCV (vowel-consonant-vowel). The initial vowel is called the pre-prefix and the consonant vowel element is referred to as the basic noun prefix. In isiXhosa for some classes the vowel of the basic noun prefix is elided. Compare isiZulu *u-mu-ntu* with isiXhosa *u-m-ntu* 'person'.	*u- m- ntwana* IV1-BP1-child	Overlapping[25] stages of NPx development between the ages of 2 and 3:[26] 1. no prefixes, *e.g. twana* 2. shadow vowels and nasal prefixes, *e.g. mntwana* 3. full and correct NPx, *e.g. umntwana* 'child'. (Sources: Kunene, 1979; Connelly, 1984; Tsonope, 1987; Suzman, 1991, 1996; Tsonope, 1993; Demuth, 2003; Idiata, 2005; Sibanda 2014)
Identificative copulative prefixes (COPs) Identificative copulatives (copulative from here) are prefixed to nouns and convey the meaning of 'it is a…'/'they are…', for example.	*i- bhola* NPx9-ball *y- i- bhola* COP9-NPx9-ball	The copulative in Sesotho appears at 2;6 (Demuth, 2003) but the Sesotho copulative is much less complex than in isiXhosa, not being in agreement with the noun as it is in isiXhosa.
Subject Markers (SMs) Subject markers are prefixal elements that concord with the noun.	Present tense indicative positive: 1. Disjunctive *Ndi- ya- hamba* SCp1-DSJ-go 2. Conjunctive *Ndi- funa ama- nzi* SCp1-want NPx6- water	Similar overlapping stages to the acquisition of NPx between the ages of 2;4 and 2;10[24]: 1. no marking, *e.g. funa* 'want' 2. shadow vowel (usually *a* or *i* in place of the first person subject marker), *e.g. afuna* 3. well-formed morphemes, *e.g. ndiyafuna* 'I want' (Sources: Kunene, 1979; Connelly, 1984; Tsonope, 1987; Demuth, 1988, 2003; Suzman, 1991; Tsonope, 1993; Idiata, 2005; Gxilishe, de Villiers and de Villiers, 2007a; Sibanda 2014)

[24] See Appendix A for a full table of the isiXhosa Noun Classes.

Object markers (OMs) Object markers are prefixed directly before the verb root and can be used in the place of an object already referred to or in conjunction with an object. Object agreement is not obligatory when the object is present (Gxilishe, de Villiers and de Villiers, 2007a). Object markers usually occur within a morphologically complex verb, after the subject marker (Suzman, 1991).	*ndi- ya- m- thanda* SMp1-DSJ-OM1-love	Acquired between the ages of 2 and 3.[24] (Sources: Kunene, 1979; Demuth, 1988, 2003; Suzman, 1991; Tsonope, 1993; Gxilishe, de Villiers and de Villiers, 2007a)
Adjective markers (ADJMs) Bantu languages have very few adjectives (in a grammatical sense of the word), with their function being served by relatives, to a large extent (Suzman, 1991). Adjectives follow the noun that they qualify and require an adjective marker to be prefixed to the adjective stem: adjective marker + adjective stem, where *e*ach adjective marker is governed by the head noun (Connelly, 1984).	*Um-ntwana om- khulu* NPx1-child ADJM1-big *Um- ntwana* NPx1-child *m- khulu* PRED.ADJM1-big	Acquired between the ages of 2 and 2;6.[24] (Sources: Kunene, 1979; Tsonope, 1987; Suzman, 1991; Demuth, 2003)
Possessive markers (PMs) *Possessives* follow the noun they qualify and are brought into agreement with the possessive stem by the possessive marker.	*Um- ntwana wa- m* NPx1-child PM1-my	Acquired between the ages of 2 and 2;6, apart from isiZulu in which they are acquired before 2.[24] (Sources: Demuth, 1988; Suzman, 1991)
Possessive pronouns Equivalent to the English 'mine' or 'it is mine' (possessive pronoun + copulative).	*y- e- ya- m* COP9-AGR-PM9-my	Not acquired by 1;11 (Suzman, 1991) – at this age concordially correct possessives were used to express 'mine', without the pronoun attached. Possessive prounouns appeared in Suzman's (1991) data around the age of 2;4.
Locative positions (prepositions) Prepositions in isiXhosa are formed by attaching the locative position + *kwa-* to the noun. Subject markers often occur as a prefix on the preposition to create predicative utterances.	*i- pen i- phezu* NPx9-pen SM9-on *kwe- tafile* POSS17- table	Before 2.[24] (Sources: Connelly, 1984; Sibanda, 2014)
Demonstrative (DEM) In isiXhosa there are three demonstrative positions. All agree in noun class with the head noun (Demuth, 1992).	*lo m- ntwana* 1DEM1 BNP1-child	Acquired between the ages of 2 and 2;6.[24] (Sources: Demuth, 1998, 2003; Suzman, 1999)

[25] Ziesler and Demuth (1995) note that the 3 stages of NPx acquisition are not discrete stages, and at any point in a child's development they could produce any of the three forms (see also Connelly, 1984: 80), with alternations most likely to be occurring around the age of 2;4 -2;6 (Demuth, 1988: 309- 310).

[26] See Appendix B for a breakdown of acquisition ages by author and language.

Presentative demonstratives[27] The three positions of the presentative are used to indicate 'here it is/here they are', 'there It is/there they are' or 'there is it over there/ there they are over there'. The subject marker, or a variant thereof in the case of weak classes, is suffixed to *na-*.	*nantsi* 1PRST9 *nantso* 2PRST9 *nantsiya* 3PRST9	No formal enquiry into the exact age of acquisition exists, but Suzman (1991) observes its use by a child as young as 1;10.
Verb forms Tense, negation and mood are often marked by modifying the final vowel of a verb and occur in conjunction with a corresponding prefix.	*andi- fun- i* NEG.SMp1-want-PRS.NEG *suku- hamba* NEG.IMP-go *ndi- hamb-ile* SMp1-go- PST.DSJ *ndi- khab-e* SMp1-kick- PST.CSJ *i- bhola* NPx9-ball *ndi- zo- hlala apha*[28] SMp1-FUT-sit here *ndi- dlal- e phandle* SMp1-play- SBJ outside	Negation: use beginning around the age of 2.[24] Tense: use of various tense markers begins around the age of 2, with expansion occurring around 2;6. (Sources: Demuth, 2003; Gxilishe, de Villiers and de Villiers, 2007b; Smouse et al., 2012)

2.5 Discussion of grammatical acquisition

As identified in table 2-1, the period between ages 2 and 3 is characterised by substantial expansion in NPx and concordial agreement, in which children alternate between overgeneralised and accurate forms, with modifications to utterances in accordance with adult feedback (Suzman, 1991). In this vein, Suzman (1991: 54-55), drawing on her observation that in her data there is a wider range of possessive

[27] Suzman (1991: 45, 57) ambiguously reports this item of grammar (*nayi*) first as an adverbial stem, then later together with *iphi* as a locative. For my purposes, I refer to this construction as a 'presentative demonstrative', as per Gowlett (2003: 629). Historically this construction has been referred to as the 'demonstrative copulative' (e.g. Nomlomo, 1993: 56).

[28] This is a commonly used contracted form of the future: *-za ku-*, for example, *ndiza kuhlahla apha* 'I will sit here'. Another commonly occurring contracted form used in speech is *-zawu-*, for example, *ndizawuhlala apha* 'I will sit here' (see Jordan, 1956: 88; Louw and Jubase, 1978: 183).

markers than there are NPx or subject markers, remarks that "what eventually becomes an integrated noun class and concordial system first appears in a rather piecemeal way".

The lack of consensus on Bantu language acquisition is reflected in Suzman's (1991) claim that plural classes are acquired after singular classes in isiZulu, and Demuth's (2003) counterclaim that there is no evidence that the acquisition of plural classes in Bantu is delayed. This divergence is further highlighted by the inconclusiveness and incoherence surrounding differences in ages at which children acquire morphemes and, for example, pass through the three stages of NPs and subject marker acquisition in the different languages. However, Suzman (1991) also importantly notes that the number of children involved in prior studies is typically small (see Suzman, 1996: 93 for a breakdown), and thus individual variation may explain the differing timetables of acquisition rather than variation in language structure, *per se* (Demuth, 2003). In this section I thus explore the manner of grammar acquisition in Bantu in more detail by considering the role of semantics, morphology, phonology, prosody, and phonetics in this process. For ease of comprehension in this section, the reader is reminded of that the publications cited correspond to the following languages:

1. IsiZulu (Suzman, 1991, 1996, 1999),
2. Siswati (Kunene, 1979),
3. IsiXhosa (Gxilishe de Villiers and de Villiers, 2007a, 2007b; Gxilishe, 2008; Smouse et al., 2012),
4. Sesotho (Connelly, 1984; Demuth, 1988, 1992, 2003; Demuth and Ellis, 2010; Ziesler and Demuth, 1995),
5. Setswana (Tsonope, 1987, 1993),
6. Chishona (Sibanda, 2014),
7. Chichewa (Chimombo and Mtenje, 1989), and
8. Isangu (Idiata, 1998, 2005).

2.5.1 Manner of NPx acquisition

2.5.1.1 Insights into potential semantic motivations

Demuth (2003), Connelly (1984), and Tsonope (1993) find that Bantu language speaking children do not make semantic overgeneralisations and that the only NPx errors are errors of commission when a singular may take its plural in one of two classes (for example, in Nguni and Sotho languages, Cl. 9

plurals can occur in Cls 10 or 6), or as Connelly (1984) finds, children using Cl. 9 plural (Cl. 10) on nouns in which no plural prefix exists in adult speech. Sibanda (2014) also notes the overgeneralisation of the Cl. 5 plural (Cl. 6) to Cl. 10 nouns (the plural of Cl. 9) which usually have a zero prefix. This suggests that children do not have access to the productive semantics of the noun class system but rather treat it as a grammatical system, suggesting that overgeneralisations are "morphologically motivated" (Connelly, 1984: 147). Connelly (1984) finds that these types of overgeneralisations happen at a stage after which the main aspects of the morphological system have been acquired. This moreover suggests that the child has already reached a stage in which it is using grammatical rules, pointing toward the fact that overgeneralisations are morphological and not semantic.

On the other hand, Suzman (1996) points to the fact that NPx are learnt in a gradual and accurate way, derived from the initial basis of a much simpler gender system in isiZulu. She provides evidence of the overgeneralisation of noun classes when children start off with a binary understanding of the classes, placing 'people' in Cls 1 or 1a and all other 'things' in Cl. 9 – a semantic overgeneralisation of *i-* commencing Cls 5, 7 and 9 (Suzman, 1991; 1996; 1999). But, the extent to which this is due to grammatical processing still being assimilated, or due to an accommodation arising from ill-formed phonological processing (Connelly, 1984) is ambiguous. The latter would imply that apparent, potential semantic overgeneralisations of Cl. 9 are not overgeneralisations, *per se*, but the use of a NPx in a collapsed form – for example, *i' tulo* instead of. *isitulo* 'chair'.

Kunene (1979, in Demuth, 2003) and Idiata (1998, in Demuth, 2003) find overgeneralisation of subject markers in story-telling tasks where human/animate referents that do not belong to Cls 1 and 2 are subsequently referred to with Cls 1 and 2 agreement. Despite this being the norm in adult speech as well, I believe it may suggest a basic understanding, at the very least, of the relatively consistent semantics of Cls 1 and 2.

2.5.1.2 Insights into potential morphological motivations

According to Suzman (1991) the acquisition of NPx in isiZulu i*s* earlier than in Sesotho and Siswati, suggesting that the pre-prefix on isiZulu nouns may facilitate the earlier emergence of NPx as a whole (Demuth, 2003). For example, Cls 1a and 9 in Sesotho have a zero prefix (Ziesler and Demuth, 1995), whereas Nguni languages retain the pre-prefixes *u-* and *i-* for these classes respectively. Additionally, Cls 1, 2, 4, 7, and 8 all retain a pre-prefix in isiXhosa and isiZulu, whereas in Sesotho they consist of only the basic prefix. Another reason could be that Setswana and Sesotho speaking children hear NPx less

frequently since classes which are empirically important in young children's speech (Cls 1a and 9) have zero prefixes (Suzman, 1996). Nguni nouns omit the pre-prefix in the vocative[29] as well as after negatives, demonstratives, lists of things, and in a number of other environments (see Pahl, 1967: 27 and Suzman, 1991: 42). Certain nouns in Sesotho (from Cls 5, 7, 8, 10, and 14), on the other hand, lose the *whole* NPx in adult speech when a nomimal modifier is used[30] (Demuth, 1988, 1992; Doke and Mofokeng, 1957 in Ziesler and Demuth, 1995) or if agreement is marked elsewhere in the sentence (Demuth and Ellis, 2010). This means Sesotho children may hear full NPx less frequently (Suzman, 1996).[31] Demuth and Ellis (2010) suppose this may be due to different syntactic analysis of NPx across Bantu languages: in Sesotho being grammatical function items[32] and in other languages being bound morphemes that are listed in the lexicon.

Idiata (2005) summarises the work on Bantu agreement acquisition, noting that it appears that correct agreement markers appear before NPx fully emerge in children's systems. This suggests that children have access to gender features even before the appearance of NPx. Connelly (1984) elaborates on this by considering the acquisition of plural NPx and suggests that number agreement occurs before children can mark it in noun morphology. His data highlights that number is indeed expressed as a concept in utterances before obligatory plural NPx are in place[33] (Connelly, 1984). Number can be expressed through the use of number adjectives (he finds two cases of this) or by means of plural agreement morphemes in the rest of the utterance[34] (Connelly, 1984). For the latter, he finds plentiful evidence, with examples indicating the plural subject markers occur not only when the plural NPx is

[29] The vocative denotes "a case of nouns, in some inflected languages, used when the referent of the noun is being addressed" (Collins, 2018).

[30] Demuth and Ellis (2010) find that in adults' conversations with 2-3 year olds, adults dropped 20-35% of NPx when the noun was marked with agreement elsewhere.

[31] See Demuth and Weschler (2012) for an analysis on acquisition of this phenomenon which is beyond the scope of this thesis given it is not a feature of Nguni languages.

[32] Grammatical function refers to the syntactic roles played by morphemes in a particular clause or sentence (Nordquist, 2018).

[33] The case of missing NPx with plural agreement could support Suzman's (1991) claim that subject marker agreement is often incorrect, however, Connelly (1984) does not view this as an 'error' as the concords are correct by reference to the context.

[34] Note that this does not dispute Demuth's (2003) assertion that there is no delay in plural classes, due to the way in which plurality is marked in the rest of the utterance.

absent but when the singular NPx is absent too (although in one case it is present) (Connelly, 1984). Connelly (1984) stipulates that the missing singular NPx makes the plural noun both phonologically and morphologically ill-formed, since there must be either a singular or plural prefix of the correct class on any noun stem. A reason for this is unlikely to be that children favour less complex singular forms since in Bantu languages singular and plural forms are equally as complex. It may thus be due to the higher proportion of singular nouns in children's speech (Connelly, 1984).

2.5.1.3 Insights into potential phonetic, phonological, and prosodic motivations

Tsonope (1993) takes issue with the assumption that children have access to gender features even before the appearance of NPx. He posits that considering NPx as a 'form' and noun stems as 'content' as a potential explanation for why children appear to acquire noun stems before NPx is problematic. He argues that 1) prefixes do bring about profound meaning changes, and 2) if the child were aware of a NPx and stem distinction, it would be very unlikely that they would delete the very NPx that they are aware of (Tsonope, 1993). A counter argument for (1) is provided by Sibanda (2014), who argues that if a word takes a variety of prefixes it is likely that a child will hear the stem more often and, confronted with the task of choosing the appropriate NPx, will rather omit it.

Notwithstanding, Tsonope (1993) furthermore believes that a form/content distinction does not explain why monosyllabic stems are acquired with their prefixes on.[35] He attempts to explain the three-stage process by drawing on the deletion of weak-initial syllables in English, for example, banana (nana) and potato (tato) (Allen and Hawkins, 1978, 1980 in Tsonope, 1993: 113; Demuth, 2003). In children's attempts to make trochaic patterns,[36] an initial weak syllable must either be made heavy, or deleted (Tsonope, 1993). Demuth (1992) similarly proposes that agreement appears correctly marked before NPx are consistently marked, because children prefer disyllabic feet and thus potentially omit NPx.[37]

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[35] See recent work by Demuth and Ellis **(**2010) suggesting that children might be more likely to use NPx with monosyllabic nouns and that there is a greater likelihood of prefixes being truncated on polysyllabic nouns for children aged 2;3.

[36] A trochee is a rhythmic unit consisting of a stressed/long syllable followed by an unstressed/short syllable (Collins, 2018).

[37] In Sesotho, both possessives and demonstratives are disyllabic, making this an appropriate hypothesis, however, this is not the case in isiXhosa as most often the common demonstratives and possessives are monosyllabic.

Tsonope (1993: 114) accordingly explains the three-stage process of NPx acquisition as noted in Table 2-1 as:

> 1. Children produce noun stems in a manifestation of a 'template-based phonological heuristic';
> 2. Children increasingly hear noun forms that depart from this shape and in an attempt to correct the mismatch, elaborate on their template with a shadow vowel.

Suzman (1996) elaborates on this prosodic argument by arguing that elision rules in isiZulu (same as in isiXhosa), do not allow for CCV sequences, necessitating even in child speech, the use of a pre-prefix, for example, *thatha isicathulo -> thath' isicathulo* 'take the shoe' (see full example in Suzman, 1996: 95), which may facilitate the earlier acquisition of prefixes in isiZulu and other languages that have retained the pre-prefix. Suzman argues that her findings of this trend in isiZulu support Peter's (1994 in Suzman, 1996: 96) proposal that prosody assists children in segmentation (finding boundaries) but also provides a focusing tool for certain aspects of morphological structure. This is likely to assist children in moving from non-productive to productive word combinations and is also linked to the notion of prosodic bootstrapping as described in Section 2.2.4.

Suzman (1996) also suggests that the placement of the noun in the sentence[38] will be correlated with use or non-use of the NPx. That is, the NPx is more likely to be used when a noun follows a verb, rather than when it precedes it (Suzman, 1996). This is corroborated by her findings that children used the NPx for Cl. 7 with the consonant in place when following *siphi* (e.g. *siph' is'tulo*) *but* with only the pre-prefix *i-* when following the construction *nayi* 'here is' (Suzman, 1991: 68). This suggests children learn from a young age that *yi-* or *i-* triggers *i-* (NPx) and *ya-* (PM) and that "the subcategorisation frames associated with basic syntactic categories facilitate the acquisition (of new instances) of the category" (Suzman, 1991: 68).

Demuth (1988) notes that NPx with a nasal tend to be acquired earlier and with more consistency than NPx in which there is no nasal. This is in line with what Jakobson (1968) proposed about the early acquisition of stops and nasals. However, despite Cl. 3 having a NPx with a nasal, Cl. 3 nouns are

[38] Variation in isiXhosa sentence structure is common, as is pro-drop, a feature in which the subject noun does not have to be present in the sentence (Gxilishe, de Villiers and de Villiers, 2007a, 2007b; see also Suzman, 1991), but subject markers are always obligatory (Suzman, 1991).

reported to be lacking in children's speech (see Suzman, 1991; Zawada and Ngcobo, 2008). Suzman (1991) supposes that this pattern of class acquisition may be due to the fact that nouns referring to people, common objects, and playthings (words children would be likely to encounter most often) occur in certain classes (like Cls 1, 5, and 9). Zawada and Ngcobo (2008) additionally suggest that due to the morphological similarity between Cls 1 and 3, yet the semantic similarities of Cl. 3 with Cls 5 and 9, children may be confused to the extent that these nouns are simply omitted from their speech until a later stage.

Sibanda (2014) highlights the fact that the phonological complexity of consonants vis-á-vis vowels seemed to be one of the reasons children dropped consonants in her data. Connelly (1984: 79) argues that later in the child's development some nouns with greater phonological complexity are already 'learned' and in use, which tends to illustrate that learning is morphological rather than phonological (although he posits phonology is involved at a "less-important" level, and thus terms the process 'morphophonological').

2.5.1.4 Insights into potential morphophonological motivations

Kunene (1979 in Idiata 2005: 88) finds the overgeneralisation of Cl. 11 nouns to Cl. 5, using *lunwabu* > *linwabu* 'chameleon' as an example. Gowlett and Dowling's (2015) research reveals an incipient merger of Cls 11 to 5 in adult speech suggesting this no longer a phenomenon unique to child acquisition. It could be argued, however, that its presence in early childhood development initially may have induced this morphophonological historical change (Demuth, 2003). Dowling and Gowlett (2016: 296) present similar findings that explain the shift of Cl. 11 nouns to Cl. 5 was initiated by "the tendency towards the apparent 'normalisation' of the 11/10 gender in this instance to an 11/6 one" and then, by analogy, the shift of Cl. 11 nouns to Cl. 5 (the typical singular of Cl. 6). Possible reasons given are 1) that children are unaware of the distinction in the Cls 5 and 11 NPx *lu-* and *li-* or 2) children have an "internalised grammar" in which Cl. 11 concords have their plural in Cl. 6 (Dowling and Gowlett, 2016), reinforcing Connelly's (1984) view that overgeneralisations are morphologically motivated. Dowling and Gowlett's (2016: 300) study moreover has bearing on my rural study since they find that there appears to be "no difference between rural and urban children as regards the acquisition of Cl. 11".

Suzman (1996: 100-101) suggests that shadow prefixes and overgeneralised prefixes are in "complementary distribution in languages whose noun class systems have different phonological properties" (as Nguni languages and Sotho languages do), simply being alternative morphological

strategies of acquisition. She posits that, because in isiZulu all singular prefixes are either *i-* or *u-* commencing, children learn a system that is "superficially more transparent" than that encountered by Sesotho-speaking children (Suzman, 1996: 100). She says that isiZulu-speaking children are confronted with a range of *i-* commencing nouns, which gives them the tendency to overgeneralise the Cl. 9 prefix (or pre-prefix, in line with Herbert's (1978) analysis that reanalyses the nasal of Cl. 9 as part of the stem). A Sesotho-speaking child, on the other hand, may tackle being confronted with prefixes commencing with different consonants, vowels, or zero morphemes by using a filler syllable identified as a shadow prefix, a partial prefix, or a place holder morpheme (Suzman, 1996). She says that consonant-commencing prefixes make the NPx less accessible to the child, and they resort to placeholder morphemes (Suzman, 1996). This is in line with findings of Tsonope (1993) who observes shadow vowels but no overgeneralisations of the NPx. Results of Suzman's (1996) study show that the primary determinants of variation in patterns of acquisition across Southern African Bantu languages are the morphophonological properties of surface input.

Manner of NPx acquisition, summary: Overgeneralisations are unlikely to be semantically driven. The acquisition of NPx seems to occur through an interaction of morphological, phonological, and prosodic features, although the extent to which each of these factors dominates, remains unclear. This is in line with Yang's (2000: 234 in Dowling and Gowlett, 2016: 301) alternative view that child language is not just an imperfect version of adult language but what he terms 'a variational process' in which children must adopt assumptions about how language works – assumptions which then change as new evidence is presented from their speech environments.

2.5.2 Morphological and phonological agreement overgeneralisations: insights into agreement acquisition

Suzman, (1991: 57) says that frequent, familiar, overgeneralised locatives[39] such as *nayi* 'here it is' and *iphi* 'where is it' constitute the base upon which first expansions on noun phrases and clauses occur in isiZulu. To shed more light on the process of children's grammatical expansion, however, I consider the morphological and phonological factors of agreement acquisition specifically through the lens of overgeneralisations "since it is only through these that [children's] progress towards adult forms can be plotted" (Connelly, 1984: 66).

[39] Suzman's terminology is not accurate here: I would term *nayi* a presentative and *iphi* a descriptive copulative.

2.5.2.1 Subject markers

Gxilishe, de Villiers and de Villiers (2007a) review theories of agreement and the way in which a child may come to produce the correct subject agreement on a verb. They theorise that subject marking may either be direct, which involves copying of the noun prefix onto the following verb, meaning noun prefixes have to be acquired first (known as the direct copy theory); or independent, which suggests that there is no relationship between the acquisition of subject agreement marking on the verb and NPx (Murphy, 1997 in Gxilishe, de Villiers and de Villiers, 2007a: 115). However, they state that "subject noun marking should be present when subject agreement is marked, because it is generated in the lexicon and reflects the same noun class that dictates the subject agreement" (Gxilishe, de Villiers and de Villiers, 2007a: 116). But, since noun class marking is an inherent feature of the noun, even in cases where the NPx may be absent, subject marking may still occur (Gxilishe, de Villiers and de Villiers, 2007a). For example, children may only produce *umama* 'mom' phonologically as *mama* but from input know that it is a Cl. 1 noun and thus correctly use the subject agreement marker. This in fact accounts for 31.8% of cases observed when Gxilishe, de Villiers and de Villiers (2007a) study spontaneous speech samples of children between the ages of 1 and 3;3. There is no difference at any age in the possibility of the child supplying the agreement whether the subject was explicit or not, their results thus debunking the direct copy theory (Gxilishe, de Villiers and de Villiers, 2007a). This is in line with findings from Kunene (1979), Suzman (1991) and Demuth (1988, 1992) that subject markers can appear before NPx. Gxilishe, de Villiers and de Villiers (2007a: 118) moreover note that subject marker substitution errors are "vanishingly rare" with 97.2% of errors being errors of omission. This is in line with subject agreement acquisition in Sesotho and Siswati (Demuth, 2003 in Gxilishe, de Villiers and de Villiers, 2007a: 118).

Suzman (1991) notes an overgeneralisation of *a-* as a cover term subject marker but comments that it is a form also used by adults when speaking to children. Suzman (1991) suggests that this could be the present tense disjunctive form *-ya-* with a zero subject marker, with the *-ya-* contracted to *-a-*. Demuth (1992) similarly suggests that the shadow vowel in Sesotho subject markers may stem from the Sesotho disjunctive *-a-*. Suzman (1991) notes this as a similar process to subject markers such as *si-* and *li-* being contracted to *i-* in the present tense conjunctive form, emerging as overgeneralisations of the Cl. 9 subject marker *i-*. She says this could be because the majority of nouns that children use come from classes in which the prefix contains *i-*, and they thus create what she terms 'morphological paradigms'

around frequently occurring classes (Suzman, 1991: 48). But whether this is due to poor phonological differentiation or actual mis-assigning of class marking remains unclear (Demuth, 1988).

Additionally, Suzman (1991) observes children using *i-* as an alternative for the first person subject marker *ngi-* as well as for the Cl. 1 subject marker *u-*. Idiata (2005) notes how this is what Criesels (1991 in Idiata, 2005: 99) calls 'echoes', meaning that essentially the child treats subject markers as pronouns rather than agreement markers at the stage that this overgeneralisation occurs, generalizing highly salient pronouns. More research is needed regarding whether shadow-vowel subject markers indicate overgeneralisation of classes or are simply morphological place holders (Demuth, 2003). Demuth additionally (1992) notes that despite subject markers being well formed somewhat before the age of 3, there is nonetheless evidence of phonological ill-forms, for example, *te a* instead of *ke a* 'I am' (disjunctive form).

2.5.2.2 Other agreement markers

Object markers

Suzman (1991: 77-78; 1999: 139) finds the overgeneralisation of the third person, Cl. 1 object marker *-m-* to Cls 2 and 9 at age 2;2 but only with only the disjunctive form *-ya-* and no subject marker (e.g. *yambona* instead of *uyababona* 'you see them'). However, once the Cl. 9 object marker is acquired by 2;4, the child in her study begins to overgeneralise that object marker to other *i-* commencing classes. She posits that as with subject markers, this is a failure to associate the object marker with specific NPx (Suzman, 1991). Kunene (1979 in Demuth, 1992: 606, 2003: 219) finds that Cl. 3 object markers are being overgeneralised to Cl. 1 (see also Dowling, Deyi and Whitelaw, 2017) and Cl. 11 object markers are being overgeneralised to Cl. 5 in the speech of children aged 4;5-5;11. One can expect that if older children are making such errors, younger children would too. Demuth (1992) says this suggests that children do make phonologically based generalisations, collapsing phonologically similar classes.

Demonstratives

Demuth (1988) further notices an overgeneralisation of a Cl. 9 demonstrative for a Cl. 5 noun (child also aged 2;1) but drawing on her personal communication with Chimombo, who described child acquisition of Chichewa, speculates this may be due to a lack in phonological ability to produce distinct forms, particularly the 'l' sound which would indicate the appropriate Cl. 5 agreement at this age. This moreover seems to be the case as evidenced by the missing 'l' not only on the demonstrative agreement (produced as a glide instead, appearing in the same form as a Cl. 9 marker) but on the

conjunction *le* 'and' (with the 'l' deleted and pronounced *e* by the child) as well (Demuth, 1988). It thus appears the child is not overgeneralizing but underspecifying (Demuth, 1992). When this occurs, Demuth (1992) posits that the initial consonant either surfaces as a glide or is deleted altogether. This is a common phonological replacement in which children across languages replace a liquid with a glide (Oostendorp, 2016). The gliding of liquids is evidenced in isiXhosa by Maphalala (2012), who posits that glides emerge slightly before liquids, which is in line with findings from Tuomi, Gxilishe and Matomela (2001) in isiXhosa too. Liquids are acquired by the age of 3 in Maphalala's (2012) data, although Grunwell (1997 in Maphalala, 2012) suggests that gliding of liquids can persist until the age of 5.

Possessive markers

Demuth (1988) notes overgeneralisation of Cls 9 and 10 possessive markers to what should be a Cl. 7 possessive markers at age 2;1, within a few utterances of the typical agreement. This occurs in both instances when no NPx was present on the noun (Demuth, 1988). She speculates this may be due to the large proportion of Cls 9 and 10 lexical items in the child's vocabulary at the time or due to the articulatory ease of Cl. 9 agreement markers over others (Demuth, 1988).

Adjective markers

Suzman (1991) notes that despite being infrequently used, adjective markers appear in their concordally-correct forms. She posits this infrequency could be because "naturalistic conversation about ongoing activities and/or familial situations were not discourse topics that encourage elaboration and description" (Suzman, 1991: 73). This corresponds to her later statement that agreements produced are usually a direct consequence of what children talk about (Suzman, 1999) and implies that agreement for the noun classes produced most frequently (i.e. Cls 1, 5, and 9) may be acquired first. This parallels Harris, Golinkoff and Hirsh-Pasek's (2011) first principal of word learning, namely: children learn the words that they hear most frequently.

2.5.3 The 'error-free' concept

Suzman (1991) notes that due to overgeneralisations, subject markers were incorrect 10% more times than NPx (85% vs. 95% on average). Her findings thus suggest that subject markers are overgeneralised to an extent that NPx are not, a finding that supports Connelly's (1984: 82) theory of generally errorless acquisition of the correct NPx in Sesotho: "cases in which the *wrong* [emphasis my own] prefix is adjoined to a stem … are almost entirely absent". Suzman (1991) posits subject markers could be more

often incorrectly used in agreement since they are not learned in close association with a noun stem (as NPx are). On the other hand, Connelly (1984) reports an almost error-free acquisition of subject markers too, except for when singular NPx were used with plural subject markers (of which there were only 3 instances).

Connelly (1984: 144) importantly notes that his labelled 'errorless' acquisition of nouns does not imply all nouns occur perfectly formed but that their development is stage-like (as described in Table 2-1 above). Suzman (1991) finds a similar errorless concordial acquisition of possessives. Despite acquisition being 'errorless' in this sense, insights are still offered by the order and manner in which morphemes of classes are acquired, and the corpus of information regarding this nonetheless provides insights into developmental norms.

2.5.4 Discussion conclusion

The tabulated findings show significant variability in the literature regarding the exact age at which various morphemes are acquired. They also highlight inconsistencies across the amount of research conducted on the acquisition of various grammatical constructions. It is evident that the acquisition of morphemes is not an orderly process, with the acquisition of individual grammatical items noticeably overlapping and agreement morphemes of certain classes (e.g. Cls 1, 9, and 5) clearly acquired before those of other classes. Nonetheless, grammatical acquisition does appear to follow more-or-less a similar trajectory across the studied Bantu languages. Gaps in the data on acquisition of certain grammatical items visibly point to a pressing need for more extensive child-centred research.

The above discussion has delved into the intricacies that are hypothesised to be at play in the acquisition of NPx and agreement markers. Far from being an orderly or well-defined process, many hypotheses remain just that, informed and educated speculations by scholars in the field. It remains to be seen whether additional research will shed new light on confirming or rejecting the hypotheses or whether it will simply add an additional voice to the uncertainty. Whatever the case, the existing research sheds important light on how language acquisition occurs in Bantu languages and strongly suggests that it may not be independent of the properties of specific named languages, which has implications for which theories of language acquisition hold true.

The findings above also suggest that children learning Bantu languages are ahead of English-speaking children in terms of 1) morphologically complex utterances, 2) creatively and spontaneously using grammatical constructions (Connelly, 1984; Demuth, 1989, 1990, 1995, 2003), and 3) the mastering of phonemes (Mowrer and Burger, 1991). This has implications for the adaptation of instruments such as CDIs, necessitating thorough research that leads to interventions that are not just translations but are linguistically informed adaptations.

2.6 Conclusion

This chapter has considered the role of various environmental and socio-demographic factors on a child's word learning process, specifically through the lens of existing scholarship on adapted CDIs. Common insights are that factors such as maternal education, gender, birth order, crèche attendance, and the presence of multiple secondary and sibling caregivers all play a role in a child's language ability. Additionally, monolingual CDIs should account for the fact that vocabulary from other named languages may form part of a monolingual child's vocabulary, and CDIs should be created with long-terms goals of combining them to create bi- and multilingual CDIs.

It is acknowledged that grammatical acquisition occurs after word-learning processes, although expertise acquired in the latter is likely to be linked to proficiency in the former. The progression of acquisition with special regard to Bantu language-speaking children is considered, which reveals not only the role of the language being acquired in the acquisition process but the varying and overlapping ages at which children acquire individual morphemes. This highlights certain considerations to be taken into account in adaptations, namely the structure of the language being acquired. Since grammar is not acquired in isolation to vocabulary (which as discussed, necessarily takes into account socio-demographic and culture), the two need to be considered hand-in-hand to create the most accurate and non-biased assessments.

3 Methodology

In this chapter I discuss the methodology followed in this study. I briefly provide some methodological background, before describing the need for a pre-pilot and the methods which were applied. Next, I consider the implementation of Pilot 1 and the corresponding data collection. Following that I explain the data-capturing and analysis procedures for Chapters 4 and 5 (the results chapters), and the chapter ends with a consideration of methodological limitations.

3.1 Methodological background

As already mentioned, CDIs have two versions: an infant version for children aged 0;8-1;3 and a toddler version for children aged 1;5-2;6. This thesis is undertaken as a contribution to the adaptation of the isiXhosa CDI, which falls under the international project to adapt the CDI into six Southern African languages, namely: isiXhosa, Sesotho, Setswana, Xitsonga, Afrikaans, and South African English. As such, pre-pilot research was conducted to inform both the infant and toddler versions, however, due to time and financial constraints, I contribute only to the toddler version through the first pilot with rural participants. Pilot 1 necessitated that data on the toddler version of the CDI be collected first, in order to inform the first pilot of the infant version. As more words appear on the toddler version than the infant version, it makes sense to eliminate words from the largest possible base. The toddler age group is also a particularly interesting age to study as it represents the period of accelerated growth (Huttenlocher et al., 1991).

When a source instrument is modified for use in a culture different from the one in which it was developed, comprehensive and rigorous procedures are required that statistically test the validity of the scores of the modified instrument within the new cultural context to ensure its structural equivalence to the source instrument (Byrne et al., 2009). The term ‘adaptation’ refers to a more advanced approach to the development and use of translated instruments (Byrne et al., 2009: 96) to avoid item and cultural bias and thus enhance structural equivalence. It is then necessary to re-establish norms relative to the new culture and to equate them with the original version. Given that six languages are being adapted as part of the larger project, it is necessary for all language teams to follow the same data collection protocol, in order to minimise item bias and demonstrate good structural equivalence.

In the use of instruments across diverse cultural groups, structural equivalence is "the extent to which item content is similarly perceived and [the instruments'] underlying constructs similarly structured across groups" (Byrne et al., 2009: 103). More generally, it refers to score comparability across cultures (Meiring et al., 2005). Only if structural equivalence is maintained across tests can valid comparisons between languages and cultures be made. This has relevance for the Southern African CDI teams, because if language versions of the instruments are to be combined to create bilingual versions in the future, it is necessary to ensure structural equivalence of the adapted assessments in all six Southern African languages for which the CDI is being adapted. It is furthermore important for cross linguistic studies on the grammar and vocabulary of different languages, which may provide useful for bilingual acquisition analyses as well (Law and Roy, 2008).

Between November 2016 and November 2017 the entire Southern African CDI adaptation team met at two separate week-long workshops, as well as at a one half-week workshop, to collaborate on creating a protocol for the adaptation. These workshops also functioned as interdisciplinary focus-group spaces in which professionals from various backgrounds (including speech therapy, psychology, linguistics, and African languages) could discuss and brainstorm the adaptation. The adaptation is largely informed by the experiences of Dr Katie Alcock, a senior lecturer in Psychology at Lancaster University, who had overseen the development of the Kiswahili and Kigiriama CDI in Kenya.

3.2 Pre-pilot methodology

The initial workshops played an important role in planning the focus groups and interviews, which formed part of the pre-pilot. The pre-pilot was necessary to gauge the types of gestures, words, and sentences that isiXhosa-speaking toddlers use, before creating a list that could be piloted. Moreover, to obtain the most comprehensive picture of what toddlers in the CDI may know, some of these toddlers at the pre-pilot phase were slightly older than the upper limit of the cohort as per the CDI. Note that I refer to my child research participants as 'toddlers', but due to the nature of my discussions and the related literature, I will often substitute the word 'child'.

A licence for the adaptation of the MacArthur-Bates CDI into Southern African languages was granted to the South African team. Ethical clearance for the research project involving the adaptation of the CDI into Southern African languages by the University of Cape Town team (including this isiXhosa

adaptation) was obtained prior to the research commencing. All participants (or caregivers, in the case of children) gave their consent.

3.2.1 Data collection

Pre-pilot data was collected in Cata, a rural settlement in the Eastern Cape (see Figure 1.1 in Section 1.2), where isiXhosa is spoken by 98.1% of the population (StatsSA, 2011b) as well as the urban settlements of Vukuzenzele (bordering Gugulethu, Cape Town, a township in which 89% of the population speaks isiXhosa; StatsSA, 2011c) and Masiphumelele, Cape Town, a township in which 58.08%[40] of the populations speaks isiXhosa (StatsSA, 2011d).

The following steps form part of the collection of pre-pilot data:

1. The American English CDI was translated into isiXhosa. This was performed separately by two first-language isiXhosa speakers. The translations were then checked and collated into one document.

2. Recordings and interviews:

2.1 Spontaneous speech and gesture recordings:

- **Rural (Cata):** three girls (aged 2;10, 3, and 3 respectively) and one boy (aged 3).
- **Urban (Vukuzenzele):** three boys (aged 2, 2;10, and 3 respectively).

Each set of recordings (urban and rural) were made at the home of one of the children, lasting approximately one hour and with interaction occurring between all children involved as well as interaction with older siblings, caregivers, and researchers (Dr Dowling and me). As the children were reluctant to speak when alone, we decided to record them playing with their friends – this made them feel more comfortable and elicited far more spontaneous, natural speech.

[40] This figure was 91% in 2001 (see Dowling, 2011).

2.2. Focus groups with mothers of varying backgrounds:

- **Rural (Cata):** two focus groups were groups held with mothers/caregivers of children in the toddler age group. There were four mothers/caregivers in each focus group.
- **Urban (Masiphumelele):** one focus group was held with three professionals (caregivers of children in the age group).

2.3. Individual interviews were held in **urban Vukuzenzele** with eight mothers of toddlers.

In focus groups and interviews, questions were asked about their children's speech and gestures, such as:

- "Please tell me the last 10 words that your child said."
- "What did your child say this morning?"
- "What sentence did your child say last?"
- "What were the three longest sentences your child uttered in the past week?"
- "What cute things does your child say?"
- "What songs/prayers does your child know?"
- "What does your child not say quite right yet?"

In one of the rural focus groups, I additionally consulted the mothers on the appropriateness of words on the list. During my time in the rural area, my formal data collection was further supplemented by data collection through informal interactions with one of the girls (aged 2;10), whose spontaneous speech was recorded in step 2.1 above. Appropriate consent from her mother was obtained.

3.2.2 Data capture

The data from the spontaneous speech and gesture recordings were transcribed into CHILDEs[41] format where the target adult form utterance and an English gloss is provided (see Appendix E). The frequency

[41] "CHILDES is the child language component of the TalkBank system. TalkBank is a system for sharing and studying conversational interactions." See: https://childes.talkbank.org/.

of words was counted to inform the word list for the first pilot. Since the transcriber (a fluent speaker of both English and isiXhosa) transcribed the children's spontaneous speech utterances from a video file and not a sound file, she was able to use the linguistic and non-linguistic contexts of the conversations to determine the children's target utterances. This was also aided by a set of notes I made during recording and by asking caregivers to repeat what their child was trying to say.

Transcriptions were further used to inform a table of grammar acquisition 'errors' (see Appendix F) and caregiver responses from the focus groups and interviews were documented alongside the translated version of the American English CDI to inform which words were commonly known.

3.3 Pilot-one

3.3.1 Development of the instrument (toddler CDI in isiXhosa)

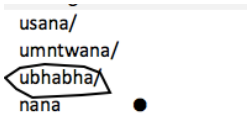
3.3.1.1 Words

The frequency of words in children's spontaneous speech and the responses from caregivers were used to inform new vocabulary to add to the translated version of the isiXhosa CDI. Most words from the translated American English version remain on for the first pilot but some irrelevant words, such as 'basement', were removed. Vocabulary added was also informed by the South African English word list that was created by the team working on that adaptation: for example, if we saw there were words added by the South African English team and we thought they might occur in isiXhosa too, then we provided an isiXhosa translation to test. This will also help in facilitating cross-linguistic comparisons. Translations for some of the additional South African English words were not included if we felt they were not appropriate, but all isiXhosa words have a South African English translation (even if these words do not form part of the South African English CDI) for purposes of the data variable names. Data variable names were created across languages in the format: category, number within the category, first three letters of the South African English word, first three letters of the isiXhosa word, for example: B15cowink for *inkomo* 'cow', which is the 15th word in category B. The variable names are important linking identifiers in the database in which pilot data is held.

The final 'Words' section of the isiXhosa CDI Pilot 1 (see Appendix G) thus constitutes 771 words – not accounting for synonyms – and is broken up into the 21 semantic categories: 'Sound effects and animal sounds', 'Animals', 'Transport/Vehicles', 'Toys', 'Food and drinks', 'Clothing', 'Body parts', 'Small

household items', 'Furniture and rooms', 'Outside things', 'Places to go', 'People', 'Routines and games', 'Action words', 'Descriptive words', 'Words about time', 'Pronouns', 'Questions words', 'Prepositions and locations', 'Words about amounts', and 'Conjunctions/sentence modifiers'.

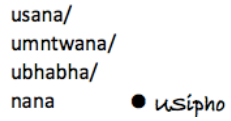
In completing the CDI, caregivers are required to say whether their child understands and says a word, and it was explained that it does not count if the child simply mimics a word used by an adult. Receptive abilities as a category of their own are not considered, as recommended by Dr Alcock, to shorten the tool as well as the fact that, according to Eriksson et al. (2012: 228), the comprehension component of the CDI (when it has been included as a category on its own) is a less precise measure than production. For purposes of the qualitative component, when words are listed as synonyms (for example, the English word 'want' can be realised as *funa, rhalela* or *bawela* in isiXhosa) then caregivers are asked to indicate which of the synonyms their child knows. For example, for the word 'baby', the list would look like this if a caregiver gives *ubhabha* as the synonym the toddler uses:



If their child knows a different word with the same meaning, it is written next to the word on the CDI. For example:

Caregivers are additionally asked to provide the child's pronunciation of the word if they know it but are not yet able to give the standard pronunciation. For example:

If the child does not know the word 'friend' *umhlobo/itshomi but* has a friend whose name they know and call, they are awarded for that too. For example:



3.3.1.2 Sentences and Grammar

The table of grammatical constructions from children's spontaneous speech (see Appendix F), caregiver responses, as well as existing literature on child acquisition were used to inform the grammar section of the CDI. The grammar section for all Bantu languages is created identical (except for two additional questions on the isiXhosa CDI),[42] and it is thus also, to a certain extent, informed by Sesotho and Setswana pre-pilot data (the Xitsonga team joined the adaptation later and thus had not yet completed the pre-pilot stage).

This section is also informed by Dr Alcock's findings from the grammar section of the Kenyan CDI. For example, she finds there is no correlation between a child's age, nor with any measures from spontaneous speech recordings for verb forms such as the passive,[43] so she recommended this be left off the Southern Bantu language CDIs. Dr Alcock additionally recommended that questions should not be asked about grammatical items that are not acquired in an errorless manner (for which the spontaneous speech was consulted), as this is less helpful in assessing development. This approach is similar to that of Connelly (1984: 66) who, in his study, depends on the analysis of children's errors since, as mentioned earlier, "it is only through these that [children's] progress towards adult forms can be plotted". Dr Alcock also recommended that the CDI does not ask about verbal extensions since, for example, the applicative[44] in Kiswahili and Kigiriama is either not used or used correctly. According to Suzman (1991), verbal extensions appear to be initially lexically learned and as Demuth (1992) says of the causative, treated as a lexical whole even by adults – although this may be less true for the applicative.

[42] The first asks about the Cl. 9 NPx (which is zero in Sesotho and Setswana) and the second asks about the Cls 1 and 1a identificative copulative (which in Sesotho and Setswana is identical across all nouns classes).

[43] See Suzman (1991) for an appraisal of the acquisition of the passive in isiZulu.

[44] See Demuth (1998) regarding Sesotho-speaking children's use of the applicative in the 2 to 3-year-old age group. Morphology of the applicative acquisition in Sesotho may be a more productive field of study due to the various forms in which it is realised in the language (very few allomorphs of the applicative occur in isiXhosa). This being said, more research is needed on the acquisition of the applicative in isiXhosa regarding children's ability to use it in the correct contexts (i.e. locative, benefactive), although this is beyond the scope of the grammar section of the CDI.

The grammar section is split into the following categories, of which I will discuss the construction of the questions relevant to the analysis in this thesis. See Appendix G for the full grammar section of the CDI.

Section A consists of the following yes/no questions:

- **The production of noun class prefixes**
  For this question Cls 1 and 1a are used as examples, as recommended by Dr Alcock.
- **The production of plurals**
  For this question Cls 1/2, 5/6, and 9/10 are used as examples, as recommended by Dr Alcock and as informed by the pre-pilot spontaneous speech examples.
- **The production of correct adjective agreement**
  Adjectives 'big' and 'small' are used for examples with agreement markers of Cls 1, 9, and 5, as recommended by Dr Alcock and as informed by the pre-pilot spontaneous speech examples.
- **The production of the present tense (disjunctive)**
- **The production of the recent past tense (disjunctive)**

First and second person subject markers are used in the examples as spontaneous speech samples showed these were commonly known and used by this age group.

Section B asks respondents to pick the option that sounds most like their child's speech at the time, in testing for the following grammatical components. Two or three options are given for each item, with the first being the most basic form, often with missing agreement and tense markers and the last being the full, appropriate adult form. The questions[45] elicit information on:

[45] All of these questions are either informed by the Kenyan CDIs, spontaneous speech samples, or both. Questions on the copulative below are only informed by observations of errors in spontaneous speech, as questions on copulative forms do not appear on the Kenyan CDIs.

- **NPx production for specific classes**
- **The conjunctive past tense**
- **Subject marker omission in negative**
- **The production of the full negative imperative**
- **The correct use of the subjunctive**
- **The full or partial use of the future tense**
- **Present tense**
- **Production of object markers without tense marking**
- **Production of object markers with present tense**
- **Production of the copulative**
- **Production of the full or partial Cl. 1 copulative**
- **Production of the standard Cl. 5 copulative or an overgeneralisation of Cl. 9 copulative**

Section C ask for the child's three longest utterances, if they are combining words. If they are not yet combining words, only Sections A and B are completed.

Section D considers the complexity of the child's multi-word utterances. This section is only completed if children are already combining words. For the purposes of the results in this thesis, I consider the following from this section:

- **Complexity in the use of the possessive pronoun**
- **Complexity in the use of prepositions**

Vocabulary items used in Sections B and D are informed by the pre-pilot research.

Possessives and possessive markers are asked under a category in the words section since pronouns like 'mine' are not considered part of grammatical acquisition in English, however, for the purposes of my results and analysis I consider them as grammatical due to the interesting results that the Bantu language agreement provides. I also analyse prepositions under the grammar section since, whilst words like 'up' and 'outside' are stand-alone words in English and are asked as such on the CDI, they are lexicalised morphologically in isiXhosa.

3.3.1.3 Family history questionnaire

During the workshops an existing family history questionnaire used by linguists at the University of Stellenbosch was adapted for the Southern African CDI, through consultation with key role players. This questionnaire accompanied the CDI. The questionnaire and CDI instructions (see Appendices G and H) were translated into isiXhosa by one first-language isiXhosa speaker together with a second-language professional in the field. This questionnaire was pre-piloted before pilot-one fieldwork, with two caregivers from different SES in Cape Town (aged 60 and 23), to ensure the questions were eliciting the responses required and to avoid children's scores being negatively impacted due to poorly translated questions.

3.3.2 Participants and location

CDIs and the corresponding family history questionnaires were completed by the isiXhosa research team[46] sitting together with participants. The research team's familiarity with the form meant that filling it out themselves allowed the approximately two-and-a-half-hour interview process to be slightly less arduous for the participants. Participants were chosen randomly with the assistance of a person familiar with both the area and the local families. I did not give explicit instructions to assistants regarding the number of males and females we wanted assessed, because 1) I wanted to ensure the randomness of the selection process was preserved (to minimise selection bias) and 2) the narrowness of age cohort may have already made it difficult for our assistants in the villages to find participants.

Two villages in rural Eastern Cape were visited for data collection (see Figure 1.1 in Section 1.2):

- **Xorha**: Xorha is a rural settlement located in the Eastern Cape Province. The closest census statistics available for the settlement were for Hobeni, in which isiXhosa is spoken by 93.1% of the population (StatsSA, 2011e).
- **Mbolompo:** Mbolompo is a very small rural settlement located in the Eastern Cape Province. The closest census statistics available for the settlement were for the neighbouring villages of Zithulele and Mpindweni. The majority of people in Zithulele and Mpindweni speak isiXhosa (99.6% and 94.6% respectively; StatsSA, 2011f, 2011g).

[46] The Pilot 1 research team consisted of Dr Tessa Dowling, her PhD student, Lara Krause, and me.

Table 3-1 shows the age and gender breakdown of the toddlers for whom a CDI was completed. Ten CDIs (with a mean age of 1;10 between six females and four males) were completed in Xorha, and the other ten (with a mean age of 2 between seven females and three males)[47] were completed in Mbolompo. Primary caregivers were from a range of ages and educational backgrounds. Over both locations and groups, the mean age is 1;11.

Table 3-1 Toddler pilot age and gender distribution (N=20)

	Female (n=13)	**Male (n=7)**
16-23.5 months (n=11)	7	4
23.5-30 months (n=9)	6	3

3.4 Pilot data capturing, methods of analysis, and statistics

3.4.1 Pilot data capturing, method of analysis, and statistics for Chapter 4

A database was created in Microsoft Access by one of the Southern African CDI team members, Dr Ribbens-Klein, to facilitate data capturing from the paper-based questionnaires. Each section of the questionnaires (family background and CDI) is represented by a spreadsheet table, and the tables are used to create data entry forms, which resemble the paper-based questionnaires. Using this method for data capturing minimises potential for errors that are more likely if data is captured directly into spreadsheet tables. Data were captured in this way by the same individual who transcribed the spontaneous speech, ensuring familiarity with the project was maintained. The captured data were then exported as tables from Microsoft Access to be cleaned in Microsoft Excel, where it was also checked and corrected where necessary, before being subsequently imported to STATA[48] (StataCorp, 2015) for further statistical analysis.

[47] In this group, there are two sets of twins. One set is both females and the other set comprised of one male and one female.

[48] STATA is statistical computing software that allows analyses to be performed through written code (command syntax). See https://www.stata.com/why-use-stata/easy-to-use/ and Appendix D for an example of the code used for this thesis.

Due to the large number of variables captured by the family history questionnaire (see Appendix H), it was necessary to provide focus and direction in the analysis, and the decision was made to work with the following variables, as informed by the review of the literature discussed in Chapter 2.3. Given that the family history was piloted as part of the larger Southern Africa CDI adaptation, it is important to note that I am also working within the framework that was informed by the project as a whole, and not only this thesis.

3.4.1.1 Dependent variable

1. **Productive vocabulary size** (number of vocabulary items that the child can produce/say)
   I computed the expressive vocabulary score for each child as the total number of items a child is reported to produce, divided by the total number of items on the CDI; converted to percentages. The percentage total words produced was used in an Ordinary Least Squares (OLS) multiple linear regression (MLR) analysis.[49]

3.4.1.2 Independent variables

1. **Age**
   Despite the toddler CDI being for a specific age cohort, age is nonetheless controlled for to 1) confirm that younger children within the toddler age cohort do not produce as many vocabulary items as older children within the toddler age group as well as 2) to obtain cleaner estimates of the other effects by partialling out any effects that age might have (see Wooldridge, 2003: 78-79). Age is grouped into two cohorts only for the purposes of Table 3-2 below since it provides useful insight into the distribution of age in the sample. It is used un-grouped for the purposes of the regression.

[49] The sample is too small to run a multinomial logistic regression on percentiles since the model is perfectly fitted, thus rendering any meaningful analysis using this method impossible. Due to the continuous nature of the dependent variable, MLR is preferred. Vogt, Mastin and Aussems (2015) correspondingly note how a linear trend is common with CDI scores. In a linear regression model, OLS estimates the unknown parameters by minimising the differences between the collected observations in an arbitrary data set and the responses predicted by the linear approximation of the data (Ohri 2018: 140).

2. **Gender**

   The binary categories, female and male, as per the family history questionnaire, are used.

3. **Mother's level of education**

   Maternal education is grouped into categories based on the level of schooling completed, closely following that used by Vogt, Mastin and Aussems (2015), namely: not completed primary school, completed primary school, not completed secondary school, completed secondary school, and completed higher education (including FET training colleges).

4. **Sibling as a secondary caregiver**

   In order to consider the role of sibling caregivers (as reported in Section 2.3.2) data was cleaned to represent whether a child is reported to have a sibling caregiver or not. The presence of a sibling caregiver is logged if a secondary caregiver under the age of 18 is reported in the family history questionnaire. This is not broken up into further age cohorts.

5. **Whether the child is a twin**

   This variable is perfectly correlated to whether the child was born early (i.e. not full term). Hence the latter is not included as an explanatory variable.

6. **Birth order**

   Given the findings of existing scholarship outline in the literature review, I consider only whether the child was the first born or not (i.e. firstborn vs. laterborn). This is the same method that Reese and Read (2000) use for capturing birth order effects on the New Zealand CDI.

7. **Ear problems**

   In the family history questionnaire, participants are asked about whether their child has experienced any health-related problems, because poor health can negatively affect language development (Vogt, Mastin and Aussems, 2015). The only health problem controlled for is ear infection/ear problem since answers to all other questions are "no".

8. **Crèche attendance**
9. **Number of adults in the home**
10. **Number of secondary caregivers**
11. **Number of siblings**
12. **Number of children in the home**
13. **Household income**

    The household income variable is calculated on a binary variable (high or low) since all participants except two fall into the R0-36000/year category.

14. **Age-gender interaction**

    Lastly, I created an interaction term for age and gender. The age-gender interaction measures the effect of gender on vocabulary production due to age differences. This is to partial out the effect that the majority of the older children are female.

Table 3-2 below provides distributional information regarding the number of participants in each category of the independent variables described above:

Table 3-2 Independent variables

1. Age
16-23.5 months [1;4 – 1;11.15] (n=11)
23.5-30months [1;11.15 – 2;6] (n=9)
2. Gender
Female (n=13)
Male (n=7)
3. Mother's education
not completed primary school (n=0)
completed primary school (n=3)
not completed secondary school (n=12)
completed secondary school (n=4)
completed higher education (n=1)
4. Sibling as a secondary caregiver
Yes (n=6)
No (n=14)
5. Twin
Yes (n=4)
No (n=16)
6. First born
Yes (n=12)
No (n=8)
7. Ear problems
Yes (n=4)
No (n=16)
8. Crèche attendance
Yes (n=8)
No (n=12)
9. Number of adults in the home
One (n=2)
Two (n=5)
Three (n=3)
Four (n=5)
Five (n=3)
Six (n=2)

10. Number of secondary caregivers
None (n=2)
One (n=4)
Two (n=8)
Three (n=3)
Four[50] (n=3)
11. Number of siblings
None (n=6)
One (n=4)
Two (n=1)
Three (n=4)
Four or more (n=5)
12. Number of children in the home
One (n=1)
Two (n=4)
Three (n=6)
Four (n=2)
Five (n=4)
Six (n=2)
Seven (n=1)
13. Household income
R0 – R36 000 (n=18)
R36 0001 – R72 000 (n=2)

14. Age-gender

Age (months)	**Male**	**Female**
17 [1;5]	2	1
18 [1;6]	1	1
21 [1;9]	1	1
22 [1;10]	0	2
23 [1;11]	0	2
24 [2;0]	1	0
25 [2;1]	0	1
26 [2;2]	1	0
27 [2;3]	1	0
28 [2;4]	0	2
29 [2;5]	0	1
30 [2;6]	0	1

[50] Due to the nature of the questionnaire, participants were not asked about more than four caregivers.

A multiple linear regression was run on all these variables (see Appendix C) using STATA. However, the results showed that some of the variables were highly statistically insignificant, which indicated that the model needed to be adjusted. I thus ran an F-test to determine whether this group of variables had no jointly significant effect on vocabulary production (Wooldridge, 200: 142-143). Variables tested were 'Ear problems', 'Number of adults in the home', 'Number of children in the home', and 'Household income'. The null hypothesis tested is that all should have 0 coefficients. The F-statistic (1.60) is not statistically significant at the 5% or 10% levels, thus it is to be concluded that the null hypothesis cannot be rejected at the 5% level. I thus concluded that all coefficients should be jointly 0 and thus the variables have no explanatory power in the model; therefore, 'Ear problems', 'Number of adults in the home', 'Number of children in the home', and 'Income' have no effect on productive vocabulary after the other variables have been controlled for and should therefore be removed from the model.

This outcome could be attributed to the following: the number of children in the home is not accounted for above the option 'three or more' in the family history questionnaire, meaning this variable has an upper limit of three in the analysis. The effects of 'Number of adults in the home' and 'Number of children in the home' may also already be captured by variables such as 'Number of secondary caregivers' and 'Number of siblings' as they are likely to be correlated. The 'Household income' variable is problematic for reasons to be discussed in Section 3.5, and excluding it is not necessarily surprising since this is also not a common measure of SES in previous studies. The finding that ear problems do not have explanatory power in the model is not different to findings of Vogt, Mastin and Aussems (2015), who report that children for whom hearing problems were reported did not differ significantly from the rest of their sample with regard to reported scores on expressive and receptive vocabularies. The final multiple linear regression used for analysis thus excludes these four variables and is specified as follows:

$$Percentage\_words\_produced = \beta_1 Child\_Age\_Mths + \beta_2 Gender + \beta_3 not\_completed\_sec + \beta_4 completed\_sec + \beta_5 tertiarty + \beta_6 Sibling\_caregiver + \beta_7 Twin + \beta_8 First\_born + \beta_9 Creche\_attendance + \beta_{10} Number\_of\_caregivers + \beta_{11} Number\_of\_siblings + \beta_{12} Agegender$$

3.4.2 Method of analysis and data handling for Chapter 5

Chapter 5 provides a descriptive analysis of lexical and grammatical acquisition. In order to provide a descriptive analysis of lexical and grammatical acquisition, I needed to capture synonyms that had not been accounted for in the initial data capturing process. Certain questions on the 'Words' section of the CDI, for example, the question on whether a child can use a first position demonstrative, are given with three options in an attempt to capture different classes' agreement, for example, *lo* (Cls 1, 1a and 3), *le* (Cls 4 and 9), and *ezi* (Cls 8 and 10). As mentioned, when 'synonyms' are listed in this way caregivers are asked to indicate which of the options/'synonyms' is specifically produced by their child. However, the initial data capturing could only account for whether the demonstrative is produced or not, and not class specific production, which, as is evident in isiXhosa, is not only morphologically but also phonologically different. Thus I further captured these results by the noun class of demonstrative produced for each child. In considering whether there is any lexical shift, I similarly account for synonyms of certain lexical items that were not captured in the method outlined in the previous section (Section 3.4.1).

To inform the lexical analysis I also qualitatively consider synonyms reported by caregivers during the pre-pilot phase. This discussion is additionally informed by frequency counts of transcribed speech, performed on CHILDEs. Unfortunately, the CHILDEs transcripts I have created for isiXhosa cannot yet be used to perform an accurate type/token analysis due to the agglutinating nature and conjunctive writing system of isiXhosa. For example, one may want to identify how many times a child produces -*thanda* 'love', however, if *ndiyakuthanda* 'I love you' and *ndiyamthanda* 'I love him/her' both occur, these will be counted as different types, instead of one type for *thanda.* This means without a morpheme-by-morpheme analysis, the type-token ratios of the spontaneous speech cannot accurately be reported on. Hence I do not include this measure in my analysis.

Data from the grammar section, along with the vocabulary data, was captured as outlined in the previous Section 3.4.1. Analysis of the grammar section is performed by considering the production of the grammatical items mentioned in Section 3.3.1.2 within the toddler age group, along with data from the spontaneous speech samples collected for the pre-pilot (compiled into a table of observed non-adult forms; see Appendix F), as well grammatical components included on the 'Words' section of the CDI, such as demonstratives, possessives, and presentatives. It was not possible to compute an overall

grammatical complexity score across or within sections of the grammar section, rendering a meaningful inferential statistics analysis unfeasible.

3.5 Methodological limitations

Firstly, due to the way this project is nested within a larger project, I am limited in the extent to which I can extend my analysis. Thus many of the limitations in this section relate to the fact that I am working from data that has come from a pilot study as well as the fact that I am working within a larger project that is still being developed. Apart from this main limitation, I will now discuss nine other methodological limitations and challenges.

1. As alluded to above, the manner in which the initial data were captured on Microsoft Access does not account for which synonym a child knows, nor for additional synonyms provided by a caregiver, nor any mispronunciations and phonological information. As mentioned, a more qualitative analysis is provided for these where relevant, however, this does pose a problem for the CDI adaptation since it is imperative to be able to statistically quantify which lexical items amongst synonyms should be kept and which removed for future pilots and the final tool.

The inclusion of synonyms also provides slightly misguided information about productive vocabulary in the following two ways:

> 1.1. If there exist two nuanced words in isiXhosa for one English word, for example, -*phunga* 'drink something hot' vs. -*sela* 'drink something cold', ('drink' in English) and -*hamba* 'go without direction' vs. -*ya* 'go with direction' ('go' in English), these appear as separate lexical items. However, since the isiXhosa CDI is adapted from an initial translation of the American-English CDI and needs to correspond as closely as possible to the South African English CDI for cross-linguistic comparison purposes, two commonly used isiXhosa words for one English word most often appear as synonyms instead of separate lexical items, for example, -*funa/-rhalela* for 'want'. The problem is that this means that a child who knows both -*funa* and -*rhalela* is captured as knowing the same as a child who knows only -*funa* or -*rhalela,* when clearly the vocabulary of the former is richer. This may lead to an underestimation of some children's productive vocabulary.

1.2. Often, synonyms appear twice, for example, *-funa* appears as a synonym for 'find', in *-fumana/-khangela/-funa,* and it appears as a synonym for 'want', in *-funa/-rhalela/-bawela/-nqwenela.* This is problematic since often it is the case that the only option a child knows for both items 'find' and 'want' is *-funa.* This same issue is found with a number of other items such as *idrink* being the only word a child uses for items 'juice', 'drink', and 'cooldrink'. This means it appears on captured data as if the child is able to produce two or more separate vocabulary items, when in fact they can only produce one. This is also extremely common with *umama* 'mother' in the family section since isiXhosa-speaking children refer to most older women as *umama* and not only their birth mother. Extensive evidence is also found of 'boy' being *utata* 'dad'. Before data capture I thus scanned the forms for such items and removed them. There may, however, remain undetected cases which will cause productive vocabulary to be overstated, and ultimately this needs to be rectified for the future. At this stage of the adaptation, though, it thus makes it look like they know comparatively less (i.e. than an English-speaking child), however, it only points to the fact that in isiXhosa, at this particular age, separate lexical items for 'boy' or 'woman' (for example) are lacking.

These two points are expanded on in Section 5.1.3 when I problematise the assumption that Western linguistic constructs, ontologies and epistemologies are appropriate for the CDI exercise as applied to Bantu languages.

2. It appears as if the category distinctions were not always clear to the caregivers. By category distinctions, I mean that *amanzi* 'water', for example, is purposefully listed in both categories 'Food and drinks' and 'Outside things'. This misperception on the part of the caregivers is evidenced by the manner in which they would respond to certain items listed in two or more categories. For example, the same synonym given for *amanzi* in 'Food and drinks', namely *isela* 'something to drink', is often listed again as the synonym for *amanzi* in 'Outside things'. Thus if caregivers do not make the categorical distinction, possibly because they think the child does not, there may be an upward bias in children's production caused by such instances. If fieldworkers are made aware of this then more care can be taken in explaining instructions to the caregivers. Although, if the end goal is to create a tool which can be left for a caregiver to fill out over a given period (for example over a week, as per the British CDI), without a fieldworker being present, then the efficiency and productiveness of asking words across categories under these circumstances need to be questioned. If these are to remain, then

it appears as if instructions at the outset will need to be more extensive, especially noting the importance of category distinctions.

3. Many of the sounds effects and animal sounds were not understood as written, but when appropriately 'acted/sounded out' then caregivers would understand. This points to the need to further develop this category, potentially with the aid of pictures, or again, via improved instructions about the importance of categories. There was additionally misunderstanding regarding *igama lalo mntwana* 'the name of this child', which is asking whether the child can say their own name. It appears, however, that caregivers may have interpreted this as whether the child can say the phrase *igama lalo mntwana*, mistakenly reporting their answer as negative. This is the same for 'pet's name'. Towards the end of the pilot phase it also became apparent to the research team that *iphepha* 'paper' was being used as the isiXhosa lexical item for 'toilet paper', which has a separate item on the CDI: *itissue/ itoyileth-paper*. This may also cause an upward bias in the results.

4. The demarcations of the 'Household income' variable are problematic, because 1) income is expressed annually instead of monthly (the latter we found was easier for the participants to recall) and 2) the income brackets do not give useful information about relative socio-economic status within this group. The majority of participants fall into the lowest category, and it is likely that the two that fall into the next category are at the lower end of that category, but, once again, the brackets as they currently stand do not allow us to capture this fact. My feedback on this to the larger team is resulting in the editing of the South-African English family history questionnaire for their first pilot. This also thus further informs the initial and subsequent pilots for other languages in the Southern African CDI adaptation too.

5. The question about when the child was born is a problem as many caregivers do not know in what week of pregnancy the birth occurred. The research team often had to reword this question to ask whether the pregnancy lasted the full nine-months or not, or whether the child was born early or on time. Despite the fact that this variable is not included in my analysis due to perfect collinearity with the 'Twin' variable, it may be that there is misreporting due to this problem described.

6. There is a question about the mother's education level, but no question is asked about the education of the primary caregiver, that is, the individual completing the CDI. This may have interesting consequences and should be explored (e.g. Lindelow, 2008).

7. In the grammar section, caregivers expressed difficulty in answering Section B "please tell us what sounds most like how your child speaks now". Although we use vocabulary based on that on the pre-pilot data, this nonetheless seemed problematic since caregivers did not know how to answer the question. They merely stated that their child could not use the word off which the example was based. For example, they would respond "but my child does not say *umfazi*" when we asked "please tell us what sounds most like how your child speaks now*: fazi,. mfazi* or *umfazi".* We managed to explain to them that *umfazi* was only an example and they should imagine if their child were to say other words like that, or if they did know that word, how they would say it. After this explanation caregivers seemed to understand with ease what it was that we were wanting, and thus this problem should cause relatively few issues for our data. It does, however, point to the need for clearer instructions if the tool is to be completed without a fieldworker present.

8. Due to time and financial constraints, this study's sample group is small. Nonetheless, due to the relatively larger sample size from which to draw results as compared to similar Bantu language acquisition studies, especially regarding acquisition of certain grammatical structures, this study is nonetheless well placed to contribute to existing scholarship on child language acquisition. Furthermore, these initial pilot study results will contribute to the development of the Southern African CDI project as a whole.

9. Lastly, the length of the CDI (specifically this pilot), as well as the long time it takes to complete, leads to participant and researcher fatigue. This potentially led to misreporting evidenced in the data. For example, a caregiver would report that a child did not produce *phi?* 'where?' but when reporting the child's three longest sentences they would offer *Uphi umama?* 'Where is mom?', clearly using *phi.* Unfortunately, in many cases this was only discovered after the research was complete, which also points to the length of the CDI negatively impacting on the fieldworkers' concentration levels. In cases such as this we do not fill in the production of *phi?* ourselves since it is not clear whether the misreporting is on the lack of production of *phi?* or in the three longest sentences the child could produce.

4 Socio-demographic factors and variability in toddlers' vocabulary production

The data analysis and discussion provided in this chapter is based upon data from the first isiXhosa CDI pilot. I statistically analyse a number of socio-demographic and environmental factors, as outlined in the methodology (see Chapter 3), which can affect variability in toddlers' vocabulary production (interchangeably referred to as 'production of words' or 'vocabulary size' due to the inability to statistically account for synonyms produced). As an introduction to the analysis, I present scatter plots indicating the trends in vocabulary production according to age. Thereafter, I present and discuss the regression analysis and results.

4.1 Vocabulary production trends according to age

In this section I present two scatter plots (see Figures 4-1 and 4-2 below) to visually orientate the reader with the trend in the data regarding vocabulary size and age. The distributions evidenced in these scatter plots confirm the expected trend that word production increases with age. Figure 4-1 shows that despite the visible variability in the production of words in the toddler cohort, there is nonetheless an upward trend as age increases. A larger sample size is needed to gauge whether this distribution is influenced by outliers or whether it is common across the ages of 1;3 to 2;6 to exhibit this variability and overlapping in word production across the age range. The highest number of total words known is 498 out of a total 771, which corresponds to 65%, not including synonyms. It is apparent from the graph, however, that this is not produced by the eldest child. The lowest, 4%, corresponding to a total of only 28 words produced, is as expected, produced by the youngest child in the sample group.

Grouping the percentage of words known by each child into percentiles (see Figure 4-2) provides another lens through which to view the variability in vocabulary production in this cohort. Specifically, it allows one to unambiguously see that for the first two percentiles (0-25% and 25-50%), it is clear that there is a large amount of overlapping with regard to age and word production. This appears to be the case up until the age of about 24 months (2, 0) with no overlapping with regard to age after this. From the data in Figure 4-2 it appears as if toddlers produce words in the third percentile (50-75%) consistently from approximately 27 months (2;3). However, by 30 months (2;6) children in this data set are not producing more than 75% of words on the isiXhosa toddler CDI. This wide variability is noted in literature and is attributed to the cross-sectional nature of CDI data (Feldman et al., 2000). Thus it should neither be taken as psychometric deficiencies (see Fenson et al., 2000b), nor undermine the

potential value of CDIs, but rather should be taken as authentic variations in children's early development. Both scatter plots thus confirm existing findings in literature regarding word production (i.e. it increases with age but is variable) and do well to visually set the scene for the statistical analysis to come.

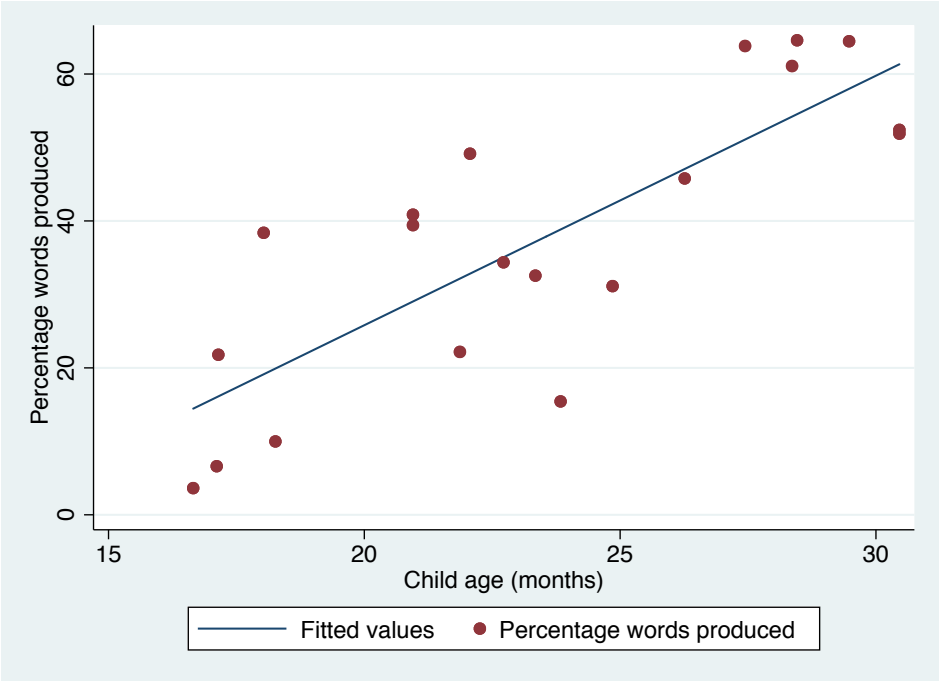


Figure 4-1 Scatter plot showing percentage words produced by age, CDI data

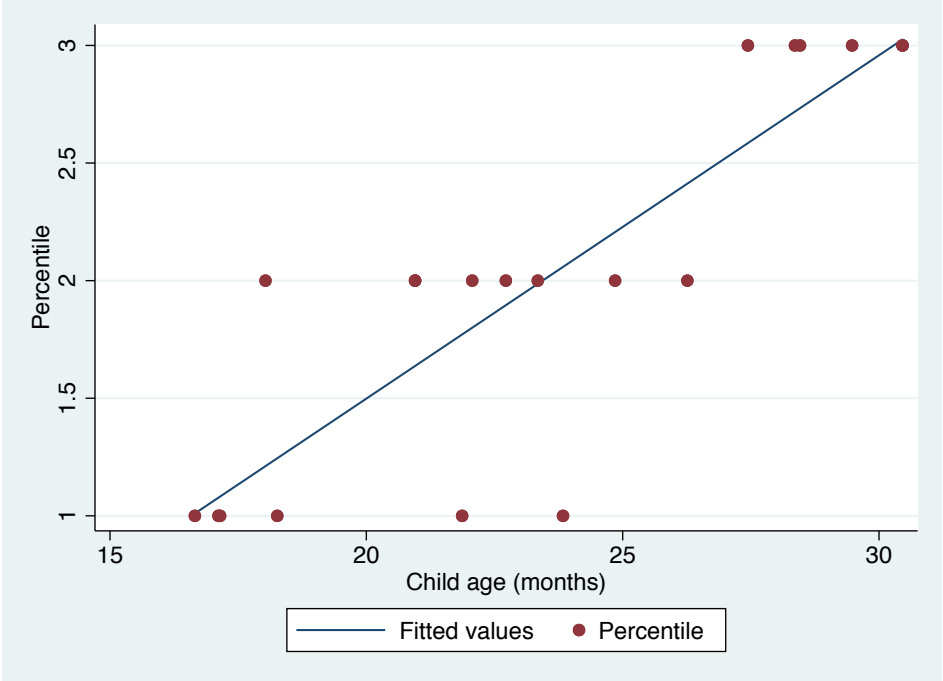


Figure 4-2 Scatter plot showing percentile by age, CDI data

4.2 Regression analysis: results and discussion

In this section I statistically analyse a number of socio-demographic and environmental factors that can affect variability in toddlers' vocabulary production. Due to the continuous nature of the dependent variable (percentage words produced) I perform an OLS multiple linear regression analysis, which estimates the unknown parameters in the MLR by minimising the differences between the collected observations in the data set and the responses predicted by the linear approximation of the data. The results presented are for independent variables post the exclusion restrictions (F-test). As explained in Chapter 3, the F-test is run to determine whether the variables 'Ear problems', 'Number of adults in the home', 'Number of children in the home', and 'Household income' have a jointly significant effect on vocabulary production, which is not the case. The model is thus specified as follows:

$$Percentage\_words\_produced = \beta_1 Child\_Age\_Mths + \beta_2 Gender + \beta_3 not\_completed\_sec + \beta_4 completed\_sec + \beta_5 tertiarty + \beta_6 Sibling\_caregiver + \beta_7 Twin + \beta_8 First\_born + \beta_9 Creche\_attendance + \beta_{10} Number\_of\_caregivers + \beta_{11} Number\_of\_siblings + \beta_{12} Agegender$$

Table 4-1 provides the regression coefficients and significance levels for the model.

Table 4-1 Multiple linear regression output (from STATA)

VARIABLES	Coefficients
Child age (months)	0.0251**
	(0.00808)
Gender	0.541*
	(0.256)
Mother education: not completed secondary school	0.167**
	(0.0684)
Mother education: completed secondary school	0.123
	(0.0787)
Mother education: completed higher education	0.253*
	(0.124)
Sibling secondary caregiver	-0.186***
	(0.0520)
Twin	-0.0771
	(0.0434)
First born	-0.286***
	(0.0619)
Crèche attendance	0.368***
	(0.0826)
Number of secondary caregivers	0.113***
	(0.0258)
Number of siblings	-0.0505**
	(0.0207)
Age-gender	-0.0268*
	(0.0114)
Constant	-0.316
	(0.188)
Observations	20
R-squared	0.964
Standard errors in parentheses	
***** p<0.01, ** p<0.05, * p<0.1**	

Positively, a large number of the variables are statistically significant, indicating that despite the small sample size, sound conclusions can be drawn about the majority of the variables. Additionally, as indicated by the coefficient of determination (R-squared), 96,4% of the variability in the percentage of words produced by toddlers is explained by this model, indicating a very affirming goodness-of-fit. It must be cautioned, however, that the results in this chapter apply to rural context only, and whilst for many monolingual isiXhosa-speaking children the realities may be similar with regard to living arrangements and SES, an urban context can be markedly different in many ways. Thus what may be true for a rural child, cannot automatically be assumed to be true for an urban child.

Based on the regression results supplied in Table 4-1, I start my discussion by focussing on the variable for age, followed by gender, and then the interaction between age and gender. Perhaps surprisingly, given the variability in the scatter plot analysis, the coefficient on age is statistically significant at the 5% level. However, this indicates that increasing age by one month is associated with a 2.5 percentage point increase in vocabulary production on average (see coefficient of 0.0251 in Table 4.1), a relatively small effect considering that holding all else constant, being female is associated with producing 54.1 percentage point more words on average.

Gender is significant at the 10% level ($p<0.1$), which for small sizes is considered pertinent due to the fact that estimates from small samples are less precise (Wooldridge, 2003). However, this effect is for when age is zero, which is an uninteresting and implausible scenario. In order to capture the effect of gender when a child is older than zero, the coefficient on the age-gender interaction term needs to be considered. The statistically significant coefficient on the age-gender interaction term indicates that there is a significant effect of gender on vocabulary production, which differs with age. What this means is that with every month that a female child becomes older, the gender effect is reduced by 2.68 percentage points. Therefore, when a female is 17 months old (1;5, the youngest of the cohort), the effect of being female, holding all else constant, is only an 8.44 percentage point (54.1-45.56)[51] increase in percentage words produced on average. Whilst this is a bigger effect of gender than that which is found by Fenson et al. (1994), it is not out of line with findings from Simonsen et al. (2013) (see Section 2.3.3), and it nonetheless corresponds to being one of the relatively smaller effects observed when considering the group of variables as a whole.

[51] 17 x 2.68 = 45.56

Dummy variables for mother's education level use 'completed primary school' as the base category, since no mother was reported to have been in the lowest category, 'not completed primary school'. Holding all else constant, a child with a mother who has not completed secondary school (it is implied that they have started secondary school, else they would fall into the category below) will produce 16.7 percentage point more words on average than a child whose mother has only completed primary school (statistically significant at $p<0.05$). Having a mother who has completed secondary school is associated with 12.3 percentage point more words produced by a child on average, compared to a child with a mother who has completed primary school only. This result, however, is not statistically different from 0. Intuitively this makes sense since it would be odd that a child whose mother has lower education (not completed secondary school, compared to completed secondary school) would produce a higher percentage (16.7 vs. 12.3) of words. The statistical insignificance of this variable may stem from the fact that only four mothers were in this category. Despite the fact that only one mother in the sample had completed a tertiary education, the effect is statistically and practically significant ($p<0.1$): compared to a child whose mother has only completed primary school, a child whose mother has some level of tertiary education will produce 25 percentage point more words on average, holding all else constant. This corresponds to qualitative findings from pre-pilot research in Cata where an extremely talkative toddler (aged 2;10) had a mother who was a teacher. When we visited her home we observed the extraordinary level of stimulation she and her older brother were getting.

As suggested in prior literature, the results confirm that the presence of a sibling as a secondary caregiver has a negative effect on vocabulary production. On average, having a sibling secondary caregiver is associated with a relatively large 18.6 percentage point decrease in expressive vocabulary size, holding all else constant ($p<0.01$). This echoes Vogt, Mastin and Aussems's (2015) findings that children (aged 1-2;1) who are reported as having a sibling as a secondary caregiver produce 18% fewer words than a child with a primary caregiver or adult secondary caregiver only.

On the other hand, increasing the presence of a secondary caregiver by another one, is associated with a highly significant 11.3 percentage point increase in words produced ($p<0.01$). It is important to note that sibling secondary caregivers were not excluded from the 'Number of secondary caregivers' variable.[52] This potential endogeneity would only work to reduce the statistical significance of these variables, but given that both are significant this is unproblematic. Vogt, Mastin and Aussems (2015)

[52] This problem should be considered in the development of the final CDI questionnaire.

find a negative but not statistically significant effect of an adult secondary caregiver. My results suggest a slightly more nuanced understanding, namely that whilst having a sibling secondary caregiver is associated with lower vocabulary production, holding all else constant, the presence of multiple secondary caregivers may in fact benefit the child, arguably through increased interaction and stimulation. In Vogt, Mastin and Aussems's (2015) sample, having a secondary caregiver is much more strongly associated with the rural community. If a similar pattern persists in South Africa, these finding may be moderated by the inclusion of urban data.

The coefficient of being a twin (or alternatively, being born early) is not statistically different from 0, which is more in line with findings from Saudino et al. (1998) than Thorpe (2006), who finds mild language delay. Being a mother's first child is associated with the production of 28.6 percentage point fewer words on average, which is highly significant at the 1% level ($p<0.01$). This is in the opposite direction to the effect which is found by Fenson et al. (1994), and is slightly counterintuitive, since one may expect the first born to receive a larger portion of the mother's attention in the early years of its life, before siblings arrive. However, it could be that this effect is channelled through the fact that being in the presence of older siblings since birth (i.e. if it is not the first born) may encourage interactive play and thus stimulate the production of words.

Surprisingly though, the coefficient on the number of siblings a child has, whilst low, is negative, indicating that for every additional sibling a child has, 5.05 percentage point fewer words are produced by the child on average ($p<0.05$). This does not rule out the potential explanation for the negative sign on 'First born' since the 'Number of siblings' variable does not distinguish between siblings born before or after the child. In fact, this result is in line with findings from Harkness (2009, in Vogt, Mastin and Aussems, 2015: 11), who shows that children growing up in rural Kenya who socialise more with siblings have smaller vocabularies than those who socialise more with their mothers.

In this case, it may be that more siblings direct the mother's attention away from the child in question, explaining the negative coefficient on number of siblings – although this does not account for the negative effect of being a firstborn. Alternatively, the effect of number of siblings could operate through similar channels as having a sibling secondary caregiver. The most plausible explanation though, for explaining the negative coefficients on both first born and number of siblings, may arise to from educational factors. Mothers are younger when they have their first child, so it is not improbable that they will have lower education too, and in fact many of the mothers we interviewed reported still

being in school.[53] Additionally, if the child spends a large amount of time with siblings, who also have a low education by virtue of their age, the effects of education are likely to be similar.

Finally, pointing towards the critical importance of early childhood development centres in South Africa is the large and statistically significant (at the 1% level, $p<0.01$) coefficient on crèche attendance. Holding all else constant, crèche attendance is associated with a 36.8 percentage point increase in vocabulary production on average. After gender (the effect of which is shown to be diminished by the age-gender interaction), the variable for crèche attendance has the largest effect on vocabulary production, even surpassing the evident importance of maternal education (particularly indicative is the attainment of post-schooling education, to be confirmed by future studies). Despite the lack of resources and educational toys in crèches in rural South Africa, it is nevertheless likely that children will be engaged in more stimulating and educational play and activities that enrich their vocabularies and their communicative development, as shown by these results.

4.3 Conclusion

It is evident that a number of socio-demographic and environmental factors play a role in shaping toddler's communicative development trajectories, in the form of vocabulary known and produced. The results show that, for the rural child, the most important of these factors is attendance at a crèche. Unfortunately, it may not be by choice that toddlers do not attend early childhood development centres since we observed a glaring scarcity of such centres in the rural areas during data collection. Results also point to importance of maternal education in influencing child performance outcomes, the importance of improving access to post-schooling institutions for rural mothers, and the importance of improving information and communication regarding post-schooling opportunities to those completing secondary school. Tying in with the venerable notion of *Ubuntu*, and the idea that it takes a village to raise a child, is the positive effect of having multiple caregivers and the fact that the more a child has, the better their word production. The negative effects of being a firstborn and having a sibling secondary caregiver may operate through similar channels to educational effects. Despite being moderated by age effects, gender unambiguously plays a role in this data, although without more information I cannot conclude whether this is due to cognitive abilities, cultural factors, or mothers speaking more to girls, to name some of the reasons outlined in Section 2.3.3.

[53] In 2016, 16% of women aged 15-19 in South African already had a first child (StatsSA, 2018b).

5 Lexical and grammatical acquisition in isiXhosa-speaking toddlers

The data analysis and discussion provided in this chapter is based upon:

- Data from the isiXhosa CDI Pilot 1, including both the words and sentences/grammar sections.
- Pre-pilot spontaneous speech data.

This chapter is furthermore concerned with investigating research questions 2 and 3, namely:

- What does the data reveal about lexical acquisition in isiXhosa-speaking toddlers?
- What does the data reveal about grammatical acquisition isiXhosa-speaking toddlers?

Therefore, based on the two research questions, the discussion is divided into a lexical analysis of the CDI and data (Section 5.1) and then a subsequent analysis of the grammar items (Section 5.2). It is important to note, however, despite the division for practical purposes, the two cannot and should not be viewed in isolation. In Section 5.1.3 I discuss how motion is lexicalised in isiXhosa verbs, however, the way this is achieved is intrinsically through grammatical constructs. Additionally, items viewed as 'grammatical', such as demonstratives, appear as lexical items of the CDI since, for example, 'this', is only one lexical item in English. However, due to the nature of agreement in isiXhosa, they carry a grammatical component too and as such are discussed in Section 5.2 rather than 5.1.

5.1 Lexical acquisition in isiXhosa-speaking toddlers

5.1.1 Order of category of words produced

In this section, I explore the order in which word categories are produced. The categories were described in Section 3.3.1.1, and the cumulative percentages by category are summarised below in Table 5-1 (ordered from lowest to highest):

Table 5-1 Cumulative percentages of words produced in each category

Category	Cumulative percentage
Words about time	13.08%
Vehicles	18.44%
Conjunctions/Sentence modifiers	20.00%
Places to go	24.05%
Furniture and rooms	25.95%
Pronouns	28.54%
Words about amounts	28.57%
Outside things	29.84%
Animals	30.00%
Descriptive words	32.22%
Toys	35.00%
Small household items	36.74%
Prepositions and locations	37.65%
Clothing	38.03%
People	39.19%
Food and drinks	40.38%
Routines and games	44.31%
Body parts	45.00%
Question words	46.43%
Action words	48.37%
Sound effects and animal sounds	55.50%

The category with the highest cumulative percentage of words known by the 20 toddlers is Category 1, 'Sound effects and animal sounds', where, cumulatively, children can produce 55% of words in this category. Many children were additionally reported to be able to make a kissing sound, when asked whether they could produce the verb for 'kiss'. This could not be captured on this version of the CDI but nonetheless points to the frequency of sounds in the speech of this age group. Within this category, the most frequently produced sound is *Yho!* (the approximate English equivalent is 'Wow!') with 19 of the 20 children producing this sound. Eighteen out of the 20 can also produce *peep peep* (being the sound of a car hooter) and *Shu!* (being an exclamation of surprise or pain).

The category with the next highest percentage of production by the 20 children cumulatively, at 48.37%, is 'Action words'. This strongly corresponds to Harris, Golinkoff and Hirsh-Pasek's (2011) fourth principal of word learning, namely that children learn best in contexts that exemplify the meaning of words (which is almost always the case with action words, because they can be acted on/out). It also loosely corresponds to their third principal of word learning, that is, children learn best in interactive and responsive contexts (Harris, Golinkoff and Hirsh-Pasek, 2011), which are also easily created around action words. This finding is also in line with existing universal literature that children will learn content words first. The most produced words in this category are *ncanca* 'breastfeed' and *thatha* 'take', both being produced by 19 out of the 20 children.

The third most well produced category is 'Question words', where a cumulative 46.43% of words are produced, despite the category being small and containing only seven items. *Phi?* 'where?' is the most commonly produced question word, produced by 15 out of 20 children. As mentioned in methodological limitations (Section 3.5), this frequency may be understated due to suspected reporting errors. Coming in at a close fourth is 'Body parts' at 45%, followed closely by 'Routines and games' at 44.31%. However, this category is suspected to suffer from upward bias due to the same word appearing across categories yet not being recognised in a nuanced way as guided by the category titles (as problematised in methodological limitations, Section 3.5). The most commonly produced body part is *intloko* 'head', said by 17 children, and the most common routine is saying *bhayibhayi* 'bye bye'. *Bhayibhayi* also frequently appears in the spontaneous speech sample, corroborating this trend. The least well produced category is 'Words about time' with only 13.44% of words cumulatively produced by the 20 children.

Lower scoring categories may suffer from inappropriateness of the lexical items, as will be discussed in Section 5.1.3, but nonetheless the findings presented here largely tie in with commentary by Idiata (2005), who notes that socio-pragmatic and ludic words emerge first, followed by words with referential and predictive functions. Although Caselli et al. (1995, in Idiata, 2005: 85) state that these are mostly common nouns, this stage is followed by the production of verbs. These stages are clearly evidenced in my data, the only inconsistency being that verbs appear to be slightly more favoured than nouns. However, in a similar vein, French, Korean and Mandarin data on child acquisition likewise shows a lower portion of nouns and more verbs, when compared to English children (Idiata, 2005).

5.1.2 Lexical shifts and other phenomena

I now consider whether the data indicates any lexical shifts in monolingual isiXhosa-speaking toddlers' lexicons, as well as other linguistic phenomena, such as observations made regarding the use of the locative morpheme. Data is from the CDI as well as the spontaneous speech recordings.

5.1.2.1 Ndibhala inkomo 'I'm writing a cow'

During the pre-pilot data collection, we would try to think up activities for the children to do to maintain their interest in interacting with each other and speaking. One of these activities in Vukuzenzele (urban) was drawing. To our amusement, all the boys wanted to 'write a cow', using the isiXhosa word *bhala* 'write', instead of the traditional isiXhosa verb for 'draw', *zoba.* One of the mothers instructed them to *zoba* 'draw', *drowa* 'draw', and *bhala* 'write', but it seems that the latter is the word that they latched on to. *Bhala* appears seven times in the spontaneous speech, with the words *zoba* and *drowa* not appearing once. Whilst this lexical shift may stem from the mother's input, it does highlight that the children do not yet have access to the nuanced semantics of writing and drawing, and it is thus important for future adaptations and for speech and language pathologists to be aware of this fact.

Because of this finding, the words *drowa, zoba,* and *bhala* are all asked as synonyms for 'draw' in the 'Action words' category of the CDI. The frequencies of each for the toddler cohort are tabulated below in Table 5-2:

Table 5-2 Frequency of synonyms for 'draw', CDI data

	drowa	**zoba**	**bhala**
Frequency	0	1	13

It is difficult to assess whether caregivers were able to separate the case in which we asked for *bhala* on its own as an item, meaning 'write', and when we asked for it with synonyms for 'draw', to mean 'draw'. Nonetheless, it is evident that isiXhosa-speaking toddlers are not familiar with the lexical items *drowa* and *zoba* and that this is not a phenomenon exclusive to the boys in Vukuzenzele, simply due to latching on to only one of the words the mother said. The boy who produces *zoba* in the CDI data is aged toward the upper end of the cohort at 2;3. He also produces *bhala* 'write', but in this frequency Table 5-2 I report frequency only of the *bhala* item for 'draw', which he did not, apparently, say.

5.1.2.2 Uyangxola bhabha 'the baby is noisy'[54]

Traditionally, the isiXhosa word for 'baby' is *usana.* During spontaneous speech and CDI data collection, however, I observed a shift to *umntwana* 'child' and *ubhabha* 'baby' as synonyms for *usana*. In the group of boys' spontaneous speech, this is the only word that they used to refer to a baby. The group of girls refer only once to a baby, in which one of them responds to a question saying: *mntanam (ngumntwana wam)* 'it is my baby'. As a result, the options for the lexical item 'baby' on the CDI are given as *usana, umntwana, ubhabha,* and *unana.* Unfortunately, as mentioned above, it is difficult to assess whether caregivers were able to separate the case in which we asked for the lexical item for 'child' (with options *umntwana, umntana, umntanam*) and when we asked for *umntwana* with synonyms for 'baby'. Nonetheless, the results of synonyms for 'baby' produced by toddlers are captured in Table 5-3 below. In Table 5-3 I have added an option for *umntana* since this was frequently reported by caregivers as an alternative for this line-item too.

Table 5-3 Frequency of synonyms for 'baby', CDI data

	usana	**umntwana**	**ubhabha**	**unana**	**umntana**
Frequency	3	2	2	7	10

It thus appears that *usana* is no longer a stable lexical item for 'baby', or it may simply not yet be acquired by children of this age group. These present mildly contradictory results to what is observed in urban Vukuzenzele with the use of *ubhabha,* however, this may be a more stable form in urban areas, which necessitates the urban pilot to be completed before conclusive inferences about *ubhabha* can be drawn. It does, however, seem conclusive that *umntana*[55] is a much more commonly used form (whether referring to a 'baby' or a 'child') than the traditionally reported word for 'child', *umntwana.* Gowlett and Dowling (2015) state how the production of *lw*V sequences is problematic in early-learning, and although this construction is *tw*V, it nonetheless may be undergoing a similar phonological process in which C*w*V forms are becoming CV (see Dowling and Gowlett, 2016).

[54] Out of context this sentence would read 'you are noisy baby', however, the toddler clearly meant to say 'the baby is noisy' and was merely eliding the pre-prefix of the noun.

[55] *Umntwana* is listed as a synonym for 'baby' in the Oxford English-isiZulu Dictionary (de Schryver, 2010: 281), however, it does not appear as such in the isiXhosa version. The use of this lexical item for 'baby' may thus be arising due to language contact, shift and change.

Unana is also a commonly used form, which is not formally described as a lexical item for 'baby' (Fischer et al., 2010: 39). It thus appears a shift may be beginning towards *unana* as a commonly used lexical item for 'baby'. It is interesting to note that one caregiver reported this form as a Cl. 1 noun (instead of Cl. 1a): *umnana.* Conclusions for all isiXhosa-speaking toddlers cannot be drawn off this one child but it appears that the child may be semantically or grammatically overgeneralising Cl. 1 in this instance.

It is interesting to note a feature of the title of this section, which is taken from the spontaneous speech of a boy aged 2 – *Uyangxola bhabha* 'The baby is making a noise'. This utterance shows obvious subject postponement, which is suggested by Demuth (2003) to only appear around the age of 2;6. Whether this is perhaps specific to Sesotho only is not for me to ascertain, suffice to say this utterance is relatively advanced to what is suggested in existing literature, and provides the first insight of this chapter into the relative grammatical sophistication of isiXhosa-speaking toddlers.

5.1.2.3 Esikolweni, endlini, and other words known only in the locative[56]

Another phenomenon encountered during pre-pilot research is that children seem to know some words in the locative only. For example, they do not know *isikolo* 'school' but only *esikolweni*[57] 'to/at/from/in school', since this is potentially the only form in which they hear the word used. This suggests not that toddlers can produce the locative on all nouns, but that they may know some which they hear frequently as discrete lexical items. Because the locative has so many prepositional functions 'in/at/on/to', it will be used in many different contexts (going to school, coming from school, being at school etc.) and thus the child is likely to hear these forms often. It is unlikely that they make the distinction between two separate lexical items for 'school' and 'to/at/from/in school' at this stage, with the locative form most likely existing as the complete lexical item for 'school' as well. This is also evidenced by words like *endlini* 'in the house' and *eteksini* 'in the taxi', which are reported not only in spontaneous speech but by parents and caregivers in interviews too. It does appear, however, as if some children are able to functionally use the locative form, for example, a boy aged two from Vukuzenzele knows *imoto* 'car' but also *emotweni* 'in the car'. That being said, it is not clear whether

[56] A similar phenomenon occurs where some children only know words in the plural form, however, there was no guidance from spontaneous speech to test this on the CDI like there was for locative forms.

[57] A common locative in isiXhosa is formed by a 'discontinuous locative morpheme': *e-…-ini/-eni.*

he could apply this discontinuous locative morpheme to all nouns or if he has simply frequently heard both *imoto* and *emotweni* regurlarly enough to make a lexical distinction.

I tested the hypothesis that some children will only know certain words in the locative by giving the locative form of 'school', 'house', 'sofa', 'car', and 'work' on the CDI section 'Places you can go to', together with the nouns in non-locative form (see Table 5-4). *Emsebenzini* 'to work' does not appear on the spontaneous speech, but it was frequently reported during caregiver interviews and focus groups that children would cry in the mornings begging their parents not to go 'to work' – *emsebenzini*.

Table 5-4 Frequency of locative forms, CDI data

	isikolo/esikolweni	**indlu/endlini**	**umsebenzi/emsebenzini**	**isofa/esofeni**	**imoto/emotweni**
Frequency[58]	0/9	5/8	2/2	3/0	17/7

Considering Table 5-4, it is apparent that this hypothesis holds true: 'school' was reported to only ever be produced in the locative, 'house' is being produced more frequently in the locative than not, and there is an even split between 'work' and 'to work'. Interestingly, 'sofa' is never produced in the locative, but this lexical item is not one that these rural toddlers appear to be familiar with, which makes sense given the type of seating in rural dwellings. The frequencies of these different lexical items not only give insights into word forms known in the locative or not but also offers insights into the lifestyle of rural toddlers. It seems these children may frequently encounter cars, but, given the low frequency of the locative form, it would appear that they infrequently travel in them. It is likely that the cars they do encounter are either taxis passing by, or in the case of Xorha, perhaps tourists' cars as they travel past on their way to the hotel and not the inhabitants' own vehicles in which they ride. Similarly, the low frequency of the reference to 'work' is potentially indicative of high rural unemployment, compared to the urban caregivers' reportings of their toddlers' speech.

Caregivers would sometimes offer the form in which their child new the word, and as such a boy aged 2;3 is reported to know the word for table only in the locative form *etafileni* (pronounced by the child as *tafileni).* This child exhibits personal variation in his locative use, not producing *esofeni* but proficiently producing *esikolweni, endlini,* and *emsebenzini.* Another girl aged 1;10 is reported to know *ivaranda* 'veranda' only as *evarandeni* (pronounced by the child as *elandini)* and *idolophu* 'town' as

[58] Note that some children might produce both forms, others one of the two, and some none at all.

edolophini (pronounced by her as *egolophini).* She does not know how to say any lexical forms for 'sofa' and 'work', but knows only the locative forms of 'house' and 'school'. Another word known only in the locative by a young girl aged 1;6 is *umatrasi* (pronounced *setasini*). An even younger boy (1;5) who does not produce any of the forms of words in Table 5-4, produces the locative form of 'shop', *evenkileni* 'to the shop' (pronounced *venkiyeni).* The previous two examples are interesting since they represent cases in which caregivers self-reported locative forms and offered a pronunciation in which the initial *e-* of the discontinuous locative morpheme is omitted. This is also the case with a boy (2;2) who produces *kolweni* (although part of the NPx is missing too). It would thus appear that the omission of the initial *e-* may be akin to the omission of NPx on nouns, which will be discussed later in Section 5.2.1.

A different girl (1;10) also produces *evenkileni* (pronounced *eyeyeni)* and 'home' *ikhaya* as *ekhaya* 'at home'. She cannot say either form of 'sofa' or 'work' but produces *imoto* and *endlini.* A girl, aged 2;5, similarly knows *evenkileni* (pronounced *evenkeni)* instead of *ivenkile,* as does and a boy (2;2). It would thus appear that 'shop' is another word commonly only known in the locative, but this form did not avail itself in the pre-pilot data. What is also interesting is that in the mispronunciations of these locatives, liquids often appear as glides. This phonological under-specification was noted in the literature review when Demuth (1988) notes an overgeneralisation of a Cl. 9 demonstrative for a Cl. 5 noun (child also aged 2;1), and drawing on her personal communication with Chimombo, who describes child acquisition of Chichewa, she speculates this may be due to a lack in phonological ability to produce distinct forms, particularly the 'l', as corroborated by Maphalala (2012). This is discussed in further detail in Section 5.2 when considering grammar, however, these findings stand to support those to come. Lastly, one faithful young boy (2) knows *icawa* 'church' as *ecaweni* 'to/in church', although he does not know any of the other lexical items discussed here.

The fact that children know some words in the locative only, and others not, suggests a strong role of the influence of input speech in children's acquisition, supporting the imitation sub-theory of behaviourism, that states that children's speech is driven by imitation of the language stimulus in their environment, and they listen to and repeat what they hear. This also corresponds to Harris, Golinkoff and Hirsh-Pasek's (2011) first principal of word learning, namely that children learn the words they hear most frequently. It is also not unusual for young first-language speakers (or even adults for that matter) to encode grammar in the lexicon, as Suzman (1991) and Demuth (1992) suggest of some

verbal extensions. These findings point to the danger of drawing conclusions about the age of acquisition of grammatical items merely by their emergence in children's speech.

5.1.3 Linguistic and ontological considerations

In this section, I draw on the findings presented above and problematise the assumption that Western linguistic constructs, ontologies, and epistemologies are appropriate for the CDI exercise as applied to Bantu languages and deliberate the lexical appropriateness that needs to underpin adaptations. I have already highlighted in the above section that two discrete word combinations in English may be considered a grammatical construction in isiXhosa – that is, locative noun forms – are actually encoded in the lexicon of toddlers. In a similar vein, whilst working with isiXhosa-speaking children and their caregivers in both urban and rural areas, I experienced the additional discomfort of using ontological categories (in particular with reference to labelling how we talk about space) that were not easily translatable into isiXhosa. Levinson and Wilkins (2006: 1) deftly capture this sentiment:

> Where we have linguistic universals, the correlation may be presumed to be driven by cognitive universals. But where we have cultural divergences, language may not so much reflect underlying cognition, as actively drive it.

Levinson and Wilkins (2006: 2) acknowledge that spatial thinking is variable and that languages reflect this variability in conceptual distinctions. Imai and Mazuka (2007: 389) expand on this idea, stating:

> Children may start out with a universally shared conceptual space. Through language learning, from a very early age, they become sensitive to the way in which their own language divides the world (Imai and Mazuka, 2007: 389).

To exemplify this further, I draw on the concept of framing. A 'frame' refers to "any of the many organised packages of knowledge, beliefs, and patterns of practice that shape and allow humans to make sense of their experiences" (Fillmore and Baker, 2010: 314). A such, a frame can be an approach to semantic analysis. A framing event has a 'core schema' which describes the relationship between an entity and another object. In a motion event, the core schema or semantic notion is called the 'Path' (i.e. the course of movement followed by the moving entity; Matsumoto, 2003: 407).

Motion events can be either verb-framed or satellite-framed. Verb-framing is a characteristic of Bantu languages (Schaefer and Gaines, 1997), which means that the path is encoded or lexicalised in the verb, whereas satellite-framed languages such as English indicate path by "non-verb elements that function

as sisters" – that is, the satellite (Ameka and Essegbey, 2013: 19). For example, where English uses a phrasal verb with the adverb 'back', the isiXhosa equivalent does not necessarily include the free morpheme adverb *emva* 'back'. Speakers frequently use the applicative extension *-el-*, which cannot stand alone as a translation for 'back', but changes a verb like *-jik-a* 'turn' to *jik-el-a* 'turn back'. Similarly the sense of 'up' can be part of a verb root, as in *-funqul-a* 'lift up', so a child's request to its mother *Ndifunqule* 'Lift me up' does not contain the free morpheme that translates 'up', namely *phezulu*. This treatment of a phrase which is usually a locative by use of the applicative extension is also observed in the Bantu languages Setswana and Chishona (see Matsumoto, 2003; Schaefer and Gaines, 1997). This means that Bantu languages lexicalise *motion + direction*. Failing to take this difference in framing into account can make the capturing of these concepts for word lists problematic.

5.1.3.1 What is a word in Bantu?

This ontological observation regarding framing led me to consider the issue of what constitutes a 'word' in isiXhosa, as the CDI is essentially a list of words. In 1935, Clement Doke, in his seminal *Bantu Linguistic Terminology*, referred to the problem of giving an exact definition of 'word' in Bantu languages. He argued that while there might be a case in some languages for defining 'word' as "an entity conveying a complete concept" (Doke, 1935: 10), this is a completely inadequate definition for agglutinating languages. He goes on to note that the "diversity of method of word-division in Bantu languages" can be attributed to the Europeans who were responsible for codifying those languages in writing (Doke, 1935: 11) and tried to divide Bantu disjunctively to fit European linguistic classifications.

The way English defines a word, in contrast with the way isiXhosa words are classified and the manner in which the semantics of their constituent parts are realised, highlights the incompatibilities of the structures of the two languages. For example, *ndiyamthanda* 'I love him/her' (I-him/her-love) is a complete isiXhosa sentence with five different morphemes indicating person, object, pronoun, and tense but could be considered to be equivalent to one word in English.

In a CDI originally developed for English speakers, some 'words' translated in Bantu by verbal extensions, aspectual formatives, agreement markers, or discontinuous locative morphemes that cannot be isolated are abandoned because they do not 'mean' anything specific when not attached to another lexical item, although they can convey a host of possible meanings in context. Translators and testers are forced to try to find 'words' that match the English equivalent, and this can result in less

common words being used and/or toddlers seeming less linguistically capable than their English-speaking counterparts.

5.1.3.2 Polysemic words

"Polysemy occurs where a word has two or more related meanings" (O'Grady, Dobrovolsky and Katamba, 1997: 270). In isiXhosa, the verb *-phatha* has among its many meanings 'touch, hold, carry, manage, treat, cause to experience physical pain, and treat with black magic' (see Mini et al., 2003: 996). During my research I frequently heard one isiXhosa word encompassing many different English ones – for example, *qhwaba* meaning 'slap' and 'clap', while *suka* appeared three times in my unpiloted, initial inventory with three different meanings: 'careful', 'come from', and 'go away'.[59] This polysemic tendency in isiXhosa lexical items chosen for a particular list may have the effect of making children look as if they know less, whereas they know different meanings for a particular word in different contexts. IsiXhosa-speaking children do not distinguish between 'chicken' and 'hen' but do know both isiXhosa verbs for 'drink': one referring to drinking something hot, *ukuphunga*, and the other to drinking something cold, *ukusela*. An isiXhosa-speaking child's lexicon may appear smaller if assessed by English standards, but that is merely because one word can be used in a variety of contexts or because a single 'concept' (as conceived in English), such as 'drink', can be expressed in more than one way in isiXhosa. This nuance is not captured or acknowledged by current tests and standards.

5.1.3.3 Synecdoche and category extension

When the caregivers of isiXhosa-speaking toddlers were asked whether they knew the word *iinzwane* 'toes', they answered in the negative, saying that they and their children used *iminwe* 'fingers' to refer to both fingers and toes. Instances in which *unyawo* 'foot' is used for both 'foot' and 'leg' are also found. These are not cases of my informants not knowing the 'correct' isiXhosa words but rather examples of semantic change.

In the case of 'toes' becoming 'fingers' in isiXhosa, this could be described in terms of one of Wilkins' (1996: 273-274) postulated 'natural tendencies' for naming different parts of the body:

> Where the waist provides a midline, it is a natural tendency for terms referring to parts of the upper body, to shift to refer to parts of the lower body.

[59] In fact, the *Greater Dictionary of Xhosa* (Pahl et al., 1989: 227–228) has 16 different glosses for *ukusuka*.

The case of 'foot' *unyawo* being used instead of 'leg' *umlenze* cannot be explained by this theory, but rather in terms of synecdoche[60] in a process of language change (see Wilkins, 1996: 298).

> Brown and Witkowski (1983) observe that approximately one-half of the languages of the world have a single term to cover the notions 'eye' and 'face'. On the basis of an investigation of 109 genetically and areally distinct languages, Witkowski and Brown (1985: 198) have noted that '50 have hand/arm polysemy, a frequency of about 46 per cent on a worldwide basis' and they also observe that '42 languages have foot/leg polysemy, a frequency of about 39% on a worldwide basis' (1985: 202) (Wilkins, 1996: 278).

So the fact that many isiXhosa-speakers use *unyawo* 'foot' for *umlenze* 'leg' is not unusual in terms of language change globally.

Another form of synecdoche common in isiXhosa, also referred to as category extension (see Wilson 2004: 275), is the use of a brand name to refer to all things in its class. While this is also found in English (e.g. 'Hoover' to refer to any vacuum cleaner), it is a growing phenomenon in Bantu languages. Koopman (1999: 43) gives the following isiZulu[61] examples:

> *ushekazi* ('plastic shopping bag' < Checkers supermarket chain; cf. isiXhosa *itshekasi* and N.Sotho *tšhêkase*), *isikibha* ('casual open-necked shirt', 'T-shirt' < Skipper Shirt Factory, in Durban), and *i-okapi* ('knife with folding blade' < Okapi Knife Manufacturers).

While not institutionalised in dictionaries and school textbooks, these brand names are becoming acceptable terms for everyday items: for my study informants, all nappies were *Kimbies* or *iiPampers*, *Rama* was any kind of butter or margarine, *Colgate* was any toothpaste and *itshepis* was chewing gum (*Chappies*). These brand name vocabulary items in isiXhosa need to be accounted for in instruments assessing lexical development.

5.1.3.4 Semantic overextension

Semantic overextension is the tendency of children in the early stages of their development to overextend word meanings (Oostendorp, 2016: 245). The methodological challenge for my data presented by semantic overextension has been mentioned in Section 3.5 with reference to *umama* and *utata,* but this phenomenon is also common with children in my data set who would often refer to all

[60] Synecdoche is "a figure of speech in which a part is substituted for a whole or a whole for a part, as in 50 head of cattle for 50 cows, or the army for a soldier" (Collins, 2017).

[61] IsiZulu, along with isiXhosa is a Nguni language and is the closest mutually intelligible language to isiXhosa.

vehicles as *imoto* 'car' or all flying bugs as *irhorho*. Whilst polysemy, synecdoche, and category extension need to be accounted for on a CDI adaptation, semantic overextension should not be accounted for in measuring productive vocabulary, that is, a child should not be reported to know more items of vocabulary if they call all bugs *irhorho*.

5.1.3.5 Incompatibility across lexical items

The research that I conducted in monolingual homes and crèches in both rural and urban areas revealed vast differences between these social contexts and average English-speaking or bilingual isiXhosa- and English-speaking suburban families. The vocabulary items I contrast below are ones that appear in the UK English version of the MacArthur-Bates CDI. For those items that did remain on the first pilot list, cases of children producing these words were either extremely low or non-existent. To exemplify this idea, from our data set only one child in Mbolompo and two children in Xorha produce *ifriji* 'fridge' and not a single child produces *ifriza* 'freezer'. Here, I itemise just some of the lexical differences, like 'fridge' and 'freezer', that arise from dissimilar social and environmental contexts.

Mommy, daddy, sister, brother

IsiXhosa-speaking children grow up knowing all adult females as *umama* 'mother' and all adult males as *utata* 'father'. A similar generalised application occurs with u*sisi* 'sister' and u*bhuti* 'brother' which are used for all members of the peer group. Thus the notion of a 'family' is extended and the child becomes acquainted with many more adults and children, all of whom are seen as kin. Some children in rural areas go to a crèche, but most stay at home and follow the caregiving adult around as she gets through her quotidian tasks of feeding animals, gardening, doing the laundry by hand in a large tub, and cleaning the home. In townships, more children attend crèches than in rural areas, although some small children are looked after by babysitters while the parents are at work. These babysitters are also referred to as *umama,* with no separate word being used for a nanny.

Upstairs, downstairs, basement, bedroom, bathroom, bathtub, toilet, garage, park

Township homes are much the same as their suburban counterparts, apart from often being much closer together, with far more interaction among families. Houses are invariably single-storeyed, so concepts of upstairs and downstairs and basements (as they occur in the MacArthur-Bates inventory) are unfamiliar. Bedrooms in rural areas often double up as kitchens and vice versa.

In both rural and urban areas there is a lack of household plumbing: quite often toilets are found outside, and water frequently has to be fetched from a river or communal tap. Bath time is not a time for play. If there is a car, it is kept in the yard, not in a garage. A 'garage' is a place where one gets petrol. In rural areas, there are no specifically demarcated play areas such as parks.

Rocking chair, high chair, oven, fridge, toy, toybox

In both urban townships and rural areas, it is rare to find different types of seating arrangements as they occur in the English CDI version. There are no rocking chairs or high chairs, although couches are fairly common among those who can afford an alternative to the beds, benches and upturned plastic buckets that most rural, and many township, inhabitants use for seating. Most homes, urban and rural, have hotplates for cooking, but not ovens. Sometimes old, non-functioning fridges serve as cupboards. Toys and toyboxes are not common in either urban or rural areas.

Train, tractor, truck, helicopter, motorcycle, boat

While taxis (in the South African sense of minibuses plying fixed routes) and busses are an everyday part of township and rural environments, other forms of transport are less common: there are no trains or boats, for example, in mountainous rural villages, and even private cars and motorcycles are rare, being luxuries that few can afford. In these areas children use wheelbarrows to carry groceries from the (minibus) taxi after a trip to a town.

Lion, giraffe, tiger, penguin, crocodile

Children know the animals they actually encounter in their neighbourhoods, such as dogs, cats, goats, cows, chickens, and pigs. Because storybooks are rare, they seldom know the names of more exotic animals such as lions, giraffes, tigers, penguin,s and crocodiles, unless they appear in folktales, for example, *UMvundla* 'Mr Hare'.

Park, picnic, zoo, circus, library, bike, trike, skateboard

Some townships in urban areas have parks, but this is not the case in rural areas. Children play outside and use whatever they can find as toys. Traditional healers sometimes allow children to play their drums, while at traditional ceremonies they dance and clap and take part in the general adult festivities. People in rural areas do not picnic, nor do they go to the zoo or circus. In urban areas some caregivers take their children to libraries, but books, especially in isiXhosa, are very scarce in rural

areas. There are few bikes, trikes, skateboards, or roller-skates to be seen in the streets of the rural areas as the roads are not tarred.

The tissue issue

An example of economic exposure affecting the understanding of a word is vividly illustrated by the confusion that was encountered around the word 'tissue'. The isiXhosa translation of the original CDI list gave this as *i-tissue*, which was corroborated by middle-class and working-class isiXhosa-speaking caregivers living in urban areas. However, caregivers in the rural Eastern Cape, when presented with the same translation, needed us to explain the word to them: "What are the functions of a tissue?" they asked. It was explained that it was to wipe noses or clean hands in the absence of a wet cloth. Eventually the caregivers started laughing. "That's toilet paper! Tissue? Tissue! My goodness! Sometimes we can't even afford toilet paper, and you expect us to have tissues!" In the *Oxford English-Xhosa Dictionary* (Fischer et al., 2010: 668), 'tissue paper' is glossed as *iphepha eliyacuyacu* 'paper which is flimsy'. A woman in her sixties asked us if we were not possibly referring to *itshefu* 'handkerchief'. None of the younger mothers had presented *itshefu* to us as a possible translation, which can be explained by the fact that the handkerchief (from which the word *itshefu* orginates) has largely died out as an everyday item today, even among English speakers.

The point I am trying to make here is that these speakers do not have the luxury of what they see as a particular sub-class of toilet paper, that is, a tissue. Even women who had travelled to cities and had bought fast food, speaking among themselves, said "Oh, they mean the serviettes you get with KFC [Kentucky Fried Chicken]!" At the day care centre in Masiphumelele referred to above, 'tissue' was translated as *ifadukwe,* literally 'a dish cloth'. This example also points to the fact that certain lexical terms imply relative wealth and socio-economic privilege, and it is imperative to be aware of the role that exposure plays when adapting the CDI in line with the parameters I mention above.

In addition, it became apparent after the CDI data collection that *iphepha,* which traditionally refers to paper on which one writes or draws, is being used in addition to *itoyileth-phepha* as a lexical item for 'toilet paper', which again points to the role economic exposure can play. That is, for many rural (and urban) inhabitants buying paper on which to write or draw is a luxury. Hence the associated meaning of *iphepha* with that which is more common for them, namely 'toilet paper'.

In South Africa, most monolingual isiXhosa-speaking children are raised in either rural or urban settings, or straddle both worlds, but neither context has much in common with the average middle-class

English-speaking home. In some small pockets, though, such as the crèche or school, there are similar preoccupations. For example, while many of the toddlers know very few nursery rhymes or songs, either in isiXhosa or English – apart from popular songs played on radio and TV to which they dance, mimicking the actions of the adult singers – a day care centre in Masiphumelele was encountered where songs and rhymes in both languages were deliberately taught. The centre also had English storybooks, which resulted in learners knowing isolated English terms, such as 'penguin', and 'lion': a caregiver would read the word out in English and point to the corresponding pictures.

Such pockets of exposure to other languages and cultures seldom exist for the English-speaking child. If an English-speaking parent were to be asked whether their child knew what a *kraal* was, or a flat stone for grinding, or a *spaza*,[62] or wet cow dung used for smearing floors, the response would probably be puzzlement and an insistence that such terms were far from commonplace and much too obscure for a small child to know. This demonstrates the problem: that the items occurring in an English-speaking child's world are considered 'standard', while those in the isiXhosa-speaking child's environment are perceived as out of the ordinary, and consequently seldom feature in children's resources and are largely ignored when creating texts (see Alexander and Bloch, 2004: 12, regarding the 'print-scarce' environments of African languages).

5.1.3.6 Offbeat considerations

It was advised, during training for the pilot, to ask the question, "What were the first things your toddler said this morning?" as a way of eliciting examples of natural speech. Sometimes the responses to these questions were so unexpected and out of the ordinary that I might have been tempted to dismiss them. Some were less obviously eccentric, but nevertheless intriguingly complex. In the urban areas, where parents had to leave very early for work, a common – and heart-wrenching – cry was:

> *S'undishiya*! 'Don't leave me!'

Other children had clearly witnessed the neighbours yelling at each other, and would borrow abusive language, including swearwords, from those exchanges. One mother told us her child liked to say:

> *Undiqhela amasimba!* 'You're treating me like shit!'

[62] An informal township shop.

This was corroborated by other caregivers and parents, who admitted that their children heard so much swearing that it was inevitable that they too would swear adroitly.

It is important to remember that children are stimulated by real-life encounters. A grandmother whose house was next door to a shebeen[63] told us that her two-and-a-half-year-old toddler liked to imitate drunks, and would shout out:

*Ndibambelele, magent*s! 'Hold on to me, guys!'

Stumbling drunkenly towards the fridge or onto the bed, he would slur:

Ndifuna ukutya! 'I need food!'

It was later told that this particular toddler is already an accomplished comedian who mimics those around him brilliantly, often commanding a large audience of amused teenagers and adults. He also likes to swear, his grandmother told us, but will often get it wrong. Instead of the curse *nqundu wakho* 'your arse', he mistakenly says *nqundu wam* 'my arse', which everyone finds very funny and endearing.

Through this mimesis the toddler is in fact turning cultural hegemony on its head, since he is questioning, speaking for himself, representing, transforming and defining himself, and exhibiting his freedom to take control of a situation (Guss, 2005). What may be an 'awkward affect' (Guss, 2005: 233) in Western cultures is dispelled by this toddler's play.Heath (1982: 65) refers to children in an Afro-American community who were rewarded with affectionate attention from caregivers when they were able to imitate adults they knew. She argues that while this is not 'mainstream' learning, it is nevertheless a demonstration by children of knowledge about oral language and how it operates in their immediate environment. I thus emphasise the importance of creating diverse learning goals (Guss, 2005) and incorporating the wide variety of contexts isiXhosa children grow up in.

5.1.4 Section conclusion

In this section I considered lexical considerations in acquisition, namely, which categories of words are favoured in acquisition, lexical shifts, as well as linguistic and ontological considerations. It is shown

[63] "Shebeen is a term used in South Africa to refer to informal bars or pubs selling alcoholic drinks ... These shebeens are often situated in homes in informal settlement areas" (Wills, 2009: 22). As of 2006 the estimated number of shebeens in South Africa was 127,000 (Rolfe et al., 2010).

that isiXhosa toddlers favour sounds and action words in their early lexicons, echoing universal literature on this subject. I specifically find lexical shifts occurring for the English words 'draw' (to *bhala*) and 'baby' to (*umntana* or *unana*) and a host of evidence that certain nouns are produced only in their locative form. The section on linguistic and ontological considerations compels adaptors to recognise nuances in the target language. These constitute considerations regarding linguistic universals, what constitutes a word, polysemy, synecdoche, semantic overextension, cultural or economic incompatibility of lexical items, and the importance of recognising what might be for other cultures 'offbeat considerations'.

All findings in this section on lexical acquisition critically portray the importance of understanding the intricacies of a particular language, not only for instrument-adaptation purposes, but for understanding children's communicative development. It is imperative for adaptors and speech and language pathologists to be able to notice that the use of nouns in locative form is not necessarily indicative of more advanced development, for example, if children learn these otherwise grammatical forms as individual lexical items. Moreover, understanding the movements in children's lexicon is central to any study of communication, and the shifts and phenomena highlighted above are only the tip of an iceberg that needs to be more thoroughly explored. Nonetheless, it is my hope that the findings on isiXhosa-speaking toddlers' lexicon will assist in providing direction for research on isiXhosa language acquisition as well as highlight more general complexities involved in adaptations and the taking of Western ontologies and epistemologies as the basis of theoretical truths. As evidenced by certain lexical shifts in isiXhosa vocabulary and, needless to say, grammatical shifts too, researchers must also be conscious of relying too heavily on isiXhosa in its 'standard', written form. This 'standard' initially began under missionary and colonial duress and has very much become the property of academics and universities (Mathiesen, 2000) and not that of the people for whom the language is a communicative reality.

There is danger in the perpetuation of one standard to represent a linguistically diverse people (Mathiesen, 2000), and as such the insights afforded by this research and results of this section, bring to mind the observations of Westley, Zimmerman and Patton (2007: 7) on complexity science: in order to understand social innovation we need to see the world and our work in all their complexity and strive to comprehend the relationships among all the elements involved in that complexity.

> Traditional methods of seeing the world compare its workings to a machine. … By using a machine metaphor, often unconsciously, we ignore the living aspects of our world and our

> work. Complexity science embraces life as it is: unpredictable, emergent, evolving and adaptable – not the least bit machine-like (Westley, Zimmerman and Patton, 2007:7).

In our pursuit of exactitude, we "are drawn to … one-size-fits-all remedies and measurable results" (Westley, Zimmerman and Patton 2007: 7), sometimes to the detriment of the people that the solutions are meant to serve.

5.2 Grammatical acquisition in isiXhosa-speaking toddlers

In this section I answer the third research question by considering the grammatical items laid out in Table 2-1 of Section 2.4.3. For the discussion that follows, it is important to recall the following distribution of ages by gender (see Table 5-5), since, as suggested by the literature (e.g. Simonsen et al., 2013), it is likely that females may be developmentally slightly ahead of boys. For instance, the production of the Cls 1 and 2 NPx is skewed in favour of girls, however, without a more rigorous statistical analysis – which I have not done, for reasons discussed in the methodology section (Chapter 3) – I am unable to reach comprehensive conclusions regarding the extent to which this is attributed, for example, to the higher number of girls in the data set or the higher age of girls in the data set and whether the effects are statistically different from zero or not. Thus I refrain from referring to this aspect in much detail.

Table 5-5 Age distribution by gender

Age (months)	Male	Female
17 [1;5]	2	1
18 [1;6]	1	1
21 [1;9]	1	1
22 [1;10]	0	2
23 [1; 11]	0	2
24 [2;0]	1	0
25 [2;1]	0	1
26 [2;2]	1	0
27 [2;3]	1	0
28 [2;4]	0	2
29 [2;5]	0	1
30 [2;6]	0	1

It is also important to note that the spontaneous speech data reported in this section should not be directly compared to that of the CDI. The children in the spontaneous speech sample are on the upper

end of the cohort, some being slightly older, with ages ranging between 2 and 3;9 (see Appendix E for the full transcripts with each child's age). Due to the age of some children being out of the age cohort, the differences in the number of children, as well as method of data collection (i.e. recording over a time period vs. questionnaire), frequency of grammar items should not be directly compared to that of the CDI *per se*, although similar or dissimilar trends are able to be observed.

5.2.1 Noun Prefixes

The first question that appears about NPx on the CDI grammar section (this being question 1 of Section A on the grammar section – see Appendix G) is whether or not children are able to produce NPx on noun stems. As mentioned, examples of nouns in Cls 1 and 1a (see Appendix A for a list of the NPx for each class) were recommended by Dr Alcock. Table 5-6 shows that nine children are reported to not yet use NPx on the front of nouns, whilst 11 are able to do so. When considering responses by age, the three youngest children at 1;5 are not yet producing NPx but a child one month older at 1;6, is. The eldest five children all use NPx on their nouns (from age 2;4 and above), however, between the age of 1;6 and 2;4 use seems erratic. Moreover, this question does not account for whether children are using shadow prefixes or not, and for those that are it is unclear whether the caregiver classified them as using NPx or not.

Table 5-6 NPx production by age, CDI data

Age (months)	No	Yes
17 [1;5]	3	0
18 [1;6]	1	1
21 [1;9]	0	2
22 [1;10]	1	1
23 [1; 11]	1	1
24 [2;0]	0	1
25 [2;1]	1	0
26 [2;2]	1	0
27 [2;3]	1	0
28 [2;4]	0	2
29 [2;5]	0	1
30 [2;6]	0	2
TOTAL	**9**	**11**

The first nine questions from Section B of the grammar section (see Appendix G) explore NPx production in slightly more detail. They consider the production of NPx by class and include a three-tiered option for the caregiver to select either no production, a shadow prefix, or the full prefix production.

5.2.1.1 Class 1

Table 5-7 below shows that for Cl. 1, nine children do not produce any prefix, which is in line with findings above from the initial NPx question posed. Six children are reported to produce shadow prefixes for Cl. 1, which is in the form of the nasal *-m.* Only five children in the toddler cohort produce the full NPx for Cl. 1. These results suggest that caregivers who answered 'yes' to the initial NPx question did so even if their child is only producing partial/shadow NPx. However, upon closer inspection it appears caregivers may not have been accurate in their reporting of acquisition of NPx: of the three youngest children (1;5), for the Cl. 1 NPx, one produces no NPx and two produce a partial NPx. But, according to their caregivers the three youngest children are not able to produce a NPx (see Table 5-6). Perhaps, what may be happening is that in answering the first question on general NPx production, caregivers aggregated their child's ability across all noun classes, or at least the ones listed in the example of that question, and concluded that their answer should be "no" since they do not hear all those NPx a lot of the time. However, when it comes to questions about specific NPx, such as this one, perhaps the caregiver is able to answer more accurately, being able to pin their answer to one specific sound (or NPx) only. The fact that results to the first yes/no question on NPx shows acquisition as early as 1;6 (see Table 5-6), but with acquisition of Cl. 1 only being reported at 1;10 (see Table 5-7), should not be entirely surprising either then, if caregivers use some form of aggregating strategy.

Table 5-7 shows that the first child to report using the full form is 1;10, however, a child at the same age and one who is a month older produce no NPx. Moving towards the top of the age range two children aged 2;4 produce no NPx and a shadow prefix respectively, but the three eldest children (2;5 and 2;6) produce the full Cl. 1 NPx. Children in the middle of the age group similarly vary between the three forms.

Table 5-7 Cl. 1 NPx production by age, CDI data

Age (months)	fazi	mfazi	umfazi
17 [1;5]	1	2	0
18 [1;6]	2	0	0
21 [1;9]	0	2	0
22 [1;10]	1	0	1
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	1	0	0
27 [2;3]	0	1	0
28 [2;4]	1	1	0
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**9**	**6**	**5**

5.2.1.2 Class 2

Since Cl. 2 is the plural of Cl. 1, the acquisition of the Cl. 2 NPx should correspond to answers given to the second question of Section A of the grammar section, namely whether the child can produce plural forms yet. Since plurality is indicated in isiXhosa by a change of the NPx, one would expect that a child who is reported not yet to be using plurals, would also not yet be using plural NPx. Responses given to the question of whether a child can produce plurals or not show that 16 children cannot, whilst four can (see Table 5-8). Responses to whether children can specifically produce the Cl. 2 NPx show that 14 cannot, whilst two produce it partially and four can produce it fully (see Table 5-9). This could suggest that children who are only producing partial forms of the Cl. 2 NPx are reported by caregivers as being unable to produce plurals, however, this is in contradiction then to their reporting methods for the NPx of Cl. 1 as mentioned above.

Table 5-8 Plural production by age, CDI data

Age (months)	No	Yes
17 [1;5]	3	0
18 [1;6]	2	0
21 [1;9]	2	0
22 [1;10]	1	1
23 [1;11]	1	1
24 [2;0]	1	0
25 [2;1]	0	1
26 [2;2]	1	0
27 [2;3]	0	1
28 [2;4]	2	0
29 [2;5]	1	0
30 [2;6]	2	0
TOTAL	**16**	**4**

Table 5-9 Cl. 2 NPx production by age, CDI data

Age (months)	ntwana	bantwana	abantwana
17 [1;5]	3	0	0
18 [1;6]	2	0	0
21 [1;9]	2	0	0
22 [1;10]	1	1	0
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	1	0	0
27 [2;3]	1	0	0
28 [2;4]	1	1	0
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**14**	**2**	**4**

Table 5-8 shows that the first child to display ability to produce plural forms (although only partially – see Table 5-9) is aged 1;10, however, this is not consistently acquired by the elder children. Table 5-9 shows that an elder child of 1;11, though, is reported to be the first to be able to produce the full form of the Cl. 2 NPx. Nonetheless, the data displays that the Cl. 2 NPx may be acquired by 2;5 as all three children this age and above use the full form (see Table 5-9), although the use of the Cl. 2 NPx across younger ages is intermittent. It is inconsistent that in response to the plural production question that these three children are reported not to produce plurals (see Table 5-8), however, it may be that

caregivers are using the strategy of aggregating what their child knows when reporting yes/no answers across classes.

With reference to Connelly's (1984) observation that number agreement occurs before children can mark it in noun morphology, this appears to be the case with a girl aged 2;10, who we observed in Cata. Whilst speaking to us about when we were going to leave, she correctly produced the second person plural subject marker *ni-*, but she was unable to produce the appropriate Cl. 2 NPx, saying *mlungu, nihamba nini?* instead of *belungu, nihamba nini?* 'white people, when are you going?'. Note that rules of the vocative in isiXhosa necessitate the pre-prefix is dropped, so the omission of the *u-* in her NPx is not necessarily an error. This talkative young girl's speech was observed to be very advanced compared to that of her peers (her mother has a teaching diploma), and thus it is an important finding that she is making this error at the age that she is. It suggests that the results of the CDI, that is, that children aged 2;5 and above produce full Cl. 2 NPx, cannot be categorically made.

5.2.1.3 Class 3

Due to the phonological similarity of the Cls 1 and 3 NPx, one would expect these to display relatively similar patterns of acquisition. The trend of acquisition shown in Table 5-10 is in fact largely identical with that of Cl. 1 shown in Table 5-7, with only one less full NPx and one less partial NPx produced. This slight difference of acquisition of identical prefixes does not necessarily suggest caregiver misreporting, since it is likely that there is a low frequency of Cl. 3 nouns in children's speech (Suzman, 1991 and Zawada and Ngcobo, 2008), which is verified by my spontaneous speech data. Four children can produce the full NPx for Cl. 3, five produce a partial NPx, and 11 produce no NPx. No clear pattern of acquisition with regard to age emerges, but, once again, the eldest three children are producing the full form.

Table 5-10 Cl. 3 NPx production by age, CDI data

Age (months)	lenze	mlenze	umlenze
17 [1;5]	2	1	0
18 [1;6]	2	0	0
21 [1;9]	0	2	0
22 [1;10]	2	0	0
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	0	1	0
27 [2;3]	1	0	0
28 [2;4]	1	1	0
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**11**	**5**	**4**

5.2.1.4 Class 4

As described when considering Cl. 2, children who are reported not yet to be producing plural forms (as per Table 5-8) should presumably not yet have acquired the NPx for Cl. 4 (Cl. 4 being the plural class of Cl. 3). As Table 5-11 shows, though, only six children are reported not to have acquired it, with nine producing the partial form and only five producing the full NPx. This low frequency of only six children who do not produce the Cl. 4 NPx is in stark contrast to the 16 children who are reported not to be able to produce plurals (Table 5-8). Production by age shows that both the eldest (2;6) and youngest (1;5) children can produce the full form of the Cl. 4 NPx (see Table 5-11), with haphazard use of all three forms in between. Interestingly, the mother of the youngest child had completed tertiary education, which may have placed this child's communicative ability ahead of other children his age, meaning the results we observe are not necessarily unlikely. The low frequency of instances in which the Cl. 4 NPx is not produced, is in support of Demuth's (1998) suggestion that the presence of a nasal in the NPx facilitates the earlier emergence of the NPx.

Table 5-11 Cl. 4 NPx production by age, CDI data

Age (months)	thi	mithi	imithi
17 [1;5]	2	0	1
18 [1;6]	1	1	0
21 [1;9]	0	2	0
22 [1;10]	0	2	0
23 [1;11]	1	0	1
24 [2;0]	0	1	0
25 [2;1]	1	0	0
26 [2;2]	0	1	0
27 [2;3]	1	0	0
28 [2;4]	0	2	0
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**6**	**9**	**5**

5.2.1.5 Class 5

At the outset, it is important to note that the Cl. 5 noun presented in the question has a monosyllabic stem. In isiXhosa, Cl. 5 nouns with a monosyllabic stem have the NPx *ili-,* for example, *iliso* 'eye', whilst Cl. 5 nouns with polysyllabic noun stem retain only the pre-prefix *i-*, for example, *ihashe* 'horse'. In the latter case, testing for a shadow prefix for a Cl. 5 noun would be redundant, which is why the CDI asks about the prefix on a monosyllabic noun. Additionally, the NPx on the polysyllabic Cl. 5 noun is the same form as many Cl. 9 NPx (e.g. see Section 5.2.1.8 on Cl. 9 NPx acquisition), which if asked in this way would not necessarily provide any interesting or comparable results across Cls 5 and 9 NPx acquisition.

Table 5-12 shows that six children do not produce any NPx on Cl. 5 nouns, whilst the remaining 14 are evenly split between producing a shadow prefix and a full NPx. A production of seven full NPx for this class means that it is produced fully more frequently than the NPx of singular Cls 1 and 3. This provides some evidence to counter Demuth's (1998) suggestion that classes with a nasal in the NPx are acquired before others. Cl. 5 is fully acquired by a child aged 1;5 (the child whose mother has a tertiary education), however, the next child to produce a full NPx is five months older. The four of the eldest children (2;4, 2;5, and 2;6) have all acquired the full form, but one of the children aged 2;4 is still only producing a partial form.

It would thus appear that acquisition of this class might be in place by 2;5, although children in the spontaneous speech data aged 2;10 and 3;9 do not use the full NPx on *ilitye* 'stone', instead expressing it as *yitye.* It is not clear, however, whether this '*y*' is an attempt to use a copulative (as necessitated in the sentence according to adult speech), appearing as an overgeneralised Cl. 9 concord, or whether they are underspecifying the phonology and pronouncing the Cl. 5 shadow prefix's consonant 'l' as 'y'.

Table 5-12 Cl. 5 NPx production by age, CDI data

Age (months)	so	liso	iliso
17 [1;5]	2	0	1
18 [1;6]	1	1	0
21 [1;9]	0	2	0
22 [1;10]	0	1	1
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	0	1	0
26 [2;2]	0	1	0
27 [2;3]	1	0	0
28 [2;4]	0	1	1
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**6**	**7**	**7**

5.2.1.6 Class 6

Cl. 6 is the plural class of Cl. 5. The plural NPx is the same whether the stem is monosyllabic or polysyllabic. Fourteen children cannot produce any NPx on these nouns, whilst one produces a shadow prefix and five produce the full form (see Table 5-13). The low frequency of the shadow prefix and full prefix is noteworthy since this once again contrasts findings in literature (e.g. Demuth, 1988) that the nasal in this class could potentially facilitate the earlier emergence of this NPx.

As reported in Section 3.5 on methodological limitations, caregivers may have been slightly unclear about answering the question in the case that their child could not produce the word that is used as an example. The word given as an example for this question is *amagqabi* 'leaves'. It is thus debatable the extent to which the high frequency of the most basic option is due to the fact that children do not use the word *amagqabi* because of the click (although this word is present in the spontaneous speech data). There appears no other reason that the acquisition of this class should be delayed over that of

Cl. 4 since both NPx include a nasal with an identical vowel on either side. In fact, one might expect Cl. 4 to be relatively delayed as compared to Cl. 6 due to the lack of Cl. 3 nouns in children's speech. However, it could be that nouns in Cls 3 and 4 may simply be more often referred to in the plural than in the singular.

The first full form appears at 1;11, the same age that Cls 3 and 2 also appear (see Table 5-13). The eldest four children (2;4, 2;5, and 2;6) have acquired the full form of this NPx. It appears that this NPx infrequently appears in shadow prefix form, with only one child producing this form. There is similarly only one such instance observed in spontaneous speech.

Table 5-13 Cl. 6 NPx production by age, CDI data

Age (months)	gqabi	magqabi	amagqabi
17 [1;5]	3	0	0
18 [1;6]	2	0	0
21 [1;9]	2	0	0
22 [1;10]	2	0	0
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	1	0	0
27 [2;3]	1	0	0
28 [2;4]	0	1	1
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**14**	**1**	**5**

5.2.1.7 Class 7

Table 5-14 shows that the frequencies of production for no NPx, a shadow NPx, and the full NPx for Cl. 7 are 12, two, and six respectively. The full form of this NPx first appears at 1;10. The eldest four (2;4, 2;5, and 2;6) children have acquired the full form, with one of the children aged 2;4, however, still not using the NPx. The partial form of the NPx appears to be more common in the spontaneous speech data, with four instances being expressed by children 2;10 and 3;9. This suggests that despite the seemingly consistent acquisition from the CDI data around age 2;5, this is not necessarily the case in reality.

Table 5-14 Cl. 7 NPx production by age, CDI data

Age (months)	tulo	situlo	isitulo
17 [1;5]	3	0	0
18 [1;6]	2	0	0
21 [1;9]	0	2	0
22 [1;10]	1	0	1
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	1	0	0
27 [2;3]	1	0	0
28 [2;4]	1	0	1
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**12**	**2**	**6**

5.2.1.8 Class 9

We do not ask for a shadow prefix in question about Cl. 9 NPx production, since the literature suggests that the nasal of this class is in fact becoming reanalysed as part of the noun stem (Herbert, 1978). Additionally, not all nouns in this class have a nasal in the prefix (especially borrowed nouns). Spontaneous speech data does reveal instances in which Cl. 9 nouns are produced with the nasal as a shadow prefix or in which it is reanalysed as part of the stem, for example, *nyoka* instead of *inyoka* 'a snake'. Two boys make this error, one of whom is aged 2 and the other of whom is aged 2;10. This corroborates the trend that full NPx production may not be accurately acquired by all children in the upper limit of the CDI cohort.

The data captured from the CDI shows that nine children cannot produce a NPx for this class, while 11 can (see Table 5-15). This renders Cl. 9 the class with the highest frequency of children who can produce a full NPx. That being said, it is likely to be easier to acquire since it consists of only one phoneme, *i-.* This NPx is relatively consistently used, even by the youngest in the cohort, although it is apparent that not all children in the toddler age group have acquired it. Moreover, there is evidence in the spontaneous speech data of a boy as old as 3 omitting the NPx on *imoto* 'car', suggesting that it may not be acquired by all children, even by this late age. Other examples of Cl. 9 NPx omission in spontaneous speech (seven in total) are shown in Appendix F.

Table 5-15 Cl. 9 NPx production by age, CDI data

Age (months)	bhola	ibhola
17 [1;5]	2	1
18 [1;6]	1	1
21 [1;9]	0	2
22 [1;10]	1	1
23 [1;11]	1	1
24 [2;0]	0	1
25 [2;1]	1	0
26 [2;2]	0	1
27 [2;3]	1	0
28 [2;4]	2	0
29 [2;5]	0	1
30 [2;6]	0	2
TOTAL	**9**	**11**

5.2.1.9 Class 10

Cl. 10 is the plural of Cl. 9. Stems that are monosyllabic receive the prefix *izin-*, whereas polysyllabic stems receive *iin-* or *ii-*. The example used in the CDI is *izinja* 'dogs' so that the shadow prefix can be tested in the form of *zinja.* Table 5-16 indicates that 15 children are reported not to produce any NPx, one produces the noun with a shadow prefix form, and four produce the full form. One of the three youngest (1;5) and the three eldest (2;5 and 2;6) produce these forms. It does not seem as if nouns in this class are commonly used in partial form, although this fact may also stem from the example used.

Table 5-16 Cl. 10 NPx production by age, CDI data

Age (months)	nja	zinja	izinja
17 [1;5]	3	0	0
18 [1;6]	2	0	0
21 [1;9]	2	0	0
22 [1;10]	2	0	0
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	1	0	0
27 [2;3]	1	0	0
28 [2;4]	1	1	0
29 [2;5]	0	0	1
30 [2;6]	0	0	2
TOTAL	**15**	**1**	**4**

5.2.2 Identificative copulative prefixes

Analysis of the spontaneous speech data reveals several inconsistencies in the use of copulative concords in isiXhosa (see Appendix F for a full list of errors). Firstly, it is apparent that children are 1) leaving off copulatives in many instances in which the adult form requires them, as well as 2) using made-up forms for Cls 1 and 1a, and 3) using Cl. 9 agreement on Cl. 5 nouns.

There are nine instances in which the copulative is left off the NPx in situations when it should be used, for example, *iphepha* 'paper' instead of *liphepha* 'it is paper'. Three of these pertain to Cl. 1a, three to Cl. 9, two to Cl. 5 and one to Cl. 6. Children making these errors are between the ages of 2 and 3. The spontaneous speech data moreover shows three instances in which a glide *'w'* is used as a copulative for Cls 1 and 1a instead of the standard *ngu-,* for example, *wuOtha* instead of *nguOtha* 'she is Otha' and *wabhabha* instead of *ngubhabha* 'it is a baby'. No such sound exists in adult speech as a copulative. There are also instances in which neither the NPx, nor the copulative is used in situations in which it was necessary to do so. In some of these instances a partial NPx is used, for example, *situlo* instead of *sisitulo* 'it is a chair'. It is inferred from the situation that a copulative should be used, which is why it is reported in this section on copulatives. It should not, however, be read in isolation to the NPx section as the results do largely feed into each other

There are eighteen instances in total in which there is both a missing (or partial) NPx as well as a missing copulative. As expected, children as young as 2 are observed making this error but even the girl aged 3;9 makes this error with nouns in Cls 1, 6, and 7. In this category of errors, one can observe Cl. 9 nouns being used with the shadow prefix in the form of the nasal retained, for example, *nkonkxa* instead of *yinkonkxa* 'it is a tank', yet a different child of the same age (2;10) uses a Cl. 9 noun with the nasal of the NPx omitted (or relocated), for example, *kunku* vs. *inkuku* 'it is a chicken'. Similarly, a child aged 2 produces *toni?* instead of *yintoni?* 'what is it?' (with the nasal omitted), whilst a child aged 3 produces *ntoni* instead of *yintoni* (with the nasal retained as a shadow prefix). It is ambiguous to what extent these findings support or contradict Herbert's (1978) notion that the nasal of the Cl. 9 NPx is becoming reanalysed as part of the noun stem – they may be indicative of a re-analysation process underway or simply evidence that the nasal is a form of a shadow prefix. These examples do suggest that isiXhosa children have not yet acquired the full NPx and the copulative by the age of 3 and potentially, as evidenced by one girl, even as late as 3;9. Although, it is not clear to what extent she is an outlier. One would need to examine more speech from children of her age before reaching a definitive conclusion.

There are five instances in which an atypical copulative agreement was used, that is, the Cl. 9 agreement on a Cl. 5 noun: *yihlati* instead of *lihlathi* 'it is a forest' as well as *yitye* instead of *lilitye* 'it is a stone', where the latter not only exhibits the incorrect agreement but also an incomplete form of the NPx. This particular inaccuracy occurs in the speech of three children aged 2;10, 3, and 3;9 respectively. Although, as mentioned under Section 5.2.1.5 on Cl. 5, it may be that the children are in fact not producing the copulative at all, and is simply producing a glide 'y' instead of a liquid 'l' in a phonological under-specification of a partial NPx form. The overgeneralisation of the Cl. 9 copulative is also found with a Cl. 11 noun *udonga* 'wall' (pronounced *yidoka* instead of *ludonga* 'it is a wall'). This is unsurprising, however, since as evidenced by Gowlett and Dowling (2015) there is an incipient merger of Cls 5 and 11 underway, and the child may have been producing the Cl. 5 copulative *li-* as *yi-* in an overgeneralisation or under-specification.

These observations lead to the introduction of questions regarding the following on Section B of the CDI grammar section:

1. The production of a copulative (for which we used an example from Cl. 9).
2. The production the Cls 1 and 1a copulative concord specifically.
3. Which copulative is used on Cl. 5 nouns.

The questions and options take the following forms respectively, and the number of children reported to produce each option is indicated in brackets:

1. "If you ask your child, "what is this?" which way sounds most like the way that your child would respond?"

a. *bhola* [n=11]

b. *yibhola* [n=9]

2. "If you ask your child, "what is this?" which way sounds most like the way that your child would respond?"

a. *umntwana* [n=12]

b. *wumntwana* [n=1]

c. *ngumntwana* [n=7]

3. “If your child wants to talk about a noun like *ihlathi* ‘forest’ or *ihashe* ‘horse’*,* which of the beginnings of these words sounds most like that which your child would use?”

a. *yihashe* [n=14]

b. *lihashe* [n=6]

With regard to the first question (1), nine of the children captured by the CDI produce the copulative and 11 do not. This can largely be understood as the production of the Cl. 9 copulative, since it is unlikely that caregivers extended the question across all classes since no other examples were given. *Yi-* is also the copulative for Cl. 4, so one may be inclined to infer that if the copulative is used productively for Cl. 9, then it also is for Cl. 4. That being said, as differences in the NPx production showed, one cannot always take such seemingly predictable patterns as absolutes.

There is wide variability in the production of the Cl. 9 copulative by age. This copulative first appears at 1;9, with variable use until 2;4, after which all five children from this age and up produce it. It cannot be conclusively concluded that children above the age 2;4 consistently produce the copulative when it is necessary, though, as evidenced in the spontaneous speech data by a boy aged 3 who produces *TV* instead of *yiTV.* Interestingly, the girl aged 3;9 does not omit the copulative on any Cl. 9 nouns as she did with others, which may be suggestive of the likelihood that the Cl. 9 copulative is acquired not only earlier but also more consistently across children than the copulative of other classes.

With regard to (2), 12 children are not producing any copulative on Cl. 1 nouns, one child is reported to use the glide form of the copulative, and seven children produce the full form. This lower frequency of the Cl. 1 copulative relative to that of Cl. 9 supports the suggestion that Cl. 9 may be acquired by more children more consistently at an earlier age. The first child who is able to produce this copulative is aged 1;6, although there are children who are both older and younger than him who cannot produce it, which suggests acquisition in a non-systematic fashion in this age group. The child who produces the glide is 2, although there are four children younger than him who can already produce the full form. The eldest two (2;6) are producing the full form but the third oldest (2;5) is not. Despite the low frequency of the glide copulative in the CDI data, the fact that a caregiver admits to her child producing this form, together with the examples in the spontaneous speech data, are indicative of this being a typical instance of child speech.

Regarding the third question (3), 14 children use the Cl. 9 agreement on Cl. 5 nouns. It is unclear, however, to what extent this is evidence of an overgeneralisation of Cl. 9 agreement or an inability to produce the 'l' sound. If children are not overgeneralising but underspecifying, with the initial consonant surfacing as a glide, 'y', this would in fact indicate the appropriate Cl. 5 agreement. This phonological under-specification is backed up by evidence from spontaneous speech in which the girl aged 3;9 produced *mabeye* instead of *ngamabele* 'they are breasts' and the mispronunciations of nouns in the locative evidenced in Section 5.1.2.3. The correct agreement, or phonological form, appears at 1;9 and appears to be consistently used by the eldest three children (2;5 and 2;6). However, as evidenced by spontaneous speech data, this may not mean that all children are able to produce the appropriate form by 2;5.

5.2.3 Subject Markers

Subject markers are assessed in two different ways on the CDI, for the present tense. Subject marker use on other verb forms and use with object markers will be discussed in these respective sections. Whilst subject markers are not the primary focus in any of the questions on verb forms, the way these verb forms are used in spontaneous speech shows that some stratification in options in assessing verb forms is needed to accommodate for omitted subject markers, which is why this differentiation occurs. Nonetheless, this section should not be read in isolation to those. The first way subject marking is assessed is via a question that elicits whether the child has started using verbs in full present tense sentences in isiXhosa. It asks the caregiver the following yes/no question in grammar Section A:

- "Some children usually use words as if they are using them in a command, for example, *ngena '*enter', *khaba* 'kick', *pheka* 'cook', etc., but over time they start to speak as if they are doing the action or you are doing the action, for example, *uyangena* 'you enter', *uyakhaba* 'you kick', *uyapheka* 'you cook' etc. Has your child started to do this?"

By including the ability to produce the present tense disjunctive marker *-ya-*, this question does not only ask about subject markers, but the question nonetheless gives an initial indication of where the sample is developmentally, with regard to this grammatical item.

Half of the toddlers have started producing the full form of the present tense (i.e. with the subject marker and present tense disjunctive marker), as seen on Table 5-17. This trend of acquisition moves

largely according to age, with those who are unable to produce this form being concentrated at the bottom half of the age cohort. Whilst two children in the bottom half can produce this form, it is clear that the majority of children will acquire this around age 2, which largely corresponds to ages in the existing literature, although like NPx marking it seems to occur slightly earlier in isiXhosa.

Table 5-17 Present tense production by age, CDI data

Age (months)	No	Yes
17 [1;5]	3	0
18 [1;6]	1	1
21 [1;9]	2	0
22 [1;10]	2	0
23 [1;11]	1	1
24 [2;0]	1	0
25 [2;1]	0	1
26 [2;2]	0	1
27 [2;3]	0	1
28 [2;4]	0	2
29 [2;5]	0	1
30 [2;6]	0	2
TOTAL	**10**	**10**

The second question that assesses subject marking is in Section B of the grammar section, and as such asks the caregiver to choose the option (a, b or c – from least to most complex) that sounds most like their child's speech if their child wants to refer to something that is happening now:

a. *hamba* [n=14]
b. *yahamba* [n=5]
c. *uyahamba* [n=1]

This question allows for a more refined assessment of when the subject marker itself appears, as opposed to jointly with the present tense disjunctive marker, *-ya-*, as in Table 5-17. The frequencies of each type (see Table 5-18) indicate that caregivers probably responded 'yes' to the question represented in Table 5-17, because they had heard their child producing *-ya-* and not the subject marker, *per se*. Nonetheless, there are still four children who are reported to be able to produce the subject marker and present tense marker as per Table 5-17 than there are for this more nuanced question (ten vs. six). This evidences over reporting in the yes/no question, which is also highlighted in

Section 5.2.1 on NPx where the caregivers over reported the production of NPx for all classes except Cl. 9. It may be that caregivers misunderstand these yes/no questions or are not able to answer accurately unless stratified examples are used in which the progression of development is more easily identified.

Table 5-18 shows that the child who can reportedly produce the full form with the subject marker is aged 1;11. This is earlier than existing acquisition literature suggests, and thus is it not clear to what extent this is a misreporting. Suzman (1996) does posit, however, that because in isiZulu all singular prefixes are either *i*- or *u*- commencing, children learn a system that is "superficially more transparent" than that encountered by Sesotho-speaking children, potentially making subject marking easier to acquire for isiZulu-speaking children than for Sesotho-speaking children (in which the NPx is consonant-commencing). Even then, though, it would seem to be that more plentiful evidence would be needed than just one child to suggest if this holds true for isiXhosa as well.

It should be recalled that Suzman (1991) notes an overgeneralisation of *a*- as a cover term subject marker and suggests that this could be a contraction of the present tense disjunctive form -*ya*-. Demuth (1992) similarly suggests that the shadow vowel in Sesotho subject markers may stem from the disjunctive -*a*-. This appears to be the case in this CDI data too. Data in Table 5-18 shows that the use of *yahamba* increases slightly with age when compared to *hamba,* however, the eldest three children do not yet produce even this partial form of the present tense.

Table 5-18 Subject marker production by age, CDI data

Age (months)	hamba	yahamba	uyahamba
17 [1;5]	3	0	0
18 [1;6]	2	0	0
21 [1;9]	2	0	0
22 [1;10]	1	1	0
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	0	1	0
27 [2;3]	0	1	0
28 [2;4]	0	2	0
29 [2;5]	1	0	0
30 [2;6]	2	0	0
TOTAL	**14**	**5**	**1**

In the spontaneous speech data, there are eight instances of missing subject markers in the present tense. Of these, three occur in the form *-ya-* + verb, for example, *yangxola* instead of *uyangxola* 'you are making a noise*',* as expressed by a boy aged 2. Five children (two girls aged 2;10 and 3;9, and three boys aged 2, 2;10, and 3) omit subject makers on the verb in instances in which it was not necessary to use the present tense disjunctive *-ya-* due to an object following the verb, for example, *funa isuphu* instead of s*ifuna isuphu* 'we want soup'. This type of error thus seems to span a long age period and there exists plentiful evidence that dispels the suggestion in the literature that subject markers are acquired by the age of 2;10.

In this vein, spontaneous speech shows an instance of both the present tense marker *-ya-* and subject marker being omitted, by a boy aged 2;10. A child four-months older than the eldest child from the CDI data also periodically omits a subject marker, validating the trend in the CDI results. There are two cases in which only the present tense marker *-ya-* is omitted in cases in which it is required, namely:

- *Ndivala* instead of *ndiyavala* 'I'm closing', in which the full subject marker is present.
- *S'dlala* instead of *siyadlala* 'we are playing',[64] in which only the partial subject is present.

The latter presents an interesting case since Suzman (1991) notes a process in which subject markers such as *si-* and *li-* are contracted to *i-* in the present tense conjunctive form, emerging as overgeneralisations of the Cl. 9 subject marker *i-*. Whilst this is clearly a disjunctive form, there appears no logical reason as to why the process of subject marker 'contraction' should be different and it is thus interesting that it is the consonant and not the vowel that is retained. These mistakes are made by boys aged 2 and 3 respectively. Perhaps the older age of the boy who makes the *s'dlala* error is the reason for the retention of the consonant instead of the vowel since it is more likely that older children can produce consonant subject marker forms (see Sibanda, 2014).

In line with the existing literature, errors of incorrect subject marker agreement are rare in the spontaneous speech data. The two that present themselves are:

[64] It is inferred from the context and noted at the time that the child attempted to produce *siyadlala 'we* are playing' and not *sukudlala* 'do not play'.

- *Iyachitha Akum* instead of *uyachitha uAkum* 'Akum is spilling'.
- *Ititile* instead of *uyitshixile* 'you locked it'.

Both are produced by the same boy, aged 2. Despite the latter sentence being in the past tense, it is the mis-agreement with which I am concerned here, and why I present this example in this section instead of in the section on tense. It is debatable, though, whether *i-* is really the incorrect Cl. 9 subject marker on the front of his phonologically ill-formed verb, *titile,* or if it is a clipped form of the object marker, *-yi-* 'it'.

5.2.4 Object markers

As already mentioned, some discussion on subject markers will feed into this section, since errors observed take the form *-ya-* + OM + verb (with the subject marker missing), suggesting an earlier emergence of object markers relative to fully formed subject markers.

In the spontaneous speech data three errors of this type are made by girls aged 2;10, 3 and 3, respectively:

- *Yayikha* instead of *uyayikha* 'you are picking it'.
- *Yanditshova* instead of *uyanditshova* 'you are pushing me'.
- *Yayivala* instead of *ndiyayivala* 'I am closing it'.

There is an instance in which the object marker is present with missing disjunctive and subject markers, as produced by a girl aged 2;10:

- *Mbetha* instead of *ndiyambetha* 'I'm hitting her'.

There is also an instance in which only a nasal surfaces as the object marker for 1st person singular, 'me':

- *Uyantshova* instead of *uyanditshova* 'you are pushing me', said by the same girl as above, aged 2;10.

Two questions about object markers appear on the grammar Section B of the CDI. These were modelled off the Kenyan CDI and the errors observed in the spontaneous speech. These questions ask which of the options (a or b) most resembles the child's speech. The first question (1) tests whether the child can use the object marker in a complete adult-form sentence. Thus both present tense disjunctive and subject marking is absent in the less complex option (a). The second question (2) tests whether the child is producing object markers – thus present tense disjunctive marking is present, but the object marker is missing in the less complex example (a).

(1)

a. *nditshova*

b. *uyanditshova*

(2)

a. *ndiyathanda*

b. *ndiyakuthanda*

Tables 5-19 and 5-20 highlight the results of these two questions:

Table 5-19 Use of object markers in appropriate form by age, CDI data

Age (months)	nditshova	uyanditshova
17 [1;5]	3	0
18 [1;6]	2	0
21 [1;9]	2	0
22 [1;10]	2	0
23 [1;11]	1	1
24 [2;0]	1	0
25 [2;1]	1	0
26 [2;2]	0	1
27 [2;3]	0	1
28 [2;4]	1	1
29 [2;5]	0	1
30 [2;6]	0	2
TOTAL	**13**	**7**

Table 5-20 Object marker production by age, CDI data

Age (months)	ndiyathanda	ndiyakuthanda
17 [1;5]	3	0
18 [1;6]	2	0
21 [1;9]	2	0
22 [1;10]	2	0
23 [1;11]	1	1
24 [2;0]	1	0
25 [2;1]	1	0
26 [2;2]	0	1
27 [2;3]	0	1
28 [2;4]	2	0
29 [2;5]	0	1
30 [2;6]	0	2
TOTAL	**14**	**6**

The answers to the first question posed suggest that present tense agreement and subject marker agreement usage with object markers is largely correlated to increasing age (see Table 5-19). Although as discussed in the subject markers section, it is unclear the extent to which caregivers accurately report their child's ability to produce this form when no option for shadow marking is given. Additionally, this question does not provide much information about children's ability to produce object markers or not but is more descriptive about the presence of other morphemes in the sentence once they are already producing object markers. Moreover, is that it is not necessarily clear that the 13 children who fall into the less complex category on Table 5-19 are actually producing object markers, since caregivers may have responded with this option merely by the fact that their children cannot produce either of the forms given. Thus they may simply have picked the least complex form.

The responses to the second question posed seem to suggest that this is in fact the case, since it is clear that the youngest children are not yet producing object markers (at least definitely not the second person singular object marker as used in this question). One of the children aged 2;4 appears to be able to produce *uyanditshova* but not *ndiyakuthanda* (see Table 5-20), which may suggest that the first person singular object marker is acquired before the second person singular form. The results in Table 5-20 suggest that object markers may start appearing in isiXhosa children's speech by the age of 1;11. Object markers only consistently appear from age 2;10 in the spontaneous speech. These results are more or less in line with the existing literature which reports acquisition between ages 2 and 3, although, once again, isiXhosa data suggests a slightly earlier emergence of this morpheme.

Other inaccuracies from spontaneous speech involve a missing object marker for 'you' in a construction in which the future tense is missing too. For example, the following is produced by a boy aged 2:

- *Betha mama* instead of *uza kukubetha, umama* 'mom will hit you'.

This is in line with CDI data since although a child aged 1;11 can produce this second person object marker, children aged 2 and 2;1 in the CDI data set cannot. It is not clear to what extent the child aged 1;11 may be an exception.

There are also two instances in which the object marker, or part thereof, is missing from a command:

- *Itshaje* instead of *yitshaje* 'charge it' (the consonant 'y' of the object marker, -*yi*-, is missing).
- *Misa phezulu* instead of *yijongise phezulu* 'make it look it up' (the whole object marker, -*yi*-, is missing).

These errors are made only by the girl aged 3;9, which suggests that this level of object marker usage (i.e. with a command, in which the verb enters the subjunctive too) is likely to be too complex for the children in the relatively younger CDI toddler age group.

There is no evidence of the overgeneralisation of object markers for any class. Thus despite this data not presenting evidence that resembles Suzman's (1991, 1999) finding of the overgeneralisation of the third person Cl. 1 object marker -m- to Cls 2 and 9 at 2;2 (e.g. *yambona* instead of *uyababona* 'you see them'), the spontaneous speech examples do suggest a similar pattern of subject marker omission with object marker use.

5.2.5 Adjective markers

The only question on the CDI about adjective markers is whether or not children are producing them. This yes/no question falls under Section A of the grammar section. The CDI does not probe further into which class agreement is produced first, etc. Only three children are reported to be able to produce adjective agreement markers on the front of adjective stems at ages 1;10, 2;3, and 2;5 respectively (see Table 5-21). Existing literature suggests that adjective markers are acquired in Bantu languages between the ages of 2 and 2;6, so it is unclear the extent to which the child aged 1;10 is an outlier or if

there is once again earlier acquisition in isiXhosa. Moreover, the existing literature is silent on whether this age of acquisition is for adjective agreement for all classes or just a few. Unfortunately, the isiXhosa data cannot provide clarity in this regard. It does not seem that adjective markers will be fully acquired by all children by the age of 2;6 either, since the two children at this age are not yet producing this type of agreement.

Table 5-21 Adjective marker production by age, CDI data

Age (months)	No	Yes
17 [1;5]	3	0
18 [1;6]	2	0
21 [1;9]	2	0
22 [1;10]	1	1
23 [1;11]	1	0
24 [2;0]	1	0
25 [2;1]	1	0
26 [2;2]	1	0
27 [2;3]	0	1
28 [2;4]	2	0
29 [2;5]	0	1
30 [2;6]	2	0
TOTAL	**17**	**3**

Spontaneous speech data shows only one instance of adjective use by a boy aged 2;10 (older than the upper limit of the toddler cohort on the CDI), and thus no conclusive inferences regarding children's ability to produce adjective agreement can be drawn from this data either. Moreover, although he attempts to produce agreement, he does so incorrectly using a non-existent form in adult speech. The child's error appeared in the form *yimdaka* instead of *zimdaka* 'they are dirty'. Interestingly, a glide is present, suggesting an acquisition strategy potentially similar to that of the copulative, in that if phonologically tricky consonants are to be produced, they will surface as glides. Alternatively, he could be using a strategy in which he equates adjective agreement to copulative or object marker forms, and overgeneralises the Cl. 9 copulative or object marker, to the Cl. 10 agreement. Adjective markers thus appear to be unproductively used by toddlers and may not be a useful grammatical item to consider for this age group when assessing how advanced or delayed a child is communicatively.

5.2.6 Possessive markers

The possessive markers considered on the CDI are those for Cls 9 and 4: *ya-*; Cls 1, 1a, and 3: *wa-*; and Cl. 5: *la-*. The possessive stems under consideration are *-m* 'my', *-kho* 'your', *-inu* 'your (pl)', *-bo* 'their', and *-ithu* 'our'. These possessives are tested in the lexical/word Section A of the CDI, in which the ability to produce, for example, 'my' is asked with synonyms to capture different agreement with various noun classes, for example, *yam, wam,* and *lam.* I first present results on the ability to produce the lexical items 'my', 'your' (singular [s] and plural [pl]), 'their', and 'our' regardless of noun class (Table 5-22), and then consider the frequency of production by class (Table 5-23). Note that the frequencies in Table 5-23 will not add up to the figures presented in Table 5-22, since children can know more than one class's form.

Table 5-22 Production of possessives, CDI data

my	your (s)	your (pl)	their	our
16	11	2	5	2

Table 5-22 highlights a very low frequency of 'our' and 'your (pl)' potentially due to the fact that since they are *i*-commencing, a sound change is necessitated when the *-a-* of the possessive marker meets it, for example, *wa-* + *-ithu = wethu.* It could be that this confuses children to the extent that 'your (pl)' and 'our' are omitted from their speech. The two children who are reported to produce 'our' and 'your (pl)' are aged at the upper end of the distribution, being 2;3 and 2;5 respectively. Because of this low frequency for 'our' and 'your (pl)', only frequencies of 'my', 'your (s)', and 'their' are presented by noun class in Table 5-23 below.

Table 5-23 Production of possessive markers by class, CDI data

yam	wam	lam	yakho	wakho	lakho	yabo	wabo	labo
PM9 PM4	PM1 PM1a PM3	PM5	PM9 PM4	PM1 PM1a PM3	PM5	PM9 PM4	PM1 PM1a PM3	PM5
16	14	7	11	7	4	4	2	5

Interestingly, all 16 children who produce 'my', do so with the possessive marker *ya-* (compare Table 5-22 and 5-23). Table 5-23 also shows that the majority (14 children) also do so with *wa-*. This is since, according to Suzman (1991), children may start off with a binary understanding of noun classes,

particularly Cls 9 and 1/1a. Fewer children are reported to be able to say 'your (s)' than 'my', however, all of the instances of 'your (s)' (11 in Table 5-22) can be produced using the Cl. 9 possessive marker *ya-.* Table 5-23 also shows that similarly to 'my', fewer children use the possessive concord *wa-* on 'your (s)', with even fewer using *la-.* In contrast, though, *la-* is the most commonly used possessive marker with the stem *-bo* 'their'. In spite of this *yabo* and *wabo* follow the same trend as 'my' and 'your', with *ya-* being more frequently used than *wa-* on the possessive stem *-bo.* This observation suggests that perhaps there is some commonly occurring Cl. 5 noun that children use or hear that frequently occurs with 'their'.

Children are reported to produce *yam, wam,* and *lam* as young as 1;5. There is no child who is able to produce *lam,* without producing *yam* and *wam* first, suggesting this is acquired after the agreement for Cls 4 and 9 and Cls 1, 1a, and 3. in most children's speech. All three forms are used by the eldest three children from 2;5.

Yakho is first reported at a later age than *yam,* at 1;9, but similarly produced by the eldest three children. *Wakho* appears at the same age *yakho* although the third oldest at 2;5 does not produce this form. *Lakho* also appears at 1;9 and is not reported to be produced by the eldest two at 2;6. Children do not produce *lakho* without also producing *yakho.* An alternative hypothesis for the higher production of *ya-* compared to *la-* is once again that some children may not yet have acquired the consonant 'l' in their speech (Demuth, 1988). However, there are no instances of agreement errors for possessives in the spontaneous speech data (i.e. *ya-* used with a Cl. 5 noun) thus this seems less likely for this grammatical item. These results once again highlight the earlier emergence of this morpheme in isiXhosa, when compared to other Bantu languages for which acquisition is described. Suzman (1991) does indicate that they appear before the age of 2, although she is not specific. Data does suggest, however, while emergence is early, they are not acquired by all toddlers as defined for the CDI.

Spontaneous speech data (see Table 5-24 below) shows no instances of the possessive marker *la-*. Table 5-24 also shows that *yam* is produced a total of nine times; *wam,* a total of three; and *wakho* and *yakho,* a total of four and one times respectively. The high frequency of *yam* is to be expected and corroborates findings from the CDI (see Table 5-23).

Zam, the possessive 'my' for Cls 8 and 10, appears once in spontaneous speech data. This is not a form considered on the CDI. Since this from is produced by a boy aged 2;10, above the upper limit for toddlers as per the CDI definition, this form is not included on the CDI.

Table 5-24 Production of possessive markers by class, spontaneous speech data

yam	wam	lam	yakho	wakho	lakho	yabo	wabo	labo	zam
PM9 PM4	PM1 PM1a PM3	PM5	PM9 PM4	PM1 PM1a PM3	PM5	PM9 PM4	PM1 PM1a PM3	PM5	PM8 PM10
9	3	0	1	4	0	0	0	0	1

Considering the older ages of the children recorded in the spontaneous speech data, the lack of the possessive marker for Cl. 5 is surprising. However, it may just be that no nouns in Cl. 5 were referred to in this way during the recording slot. A closer examination of the frequency of words shows this is likely to be the case.

5.2.7 Possessive pronouns

As alluded to in Table 2-1 in Section 2.4.2, possessive pronouns are constructed in a similar manner to possessives, however, since they can be used without the noun that they are referring to, they form an agreement with that noun on the front of the possessive, which is equivalent to a + the first vowel of the NPx – compare: my ball (my = possessive) to mine (possessive pronoun). Despite being a morphologically more complex form than possessives, possessive pronouns are nonetheless asked as a single lexical item on the CDI since they correspond to a single lexical item in English. Thus in the 'Words' section of the CDI, the ability to produce, for example, 'mine' is asked with synonyms to capture different agreement with various noun classes, for example, *eyam, owam,* and *elam.* Results are thus once again split firstly according to the production of the lexical item 'mine', 'yours', 'his/hers', and 'ours'; and secondly, according to noun class for each of the items respectively. Tables 5-25 and 5-26 below summarise the findings of the CDI.

Table 5-25 Production of possessive pronouns, CDI data

mine	yours	his/hers	ours
17	14	6	2

Table 5-26 Production of possessive pronouns by class, CDI data

eyam	owam	elam	eyakho	owakho	elakho	eyakhe	owakhe	elakhe	eyethu	owethu	elethu
16	6	7	14	1	3	6	0	0	2	0	0

The sound-change related reasons discussed in the section above, may once again explain the low frequency of 'ours' (see Table 5-25). The highest frequency, being the production of the first person possessive pronoun, resembles that of the results in the previous section where 'my' was produced most frequently (see Table 5-22). However, it is interesting that 'mine' is produced by one more child than 'my' (compare tables 5-25 and 5-22). Although it would appear as if the possessive pronoun is morphologically more complex due to the necessity of the link being provided with the noun it refers to, it could be that children produce 'mine' more than 'my' since they do not need to necessarily have acquired the specific lexical item which they are referring to. This means they can automatically place it in a generalised class (here, due to the frequency, probably Cl. 9) saying 'mine', perhaps accompanied with a gesture. As mentioned in Section 2.5.2.1, Suzman (1991: 48) notes how children may create such 'morphological paradigms' around frequently occurring classes. That being said, the frequency of 16 for *eyam* is the same as for *yam* (compare tables 5-26 and 5-23), which points to the fact that it is used at least as consistently. Perhaps the vowel on the front is not even coded as a grammatical construction by the toddler, as observed with locative nouns forms. The same reasoning can explain the higher frequency of *eyakho* relative to *yakho* (14 vs. 11) in the previous section (compare tables 5-26 and 5-23).

The higher frequency of *elam* compared to *owam,* and *elakho* compared to *owakho* in Table 5-26, although marginal, may suggest that the rule for creating possessive pronouns is more easily acquired for *i-* commencing nouns (i.e. *e-* commencing possessive pronouns) since, given previous trends observed in connection with possessives and also looking at results from prior scholarship, it is unlikely that there is a higher frequency of Cl. 5 nouns in children's speech relative to Cls 1, 1a and 3 (for which *owa+*stem would occur).

The isiXhosa equivalent of 'mine' is produced by children from age 1;5. All three forms seemingly appear at this age. 'Yours', in the form of *eyakho,* first appears at 1;6 and is consistently used by all children older than 2. *Elakho* is only produced by the eldest three children (aged 2;5 and 2;6) and *owakho* is only produced by the third eldest child aged 2;5. This provides strong evidence for the later acquisition of agreement other than Cl. 9 on possessive pronouns when the second person singular is

the possessor. 'His/hers' (exclusively *eyakhe*) is used by all six children after the age of 2;1, with the exception of one of the children aged 2;4. 'Ours' (exclusively *eyethu*) is used by children aged 2;3 and 2;4, but not by the eldest three, suggesting that 'ours' is not yet acquired consistently across children at the upper end of the toddler cohort.

The fact that Table 5-26 shows *eyakhe* is the only form produced of those given for 'his/hers' and *eyethu* is the only form of those given for 'ours' once again serves to confirm the salience of Cl. 9 agreement in children's speech (spontaneous speech frequencies suggest that it is unlikely to be Cl. 4). Despite not seeming to be a potential reason for the high frequency of Cl. 9 agreement relative to Cl. 5 agreement with possessives, the same pattern observed here, however, nonetheless begs the question as to whether an under specification of the 'l' sound may be the case for possessive pronouns when a vowel sound (*e*) now occurs before the consonant (*l*). Spontaneous speech data cancels out this conjecture, showing two instances where a boy aged 2 actually produced the Cl. 5 agreement instead of the Cl. 9 agreement (*elam* instead of *yeyam* and *lelethu* instead of *yeyethu*). This is in line with phonological errors often made by English children when they underspecify 'yellow' as 'lellow'.

This variability in the acquisition of the possessive pronoun is suggestive of the fact that whilst children are clearly in the process of acquiring these forms in the toddler age group, they have by no means consistently mastered this form.

5.2.7.1 Possessive pronouns with identificative copulatives

Possessive pronouns can be used with copulatives in order to indicate 'it is mine', 'it is yours' etc. In order to do so, the consonant of the copulative of the class in which the noun being referenced falls into is prefixed to the front of the possessive pronoun. For example:

- *Eyam* 'mine' (referring to a noun in Cl. 9, e.g. *ibhola*) → *Yeyam* 'it is mine' (where the initial 'y' is the consonant of the Cl. 9 copulative, *yi*-).

Yeyam is produced 14 times in spontaneous speech, *yeyakho* twice and *yeyethu* once. No other agreements feature. There were additionally eight instances in which the appropriate full adult form would have been to use the possessive pronoun with the copulative concord in the form *yeyam*. A boy aged 2 did not do so all eight times. This same child similarly did not produce the copulative concord on *eyakho* in one instance. This is the same boy who mistakenly produced the 'l' sound instead of the

'y' sound mentioned earlier. It is thus unclear whether he is an outlier with regard to potential speech delay or if these types of errors are common across isiXhosa speaking children at this age. Another boy, aged 2;10, produced *yakho* instead of *yeyakho*, suggesting the latter may be the case.

Despite displaying as a single 'word' in isiXhosa, this item is not listed as a lexical item on the CDI since in English, it comprises three separate words 'it is mine'. After observing the high frequency of possessive pronouns and possessive pronouns with copulatives in children's spontaneous speech, it was decided to include these items as a question under Section D of the grammar section of the CDI, which tests grammatical complexity of children's sentences. The answers provided by caregivers are based on what sounds closest to what their child can say.The options that the caregivers are given to select which sounds most like their child's speech are (from least to most complex):

a. *imoto yam* [n=9]
b. *eyam imoto* [n=0]
c. *yeyam imoto le* [n=3]

Of the 12 children who are combining words into sentences (and who thus complete this section), the two youngest are from the lowest ages in the cohort, namely 1;5. However, they cannot produce the second and third option. Children aged 1;10, 1;11, and 1;4 produce the third option, but those children towards the upper end (i.e. the oldest at 2;5 and 2;6) still only produce the least complex form.

5.2.8 Locative positions (prepositions)

The only question that the CDI provides with regard to locative positions is whether the child attempts to use a preposition in an incomplete form, a full form, or a partial form. This question is in Section D of the 'Sentences and Grammar' component of the CDI.

The options, from least to most complex, take the form:

a. *ibhola tafile* [n=4]
b. *ibhola phezu kwetafile* [n=8]
c. *ibhola iphezu kwetafile* [n=0]

Of the 12 children who are combining words, four can only produce the least complex form given, in which no preposition is present and neither is the subject marker. The other eight can only produce the second option, in which the preposition is used but subject marking is absent. No children are able to use the full adult form of the preposition with the subject marker present. Of the eight children who produce the partial form, the youngest is 1;9 and the eldest 2;6. This suggests that throughout the toddler age cohort, the full form of the preposition is not yet acquired, pointing to the fact that it must be acquired at some age after 2;6. The use of the form with the missing subject marker is variable throughout the age group.

On the 'Words' section of the CDI, prepositions are asked in isolated form, with separate line items given for *phandle* and *phandle kwa-,* depending on which fitted the English translation more appropriately. The findings of this 'Words' section corroborate those of the grammar section, in that very few children are reported to produce firstly, the preposition and secondly, even fewer the preposition + *kwa-*. Children are observed in the spontaneous speech data to know lexical items for prepositions, for example, *phandle,* but these are used in a correct but grammatically non-complex manner, for example, verb + preposition: *sihlala phandle?* 'must we sit outside?'. Note the use of the preposition is correct, however, the use of the subjunctive mood on the verb is missing. The subjunctive is discussed in Section 5.2.11.

5.2.9 Demonstratives

Demonstratives denote 'this/these' (1DEM) 'that/those' (2DEM), and 'over there' (3DEM). They are asked in the 'Words' section of the CDI. Table 5-27 below shows the number of children in the toddler cohort who could produce the first, second and third position of the demonstratives respectively, with first positions produced most frequently and third position the least. Table 5-28 provides a more nuanced analysis by frequency of the type of demonstrative produced. Note that the frequencies in Table 5-28 will not add up to the figures presented in Table 5-27 since children can know more than one class's form.

Table 5-27 Production of demonstratives per position, CDI data

1DEM	2DEM	3DEM
14	7	5

Table 5-28 Production of demonstratives by class and position, CDI data

le	ezi	eli	lo	loo	ezo	laa	ezaa
1DEM9 1DEM4	1DEM10 1DEM8	1DEM5	1DEM1 1 DEM1a	2DEM for all classes with a nasal in the NPx (except Cl. 10)	2DEM10 2DEM8	3DEM for all classes with a nasal in the NPx (except Cl. 10)	3DEM10 3DEM8
9	**9**	**3**	**10**	**4**	**3**	**5**	**5**

Table 5-28 shows that within first position demonstratives, the demonstrative for Cls 1 and 1a are most well-known, followed closely by those for singular-plural pair Cls 9 and 10. This corresponds to Suzman's (1991, 1996) suggestion that children favour these classes. Alternatively, all three of these forms are demonstratives for more than one class, whereas the Cl. 5 demonstrative does not agree with any other class, perhaps signifying that children are exposed to demonstratives in this class less.

Results on the second position demonstrative suggest a weak favouring of *loo,* probably due to its widespread use across classes which are classified as 'weak' (classes having a nasal in their prefix, with the exception of Cl.10). The figures for these forms add up to the total second position demonstrative known (see Table 5-27), implying that the children in this sample produce only *loo* or *ezo*, and not both. On the other hand, children who produce third position demonstratives produced both forms. Five out of the seven children who produce the second position demonstrative, also produced the third position. It is interesting to observe that they thus knew both forms in the third position, but only one in the second. Despite the lower frequency of the third position overall, this suggests that children may favour the third position for reasons which are not clear.

When the distribution is considered by age, seven of the reported 14 first position demonstratives (not divided by noun class) are produced by the lower half of the age cohort (younger than 23.5 months), and the remaining seven are produced by the elder half. Closer inspection shows that they are likely to first be acquired around the age of 1;5. This is significantly younger than reported in the existing literature. However, the next child who can produce a fist position demonstrative is 4 months older than this. The eldest three children of 2;5 and 2;6 (the upper limit of the toddler cohort) are all producing the first position demonstrative, but a larger sample size would be needed to see if this is indicative that they are consistently produced by children after the age of 2;4. It is important that this, however, does not imply that children can produce the first position demonstrative for *all* classes, and in fact the eldest two children are not able to produce the *le, ezi* or *eli.*

Of the seven children who could produce the second position demonstrative, three fall into the younger half of the age cohort and four in the elder half. Again, one of the youngest three children is able to produce this at 1;5 indicating the acquisition occurs at or before this age. This is the same child who produces the first position, and who can, in fact, also produce the third position. It remains unclear to what extent this child is an outlier, especially since the next child who can produce this form is 5 months older at age 1;10. Interestingly, there are no children who produce the second position demonstrative without producing the first position. The eldest three once again also produce the second position, but are not able to produce both forms (*loo* and *ezo)*. Whilst this might suggest that second position demonstratives are operational in children's speech by this age, they are not productively used for all classes.

The third position demonstrative is produced, as mentioned, by one of the youngest three children aged 1;5, but once more the next child to produce it is aged 1;10. The eldest two in the age cohort are not reported to produce this position, pointing towards variability in the production of this position in the toddler cohort.

Table 5.29 below depicts the frequency of demonstrative forms in the spontaneous speech samples. The frequencies do not dispel the evidence in Table 5-28 above, since it may be that the children simply did not refer to something in the third or second position for the hour that they were recorded, but it does not mean that their caregivers have not heard them produce it. It does corroborate the strong presence of the first position demonstrative, Cl. 9 agreement *le*, however, which is to be expected based on the results of prior literature.

Table 5-29 Production of demonstratives by class and position, spontaneous speech data

le	**ezi**	**eli**	**lo**	**loo**	**ezo**	**laa**	**ezaa**
1DEM9/ 1DEM4	1DEM10/ 1DEM8	1DEM5	1DEM1 1DEM1a	2DEM for all classes with a nasal in the NPx (except Cl. 10)	2DEM10 2DEM8	3DEM for all classes with a nasal in the NPx (except Cl. 10)	3DEM10 3DEM8
13	**1**	**0**	**1**	**0**	**0**	**0**	**0**

There is one demonstrative agreement error observed in the spontaneous speech. A boy aged 2;10 (the same one who made the agreement error in adjective marking) produces *ziitships zam le* instead of *ziitships zam ezi* 'There are my chips'. The construction is advanced with regard to his use of the

correct Cl. 10 copulative agreement, suggesting Cl. 10 copulative agreement, as well as the use of the correct Cl. 10 possessive marker, is manifesting around this age. He uses the Cl. 9 first position demonstrative instead of the Cl. 10, however. This mistake is consistent with findings that the eldest two children in the CDI cohort also cannot yet produce *ezi.*

5.2.10 Presentative demonstratives

The three types of presentative demonstratives (presentatives from here) are:

- The first position: *nantsi* (Cl. 9) and *nanku* (Cls 1 and 1a) 'here is/are…'.
- The second position: *nanko* (Cls 1 and 1a) 'there it/they is/are'.
- The third position: *nantsiya* (Cl. 9) 'there it/they is/are over there'

The trend observed in Table 5-30 below highlights a weak favouring of Cl. 1 agreement. Recent research on concordial flux of Cl. 3 (Dowling, Deyi and Whitelaw, 2017) shows that isiXhosa-speaking youth are using *nanku* for Cl. 3 nouns, despite the 'standard' being *nangu.* Although Suzman (1991) and Zawada and Ngcobo (2008) state that Cl. 3 nouns are poorly presented in children's speech, it could be that *nanku* is increasingly becoming a frequent construction in speech input due to this phenomenon. Two of the children who produce the second position *nanko* do not produce the first position *nanku*; and two of the children who produce the third position *nantsiya* do not produce the first position *nantsi*.

Table 5-30 Presentative demonstrative production by type and class, CDI data

nantsi	nanku	nantsiya	nanko
11	12	5	6

It is important to note that three of the cases (exactly half) of the second position *nanko*, were actually reported by caregivers as *nankuya*. This suggests that the second position presentative is likely to be less frequently used than the third.

Considering the distribution by age in more detail, *nantsi* first emerges at the age of 1;9. It is used relatively consistently from this age, with the exception of three children aged 1;10, 1;11 and 2, and surprisingly, one of the eldest children aged 2;6. *Nanku* emerges at the same age, and displays a very similar trend, except that the eldest child does produces this form, and a child aged 2;4 does not. These

results suggest that children in this age cohort are still in the process of acquiring productive presentative use, although it is unlikely that this first position presentative is acquired before 1;9. *Nantsiya* emerges at 1;5, but the eldest two children at 2;6 are reported not to produce this. *Nanko* appears at 1;6, yet once again the eldest two do not produce it. Thus despite the relatively earlier emergence of the second and third position presentative, it similarly appears that children in this age cohort are very much still in the process acquiring this item.

Table 5-31 below presents frequencies from the spontaneous speech data. Results corroborate findings regarding the higher frequency of *nantsi* to *nantsiya*.

Table 5-31 Presentative demonstrative production, spontaneous speech data

nantsi	**nanku**	**nantsiya**	**nanko**
8	0	2	2

5.2.11 Verb forms

5.2.11.1 Negation

In the spontaneous speech, only two errors are observed with regard to present tense indicative negation, namely:

- A missing negative subject marker by a boy aged 3: *funi* instead of *andifuni* 'I don't want'.
- A missing subject marker and negative suffix by a boy aged 2: *fun' ithula* instead of *andifuni ithule* 'I don't want it to stop making a noise'.

This suggests that the negative suffix on the verb could be acquired with age and before the negative subjective marker.

One of the questions on the CDI regarding negation is about the negative indicative and is modelled on the former example. Responses show that 50% of toddlers produce the negative subject marker, but the other 50% do not. The distribution, however, does not correlate with age: a child at 1;8 produces the full form, but children aged 2 and 2;1 are not able to. Interestingly, the eldest five children (2;4, 2;5, and 2;6) all produce the full form, but spontaneous speech data suggests that this may not be a reality for all children, even by the age of 3.

The other question on the CDI regarding negation is about the negative imperative. Certain literature (e.g. Chimombo and Mtenje, 1989) suggests that children produce this negative tonally only, and this was commonly observed during our spontaneous speech data collection. Often, we would ask the mother to repeat what their child had said, and in certain instances mothers would respond *sukuhamba* 'don't go' when we could very clearly hear the child only producing *hamba* as it played with its mates and begged a brother not to go. Not only does this provide interesting evidence with regard to child acquisition of Bantu grammar (specifically regarding tone), but it also suggests that parents and caregivers are in tune with the language produced by their children. Possible reporting issues described in previous sections thus may be more to do with ability to recall certain forms, than with recognising them as they occur. Alternatively, the contradictory responses on the caregivers' behalf may point more towards unsatisfactory wording or phrasing of the questions on the CDI and the options given, than to the caregivers' inability to accurately relate their child's speech. This points to the need to refine the isiXhosa CDI before the second pilot.

CDI data shows that 14 children do not produce the negative prefix *suku-* on negative imperatives, and six do. The eldest three children (2;5 and 2;6) are able to produce the full form, suggesting later acquisition of this form, however, three children aged 1;9 and 1;10 are also able to do this. It may be that these three children are outliers or that their caregivers misinterpreted the instruction "which sounds most like your child's speech now" and reported what they attempt to say. If this is indeed the case, then these results exactly mirror those of Chimombo and Mtenje (1989) in Chichewa. If these younger children can indeed produce these forms, then this is suggestive of earlier acquisition of negative imperatives in isiXhosa, especially since the previous discussions of grammar items has not revealed that these three children are particularly advanced for their age with regard to other grammatical forms. Interestingly, five out of the six children who produce these forms are girls.

5.2.11.2 Tense

Recent past tense/perfect tense:

The CDI has three questions about the perfect tense. The first is a yes/no question from Section A of the grammar section of the CDI, which asks whether the child has started to speak about events in the past:

- "When we want to talk about something which has happened, we change the sound '*a*' to be '*-ile*', for example, *ndiyahamba* →*ndihambile* 'I went'. Has your child started to do this?"

The second appears on Section B of the grammar section and considers the disjunctive form. It asks which of the following three options (a, b or c – from least to most complex) sounds most like the child's speech when they want to talk about something which has happened:

a. *khabi*
b. *khabile*
c. *ndikhabile* 'I kicked'

Where (a) misses the full perfect tense disjunctive suffix *-ile* and the subject marker, (b) misses the subject marker only, and (c) is the full form.

The third and final question, also on Section B of the grammar section, is with regard to the perfect tense conjunctive and assesses whether this form is overgeneralised to cases in which the disjunctive should be used.

Spontaneous speech shows four instances of option (b) from the second question type above, with the first being made by a boy aged 3, and the remaining three all made by a boy aged 2:

- *Gqibile* vs. *ndigqibile* 'I'm finished'.
- *Tatile* vs. *ndithathile* 'I took'.
- *Phelile* vs. *iphelile* 'it's finished'.
- *Hambiyi* vs. *ihambile* 'it's gone' (error made twice).

It appears this latter boy has difficulty with the 'l' sound, sometimes producing it correctly, other times producing it as an 'y'. This is the same boy who uses 'l' when he should use 'y' for possessive pronouns. There is one instance in which he produces the form of option (a) from the second question above, suggesting that although it may appear that the suffix *-ile* is largely acquired by the age of 2, it is not wholly consistent.

Results of the first question in Table 5-32 below show that 13 caregivers reported that their child does not yet speak about events in the past, whilst seven do. One of the youngest children aged 1;5 does, whilst the eldest two do not. Results of the second question (Table 5-33) should theoretically mirror these, although they are likely to differ based on whether caregivers mentally code being able to

produce a partial perfect tense as being able to speak about past events or not. Results of this question (Table 5-33) show interesting trends with regard to age and the various forms produced.

Table 5-32 Perfect tense production, CDI data

Age (months)	No	Yes
17 [1;5]	2	1
18 [1;6]	2	0
21 [1;9]	1	1
22 [1;10]	1	1
23 [1;11]	2	0
24 [2;0]	0	1
25 [2;1]	1	0
26 [2;2]	1	0
27 [2;3]	0	1
28 [2;4]	1	1
29 [2;5]	0	1
30 [2;6]	2	0
TOTAL	**13**	**7**

Table 5-33 Perfect tense production by form, CDI data

Age (months)	khabi	khabile	ndikhabile
17 [1;5]	3	0	0
18 [1;6]	1	1	0
21 [1;9]	0	2	0
22 [1;10]	1	1	0
23 [1;11]	1	1	0
24 [2;0]	0	1	0
25 [2;1]	1	0	0
26 [2;2]	0	1	0
27 [2;3]	0	1	0
28 [2;4]	1	0	1
29 [2;5]	0	0	1
30 [2;6]	0	1	1
TOTAL	**8**	**9**	**3**

Firstly, comparing results to the first and second CDI questions in tables 5-32 and 5-33, it is apparent that the caregiver of the child aged 1;5 who answered 'yes' to the first question, was basing it off a very incomplete form produced by the child. Upon further analysis, she is once again the most educated mother, so it is not likely that misreporting is due to low maternal education in this instance. There is evidence in Table 5-33 that other caregivers answered 'yes' in Table 5-32 when their child

produces the perfect tense suffix only, option (b), *-khabile* (e.g. the child aged 2;3), whilst others reported 'no' if their child is not producing the complete full form, which includes subject marking (e.g. the children aged 1;11 – compare tables 5-32 and 5-33). It thus appears that children may indeed attempt to use this form as early as 1;5, although in a very incomplete way (e.g. *khabi*), and the full form of the suffix, *ile-*, is likely to emerge around the age of 1;6. The perfect tense, in a completely grammatically appropriate form, is acquired around the age of 2;4 in isiXhosa, although not by all children at this age

The CDI data regarding the third question shows that the conjunctive is inappropriately used in place of the disjunctive by 13 of the children. There is no clear trend with regard to age for this type of error, although the eldest three children (2;5; and 2;6) do not appear to make it (but neither does a child as young as 1;9). Lastly, although a girl as old as 3;9 from the spontaneous speech sample produces an overgeneralised conjunctive form, it appears she may have been confused by her subject postponement: *ulahleke umntwana* instead of *ulahlekile umntwana* 'the child is lost'.

Future tense

The CDI asks caregivers to state which of the following forms of the future tense, from least to most complex, sounds most like their child's speech:

a. *hlala apha*
b. *wohlala apha*
c. *ndizohlala apha* 'I will sit here'

where (a) has no future marking, (b) has a partial form of the future tense as observed in spontaneous speech but with no subject marking, and (c) is the full form.[65]

The spontaneous speech reveals three cases in which both subject marking and future marking is missing as in (a), and two instances in which there is partial future marking but no subject marking as in (b). The former is exclusively made by a girl aged 2;10, whilst the latter is expressed by a boy aged 2 and a girl aged 2;10. This suggests that the future is unlikely to be consistently used in its full form even by 2;10.

[65] By full form, I mean full form as tested on the CDI. As acknowledged earlier, this is in fact a contraction of the future formative in isiXhosa, *-za ku-*.

Table 5-34 below highlights that from the CDI data, the majority of the toddler cohort is not using any future marking (15 in total), whilst four are, and one produces a partial form. It is not clear, however, whether the form of this partial option (e.g. -*wo*-) prevented caregivers from choosing this option if their child used a slightly different partial form, for example, -*wa*- or -*za*-. In this case, they may have picked the least complex option instead. Results suggest that the future acquisition is relatively delayed compared to the other verb forms already discussed, with the eldest two children not producing any future form at 2;6, although some younger children are able to do so.

Table 5-34 Future tense production by form, CDI data

Age (months)	hlala apha	wohlala apaha	ndizohlala apha
17 [1;5]	3	0	0
18 [1;6]	2	0	0
21 [1;9]	0	0	2
22 [1;10]	2	0	0
23 [1;11]	1	0	1
24 [2;0]	1	0	0
25 [2;1]	1	0	0
26 [2;2]	0	1	0
27 [2;3]	1	0	0
28 [2;4]	2	0	0
29 [2;5]	0	0	1
30 [2;6]	2	0	0
TOTAL	**15**	**1**	**4**

There are six instances in the spontaneous speech data (all from the boy aged 2 who made the perfect tense errors in the previous section) of the future tense used without a subject marker, for example, *zobethwa* instead of *uzobethwa* 'you will be hit'. There are two cases in spontaneous speech in which a subject marker is used but the future tense is missing, said by two boys aged 2 and 3, for example, *sibethwa ngumama* instead of s*iza kubethwa ngumama* (or *sizobethwa*) 'we will be hit my mom'. Findings on tense are broadly in line with findings in the existing literature, although like other isiXhosa grammatical forms, tense shows relatively early emergence.

5.2.11.3 Mood

The only mood tested on the CDI and noted as containing errors in spontaneous speech is the subjunctive mood. The spontaneous speech sample shows three instances in which the subjunctive is in fact correctly used but subject marking is missing, for example, *dlale phandle* instead of *sidlale*

phandle 'we must play outside' (all instances by a boy aged 2 who made the tense and negation errors)[66] . It also shows two instances in which both subject marking and the subjunctive form is missing, for example, *bhala inkomo?* instead of *ndibhale inkomo?* 'must I draw a cow?' (by two boys aged 2 and 2;10). The majority of subjunctive errors occur, when the subject marker is present but the subjunctive is not, for example, *sihlala phandle* instead of *sihlale phandle* 'we must sit outside'. There are four such errors by boys aged 2 and 2;10, with three out of the four being made by the boy aged 2.

In summary:

- Missing subject marker but subjunctive present [n=3].
- Missing subject marker and subjunctive [n=2].
- Subject marker present but subjunctive missing [n=4].

The CDI has one question on the subjunctive mood. The CDI question considers whether the subjunctive is produced when it should be. It is modelled off the form in which the majority of the spontaneous speech errors occurred, namely: subject marker present but subjunctive missing. The CDI data shows that 18 of the 20 children do not produce the subjunctive form. Interestingly, the two children that produce it appropriately are relatively young, aged 1;5 and 1;11. Since spontaneous speech shows appropriate usage of the subjunctive, albeit without subject marking, by a similarly young child (aged 2) one cannot necessarily attribute these observations to reporting errors. These findings suggest that for some children subjunctive use may appear early, but for the majority of children acquisition seems likely to occur sometime after the age of 2;6 (the upper limit of the CDI toddler cohort) and may not even be in place for all children by age 2;10, as evidenced in the spontaneous speech data.

As mentioned in the section on subject markers, that section should not be read in isolation to this one since even whilst children are acquiring verb forms it is evident that they omit subject markers. Across all tenses and verb forms, the spontaneous speech shows 35 instances of missing subject marking. Not only does this suggest that this is a common acquisitional trait of isiXhosa-speaking children, but it

[66] The reoccurring errors of different types made by this boy do not necessarily mean the others do not make them, but they could simply allude to the fact that this boy is more talkative, or at least he happened to be during the time that we were present.

suggests that multiple tenses are being acquired at the same time, and one tense does not necessarily appear in its full form before another is acquired.

5.2.12 Section summary:

The following table (Table 5-35) provides summarised information on the results from Section 5.2 on grammatical acquisition, and it facilitates comparison between ages of acquisition in Bantu from existing literature and ages of acquisition found in this study. Table 5-35 is created from a replication and simplification of Table 2-1 (Acquisition of relevant grammatical items in Bantu languages) with the addition of a column 'Age of acquisition (this study)'. This column gives the age at which each grammatical item first appears in the data (unless there is also evidence regarding when acquisition is complete), with the aim of simplifying comparisons. It must be cautioned, however, that this is not a comprehensive overview and the discussion on each item in the sections above includes important information on the plausibility/potential reporting errors of these ages, how acquisition is spread across different classes (i.e. possessive markers first appearing at age 1;5 may only be for one type and one class) and phonological errors. It is thus imperative for any reader only seeking a summary, that this table be read in conjunction with discussions.

Table 5-35 Summary and comparison of ages of acquisition from existing literature and this study

Grammatical item	Age of acquisition (existing literature)	Age of acquisition (this study)
Noun classes	Cl. 1a: before 2 Cl. 2a: no data Cl. 1: before 2 Cl. 2: between 2 and 2;6 Cl. 3: poorly represented in children's speech Cl. 4: poorly represented in children's speech Cl. 5: before 2 Cl. 6: between 2 and 2;6 Cl. 7: by age 3 Cl. 8: between 2 and 2;6 Cl. 9: before 2 Cl. 10: between 2 and 2;6 Cl. 11: poorly represented in children's speech Cl. 14: poorly represented in children's speech Cl. 15: poorly represented in children's speech (Sources: Suzman, 1991, 1999)	Cl. 1a: no data Cl. 2a: no data Cl. 1: shadow marking appearing at 1;5 and full marking appearing at 1;10 Cl. 2: shadow marking appearing at 1;10 and full marking appearing at 1;11 Cl. 3: shadow marking appearing at 1;9 and full marking appearing at 1;11 Cl. 4: fully marked by child aged 1;5 Cl. 5: fully marked by child aged 1;5 Cl. 6: fully marked by child aged 1;11 (no children produced a partial form before this age) Cl. 7: shadow marking appearing at 1;9 and full marking appearing at 1;10 Cl. 8: no data Cl. 9: fully marked by a child aged 1;5 Cl. 10: fully marked by child aged 1;11 (no children produced a partial form before this age) Cl. 11: no data Cl. 14: no data Cl. 15 no data
Noun Prefixes (NPx)	Overlapping stages of NPx development between the ages of 2 and 3: 1. no prefixes, *e.g. twana* 2. shadow vowels and nasal prefixes, *e.g. mntwana* 3. full and correct NPx, *e.g. umntwana* 'child'. (Sources: Kunene, 1979; Connelly, 1984; Tsonope, 1987; Suzman, 1991, 1996; Tsonope, 1993; Demuth, 2003; Idiata, 2005; Sibanda 2014)	Overlapping stages from the age of 1;5 upwards but not likely to be fully in place even by the age of 3.
Identificative copulative prefixes (COPs)	The copulative in Sesotho appears at 2;6 (Demuth, 2003) but the Sesotho copulative is much less complex than in isiXhosa, not being in agreement with the noun as it is in isiXhosa.	First appear appropriately marked at 1;9.
Subject Markers (SMs)	Similar overlapping stages to the acquisition of NPx between the ages of 2;4 and 2;10: 1. no marking, *e.g. funa* 'want' 2. shadow vowel (usually *a* or *i* in place of the first person subject marker), *e.g. afuna* 3. well-formed morphemes, *e.g. ndiyafuna* 'I want'	Overlapping stages between 1;11 and 2;10

	(Sources: Kunene, 1979; Connelly, 1984; Tsonope, 1987; Demuth, 1988, 2003; Suzman, 1991; Tsonope, 1993; Idiata, 2005; Gxilishe, de Villiers and de Villiers, 2007a; Sibanda 2014)	
Object markers (OMs)	Acquired between the ages of 2 and 3. (Sources: Kunene, 1979; Demuth, 1988, 2003; Suzman, 1991; Tsonope, 1993; Gxilishe, de Villiers and de Villiers, 2007a)	First appearing at 1;11 with acquisition occurring up until approximately 2;10.
Adjective markers (ADJMs)	Acquired between the ages of 2 and 2;6. (Sources: Kunene, 1979; Tsonope, 1987; Suzman, 1991; Demuth, 2003)	First appearing at 1;10, but erratic use.
Possessive markers (PMs)	Acquired between the ages of 2 and 2;6, apart from isiZulu in which they are acquired before 2. (Sources: Demuth, 1988; Suzman, 1991)	Acquisition as early as 1;5.
Possessive pronouns	Not acquired by 1;11 (Suzman, 1991) – at this age concordially correct possessives were used to express 'mine', without the pronoun attached. Possessive prounouns appeared in Suzman's (1991) data around the age of 2;4.	Acquisition as early as 1;5.
Locative positions (prepositions)	Before 2. (Sources: Connelly, 1984; Sibanda, 2014)	First appearing at 1;9.
Demonstrative (DEM)	Acquired between the ages of 2 and 2;6. (Sources: Demuth, 1998, 2003; Suzman, 1999)	Acquisition as early as 1;5.
Presentative demonstratives	No formal enquiry into the exact age of acquisition exists, but Suzman (1991) observes its use by a child as young as 1;10.	Use observed at 1;9.
Verb forms	Negation: use beginning around the age of 2. Tense: use of various tense markers begins around the age of 2, with expansion occurring around 2;6. (Sources: Demuth, 2003; Gxilishe, de Villiers and de Villiers, 2007b; Smouse et al., 2012)	Negation: use in appropriate form at 1;8. Tense: the perfect tense marking is acquired around age 2 with the future first appearing in full form at 1;11. Mood appears appropriately marked as early as 1;5.

5.2.13 Section conclusion

Literature discussed in Section 2.3.1 suggests that rural and low SES mothers may overstate their children's language ability. Although Fenson et al. (1994) similarly speculate about caregivers' abilities to report reliably about subtle features (e.g. grammatical phenomena) in their native languages, they conclude that their data suggests that the aspects of the grammar sampled in their CDI are, in fact, effectively assessed by caregivers of children in the toddler age range. This confirms "the effectiveness of the recognition format for assessing grammatical…development" (Fenson et al., 1994: 110) and underlines the fact that despite their misgivings about caregivers reporting accuracy, their reservations are in fact likely to be unfounded. This suggests that despite a potential degree of overstated ability, grammatical acquisition in isiXhosa is likely to indeed occur as early on as the above findings may suggest.

Despite the entangled intricacy of these results, there are some noteworthy trends I wish to highlight. The category into which most children fall for most classes of the NPx section (5.2.1) is no marking on the NPx yet, however, the presence of partial and full forms suggests that acquisition has at least started for this cohort. NPx are not acquired for all noun classes by the upper limit of this cohort, although for the handful of children at the towards the upper age limit this process is steadily underway. Spontaneous speech data does importantly highlight, though, that NPx acquisition for all classes is not necessarily conclusive for all children above the upper limit of the CDI of 2;6 either. Results show an earlier emergence of NPx acquisition when compared to data in the existing literature, by at least 6 months – Suzman (1991) reports the earliest acquisition in isiZulu at 1;11 – but it appears to be a slower acquisition process on the whole, since most languages report use in place around the age 3, which is not the case for all of the children in my data.

In fact, across the majority of the grammar items discussed, my data suggests earlier acquisition of grammar than has been reported in the existing literature on acquisition in Bantu. These findings thus support the theory of linguistic determinants as a driver of the child language acquisition processes, since despite the grammatical similarity of Bantu languages, certain forms in isiXhosa emerge earlier than in other Bantu languages. A more detailed cross-linguistic comparison would need to be done to observe whether they nonetheless follow the same trajectory and at what age they are productively, accurately and securely in use. For now, suffice to say that the linguistic specifics of isiXhosa are likely

to be facilitating the earlier emergence of grammatical forms such as NPx, copulatives, subject markers, object markers, possessive markers, demonstratives, and verb forms.

Due to the scattered nature of acquisition within the age group for almost all the grammatical items considered (with the exception of adjective concords, which are largely not acquired by toddlers), it is difficult to ascertain whether agreement appears before NPx are consistently marked for all children. Findings from the section on NPx (5.2.1) do, however, appear to generally support agreement appearing before NPx are consistently marked in speech. Agreements are not consistently marked before NPx are consistently marked, however, and it can therefore only be concluded that agreement most likely appears before NPx are consistently marked.

Evidence is provided that some children are phonologically confused between 'l' and 'y' sounds, and moreover this confusion occurs in both directions. This supports the hypothesis that it is not overgeneralisation that makes the copulative '*yi-*' appear on Cl. 5 nouns but rather ill-formed phonological processing. Whilst this thesis does not aim to delve into phonological acquisition, this finding is an important one for the discussion on agreement overgeneralisations, which is by nature of agreement in Bantu, a grammatical phenomenon.

On the whole, agreement appears in a haphazard manner and results often seem inconclusive. Considering frequencies nevertheless allows one to observe forms that are more common than others in the speech of a certain age group (e.g. possessives are more common than subject markers and NPx in the speech of toddlers) and what morphemes are acquired relatively later (e.g. the future tense), which will enable speech and language pathologists to more accurately identify indications of a child's communicative ability.

6 Conclusion

This thesis began by outlining the urgent and crucial need for the creation of culturally and linguistically appropriate child communicative development assessment tools in isiXhosa. The literature review provided a foundational backdrop to any reader wishing to better understand the nature of assessment adaptations, child language, and acquisition theory specifically through the lens of Bantu languages. Building on this, I filled in missing gaps on the early acquisition of isiXhosa by firstly, exploring the role of a number of socio-demographic and environmental factors which shape toddlers' communicative development trajectories in Chapter 4, before relaying the importance of ensuring assessments are lexically and grammatically appropriate in Chapter 5.

The results in Chapter 4 in particular show that age and production of words positively exhibit the expected correlation in my data. Crèche attendance and maternal education level (especially tertiary education level) both account for practically and statistically significant levels of higher word production. This points to strong positive externalities which would arise from improving the access to and quality of education, across the board, in South Africa. Also contributing to variation in rural isiXhosa-speaking toddlers' vocabulary production is the child's gender, whether they have a sibling secondary caregiver, the number of secondary caregivers they have, the number of siblings they have, and whether they were the first-born child or not.

In Chapter 5 I find that lexical and grammatical measures provide channels through which communicative proficiency can be assessed, but in order to accurately achieve measures it is important to question the wholesale uptake of Western ontologies and epistemologies as the basis of theoretical truths (as considered here through the lenses of polysemy, synecdoche, and lexical shifts, to name a few). Data collected for the majority of the grammar items suggests that isiXhosa-speaking toddlers use these morphemes earlier than is suggested by the existing literature on Bantu language acquisition. These findings thus support the theory of linguistic determinants as a driver of child language acquisition processes, since despite the grammatical similarity of Bantu languages, certain forms in isiXhosa emerge earlier than in other Bantu languages.

Section 3.5 on methodological limitations distinctly highlights the methodological complexities that this study has encountered, but through acknowledging these, future researchers, adaptors, and speech and language pathologists can avoid ostensible solutions that by their inflexibility may soon

become irrelevant − or even harmful − in a rapidly changing society (Westley, Zimmerman and Patton 2007). As such, I recommend that future adaptations (for the CDI in particular) consider a manner in which synonyms can be statistically accounted for (at least during the pilot phases in which words are added or removed based on statistical probabilities). I also recommend that a word should not appear on two or more lines (as a synonym for separate lexical items in English), as this causes biases in vocabulary scores and can incite semantic overgeneralisation. Attention should be paid to the sensitivity surrounding questions about income, and it is pertinent that a question on the primary car-giver's education level is also included. Instructions may need to be extended and improved upon if the end goal of the CDI is for it to be self-completed, and lastly, options for questions in grammar Sections B and C respectively should have the same number of levels of complexity so that an overall grammar complexity score can be calculated for each section. This would render a more meaningful and necessary statistical analysis of the CDI grammar section.

These recommendations, along with findings of Section 5.1.3 (linguistic and ontological considerations), can be the points of leverage from which meaningful change can spring and are core to the facilitation of improving early childhood outcomes. I want to reiterate that through fully understanding the situation and all aspects of a system (Westley, Zimmerman and Patton, 2007), here: the language acquisition process, researchers can harness the complexities to create adaptations with intentionality and consciousness. I thus seek to encourage researchers to:

- acknowledge complexities (for instance, to recognise social contexts while simultaneously maintaining structural equivalence) and dispel rigid boundaries,
- question actively as well as listen (continuously, seeing this as a form of action), and
- bring together knowledge from diverse disciplines (Westley, Zimmerman and Patton 2007: 85).

Findings in this thesis correspond to Demuth's (2003: 532) conclusion that the study of child language "forces us to seriously consider how these languages are used in everyday discourse". She notes how so much effort is put into passing grammatical judgements (i.e. what are permissible constructs), when in actual fact child language compels us to take a step back and examine not only how language might be changing but how it is actually used (Demuth, 2003). This is especially important for the removal of colonially-imposed, rigid language boundaries which do not accurately represent linguistic and communicative realities, and risk precipitating a detrimental divide between language-based adaptations and the interests of the children they purport to serve.

Early childhood development has become somewhat of a buzzword in South Africa, and if improving early childhood development really is going to transform the educational trajectory and academic and economic outcomes of South Africa's children, it cannot preclude the development of communicative skills. Through this isiXhosa adaptation of the CDI, and through the arguments put forward in this thesis, I have aimed to increase access to reliable, meaningful and realistic tools and information in the field of speech and language development. However, in doing so it is acknowledged that many isiXhosa-speaking children do not have access to speech and language development units or speech therapists (Le Roux, personal communication, 16 March 2017). Once the adaptation has been completed, it will be necessary to work on removing these barriers and expanding awareness about speech and language disabilities in communities, and it is my hope that the isiXhosa CDI adaptation will give clinicians an accurate tool that can be used for these purposes too.

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Appendices

Appendix A

Table 0-1 IsiXhosa noun class prefixes

Noun class	Noun prefix
1	um-
2	aba-/abe-
1a	u-
2a	oo-
3	um-
4	imi-
5	ili-/i-
6	ama-/ame-
7	isi-/is-
8	izi-/iz-
9	in-/im-/i-
10	izin-/iin-/iim-/ii-
11	ulu-/ulw-/ul-/u-
14	ubu-/ub-/u-
15	uku-/ukw-/uk-

Appendix B

Table 0-2 Expanded age of grammar acquisition by language and author

Noun Prefix (NPx)
Demuth (Sesotho): Demuth (2003) posits that all studies of the acquisition of Bantu NPx report three partially overlapping stages of NPx development between the ages of 2 and 3: 1. no prefixes 2. shadow vowels (see also Connelly, 1984 and Tsonope, 1993) and nasal prefixes 3. full and correct NPx *Suzman (isiZulu):* Suzman (1996) reports isiZulu speaking children take an early lead with 50% use of NPx at age 1;11. *Connelly (Sesotho):* Connelly (1984) reports phonologically ill-formed stems at age 1;6 to 1;8, shadow vowels at a median age of 2;1-2;2 and adult prefixes between 2;2 and 2;9. Connelly (1984) observes the overgeneralisation of the Cl. 9 plural (Cl. 10) to Cl. noun 9 nouns that take a Cl. 6 plural in adult speech – although he states this tends to have self-corrected by 1;11 – suggesting that NPx are productive in *some* Basotho children's speech prior to the age of 2. *Kunene (Siswati):* Kunene (1979 in Suzman, 1991: 26) reports prefixes at 2;10-2;11 with suitable use in place around 3.[67] *Tsonope (Setswana):* Tsonope (1987 in Suzman: 1996:93, 101) reports acquisition at 2;6, with frequent occurrence of the shadow prefix at 1;11 through 2;6 and the stages proceeding through ages 2 to 3. *Idiata (Isangu):* Phase one: 0-2;2, phase 2: 2;2-2;6, phase three: 2;10-3 (Idiata, 2005). *Sibanda (Chishona):* Sibanda (2014) indicates that stage two occurs in Chishona around the age of 2;6.
Subject markers (SMs)
Demuth (Sesotho): The first accurate subject markers appear between the ages of 2;4 and 2;6 (Demuth, 2003) but children may begin producing them in a collapsed form from the age of 2 (Demuth, 1988). Demuth (2003) reports the morphological acquisition of subject markers in Bantu languages to be a similar three stage process to the acquisition of NPx (once again with the stages overlapping to a certain degree. The stages are 1. no marking, *e.g. funa* 'want' 2. shadow vowel (usually *a* or *i* in place of the first person subject marker), *e.g. afuna* 'I want' 3. well-formed morphemes, *e.g. ndiyafuna* 'I want' *Suzman (isiZulu):* Suzman (1991) notes that children use subject markers before the age of 2. *Gxilishe, de Villiers and de Villiers (isiXhosa):* Gxilishe, de Villiers and de Villiers (2007a) moreover find that subject agreement marking does not appear to be learned in an ordered fashion, but increases probabilistically across many verb roots and noun classes between the ages of 2 and 3. *Kunene (Siswati):* Kunene (1979 in Demuth 1992: 604, 2003: 218) notes stage one in Siswati around 2;2 and stage two forming around 2;3. *Idiata (Isangu):* Idiata (2005) notes that Isangu-speaking children begin to mark agreement with a shadow vowel between 2;4 and 2;8. *Sibanda (Chishona):* Sibanda (2014) reports the presence of shadow vowel subject markers in Chishona, overlapping with stages one and two between the ages of 2;5 and 2;10.

[67] It must be taken into account that various authors report different findings from Kunene regarding the age of acquisition of NPx and subject markers, pointing towards confusion regarding the results of her PhD, or in the least, misreportings.

Object markers (OMs)

Demuth (Sesotho):

Object markers appear between 2;6 and 3, with most appearing before that being first person singular nasals (Demuth, 1988), especially in imperatives (Demuth, 2003). They also exhibit the stages:
No marking > shadow vowel > well-formed morphemes (Demuth, 2003).

Suzman (isiZulu):

Suzman (1991) observes children began to use object markers between 2 and 2;6, developing later than NPx, subject markers and possessive markers. Suzman (1991) reports two cases in which object markers appeared before the age of 2, however they only appeared in the imperative, and she notes that this may have been since the one child was particularly bossy and enjoyed giving orders.

Gxilishe, de Villiers and de Villiers (isiXhosa):

Gxilishe, de Villiers and de Villiers (2006 in Gxilishe, de Villiers and de Villiers, 2007a: 122) note that isiXhosa-speaking children are accumulating object markers in their speech by age 2.

Kunene (Siswati):

Object markers appear between the ages of 2;10 and 3 (Kunene, 1979 in Demuth, 1992: 605).
Object markers were used too rarely in the data of Smouse et al. (2012) for them to be specific about how they are acquired in isiXhosa. Suzman (1991: 76) points to their rarity being due to their optionality.

Adjective markers (ADJMs)

Demuth (Sesotho):

Demuth (1988: 313) notes overgeneralisation of Cls 9 and 10 adjective markers at age 2;1. Demuth (1988) indicates they are in productive use by age 2, but sometimes with inappropriate concordial agreement.

Suzman (isiZulu):

Appearing between 2 and 2;6 (Suzman, 1991).

Possessive markers (PMs)

Demuth (Sesotho):

Demuth (2003) notes that possessive agreement is in place by the same time as demonstrative agreement by 2;4-2;6. She indicates they are in productive use by age 2, but sometimes with inappropriate concordial agreement.

Suzman (isiZulu):

Among the first concordial markers to appear in children's speech: before the age of 2 (Suzman, 1991).

Kunene (Siswati):

Kunene (1979 in Demuth, 2003: 216) observes a child aged 2;2 using possessives, but with the Cl. 7 possessive marker used in place of Cl. 8, and the Cl. 1 possessive marker used instead of the Cl. 9 (although these both involve glides; Demuth, 1992). Between 2;4 and 2;6 she observes appropriate plural forms, even when the NPx is absent from the noun (Kunene, 1979, in Demuth, 1992: 602). She also notes possessive markers emerge after subject markers but before object markers, with consistent use in place by 3 (Kunene, 1979: 283 in Idiata, 2005: 95).

Tsonope (Setswana):

Tsonope (1987: 114-116 in Demuth, 1992: 601) reports appropriate use of a Cl. 8 possessive at 2;4, prior to consistent marking of NPx.

Prepositions and Locatives

Connelly (Sesotho):

Connelly (1984) reports the invariant locative suffix in Sesotho is acquired as early as 1;7.

Sibanda (Chishona):

Sibanda (2014) reports the emergence of a locative morpheme early, and before the class morpheme (NPx) is being used in either shadow or full form.

Demonstrative (DEM)

Demuth (Sesotho):

Demonstrative agreement is in place by 2;4-2;6 years (Demuth, 2003: 216). Demuth (1988: 313) indicates they are in productive use by age 2, but sometimes with inappropriate concordial agreement, noting the overgeneralisation of Cls 9 and 10 at age 2;1.

Suzman (isiZulu):

In data presented by Suzman (1999), a demonstrative is present in the speech of a 1;11 year old boy, demonstrating children's ability to produce these morphemes at this age. The third person demonstrative is moreover present in another child's speech at 2;2 (Suzman, 1999: 139).

Sibanda (Chishona):

Data from Chishona supports early acquisition of demonstratives (Chiswanda, 1984 in Sibanda, 2014).

Tense markers

Demuth (Sesotho):

In Sesotho data, various verb tenses (present, anterior and future) are used around 2/2;1 years (Demuth, 1988), although "phonologically ill-formed" (Demuth, 1992; 635, 2003: 220). Demuth (2003: 220) states that "by the age of 2, children learning Bantu languages may have some knowledge of negation and some of the grammatical means by which it is encoded". By 2;6 there is significant expansion in the types of tense, aspect and mood Sesotho children use (Demuth, 1992).

Gxilishe, de Villiers and de Villiers (isiXhosa):

Gxilishe, et al. (2007b) study the acquisition of tense noting that children between the ages of 2 and 2;6 supplied the correct tense markers 90% of the time, with other errors being errors of omission. This percentage increased to 91% overall when averaged with children in the 2;6-3;3 age group, suggesting no developmental change across cohorts. Gxilishe, de Villiers and de Villiers (2007b) clarify that both the disjunctive and conjunctive forms in children's speech conformed to the rules governing their use in adult speech. What's more, they find that children appropriately use the conjunctive in both the present and recent past tenses when an adverb or locative qualifies the verb (Gxilishe, de Villiers and de Villiers, 2007b).

Chimombo and Mtenje (Chichewa):

Chimombo and Mtenje (1989: 103, 144) report that three Chichewa-speaking children all use several different semantic forms of negation by the age of 2 (negative permission, nonexistence, nono-ccurrence, denial, rejection, not-knowing), but that not "one of the subcategories of negation was completely mastered by 2.6". In forming the negative imperative in Chichewa (formed similarly to isiXhosa in that a generalised negative marker is prefixed to the verb), a child produced the negative imperative tonally only, missing out the negative imperative marker up until the age of 2;4 (Chimombo and Mtenje, 1989).

Sibanda (Chishona):

Sibanda (2014: 127) indicates that Chishona-speaking children use a partial negative construction *andigoni* (which in its partial -form is identical to the negative indicative present in isiXhosa) instead of *handgoni* 'I can't' at 2;6 and 3.

Appendix C

Table 0-3 Initial regression output

VARIABLES	Coefficients
Child age (months)	0.0290**
	(0.00873)
Gender	0.450
	(0.294)
Mother education: not completed secondary school	0.117
	(0.0919)
Mother education: completed secondary school	0.0937
	(0.170)
Mother education: completed higher education	0.166
	(0.268)
Sibling secondary caregiver	-0.168*
	(0.0710)
Twin	-0.175
	(0.0763)
First born	-0.214*
	(0.0686)
Ear problems	0.0682
	(0.115)
Crèche attendance	0.356*
	(0.115)
Number of adults in home	0.00438
	(0.0397)
Number of secondary caregivers	0.113**
	(0.0295)
Number of siblings	-0.0368
	(0.0262)
Children in home	0.0143
	(0.0190)
Household income	-0.127
	(0.176)
Agegender	-0.0224
	(0.0125)
Constant	-0.395
	(0.194)
Observations	20
R-squared	0.989
Standard errors in parentheses	
***** p<0.01, ** p<0.05, * p<0.1**	

Appendix D

STATA DO-file

```
clear all
import excel "/Users/EmmaWhitelaw/Desktop/MA:CDI/Our research/Pilot data/All Pilot Data Xhosa_emma clean.xlsx", sheet("PreliminaryInfo") firstrow
ssc install outreg2

*** A. WORDS
** 1. SCATTER PLOTS

*Percentage words with age
twoway (lfit Percentage_words_produced Child_Age_Mths) (scatter Percentage_words_produced Child_Age_Mths)
tab Percentage_words_produced //distribution information for discussion

*Percentiles with age
twoway (lfit Percentile Child_Age_Mths) (scatter Percentile Child_Age_Mths)
tab tab Child_Age_Mnths Percentile //distribution information for discussion

** 1a. Tables for methodological information

*generate two age cohorts
cap gen Age2=.
replace Age2=1 if Child_Age_Mths>=23.5
replace Age2=0 if Child_Age_Mths<23.5

tab Age2
tab Gender
tab Mother_educ
tab Sibling_caregiver
tab Twin
tab First_born
tab Ear_problems
```

```
tab Creche_attendance
tab Adults_in_home
tab Number_of_caregivers
tab Number_of_siblings
tab Children_in_home
tab Income

** 2. Regressions - e.g. being a female is associated with a 2 percentage point increase in % words produced (FOR EXAMPLE)

*generate interaction term
cap gen Agegender= Child_Age_Mths*Gender

*initial regression

reg Percentage_words_produced Child_Age_Mths Gender i.Mother_educ Sibling_caregiver Twin First_born Ear_problems Creche_attendance Adults_in_home Number_of_caregivers Number_of_siblings Children_in_home Income Agegender // when controlling for the interaction, strongly positive gender, although not sign. All 14 variables. Can put in Appendix.

outreg2 using "Regression tables.xls", replace excel ct ("Multiple Linear Regression 1")

*F-test
test Ear_problems Adults_in_home Children_in_home Income

reg Percentage_words_produced Child_Age_Mths Gender i.Mother_educ Sibling_caregiver Twin First_born Creche_attendance Number_of_caregivers Number_of_siblings Agegender

outreg2 using "Regression tables.xls", replace excel ct ("Multiple Linear Regression 2")

tab Income Twin //distribution information for discussion

***GRAMMAR
```

**logit regressions (binary)

* SECTION A

logit A1noun_classXho Total_words_produced //significant - but cannot interpret this number, only interpret the positive or negative sign

margins, dydx(*) post //to interpret the sign

logit A1noun_classXho Total_words_produced Gender Child_Age_Mths // once gender & age controlled for - not significant

logit A1noun_classXho percent_words_100

margins, dydx(*) post // a 1 % pt increase in % words produced will lead to a 1.2% increase in probability that they can produce the NPx.

*others

logit A2pluralsXho Total_words_produced // not significant

logit A3agreementXho Total_words_produced // not significant

logit A4pres_tenseXho Total_words_produced //significant

logit A4pres_tenseXho Total_words_produced Gender Child_Age_Mths // once gender & age controlled for - not significant

logit A5past_tenseXho Total_words_produced // not sign BUT ALL POSITIVE SIGNS!

Appendix E

Transcripts[68]

Girls, Cata:

@Begin
@Languages: xho
@Participants: CHI4 Alunamida Child, CHI1 Onako Child, CHI2 Yamkela Child, CHI3 Nangamso Child
@Options: bullets
@ID:xho|emma|CHI4|3;|male|||Child|||
@ID:xho|emma|CHI1|2;10.16|female|||Child|||
@ID:xho|emma|CHI2|3;9.|female|||Child|||
@ID:xho|emma|CHI3|3;|female|||Child|||
@Media: 00007, video
@Date: 02-FEB-2017
*CHI1: ngena.
%gls: uyangena.
%eng: she is getting in.
*CHI2: yipeni.
%gls: yipeni.
%eng: it is a pen.
*CHI1: wunyombo.
%gls: xxx.
%eng: xxx.
*CHI2: yikipe.
%gls: sisikipa.
%eng: it is a t-shirt.
*CHI1: yihaku.
%gls: yihagu.
%eng: it is a pig.
%sit: Sounded like the child knew what it is but mother shouted 'Yihaku' as the child was answering as well. They spoke simultaneously.
*CHI1: nkonkxa.
%gls: yinkonkxa.
%eng: it is a tank.
%sit: Repeated after mother.
*CHI1: situlo.
%gls: sisitulo.
%eng: it is a chair.
*CHI2: situlo.
%gls: sisitulo.
%eng: it is a chair.
%sit: Child 1 and child 2 shouted at the same time.
*CHI2: ziigambhutsi.
%gls: ziigambhutsi.
%eng: they are gumboots.
%sit: The child was clearer the second time after mother said it.
*CHI1: yingalo.
%gls: yingalo.
%eng: it is an arm.
*CHI1: s'levu.

[68] The %gls line shows the adult form of the child's utterance. %eng is the English translation. %sit provides additional information on the situation in which the utterance occurred. 'X' occurs when an utterance was not decipherable.

%gls: sisilevu.

%eng: it is a chin.

*CHI2: s'levu.

%gls: sisilevu.

%eng: it is a chin.

%sit: Child 1 and child 2 responded at the same time. They repeated after mother.

*CHI1: gomso.

%gls: ngomso.

%eng: tomorrow.

*CHI1: nanko!

%gls: nanko!

%eng: there she is!

*CHI1: apha!

%gls: apha!

%eng: here!

*CHI3: yidoka.

%gls: ludonga.

%eng: it is a wall.

*CHI2: mntanam.

%gls: ngumntwana wam.

%eng: it is my baby.

*CHI1: yihlathi.

%gls: lihlathi.

%eng: it is a forest.

*CHI1: yena!

%gls: ngena!

%eng: enter!

*CHI1: yitye!

%gls: lilitye!

%eng: it is a stone!

*CHI2: yitye!

%gls: lilitye!

%eng: it is a stone!

*CHI3: yitye!

%gls: lilitye!

%eng: it is a stone!

%sit: Child 1, 2 and 3 shouted together at the same time.

*CHI1: ilitye!

%gls: ilitye!

%eng: stone!

*CHI4: ilitye!

%gls: ilitye!

%eng: stone!

%sit: Child 1 and child 4 shouted at the same time.

*CHI1: yindlu.

%gls: yindlu.

%eng: it is a house.

%sit: Repeated after mother.

*CHI1: nay' ingca.

%gls: nantsi ingca.

%eng: here is the grass.

*CHI1: bhayi bhayi.

%gls: bhayi bhayi.

%eng: goodbye.

*CHI2: bhayi bhayi.

%gls: bhayi bhayi.

%eng: goodbye.

*CHI3: bhayi bhayi.

%gls: bhayi bhayi.

%eng: goodbye.

*CHI4: bhayi bhayi.

%gls: bhayi bhayi.

%eng: goodbye.

*CHI1: yigasi.
%gls: yiglasi.
%eng: it is a glass.
*CHI2: yigasi.
%gls: yiglasi.
%eng: it is a glass.
%sit: Child 1 and 2 spoke at the same time.
Mother repeated what they said for clarity.
*CHI1: yingca.
%gls: yingca.
%eng: it is grass.
*CHI1: iphepha.
%gls: liphepha.
%eng: it is paper.
*CHI1: seyiye.
%gls: yiseyile.
%eng: sail.
%sit: Repeated after mother.
*CHI1: platik.
%gls: iplastiki.
%eng: plastic.
%sit: Repeated after mother.
*CHI1: amagqaba.
%gls: ngamagqabi.
%eng: they are leaves.
%sit: Repeated after mother.
*CHI1: yayika.
%gls: uyayikha.
%eng: she is picking it.
%sit: Repeated after mother.
*CHI4: inja.
%gls: yinja.
%eng: it is a dog.
*CHI1: kukutya.
%gls: iza kukutya inja.
%eng: the dog will bite you.
%sit: Mother explained what the child is saying.
*CHI4: unako.
%gls: nguOnako.
%eng: Onako.
*CHI1: hawu hawu!
%gls: hawu hawu!
%eng: woof woof!
%sit: Making a sound of a barking dog.
*CHI2: xxx.
%gls: inja iza mtya, mayihambe.
%eng: the dog will bite her, let it go.
%sit: Child not audible but mother interpreted child's utterance as in the gloss.
*CHI1: imeva.
%gls: limeva.
%eng: it is a thorn.
%sit: Repeated after mother.
*CHI3: iphi?
%gls: iphi?
%eng: where is it?
*CHI3: bambela ku.
%gls: bambelela kuye.
%eng: hold on to her.
*CHI1: khaba le bhola x.
%gls: khaba le bhola, ndiyibambe.
%eng: kick this ball so I can pick it up/hold it.
%sit: Mother explained what the child said.
*CHI2: hamba.
%gls: hamba.
%eng: leave.

*CHI1: wuotha.
%gls: nguotha.
%eng: she is Otha.
*CHI1: wumbeyambeya.
%gls: ngumbeyambeya.
%eng: he is Mbeyambeya.
*CHI1: yifoni lena?
%gls: yifoni lena?
%eng: is this a phone?
*CHI1: ivid.
%gls: yividiyo.
%eng: it is a video.
%sit: Repeated after researcher.
*CHI1: yhu, bona le nto!
%gls: yhu, bona le nto!
%eng: hey, look at this thing!
*CHI1: uwonako.
%gls: nguOnako.
%eng: it is Onako.
*CHI1: yhu, kusekaya apha!
%gls: yhu, kusekhaya apha!
%eng: hey, it is home here!
*CHI2: zuka!
%gls: suka!
%eng: move away!
*CHI3: x yanditshova.
%gls: x uyanditshova.
%eng: x you are pushing me.
*CHI3: likhaya apha.
%gls: likhaya apha.
%eng: it is home here.
*CHI3: s'apha uvaye.
%gls: s'apha uvaye.
%eng: give here and go.
*CHI1: nank' ulunku.
%gls: nank' umlungu.
%eng: there is a white person.
*CHI1: okeyi mlungu, no mlungu nina?
%gls: okeyi mlungu, ningabelungu nina?
%eng: okay white person, are you white people?
*CHI2: yikiva.
%gls: yikiriva.
%eng: it is a wheelbarrow.
*CHI2: mabheye.
%gls: ngamabele.
%eng: they are breasts.
*CHI2: uphi umntwanakho?
%gls: uphi umntwana wakho?
%eng: where is your child?
*CHI2: ulahleke umntwana?
%gls: ulahlekile umntwana?
%eng: is your child lost?
*CHI2: ufun' umntwana wakho?
%gls: ufuna umtwana wakho?
%eng: do you want a child of your own?
*CHI2: andatsi.
%gls: andazi.
%eng: I do not know.
*CHI1: ncel' cofa apha.
%gls: ndicela ukucofa apha.
%eng: may I please press here.
*CHI1: xelela umamam.
%gls: ndizoxelela umama wam.
%eng: I will tell my mom.
*CHI4: ntoni le?
%gls: yintoni le?

%eng: what is this?
*CHI1: niyanshiy' apha.
%gls: ndiyanishiya apha.
%eng: I am leaving you here.
*CHI1: yijezi.
%gls: yijezi.
%eng: it is a jersey.
*CHI1: yihendlu.
%gls: yihendel.
%eng: it is a handle.
%sit: Repeated after researcher.
*CHI1: hayi, yek' ifoni yam!
%gls: hayi, yeka ifoni yam!
%eng: hey, leave my phone!
*CHI2: nhlal' apha!
%gls: ndiza kuhlala apha!
%eng: I will sit here!
%sit: Researcher repeated for clarity.
*CHI2: icimile, itshaje!
%gls: icimile, yitshaje.
%eng: it is off, put it on the charger.
*CHI1: yitoyilethi.
%gls: yitoyilethi.
%eng: it is a toilet.
*CHI1: jong' apha.
%gls: jonga apha.
%eng: look here.
*CHI3: yinto ye?
%gls: yintoni le?
%eng: what is this?
*CHI2: khawundifunqule.
%gls: khawundifunqule.
%eng: please pick me up.
*CHI1: x impumlo?
%gls: x impumlo?
%eng: x nose?
*CHI1: womxelela mamam.
%gls: ndiza kumxelela umama wam.
%eng: I will tell my mother.
*CHI1: uphi umama wakho?
%gls: uphi umama wakho?
%eng: where is your mother?
*CHI1: ngcwaba?
%gls: wangcwatywa?
%eng: was she buried?
*CHI1: uzoyekhaye nini?
%gls: uzoya nini ekhaya?
%eng: when will you go home?
*CHI1: uyekhaya.
%gls: uye ekhaya.
%eng: you must go home.
*CHI1: hayi ke, ambe nomlungu?
%gls: hayi ke, ndihambe nomlungu?
%eng: oh well, can I go with the white person?
*CHI1: hayi, suka, nantsi nela.
%gls: hayi, suka, nantsi inwele.
%eng: hey, move, here is hair.
*CHI3: heyi, nantsi inye!
%gls: heyi, nantsi enye!
%eng: hey, here is another one!
*CHI1: uyaluma wena.
%gls: uyaluma wena.
%eng: you are biting.
*CHI1: phaya.
%gls: bhala.
%eng: write.

*CHI1: onako, uyantshova wena.
%gls: onako, uyanditshova wena.
%eng: Onako, you are pushing me.
*CHI1: hayi ke, apha?
%gls: hayi ke, apha?
%eng: oh well, here?
*CHI1: nantsa, yahlile.
%gls: nantsiya, uyilahlile.
%eng: there it is. he threw it away.
%sit: Researcher repeated for clarity.
*CHI1: inye, zimbini.
%gls: inye, zimbini.
%eng: one, two.
%sit: Researcher repeated for clarity.
*CHI4: thathani.
%gls: thathani.
%eng: take (plural).
*CHI1: ayahlekile.
%gls: alahlekile.
%eng: they are lost.
*CHI4: gqibile.
%gls: ndigqibile.
%eng: I am finished.
*CHI3: fota mna!
%gls: fota mna!
%eng: take a photo of me!
*CHI4: fota mna!
%gls: fota mna!
%eng: take a photo of me!
%sit: Child 3 and child 4 shouted at the same time.
*CHI1: nam!
%gls: nam!
%eng: me too!
*CHI1: ndifuna ukufunqula le nto.
%gls: ndifuna ukufunqula le nto.
%eng: I want to lift it up.
*CHI4: yayivala.
%gls: ndiyayivala.
%eng: I am closing it.
*CHI3: icima njani?
%gls: icima njani?
%eng: how does it switch off?
*CHI1: mbetha umntwanakho.
%gls: ndiyambetha umntwana wakho.
%eng: I am beating your child.
*CHI1: funa imbiza.
%gls: sifuna imbiza.
%eng: we want a pot.
*CHI4: funa imbiza.
%gls: sifuna imbiza.
%eng: we want a pot.
%sit: Child 1 and child 4 spoke at the same time.
*CHI2: funa isupu.
%gls: sifuna isuphu.
%eng: we want soup.
*CHI2: nepapa.
%gls: nepapa.
%eng: and pap.
*CHI3: netoti.
%gls: netoti.
%eng: and a tin.
*CHI1: nediki.
%gls: nedrinki.
%eng: and something to drink.

*CHI1: nomvathi.

%gls: nemovathi.

%eng: and morvite.

*CHI1: ukufunqula.

%gls: ukufunqulwa.

%eng: to be lifted up.

*CHI4: eh sana, ndihlamba ekhaya.

%gls: eh sana, ndiyohlamba ekhaya.

%eng: hey friend, I am going to bath at home.

*CHI4: ndivala.

%gls: ndiyavala.

%eng: I am closing it.

*CHI2: misa phezulu.

%gls: yijongise phezulu.

%eng: make it face up.

@End

Boys, Vukuzenzele:

@Begin

@Languages: xho

@Participants: CHI1 Lihle Child, CHI2 Akum Child, CHI3 Kabelo Child

@Options: bullets

@ID:xho|emma|CHI1|2;|male|||Child|||

@ID:xho|emma|CHI2|3;|male|||Child|||

@ID:xho|emma|CHI3|2;10.15|male|||Child|||

@Media: CDI-Xhosa_1bVukuzenzele, video

@Media: CDI-XhosaVukuzenzele_1a, video

@Date: 08-DEC-2016

*CHI1: tv.

%gls: yitv.

%eng: it is a tv.

%sit: Repeated after mother.

*CHI1: kekho.

%gls: akekho.

%eng: he/she is not there.

*CHI1: yadlala.

%gls: uyadlala.

%eng: he/she is playing.

*CHI3: dankie.

%gls: dankie.

%eng: thank you.

%sit: Repeated after mother.

*CHI1: Akum.

%gls: Akum.

%eng: Akum.

%sit: Child's name. Repeated after mothers in the background.

*CHI1: bhabha.

%gls: ngubhabha.

%eng: it is a baby.

%sit: Repeated after mother.

*CHI2: bhabha.

%gls: ngubhabha.

%eng: it is a baby.

%sit: Repeated after mother.

*CHI2: tv.

%gls: yitv.

%eng: it is a tv.

%sit: Repeated after mother.

*CHI1: tv.

%gls: yi-tv.

%eng: it is a tv.

%sit: Repeated after mother.

*CHI2: kekho x.

%gls: akekho x.

%eng: x is not here.

%sit: Mom asked the child a question in a form of giving the answer.

*CHI1: lo.

%gls: lo.

%eng: this one (referring to a friend).

%sit: Responding to mother asking what is the name of his friend 'who is this one?'

*CHI1: Kabelo.

%gls: nguKabelo.

%eng: it is Kabelo.

%sit: Repeated after mother.

*CHI1: tships.

%gls: ziitships.

%eng: they are chips.

%sit: Repeated after mother.

*CHI1: shap.

%gls: shap.

%eng: cool.

%sit: Child said sharp as an informal way of saying goodbye or agreeing to something. Repeated after brother.

*CHI2: shap.

%gls: shap.

%eng: cool.

%sit: Repeated after child 1.

*CHI2: sho!

%gls: sho!

%eng: cool.

%sit: Informal way of greeting.

*CHI2: ka.

%gls: ka.

%eng: hey!

%sit: The word does not mean 'hey' but it involves people joining their fists as greeting/acknowledging.

*CHI1: bhabha.

%gls: bhabha.

%eng: baby.

%sit: Repeated after brother.

*CHI1: siyapha!

%gls: zisa apha!

%eng: bring it here!

%sit: It was clearer when mother repeated what child 1 said.

*CHI1: Akum.

%gls: Akum.

%eng: Akum.

%sit: Repeated after mother.

*CHI1: avela.

%gls: avela.

%eng: avela.

*CHI1: yibhoya yam.

%gls: yibhola yam.

%eng: it is my ball.

*CHI1: s'apha.

%gls: zisa apha.

%eng: bring it here.

%sit: Mother explained what the child said.

*CHI3: hamba nna.

%gls: ndiyahamba mna.

%eng: I am leaving.

*CHI1: s'dladla.

%gls: siyadlala.

%eng: we are playing.

*CHI2: yho!

%gls: yho!

%eng: yoh!

*CHI2: kha'a!

%gls: khaba!

%eng: kick!

%sit: Repeated after mother.

*CHI1: Akum.

%gls: Akum.

%eng: Akum.

%sit: Repeated after mother.

*CHI1: ibhara.

%gls: ibhola.

%eng: ball.

%sit: Mother repeated what the child said for clarity.

*CHI1: tatile.

%gls: ndithathile.

%eng: I took it.
*CHI3: khamni.
%gls: khawume
%eng: wait.
*CHI2: khaba!
%gls: khaba!
%eng: kick!
%sit: Repeated after everyone in the background.
*CHI1: lalela!
%gls: khabela kum.
%eng: kick to me.
%sit: Child said this in excitement after kicking the ball.
*CHI1: s'apha!
%gls: zisa apha!
%eng: bring it here!
*CHI1: yetaa!
%gls: heyta!
%eng: there you go!
%sit: Child said this in excitement after kicking the ball.
*CHI1: yhooooo!
%gls: yho!
%eng: yoh!
%sit: Child said this in excitement after kicking the ball.
*CHI1: s'apha!
%gls: zisa apha!
%eng: bring it here!
*CHI1: eyam!
%gls: yeyam!
%eng: it is mine!
*CHI1: eyakho.
%gls: yeyakho.
%eng: it is yours.
%sit: Repeated after mother.
*CHI1: khaba ku.
%gls: ndikhabe kuwe?
%eng: must I kick the ball to you?
%sit: Child used similar words to the ones mother used when she asked him to kick the ball to herself.
*CHI1: yiyakhaba!
%gls: ndiyakhaba!
%eng: I am kicking!
*CHI1: shapha, eyam!
%gls: zisa apha, yeyam!
%eng: bring it here, it is mine!
*CHI1: s'unathe'e!
%gls: s'u(ku)yinyathela!
%eng: do not step on it!
*CHI1: s'unyathela!
%gls: s'uyinyathela!
%eng: do not step on it!
*CHI1: ayayayayai!
%gls: hayi, hayi, hayi!
%eng: no, no, no!
*CHI2: nkoo!
%gls: nanko!
%eng: there he is!
*CHI1: s'aph' elam!
%gls: zisa apha, yeyam!
%eng: bring it here, it is mine!
*CHI2: Lihle!
%gls: Lihle!

%eng: Lihle!
*CHI1: ee, eyam.
%gls: ee, yeyam.
%eng: hey, it is mine.
*CHI1: eyam le.
%gls: yeyam le.
%eng: this one is mine.
*CHI2: s'apha lila.
%gls: zisa apha, Lihle.
%eng: bring it here, Lihle.
%sit: Mother repeated for clarity.
*CHI1: s'apha, eyam eyam!
%gls: zisa apha, yeyam yeyam!
%eng: bring it here, it is mine, it is mine!
*CHI1: hayi, eyam!
%gls: hayi, yeyam!
%eng: no, it is mine!
*CHI1: dlale phandle?
%gls: sidlale phandle?
%eng: must we go play outside?
%sit: Mother instructed the children to go play outside and they then asked if they should go outside using same words as mother.
*CHI1: sihlala phandle?
%gls: sihlale phandle?
%eng: must we sit outside?
%sit: Mother instructed the children to go sit outside and they then askedif they should go outside using same words as mother.
*CHI1: yey, yey!
%gls: yey, yey!
%eng: hey, hey!
*CHI1: ayi, ayi, wuya!
%gls: hayi, hayi, buya!
%eng: hey, hey, come back!
%sit: Mother repeated for clarity.
*CHI1: yimoto.
%gls: yimoto.
%eng: it is a car.
%sit: Repeated after mother.
*CHI3: moto.
%gls: yimoto.
%eng: it is a car.
%sit: Repeated after mother.
*CHI1: yigeyiti.
%gls: yigeyiti.
%eng: it is a gate.
%sit: Mother said 'it is a gate' a while back when she was trying to get the children to say what it was and the child only says now.
*CHI3: yimoto yakho.
%gls: yimoto yakho.
%eng: it is your car.
*CHI2: bhoya, bhoya!
%gls: ibhola, ibhola!
%eng: ball!
*CHI3: akekho.
%gls: akekho.
%eng: he/she is not here.
*CHI1: khaba!
%gls: khaba!
%eng: kick!
%sit: Repeated after mother.
*CHI2: bhamba!
%gls: sukuyibamba!
%eng: do not touch it!

%sit: Mother repeated for clarity.
*CHI1: yiphi?
%gls: iphi?
%eng: where is it?
*CHI2: wuu, iphi ibhoya?
%gls: wuu, iphi ibhola?
%eng: wuu, where is the ball?
*CHI1: iphi ibhowa lam?
%gls: iphi ibhola yam?
%eng: where is my ball?
*CHI1: ibhoya yam.
%gls: ibhola yam.
%eng: my ball.
*CHI1: Uakum.
%gls: NguAkum.
%eng: it is Akum.
*CHI1: tata, Akum.
%gls: thatha, Akum.
%eng: take, Akum.
*CHI2: iholaa!
%gls: ibhola!
%eng: the ball!
%sit: Mother repeated for clarity.
*CHI3: yakho.
%gls: yeyakho.
%eng: it is yours.
*CHI1: phumi.
%gls: iphumile.
%eng: it has gone out.
%sit: Mother repeated for clarity.
*CHI3: nantsi ibhola.
%gls: nantsi ibhola.
%eng: here is the ball.
*CHI1: phe khush!
%gls: pearl thusi!
%eng: pearl thusi!
%sit: Singing.
*CHI2: phe khush!
%gls: pearl thusi!
%eng: pearl thusi!
%sit: Singing.
*CHI3: phe khush!
%gls: pearl thusi!
%eng: pearl thusi!
%sit: Singing.
*CHI3: yeyam.
%gls: yeyam.
%eng: it is mine.
*CHI2: akakho.
%gls: akakho.
%eng: he is not here.
%sit: Repeated after brother.
*CHI1: songena motoni.
%gls: siyongena emotweni.
%eng: we are going to get in the car.
%sit: Repeated after mother.
*CHI2: hayi x.
%gls: hayi x.
%eng: no x.
*CHI1: s'ucofa.
%gls: s'ucofa.
%eng: do not press.
%sit: Researcher repeated for clarity.
*CHI1: hay, s'ucofa, hay!
%gls: hayi, s'ucofa, hayi!
%eng: no, do not press, no!

*CHI1: yamba.
%gls: ndiyahamba.
%eng: I am leaving.
*CHI1: hayi, s'ucofa wena!
%gls: hayi, s'ucofa wena!
%eng: no, do not press!
*CHI1: s'apha!
%gls: zisa apha!
%eng: bring it here!
*CHI1: lelethu.
%gls: yeyethu.
%eng: it is ours.
*CHI1: peep peep peep!
%gls: peep peep peep!
%eng: peep peep peep.
*CHI1: fun' ithula.
%gls: andifuni ithule.
%eng: I don't want it to stop making a sound.
*CHI1: bhayi bhayi, Kabelo.
%gls: bhayi bhayi, Kabelo.
%eng: goodbye, Kabelo.
%sit: Repeated after brother.
*CHI2: bhayi bhayi.
%gls: bhayi bhayi.
%eng: goodbye.
*CHI2: gena.
%gls: ngena.
%eng: get inside.
*CHI1: hayi, betha mama!
%gls: hayi, uza kukubetha umama.
%eng: no, mom will beat you.
%sit: Mother repeated for clarity.
*CHI1: hayi, sibethwa ngumama.
%gls: hayi, siza kubethwa ngumama.
%eng: no, mom will beat us.
%sit: Brother repeated for clarity.
*CHI1: eyam ye moto.
%gls: yeyam le moto.
%eng: this car is mine.
*CHI1: hayi, zobe ngumama!
%gls: hayi, uzobethwa ngumama!
%eng: no, you will be beaten by mother.
*CHI1: bethwa wena.
%gls: uzobethwa wena!
%eng: you will be beaten.
*CHI1: Akum!
%gls: Akum!
%eng: Akum!
%sit: Repeated after mother.
*CHI1: Kabi!
%gls: Kabi!
%eng: Kabi!
%sit: Repeated after mother.
*CHI1: pheza!
%gls: pheza!
%eng: stop it!
%sit: Mother said this to child 1 few minutes ago when he was pressing the hooter.
*CHI3: pheza!
%gls: pheza!
%eng: stop it!
%sit: Repeated after mother.
*CHI1: hayi!
%gls: hayi!
%eng: no!
*CHI1: yayam le moto.

%gls: yeyam le moto.
%eng: this car is mine.
*CHI1: hayi, hayi!
%gls: hayi, hayi!
%eng: no, no!
*CHI1: uzosobethwa ngumama.
%gls: uza kubethwa ngumama.
%eng: mother will beat you.
*CHI2: xxx.
%gls: ndifuna ukudlala ibhola ngoku.
%eng: I want to play soccer now.
%sit: Brother explained what the child said as it was unclear.
*CHI1: hayi!
%gls: hayi!
%eng: no!
*CHI1: hayi, yimoto yam le!
%gls: hayi, yimoto yam le!
%eng: no, this car is mine!
*CHI1: hayi, s'ubamba moto yam!
%gls: hayi, s'ubamba imoto yam!
%eng: no, do not touch my car!
%sit: Brother explained what the child said.
*CHI1: s'ubamba moto!
%gls: s'ubamba imoto!
%eng: do not touch the car!
*CHI1: bethwa umama.
%gls: uza kubethwa ngumama.
%eng: you will be beaten by mother.
*CHI1: eyam moto!
%gls: yeyam le moto!
%eng: this is my car!
*CHI1: eyam!
%gls: yeyam!
%eng: it is mine!
*CHI1: boom boom, peep peep!
%gls: boom boom, peep peep!
%eng: boom boom, peep peep!
%sit: Child making sound of a moving car and hooter.
*CHI2: peep peep!
%gls: peep peep!
%eng: peep peep!
%sit: Child making sound of a car hooter.
*CHI1: x theksi.
%gls: ngenani etheksini.
%eng: get into the taxi.
*CHI1: genani apha.
%gls: ngenani apha.
%eng: get in here.
%sit: Repeated after researcher.
*CHI2: gena.
%gls: ngena.
%eng: get it.
*CHI1: yiranti.
%gls: yiranti.
%eng: yiranti.
*CHI1: peep peep!
%gls: peep peep!
%eng: peep peep!
%sit: Child makes sound of a car hooter.
*CHI1: yifayif ranti.
%gls: yifayif ranti.
%eng: five rand.
*CHI1: mali yam, mali.
%gls: imali yam, imali.

%eng: my money, money.
%sit: Repeated after researcher.
*CHI1: haa, zobethwa ngumama.
%gls: hayi, uzobethwa ngumama.
%eng: no, you will be beaten by mother.
*CHI1: zabethwa.
%gls: uzabethwa.
%eng: you will be beaten.
*CHI1: zabethwa.
%gls: uzabethwa.
%eng: you will be beaten.
*CHI1: zabethwa, zabethwa!
%gls: uzabethwa, uzabethwa!
%eng: you will be beaten, you will be beaten!
*CHI1: bekela lami!
%gls: bekela yeyam!
%eng: move out of the way it is mine!
*CHI3: Lihle, Lihle!
%gls: Lihle, Lihle!
%eng: Lihle, Lihle!
*CHI1: yoshel' idrink.
%gls: siyosela idrink.
%eng: we are going to have a drink.
%sit: Repeated after mother.
*CHI3: mal' gazi.
%gls: bhala igazi.
%eng: write blood.
%sit: Mother told them to 'zoba' (draw), 'drowa' (draw) and 'bhala' (write), which is the word they latched on to here.
*CHI1: igazi.
%gls: igazi.
%eng: blood.
%sit: Repeated after child 3.
*CHI1: Kabelo, sizabhala.
%gls: Kabelo, sizabhala.
%eng: Kabelo, we will write.
*CHI2: pearl thusi!
%gls: pearl thusi!
%eng: pearl thusi!
%sit: Singing.
*CHI1: bhal'ikoma.
%gls: ndibhala inkomo.
%eng: I am writing a cow.
%sit: Mother repeated what the child said.
*CHI2: hayi, Lihle!
%gls: hayi, Lihle!
%eng: no, Lihle!
%sit: Repeated after brother.
*CHI3: hayi, inkomo!
%gls: hayi, yinkomo!
%eng: no, it is a cow!
%sit: Repeated after mother.
*CHI3: bhala inkomo?
%gls: ndibhale inkomo?
%eng: must I write a cow?
*CHI2: bhal' inkomo!
%gls: bhala inkomo!
%eng: write a cow!
%sit: Repeated after child 3.
*CHI1: teng'teki?
%gls: siyothenga ikeyiki?
%eng: are we going to buy cake?
%sit: Mother repeated what the child said.
*CHI1: tranpot.
%gls: itranspoti.

%eng: transport.
%sit: Brother repeated.
*CHI1: bhala, Akum!
%gls: bhala, Akum!
%eng: draw, Akum!
*CHI1: pheza!
%gls: pheza!
%eng: stop it!
*CHI2: hayi hayi man!
%gls: hayi hayi man!
%eng: no no man!
*CHI1: wubhabha.
%gls: ngubhabha.
%eng: it is a baby.
*CHI1: nkosi.
%gls: enkosi.
%eng: thank you.
%sit: Repeated after brother.
*CHI1: enkosi mama.
%gls: enkosi mama.
%eng: thank you mother.
%sit: Repeated after child 2.
*CHI3: enkosi mama.
%gls: enkosi mama.
%eng: thank you mother.
%sit: Repeated after child 1.
*CHI1: tutex.
%gls: icutex.
%eng: cutex.
*CHI1: phelile!
%gls: iphelile!
%eng: it is finished!
*CHI1: nale?
%gls: nale?
%eng: even this one?
*CHI1: nalena?
%gls: nalena?
%eng: this one as well?
*CHI1: hayi, yangxola.
%gls: hayi, uyangxola.
%eng: no, you are making a noise.
*CHI1: uyangxola bhabha.
%gls: uyangxola ubhabha.
%eng: the baby is making a noise.
*CHI3: ziitshipsi zam le.
%gls: ziitshipsi zam ezi.
%eng: these are my chips.
*CHI1: ton' le?
%gls: yintoni le?
%eng: what is this?
%sit: Repeated after researcher.
*CHI1: keyiki.
%gls: yikeyiki.
%eng: it is a cake.
*CHI3: kunku.
%gls: yinkuku.
%eng: it is a chicken.
*CHI1: kulukukukuku!
%gls: kulukukukuku!
%eng: cluck cluck cluck!
*CHI3: nyoka.
%gls: inyoka.
%eng: snake.
*CHI1: nyoka!
%gls: inyoka!
%eng: snake!

%sit: Repeated after child 3.
*CHI1: hawu hawu!
%gls: hawu hawu!
%eng: woof woof!
*CHI1: hawu hawu!
%gls: hawu hawu!
%eng: woof woof!
*CHI1: hawu hawu!
%gls: hawu hawu!
%eng: woof woof!
*CHI3: nantsi.
%gls: nantsi.
%eng: here it is.
*CHI1: kau kau!
%gls: kau kau!
%eng: cluck cluck!
%sit: Child is asked to make a sound of a chicken.
*CHI1: ayiko.
%gls: ayikho.
%eng: it is not here.
*CHI1: ibikit yam.
%gls: ibhiskithi yam.
%eng: my biscuit.
*CHI1: yibikit yam.
%gls: yibhiskithi yam.
%eng: it is my biscuit.
*CHI3: Lihle!
%gls: Lihle!
%eng: Lihle!
*CHI1: bikit!
%gls: ibhiskithi!
%eng: biscuit!
*CHI1: hamba!
%gls: hamba!
%eng: leave!
*CHI1: hamba!
%gls: hamba!
%eng: leave!
*CHI1: hamba!
%gls: hamba!
%eng: leave!
*CHI1: ivaliwe.
%gls: ivaliwe.
%eng: it is locked/closed (car door).
%sit: Repeated after mother.
*CHI1: ivaliwe.
%gls: ivaliwe.
%eng: it is locked/closed (car door).
%sit: Repeated after mother.
*CHI1: moto.
%gls: imoto.
%eng: the car.
*CHI1: peep peep peep!
%gls: peep peep peep!
%eng: peep peep peep!
%sit: Child making the car hooter sound.
*CHI1: peep peep peep!
%gls: peep peep peep!
%eng: peep peep peep!
%sit: Child making the car hooter sound.
*CHI2: bhabha tata aph'.
%gls: bhabha thatha apha.
%eng: my brother, take from here.
%sit: Brother repeated for clarity.
*CHI3: fun' ipeni.

%gls: ndifuna ipeni.
%eng: I want a pen.
*CHI3: tata.
%gls: thatha.
%eng: take.
*CHI3: nantsiya moto!
%gls: nantsiya imoto!
%eng: there is the car!
*CHI1: hambiyi moto.
%gls: ihambile imoto.
%eng: the car has gone.
*CHI1: hambiyi moto.
%gls: ihambile imoto.
%eng: the car has gone.
*CHI2: ivaliwe.
%gls: ivaliwe.
%eng: it is closed/locked (car).
*CHI2: idla!
%gls: yidla!
%eng: eat!
*CHI1: hayi!
%gls: hayi!
%eng: no!
*CHI1: fun' imoto.
%gls: ndifuna imoto.
%eng: I want the car.
*CHI1: vuley' imoto.
%gls: ndivulele imoto.
%eng: open the car for me.
*CHI1: fun' u'khwel' imoto.
%gls: ndifuna u(ku)khwela imoto.
%eng: I want to get in the car.
%sit: Mother repeated for clarity.
*CHI1: vuy' imoto mfethu!
%gls: vula imoto mfethu!
%eng: open the car, buddy!
%sit: Mother repeated for clarity.
*CHI1: ayikho x.
%gls: ayikho x.
%eng: there is not x.
*CHI1: ayikho x.
%gls: ayikho x.
%eng: there is not x.
*CHI1: iyatitha, Akum.
%gls: uyachitha, uAkum.
%eng: Akum is spilling.
%sit: Researcher repeated for clarity.
*CHI3: yimdaka.
%gls: zimdaka.
%eng: they are dirty.
*CHI3: cithe endlini.
%gls: ndicithe endlini.
%eng: I spilled in the house.
*CHI1: le, yimoto.
%gls: le, yimoto.
%eng: this is a car.
*CHI3: le, yimoto.
%gls: le, yimoto.
%eng: this is a car.
%sit: Repeated after child 1.
*CHI1: ayiyeki.
%gls: ayivuleki.
%eng: it does not want to open.
%sit: Repeated after mother.
*CHI1: Kabi, Kabi!
%gls: Kabi, Kabi!

%eng: Kabi, Kabi!

%sit: Repeated after brother.

*CHI3: nhamba!

%gls: ndiyahamba!

%eng: I am leaving!

*CHI3: ifishi!

%gls: ifishi!

%eng: fish!

*CHI3: nantsi!

%gls: nantsi!

%eng: here it is!

*CHI1: nayi ifishi!

%gls: nantsi ifishi!

%eng: here is the fish!

%sit: Repeated after child 3. Nayi is the isiZulu presentative for Cl. 9, see Doke, Malcolm, Sikakana, Vilakazi English-Zulu/Zulu-English Dictionary, 1990:526) Witwatersrand University Press.

*CHI2: funi!

%gls: andifuni!

%eng: I do not want!

*CHI2: hayi man!

%gls: hayi man!

%eng: no man!

*CHI1: fishi!

%gls: ifishi!

%eng: fish!

*CHI1: ititile!

%gls: uyitshixile!

%eng: she locked it!

%sit: Mother repeated for clarity.

*CHI2: mmoto.

%gls: imoto.

%eng: a car.

*CHI1: ititiwe!

%gls: itshixiwe!

%eng: it is locked!

%sit: Mother repeated from clarity.

*CHI1: ititiwe!

%gls: itshixiwe!

%eng: it is locked!

%sit: Mother repeated from clarity.

*CHI1: ititiwe!

%gls: itshixiwe!

%eng: it is locked!

%sit: Mother repeated from clarity.

*CHI1: vuya!

%gls: vula!

%eng: open!

*CHI1: vuya!

%gls: vula!

%eng: open!

*CHI1: vuya!

%gls: vula!

%eng: open!

*CHI1: vuyi imoto, vuya!

%gls: vula imoto, vula!

%eng: open the car, open!

*CHI1: vuya!

%gls: vula!

%eng: open!

@End

Appendix F

Table 0-4 Grammar errors in spontaneous speech data

Type of error	Example (child form vs. adult form)	Transcript	CHI	Age	Gender	Frequency	Noun class	Additional Notes
Missing copulative	iphepha vs. liphepha	Cata	CHI1	2;10	F	1	5	
	amagqaba vs. ngamagqabi	Cata	CHI1	2;10	F	1	6	
	imeva vs. limeva	Cata	CHI1	2;10	F	1	5	
	ivid vs. yividiyo	Cata	CHI1	2;10	F	1	9	
	inja vs. yinja	Cata	CHI4	3	M	1	9	
	Unako vs. NguOnako	Cata	CHI4	3	M	1	1a	
	UAkum vs. nguAkum	Vuku	CHI1	2	M	1	1a	
	umama vs. ngumama	Vuku	CHI1	2	M	1	1a	Missing after a passive construction
	inkomo vs. yinkomo	Vuku	CHI3	2;10	M	1	9	
	eyam vs. yeyam	Vuku	CHI1	2	M	8	9	Possessive pronoun missing copulative
	eyakho vs. yeyakho	Vuku	CHI1	2	M	1	9	Possessive pronoun missing copulative
	yakho vs. yeyakho	Vuku	CHI3	2;10	M	1	9	Possessive pronoun and copulative missing
Missing part of NPx and copulative	situlo vs. sisitulo	Cata	CHI 1	2;10	F	1	7	Missing initial vowel
	nkonkxa vs. yinkonkxa	Cata	CHI1	2;10	F	1	9	Missing initial vowel, nasal shadow prefix
	s'levu vs. sisilevu	Cata	CHI1	2;10	F	1	7	Missing initial vowel
	situlo vs. sisitulo	Cata	CHI2	3;9	F	1	7	Missing initial vowel
	s'levu vs. sisilevu	Cata	CHI2	3;9	F	1	7	Missing initial vowel
	nmntanam vs. ngumntwana	Cata	CHI2	3;9	F	1	1	Missing initial vowel, nasal shadow prefix
	mabeye vs. ngamabele	Cata	CHI2	3;9	F	1	6	

	ntoni vs. yintoni	Cata	CHI4	3	M	1	9	Missing initial vowel, nasal shadow prefix
	bhabha vs. ngubhabha	Vuku	CHI1	2	M	1	1a	
	tv vs. yiTV	Vuku	CHI1	2	M	1	9	
	Kabelo vs. nguKabelo	Vuku	CHI1	2	M	1	1a	
	tships vs. ziitships	Vuku	CHI1	2	M	1	10	
	toni vs. yintoni	Vuku	CHI1	2	M	1	9	Missing nasal too
	keyiki vs. yikeyiki	Vuku	CHI1	2;10	M	1	9	
	bhabha vs. ngubhabha	Vuku	CHI2	3	M	1	1a	
	tv vs. yiT V	Vuku	CHI2	3	M	1	9	
	moto vs. yimoto	Vuku	CHI3	2;10	M	1	9	
	kunku vs. yinkuku	Vuku	CHI3	2;10	M	1	9	Missing nasal too
Wrong copulative	Yihlathi vs. lihlathi	Cata	CHI1	2;10	F	1	9/5	Overgeneralisation cl. 9
	yitye vs. lilitye	Cata	CHI1	2;10	F	1	9/5	Overgeneralisation cl. 9
	yitye vs. lilitye	Cata	CHI2	3;9	F	1	9/5	Overgeneralisation cl. 9
	yidoka vs. ludonga	Cata	CHI3	3	F	1	9/14	Overgeneralisation cl. 9
	yitye vs. lilitye	Cata	CHI3	3	F	1	9/5	Overgeneralisation cl. 9
	wuOtha vs. NguOtha	Cata	CHI1	2;10	F	1	1a	Glide copulative
	wuMbeyambeya vs. NguMbeyambeya	Cata	CHI1	2;10	F	1	1a	Glide copulative
	wabhabha vs. ngubhabha	Vuku	CHI1	2	M	1	1	Glide copulative
Missing NPx only	platik vs. iplastiki	Cata	CHI1	2;10	F	1	9	
	mai vs. imali	Vuku	CHI1	2	M	1	9	
	tranpot vs. itranspoti	Vuku	CHI1	2	M	1	9	
	nyoka vs. inyoka	Vuku	CHI1	2	M	1	9	Nasal shadow prefix
	fish vs. ifish	Vuku	CHI1	2	M	1	9	
	mama vs. umama	Vuku	CHI1	2	M	11	1a	

	mmoto vs. imoto	Vuku	CHI2	3	M	1	9	
	nyoka vs. inyoka	Vuku	CHI3	2;10	M	1	9	Nasal shadow prefix
Missing subject marker	funa imbiza vs. sifuna imbiza	Cata	CHI1	2;10	F	1	1st person plural	
	funa isuphu vs. sifuna isuphu	Cata	CHI2	3;9	F	1	1st person plural	
	funa imbiza vs. sifuna imbiza	Cata	CHI4	3	M	1	1st person plural	
	yadlala vs. uyadlala	Vuku	CHI1	2	M	1	1a	
	yamba vs. ndiyahamba	Vuku	CHI1	2	M	1	1st person	
	yangxola vs. uyangxola	Vuku	CHI1	2	M	1	1a	
	funa imoto vs. ndifuna imoto	Vuku	CHI1	2	M	2	1st person	
	funa ipeni vs. ndifuna ipeni	Vuku	CHI3	2;10	M	1	1st person	
	ngcwaba vs. wangcwatywa	Cata	CHI1	2;10	F	1	1a	Remote past SM missing
	yayikha vs. uyayikha	Cata	CHI1	2;10	F	1	1a	Missing with OM present
	yanditshova vs. uyanditshova	Cata	CHI3	3	F	1	1a	Missing with OM present
	yayivala vs. ndiyayivala	Cata	CHI4	3	M	1	1st person	Missing with OM present
	gqibile vs. ndigqibile	Cata	CHI4	3	M	1	1st person	Missing with past tense
	tatile vs. ndithathile	Vuku	CHI1	2	M	1	1st person	Missing with past tense
	phelile vs. iphelile	Vuku	CHI1	2	M	1	9	Missing with past tense
	hambiyi vs. ihambile	Vuku	CHI1	2	M	2	9	Missing with past tense

	chithe endlini vs. ndicithe endlini	Vuku	CHI3	2;10	M	1	1st person	Missing with past tense
	dlale phandle vs. sidlale phandle	Vuku	CHI1	2	M	1	1st person	Missing with subjunctive
	vuleye imoto vs. ndivulele imoto	Vuku	CHI1	2	M	1	1st person	Missing with subjunctive
	khaba ku- vs. ndikhabe kuye	Vuku	CHI1	2	M	1	1st person	Missing with subjunctive (also missing)
	bhala inkomo vs. ndibhale inkomo	Vuku	CHI3	2;10	M	1	1st person	Missing with subjunctive (also missing)
	zobethwa vs. uzobethwa	Vuku	CHI1	2	M	2	1a	Missing with future
	zabethwa vs. uzabethwa	Vuku	CHI1	2	M	3	1a	Missing with future
	yosela vs. siyosela	Vuku	CHI1	2	M	1	1st person	Missing with future
Missing present tense marker and subject marker	mbetha vs. ndiyambetha	Cata	CHI1	2;10	F	1	1st person	Missing with OM present
Missing present tense marker	ndivala vs. ndiyavala	Cata	CHI4	3	M	1	1st person	SM present
	s'dlala vs. siyadlala	Vuku	CHI1	2	M	1	1st person	Partial SM present
	hamba nna vs. ndiyahamba mna	Vuku	CHI3	2;10	M	1	1st person	SM missing too
Missing future	ndihlamba ekhaya vs. ndiyohlamba	Cata	CHI4	3	M	1		
	sibethwa ngumama vs. siza kubethwa	Vuku	CHI1	2	M	1		
Missing subject marker and missing future	kukutya vs. iza kukutya	Cata	CHI1	2;10	F	1	9	Partial future there
	xelela umamam vs. ndiza kuxelela	Cata	CHI1	2;10	F	1	1st person	Full future missing

	womxelela umama vs. ndizomxelela	Cata	CHI1	2;10	F	1	1st person	Partial future there
	betha mama vs. uza kukubetha	Vuku	CHI1	2	M	1	1a	Full future missing
	bethwa wena vs. uza kubethwa wena	Vuku	CHI1	2	M	2	1a	Full future missing
Missing absolute pronoun	bambelela ku- vs. bambelela kuye	Cata	CHI3	3	F	1	1a	
	khaba ku- vs. kuye	Vuku	CHI1	2	M	1	1a	
Agreement error	mlungu vs. abelungu	Cata	CHI1	2;10	F	1	1/2	
	elam vs. yeyam	Vuku	CHI1	2	M	1	5/9	Overgeneralisation cl. 5
	lelethu vs. yeyethu	Vuku	CHI1	2	M	1	5/9	Overgeneralisation cl. 5
	Iyatitha, Akum vs. uyachitha uAkum	Vuku	CHI1	2	M	1	9/1a	SM overgeneralisation Cl. 9
	ititile vs. uyitshixile	Vuku	CHI1	2	M	1	9/1a	SM overgeneralisation Cl. 9
	ziitships zam le vs. ziitships zam ezi	Vuku	CHI3	2;10	M	1	9/10	Demonstrative overgeneralisation Cl. 9
	yimdaka vs. zimdaka	Vuku	CHI3	2;10	M	1	9/10	
Missing past suffix	ulahleke umntwana vs. ulahlekile umntwana	Cata	CHI2	3;9	F	1		Conjunctive form instead of disjunctive form
	phumi vs. iphumile	Vuku	CHI1	2	M	1		Incomplete and missing SM
Incomplete OM on command	itshaje vs. yitshaje	Cata	CHI2	3;9	F	1		Correct use of subjunctive
	misa vs. yijongise	Cata	CHI2	3;9	F	1		Missing subjunctive as well
Incomplete/missing OM	uyantshova vs. uyanditshova	Cata	CHI 1	2;10	F	1	1st person	Present: only nasal there
	betha mama vs. uza kukubetha	Vuku	CHI1	2	M	1	2nd person	Future: missing with future and SM
	ititile vs. uyitshixile	Vuku	CHI1	2	M	1	9	Past
Missing subjunctive	khaba ku- vs. ndikhabe kuye	Vuku	CHI1	2	M	1		Missing with SM

	sihlala phandle vs. sihlale phandle	Vuku	CHI1	2	M	1		
	bhala inkomo vs. ndibhale inkomo	Vuku	CHI3	2;10	M	1		Missing with SM
	fun'ithule vs. andifuni ithule	Vuku	CHI1	2	M	1		Missing SM, negative, and suffix
Incomplete negative	funi vs andifuni	Vuku	CHI2	3	M	1		Missing SM only

Ikhodi yomthathi-nxaxheba …….

The isiXhosa Communicative Development Inventory (CDI): Words and Sentences (ages 16 – 30 months)

Uluhlu lwamagama nezivakalisi zesiXhosa zabantwana (ubudala buphakathi kweenyanga ezi-16 nezi-30)

Mzali/Mgcini-mntwana obekekileyo

Nalu uluhlu lwamagama abantwana abanokuwazi. Luluhlu olude nolukhulu lwamagama asetyenziswa ngabantwana jikelele, ungakhathazeki ukuba umntwana wazi ambalwa ngoku, kuba la magama avela kubantwana abakwii-age ezahlukeneyo. Nceda ufunde yonke imiyalelo uqinisekise ukuba ugqibezele wonke amaphepha.

Zama ukugqibezela uluhlu xa unemizuzu engaphantsi ko-30 ungaphazanyiswa, umzekelo xa umntwana wakho elele. Akufuneki uyigqibezele ngaxeshanye. Ukuba uphazanyisiwe, kulungile ukuyibeka phantsi uphinde ubuye kuyo xa unexesha elaneleyo. Kodwa zama ukuyigqiba kwiveki enye.

Enkosi kakhulu!

Imiyalelo

1. Ukuba umntwana wakho **<u>akakaliqondi igama okanye akakakwazi ukulibiza</u>**, shiya iisekile zingenanto (ungabhali kuzo).

Izilwanyana	Uyaqonda nokubiza
ibhabhathane	O
ibhadi/impunzi	O

2. Ukuba umntwana wakho **<u>uyaliqonda akwazi nokulibiza igama</u>**, makisha ngolu hlobo:

Izilwanyana	Uyaqonda nokubiza
ibhabhathane	O
ibhadi/impunzi	O
ibhere	●

Nceda njalo ugcwalise isekile yonke ngolu hlobo ● kuba le nto izonceda iskena ukuba sifunde iCDI.

Nceda ufake amagama umntwana wakho akwazi ukulibiza ngokwakhe (umzekelo ungafaki amagama obuwabize ngokwakho emntwaneni, umzekelo “Yithi itreyini”)

3. Faka amagama umntwana wakho awasebenzisileyo noba la magama athetha into enye.

Ukuba umntwana wakho uyaliqonda okanye uyalibiza **<u>igama elahlukileyo</u>** nceda uzalise isekile efanelekileyo uze ubiyele igama (ukuba likhona) okanye ulibhale phantsi elakho igama. Sicela uquke:

• Amagama ahlukileyo, umzekelo “usana” endaweni ka-”unopopi”

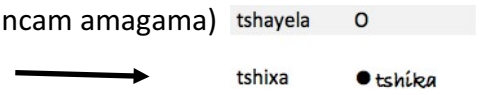
umvundla/ imbila	O
unodoli/ unopopi	● usana

• Amagama asekuhlaleni athetha into enye, umzekelo “ubhabha” endaweni ka-”usana”

unesi/ umongikazi	O
usana/ umntwana/ ubhabha/ nana	●

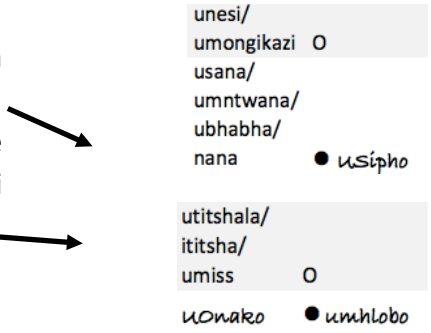
• Amagama asetyenziswa lusapho kodwa athetha into enye, umzekelo u”gogo” endaweni ka-”makhulu”

• Amagama omntwana (ukuba umntwana akawabizi ncam amagama) umzekelo u-“tshika” endaweni ka-”tshixa”



• Nceda ungafaki amagama angesiso isiXhosa (umzekelo: u-“water” endaweni ka-”amanzi”).

4. Kwicandelo 11 (Abantu) makisha igama nokuba umntwana wakho ubize igama lomntu (umzekelo “Sipho” endaweni ka-”usana”). Nceda ufake namagama abanye abantu umntwana wakho awabizileyo uze ubhale phantsi ukuba ngoobani aba bantu ekugqibeleni, kanje:



Nceda ubhale umhla oqale ngawo ukuzalisa olu luhlu (nceda ugqibe olu luhlu kwiveki nje enye ukusukela ngalo mhla wokuqala)

Umhla wanamhlanje ……/……/…….

Ubudlelwane bakho nomntwana ……..

A. ULUHLU LWAMAGAMA

Nceda makisha ezantsi iisekile ezisecaleni kwamagama umntwana wakho awaziyo okanye awaziyo futhi awabize.

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izandi ezichazayo nezandi zezilwanyana	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
hawu hawu	O	miawu/nyawu	O	tring-tri	O
hlhl	O	mm	O	tseep tseep	O
hnn/gragrama	O	moo/mmm	O	tswi-tswi	O
kau kau	O	oo oooo	O	vroom	O
kurukugu/ khapha-khapha	O	peep	O	wiu wiu	O
kwakwaku	O	shu/buhlungu	O	yho/yhuuu	O
meh meh	O	toot toot	O		

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izilwanyana	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
ibhabhathane	O	ingonyama	O	iqwarha/izebra	O
ibhadi/impunzi	O	ingwe	O	isele	O
ibhere	O	ingwenya	O	isigcawu	O

ibhokwe	O	inja	O	isikhova	O
ibhungane/ irhorho	O	injana/inja encinci/ intshontsho lenja	O	isikhukukazi	O
idada	O	inkawu	O	isilo/ isilwanyana	O
idonki	O	inkomo/ithole	O	isongololo	O
igusha	O	inkuku/i-chiken	O	itakane legusha	O
ihagu	O	inkumba/isnail/ iznail	O	ithole	O
ihashe	O	intaka	O	udyakalashe	O
ikarikuni	O	intakumba	O	ufudo/ uskilpad	O
ikati	O	intlanzi/ifish	O	umqhagi	O
imbovane	O	intsholongwane	O	umvundla/ imbila	O
impukane	O	inyathi	O	unodoli/ unopopi	O
impuku	O	inyoka	O	unomadud- wane	O
indlovu	O	inyosi	O	unomatse	O
indlulamthi	O	iphela	O	unonkala	O
ingcongconi	O	iphengwini	O	urhanisi	O
ingcuka/imvolufu	O	iponi	O		

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Isithuthi	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
inqwelomoya/ i-eropleyini	O	ihelikoptha/ i-eropleyini	O	isithuthuthu	O
iambulensi	O	ikari	O	iteksi/etheksini	O
ibhaki/iven	O	ikari yomntwana/ iprem	O	itraki	O
ibhasi	O	imoto yabacimi-lilo/ifire-engini/ ifire-brigade	O	itrekta/ igandaganda	O
ibhayisekile	O	imoto/ emotweni	O	itreyini/ uloliwe	O
iboat/isikhephe/ iphenyane	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izinto zokudlala	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
amaqhampu	O	iglu	O	ipuzzle	O
ibali/istori	O	ikreyoni	O	isipho	O
ibat	O	incwadi	O	itshokwe	O
ibhaluni	O	into yokudlala/itoyi	O	udongwe	O
ibhola	O	ipeni	O	umdlalo/igem	O
iblokhu	O	ipensile/ilid	O	unopopi	O

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Ukutya neziselo	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
amanzi	O	ikellogs/ iwheatbix/ icornflakes/ ipapa	O	isidudu	O
amaqhashu	O	ikeyiki	O	isiselo/idrink	O
amasi	O	ikhaphetshu	O	isitoki	O
iapile	O	ikhastadi	O	isonka	O
iayisi/umkhenkce	O	ikofu	O	isoseji	O
iayiskrimu	O	ikrim	O	isosi	O
ibhanana	O	imelon/ivatala	O	ispinatshi	O
ibhiskithi	O	imifuno/iveg	O	istu	O
ibhotolo/irama	O	iminqathe/ iikherothi	O	isuphu	O
idrink/icoke	O	inkuku/itshikini	O	iswekile	O
ifish/intlanzi	O	inyama	O	itapile/ izambane	O
ifruit/isiqhamo	O	iorenji	O	ithanga	O
igwinya	O	ipap	O	iti	O
ihembegha	O	ipasta/ iispagheti/ iimacaroni/ iinoodles	O	itoast/ isonka	O
Iidamplex	O	ipere	O	itshepis/ ibubble gum	O
iigrapes/iidiliya	O	ipesika	O	itshizi	O
iilekese	O	iphinabatha	O	itshokolethi	O
iimbotyi	O	ipilchard	O	itswele	O
iinuts/iipinuts/ amadongomane	O	ipitsa	O	ityuwa/isout	O
iipancake	O	ipoloni	O	ivosi	O
iipeas/ii-erityisi	O	ipudingi	O	iyogathi	O

iiscones	O	iqanda	O	ubisi/ibisi	O
iitships/ amashwamshw-am	O	iqunube/ istrawberi	O	ukutya	O
iivithamini/ amayeza	O	irantyentyisi	O	umbona	O
ijeli	O	isaka	O	umhluzi/ igreyivi	O
ijem	O	isendwitshi	O	umngqusho	O
ijus/idrink	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Aweempahla	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
amacici	O	iiglavs	O	iqosha	O
iambrela	O	iintsimbi	O	iraincoat	O
ibhanti	O	ijean	O	isihlangu	O
ibhatyi	O	ijezi	O	isiketi	O
ibhegi	O	ijezi/isilamba	O	isikhafu	O
ibibi	O	ikawusi	O	islipa	O
idyasi/ibhatyi	O	ikimbi/ihuggies/ inapkeni/inapi	O	iteki	O
iflops	O	ilokhwe	O	iziphu	O
ihempe/isikhipha	O	inecklace	O	umnqwazi/ ihat	O
iibhulukhwe	O	ipenti/ibikini	O	ushoti	O
iibhuts/ iigambhuts	O	ipijama	O	utight	O

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Amalungu omzimba	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
ibele/amabele	O	indlebe	O	isisu	O
idolo	O	ingalo	O	izinyo	O
igazi	O	intamo	O	ubuso	O
iimpundu/ibums	O	intliziyo	O	ulwimi/ilwimi	O
iinwele	O	intloko	O	umbhono/ inkaba/uqongo	O
iinyawo	O	iqatha	O	umlenze/ imilenze	O
ikuku/usisi/inyo	O	isandla	O	umlomo	O
iligxa	O	isidlele	O	umnwe/ iminwe	O
iliso/ihlo	O	isifuba	O	umnwe/ uzwane	O

imilebe	O	isilevu	O	umqala	O
impumlo	O	isilonda/iduma	O	uzipho/icutex	O
incanca/ umthondo/ itutu/ umphambili	O	isinqe	O		

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izinto ezincinci ezisekhaya	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
iayini	O	ilipstick	O	isibane/ ilayithi	O
ibhakethe/ipeyile /ibucket	O	imali	O	isikhonkwane	O
ibhaskethi	O	imbhodlela	O	isipaji	O
ibhokisi	O	imbiza	O	isitofu	O
ibhotile/ibottle/ ibhodlela/idami	O	imela/ibhoso	O	isitya	O
ibrash/ itoothbrash	O	imophu	O	isityalo	O
ibrashi	O	inelklipa	O	itawuli	O
iCD	O	ingubo	O	itawuli yobuso	O
icephe	O	inkonkxa/ikani/ itoti	O	itephu	O
icutex	O	inkunkuma	O	iteyiphu	O
iDVD	O	inkunkuma/ irabishi	O	itissue/ itoyileth-paper	O
ifolokhwe	O	into	O	itreyi	O
ifoto	O	iphepha	O	itshefu/ilaphu lokufinya	O
ifowuni/ifoni	O	iplasta	O	ivaselina/ izambak/ivix	O
iglasi	O	iplastiki	O	iwotshi	O
ihamile	O	ipleyiti	O	iyeza	O
ihuva	O	iqhaga	O	izikere	O
iipilisi	O	iranti	O	izitshixo	O
iispecs/iidimas	O	irediyo/ iwayelesi	O	umatshisi/ oomatshisi	O
ikama	O	isambrela	O	umfanekiso/ ipicture	O
iketile	O	isepha	O	umpu	O
ikhamera	O	iseviyethi/ ifadukwe	O	umqamelo/ ipilo	O
ikhandlela	O	isibane	O	umtshayelo	O
ikomityi/icup	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Amagumbi nefenitshala	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
ibhafrum/igumbi lokuhlambela	O	igumbi lokuphumla/ idiningrum	O	isitulo/ichair	O
ibhafu	O	igumbi/irum/ ikamere	O	isofa/icouch/ esofeni	O
ibhanki/ibench/ isitulo	O	ihita	O	itafile	O
ibhedi	O	iibhagla	O	itoyilethi/indlu yangasese	O
idrawa	O	ikhetini	O	itshemba	O
idraya	O	ikhitshi	O	iTV	O
ifan	O	ikhompyutha	O	ivaranda/ istoep	O
ifestire	O	Indawo yokoja	O	iwodrophu/ ikhabathi	O
ifriji	O	ionti	O	izinki	O
ifriza	O	ishawa	O	izitepsi	O
igaraji	O	isinki	O	ucango/ icango	O
igeyithi	O	isitovu	O	umatrasi	O
igumbi lokulala	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izinto zangaphandle	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
amanzi	O	imvula	O	isanti	O
iflegi	O	ingca	O	isebe	O
igadi	O	inkwenkwezi/ ista	O	isibhakabhaka/ izulu	O
igqabi/amagqabi	O	intaba	O	isikopu/ umhlakulo	O
ihose/upipe/ ipipe/umbobo/ ithumbu lamanzi	O	intonga	O	isitalato/ is'trato/ indlela	O
ikiriva/ikiliva	O	intyatyambo/ iflawa	O	ujingi	O
ilanga	O	inyanga	O	umoya	O
ileli	O	ipavement	O	umthi	O
ilifu/amafu	O	iphul	O	umtyibilisi/ islide	O
ilitye	O	irhobothi	O	uphahla/iruf	O
iliwa	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

lindawo ongaya kuzo	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
ibala	O	ikresh	O	ipikniki	O
icawa	O	ilizwe	O	isikolo/ esikolweni	O
idolophu	O	imuvi/ifilimu	O	ivenkile/ oobaraka/ emasomaliy- eni/ amasomaliya/ amamdriga- mba	O
ifama/amasimi	O	indawo	O	iyadi	O
igaraji/ipterol station	O	indlu/endlini	O	izu	O
ihlathi	O	ipaka	O	ulwandle	O
ikhaya	O	ipati/umgidi/ ibrthday	O	umsebenzi/ emsebenzini	O

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Awabantu	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
abantu	O	udadebawo	O	umlungu	O
ifirefighter/ umcimi-mlilo	O	udadewethu	O	umninawe	O
igama lalo mntwana	O	ugqirha/igqirha	O	umntu	O
igama lesilo-qabane (igama lenja okanye lekati)	O	umakazi	O	umntwana/ umntana/ umntanam	O
indoda/utata	O	umakhulu/ ugogo	O	unesi/ umongikazi	O
ineni/uanti	O	umalume	O	usana/ umntwana/ ubhabha/unana	O
inkwenkwe/utata	O	umama	O	usisi	O
intombi	O	umfazi/umama	O	utata	O
ipolisa/amapolisa	O	umhlobo/ itshomi/ mfowethu/ fethu/kwedini	O	utatomkhulu	O
ubawokazi	O	umkhuluwa	O	utitshala/ ititsha/umiss	O

ubhuti/ umntakwethu	O		O		O

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Imisebenzi yemihla ngemihla nemidlalo	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
bhayibhayi/ hamba kakuhle	O	inkulu kakhulu/ingaka	O	ndiphe	O
eish	O	isidlo sakusasa/ iblakfesi/ ibreakfast/ipap	O	ndizakufuma-na	O
enkosi	O	isidlo sangokuhlwa/ isapa	O	shap-shap	O
ewe	O	isnack/iitships	O	shem	O
etshembeni	O	isoka	O	sho	O
hayi bo	O	isopolo	O	thula	O
hayi/suku-	O	ixesha lokutya	O	ucikicane…	O
helo/molo	O	jika/jikela	O	ukuthenga/ ukushopisha	O
hi5 /take5	O	lala kakuhle	O	unangaphi	O
ibhafu	O	mini emnandi kuwe/happy birthday	O	Uphi?	O
ilantshi	O	molo/hi	O	uyabona/ yabo?	O
inap/ngqengqa	O	nceda/cela	O	vuka vuka	O

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izenzi	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
abelana/ sherishana/ipha/ qhekezela	O	jinga	O	qala	O
akha	O	jonga/khangela	O	qhuba	O
aphula/ophula	O	jula/phosa	O	qhwaba	O
baleka	O	kaka	O	qokelela	O
bamba	O	kha/ikha	O	qubha/dada	O
bamba/phatha	O	khaba	O	rhawuzelela	O
beka/faka	O	khasa	O	rola	O
beleka	O	khetha	O	s'apha/zisa/ phathela	O
betha/ngomba	O	khotha	O	sebenza/ phangela	O

bhala	O	khulula	O	sela	O
biza	O	khupha	O	shiya	O
boleka	O	khwela	O	sika	O
bona	O	khwela/qhuba	O	skeyitha	O
bonisa	O	krazula	O	suka	O
buya	O	kwazi/azi	O	sula	O
canda/cukuceza/ ahlula	O	lahla	O	thambisa	O
chama	O	lala	O	thanda	O
cima	O	landela	O	thatha/ina	O
cinga	O	leqa	O	thenga	O
chitha	O	lila	O	thetha	O
coca/klina	O	linda	O	thi	O
cofa	O	lingana/ linganisa	O	thiya/ caphukela	O
cula	O	luma	O	tsala	O
danisa/yenza injube/jiva	O	lungisa	O	tshaja	O
dibanisa/ metshisa	O	ma/yima/pheza /yeka	O	tshayela	O
dlala	O	ma/phakama	O	tshixa	O
drowa/zoba/ bhala	O	mamela	O	tshiza/thi dyumpu	O
enza	O	ncamithisela	O	tsiba	O
fihla	O	ncanca	O	tsweba	O
fika	O	nceda	O	tya	O
fota	O	ncuma	O	tyhila/jika	O
fowuna/ fowunela	O	ndwendwela/ tyelela	O	tyibilika	O
fumana/khangela /funa	O	ngena	O	tyisa	O
funa/rhalela/ bawela/ nqwenela	O	ngqubeka	O	va	O
funda/lesa	O	nika/pha/s'apha /nikeza	O	va/ngcamla	O
gabha	O	nkqonkqoza	O	vala	O
galela	O	nxiba	O	vuka	O
gqiba/phela	O	omisa	O	vula	O
gquma	O	osa/oja	O	vusa	O
haga/hagi	O	peyinta	O	vuthela	O
hamba	O	phakamisa	O	wa	O
hamba/woka	O	phatha	O	wina	O
hlala	O	pheka	O	wisa	O
hlala/sala	O	phosisa	O	xelela	O

hlamba/vasa	O	phuma	O	ya	O
hleka	O	phunga	O	yiza/za	O
hlukuhla	O	phuza/ncamisa	O	zenza	O
khawuleza	O	pusha/tyhala/ tshova	O	zimela	O

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Amagama achazayo	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
(ngoku)-khawuleza	O	khulu	O	nomsindo	O
aphukile(yo)	O	kude	O	nxaniwe	O
ayilunganga	O	kufuphi/ kufutshane/ kufitshane	O	nzima/sinda	O
banda(yo)/ godola	O	lambile	O	okugqibela	O
bi	O	lele	O	okuqala	O
bi/rharha/mdaka	O	luhlaza/grin	O	omile(yo)	O
blowu/blu/luhlaza	O	lukhuni/qinile	O	onwabile/vuya	O
bomvu/red	O	lumka/hata/ suka	O	orenji	O
brawun/ntsundu	O	lusizi	O	oyika	O
buhlungu	O	manzi	O	ozela	O
cimile(yo)	O	mhlophe	O	phakamile/ phezulu	O
cocekile(yo)/klin	O	mhlophe/ khanya	O	phelile	O
coselela/kakuhle /kancinci/phathakahle	O	mnandi	O	pinki	O
cotha	O	mnyama	O	qinile	O
dala	O	ncinane	O	shushu/tshisa	O
de	O	ncinci	O	sile/geza	O
diniwe	O	ncinci/smol	O	switi	O
empti/akho'nto	O	ngcangathi	O	thambile	O
enzakele/limele	O	ngcolile(yo)/ mdaka/dethi	O	thule	O
fudumala	O	ngcono/bhetere /rayithi	O	tsha	O
gula	O	ngxola	O	tyhuti/hle	O
hle	O	ngxola(yo)	O	vukile	O
hle/lungile	O	nobubele	O	yelo	O

				zele/gcwele/ hluthi	
hluphekile	O	nomoya	O		O

Remember to give your child credit for using different or local words with the same meaning.

Amagama amaxesha	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
emva	O	kusasa	O	ngomso	O
emva kwemini	O	namhlanje	O	phambi	O
emva/leyitha	O	namhlanje ebusuku	O	ubusuku	O
ixesha	O	ngoku	O	usuku/imini	O
izolo	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izimelabizo	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
bona	O	ngokwabo	O	wakho/yakho/ lakho	O
eyakhe/owakhe/ elakhe	O	ngokwakhe	O	wena	O
eyakho/owakho/ elakho	O	ngokwakho	O	wenu/yenu/ lenu	O
eyam/owam/ elam	O	ngokwam	O	yam/wam/lam	O
eyethu/owethu/ elethu	O	ngokwethu	O	yena	O
laa/ezaa	O	nina	O	yethu/wethu/ lethu	O
le/ezi/eli/lo	O	thina	O	yona	O
loo/ezo	O	wabo/yabo/ labo	O		O
mna	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Amagama abuzayo	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
bani	O	nini	O	ntoni	O
eyiphi	O	njani	O	phi	O
kutheni/ngoba kutheni	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Imibekwa-phambili neendawo	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
akekho/ayikho/pha	O	nantsiya/nanko	O	phantsi	O
apha	O	ngaphandle	O	phantsi kwa-	O
ecaleni kwa-	O	ngaphezulu	O	phaya	O
emva kwa-	O	phakathi	O	phezu kwa-	O
emva/eback	O	phambi kwa-	O	phezulu	O
nantsi/nanku	O	phandle	O		

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izimelabizo zoquko	Uyaqonda nokubiza		Uyaqonda nokubiza		Uyaqonda nokubiza
ayikho/azikho	O	konke/yonke/zonke/bonke	O	ninzi	O
enye/ezinye	O	mbalwa	O	zombini	O
fana na	O				

Khumbula ukufaka amagama ahlukileyo umntwana wakho awasebenzisayo okanye amagama asekuhlaleni athetha into enye.

Izidibanisi	Uyaqonda nokubiza		Uyaqonda nokubiza
ke	O	kuba	O
kodwa	O	ukuba	O

B. IZIVAKALISI NEGRAMA

Icandelo (a)	Ewe	Hayi
1. Sisebenzisa izandi ezithile, okanye iziqalo zamagama, umzekelo u-bhabha, u-mama, um-ntwana. Umntwana wakho seleqalile na ukusebenzisa ezi zandi okanye ezi ziqalo?	O	O
2. Xa uthetha ngezinto ezingaphezulu kwesinye isiqalo sizokwahluka kunaxa uthetha ngento enye. Umzekelo u-"umntwana" uyatshintsha abe ngu-"abantwana", u-"ilitye" uyatshintsha abe ngu-"amatye", u-"inja" uyatshintsha abe ngu-"izinja". Umntwana wakho seleqalile ukuthetha ngolu hlobo?	O	O
3. Ukuba sifuna ukuthetha ngezinto sizichaze sisebenzisa amagama anjengo-"ncinci" no-"khulu" – singasebenzisa izandi ekuqaleni kwegama njengo-e-/i no-om ukwenza amagama azomelana nezibizo ezichazwayo (**um**ntwana **om**khulu/**in**ja **en**kulu). Ingaba umntwana wakho seleqalile ukusebenzisa amagama ngolu hlobo?	O	O
4. Ukuthetha ngemisebenzi eyahlukeneyo – Abanye abantwana badla ngokubiza amagama ngendlela yongathi bayakuyalela ukuba yenza into ethile, umzekelo, bathi "ngena, khaba, pheka (njalo njalo)" kodwa ekuhambeni kwexesha bayaqala ukuthetha ngokungathi bayayenza loo nto, okanye omnye umntu uyayenza loo nto. Umzekelo "Uyangena, uyakhaba, uyapheka". Umntwana wakho seleqalile ukwenza oko?	O	O
5. Xa sithetha ngezinto ezenzekileyo, esezigqithile, siyatshintsha isandi esithi "a" sibe ngu"ile" (ndiyahamba → ndihambile). Umntwana wakho seleqalile ukwenza oko?	O	O

Icandelo (b)

Kwiqela ngalinye lamagama ndixelele leliphi elona qela elifana nendlela umntwana wakho athetha ngayo ngoku? Ukuba umntwana wakho usebenzisa izivakali ezinzima kwezi zibini onikwe zona, khetha esesibini.

1. fazi mfazi umfazi	O O O	**2.** ntwana bantwana abantwana	O O O	**3.** lenze mlenze umlenze	O O O
4. thi mithi imithi	O O O	**5.** so liso iliso	O O O	**6.** gqabi magqabi amagqabi	O O O
7. tulo situlo isitulo	O O O	**8.** nja zinja izinja	O O O	**9.** bhola ibhola	O O

10. Ukuba umntwana wakho ufuna ukuthetha ngento eyenzekileyo egqithileyo, yeyiphi efana nendlela athetha ngayo? khabi O khabile O ndikhabile O	**11.** Ukuba umntwana wakho ufuna ukuthetha ngento eyenzekileyo egqithileyo, yeyiphi efana nendlela athetha ngayo? siphume O siphumile O	**12.** Ukuba umntwana ufuna ukuphikisa, yeyiphi indlela efana nendlela athetha ngayo? funi O andifuni O
13. Ukuba umntwana wakho ufuna ukukuxelela ukuba ungayenzi loo nto, yeyiphi indlela efana nendlela azokulumkisa ngayo? hamba O sukuhamba O	**14.** Ukuba umntwana wakho ufuna ukutsho into amele ayenze, yeyiphi indlela efana nendlela azothetha ngayo? ndidlala phandle O ndidlale phandle O	**15.** Ukuba umntwana wakho ufuna ukuthetha ngento esezokwenzeka yeyiphi indlela efana nendlela azothetha ngayo? hlala apha O wohlala apha O ndizohlala apha O
16. Ukuba umntwana wakho ufuna ukuthetha ngento eyenzekayo ngoku, yeyiphi indlela efana nendlela azothetha ngayo? hamba O yahamba O uyahama O	**17.** nditshova O uyanditshova O	**18.** ndiyathanda O ndiyakuthanda O
19. Ukuba ubuza umntwana "yintoni le?", yeyiphi indlela efana nendlela azophendula ngayo? bhola O yibhola O	**20.** Ukuba ubuza umntwana "yintoni le?", yeyiphi indlela efana nendlela azophendula ngayo? umntwana O wumntwana O ngumntwana O	**21.** Ukuba umntwana wakho ufuna ukuthetha ngesibizo esifana no"ihlathi" okanye "ihashe", sesiphi isiqalo segama ezizofana nesomntwana azosisebenzisa? yihlathi O lihlathi O

Umntwana wakho seleqalile ukudibanisa amagama, umzekelo "Tya ukutya"?

ewe O hayi O

Ukuba umntwana wakho akadibanisi amagama enze izivakalisi, sukuqhubeleka phambili.

Icandelo (c)

Khawundinike ezona zivakalisi zide zibe ntathu okhe waziva kutshanje kumntwana wakho.

1.
2.
3.

Icandelo (d)

Kwiqela ngalinye lamagama ndixelele leliphi elona qela elifana nendlela umntwana wakho athetha ngayo ngoku? Ukuba umntwana wakho usebenzisa izivakali ezinzima kwezi zibini onikwe zona, khetha esesibini.

1. funa iti. O ndifuna iti. O mna ndifuna iti O mna ndifuna iti ngoku. O	**2.** cima isibane. O cima isibane ndiyalala. O cima isibane ndifuna ukulala. O	**3.** sukubamba. O ungabambi imoto. O andifuni ubambe le moto. O
4. iti shushi. O iti ishushu. O le ti ishushu. O	**5.** ndiyayifuna. O ndiyayifuna into onayo. O	**6.** ndifuna isonka. O ndifuna isonka nedrink. O
7. ndijonge. O ndijonge xa ndidlala. O	**8.** uphi unopopi? O uphi unopopi wam? O uphi unopopi wam uLihle? O	**9.** siyadlala. O mna noAnathi siyadlala. O
10. ndicula ingoma. O ndikuculela ingoma. O	**11.** ndineedrink ezimbini/ezi-2. O ndineebhothile ezimbini/ezi-2 yeedrink. O	**12.** ibhola tafile. O ibhola phezu kwetafile. O ibhola iphezu kwetafile. O
13. imoto yam. O eyam imoto. O yeyam imoto le. O	**14.** intombi iyalila. O intombi iyalila iwile. O intombi iyalila kuba iwile O	

Sisiphelo seCDI yesiXhosa!

Sicela uphethule wenze imibuzo ngefemeli.

Appendix H

IMIBUZO KUSAPHO – FAMILY HISTORY QUESTIONNAIRE

Indlela umntwana afunda ngayo ukuthetha nokukhomba ingaphenjelelwa yimpilo yakhe nayifemeli yakhe.

Singathanda ke ukubuza imibuzwana ngezi.

Ayongxaki nokuba awuphendulanga imibuzo ethile.

Sicela ungabhali igama lakho nendawo ohlala kuyo kweli phepha lemibuzo ukuze yonke into oyibhalileyo ihlale iyimfihlo negama lakho lingaziwa.

Khumbula ukugcwalisa le mibuzwana uthetha ngalo mntwana uthetha ngaye xa uphendula imibuzo yeCDI.

ULWAZANYANA

Umhla: _____

Uzalana njani nalo mntwana (ungumama wakhe okanye ungumakhulu wakhe, njalo njalo):

_____

Iprovince (uphondo) ohlala kuyo: _____

Idolophu/Ilali ohlala kuyo: _____

Indawo okuyo ngoku ngeli xesha lokugqibezela le fowumu: _____

A. KONKE NGOSUKU LOMNTWANA

1. Ngubani ogcina umntwana emini ngeveki yesiqhelo (Ungakhetha ibe ngaphezulu kwenye)					
Umama womntwana	O	Utata womntwana	O	Omnye umntu ogada umntwana/Abanye abantu abagada umntwana	O
1.a. Ukuba usixelele ngabanye abantu abagada umntwana ingaba ngaba bantu (ungakhetha ngaphezu komnye)					
Ifemeli	O	Umgcini-mntwana ongelilo ilungu lefemili	O	Ubudala bomgcini-mntwana____	I-creche O
1.b. Ukuba ngabanye abagcini, zingaphi iiyure/ii-hours (xa zizonke) ngeveki abazithathayo?					
1-20 iiyure/ii-hours	O	21-35 iiyure/ii-hours	O	36+ iiyure/ii-hours	O

1.c. Ngoobani abagcini-mntwana ngaphandle komama notata?

Sicela ugqibezele:

Abantu abagcina umntwana wakho	**Uzalana njani nomntwana (sicela igama ulibiyele)**	**Ubudala bakhe nemfundo yakhe**
Umntu wokuqala	usisi; ubhuti; umakhulu; utata; umakazi; udadebawo; umalume; utat'omkhulu; umam'omncinci; utat'omncinci; utat'ophakathi, umgcini-mntwana	
Umntu wesibini (ukuba iyakuchaphazela)	usisi; ubhuti; umakhulu; utata; umakazi; udadebawo; umalume; utat'omkhulu; umam'omncinci; utat'omncinci; utat'ophakathi, umgcini-mntwana	
Umntu wesithathu (ukuba iyakuchaphazela)	usisi; ubhuti; umakhulu; utata; umakazi; udadebawo; umalume; utat'omkhulu; umam'omncinci; utat'omncinci; utat'ophakathi, umgcini-mntwana	
Umntu wesine (ukuba iyakuchaphazela)	usisi; ubhuti; umakhulu; utata; umakazi; udadebawo; umalume; utat'omkhulu; umam'omncinci; utat'omncinci; utat'ophakathi, umgcini-mntwana	

52. Loluphi ulwimi lwenkobe oluthethwa kakhulu ekhayeni lomntwana? (Sicela uchaze igama lolwimi) _____

63.Umntwana wakho umana esiva olunye ulwimi okanye ezinye iilwimi ekhayeni lakhe?	EWE	O	HAYI	O

3.a. Ukuba umntwana wakho umana esiva olunye ulwimi/ezinye iilwimi ekhaya, zingaphi ii-hours (iiyure) umntwana wakho eziva olunye ulwimi ngosuku lwesiqhelo? (Sicela uchaze) _____		
83.b. Ukuba ewe, loluphi ulwimi okanye zeziphi iilwimi? _____		
94. Umntwana wakho uhamba e-day care okanye e-creche, kwiqela adlala nalo okanye kwi-preschool?	Ewe O	Hayi O
14.a. Ukuba ewe, loluphi ulwimi oluthethwa kakhulu e-daycare, e-creche, kwiqela adlala nalo okanye kwi-preschool? _____		
14.b. Umntwana wakho uchitha ii-hours ezingaphi e-day care, e-creche, neqela adlala nalo okanye kwi-preschool? _____		

B. IMPILO YOMNTWANA WAKHO NENKQUBELA YAKHE

1. Umntwana wakho uzelwe kweyiphi iveki?	Nge-week 33 okanye ngaphambili ?	O	Week 34 to 36	O	Week 37 okanye ngasemva?	O
2. Umntwana wakho uweya kangakanani ngosuku lokuzalwa?	Ngaphantsi ko 2.5kg	O	2.5kg ukuya ku 4.5kg	O	Ngaphezu ko 4.5kg	O

3. Ingaba umntwana wakho ukhe wanengxaki nendlebe/into engafuni ukuphuma endlebeni ngaphezu kweenyanga ezintathu, okanye wagula yindlebe kane okanye kathandathu phakathi kweenyanga ezintandathu, okanye enye ingxaki yokuva oxelelwe ngayo (umzekelo: uvavanyo lokuva ekuzalweni kwakhe)?	EWE O	HAYI O
Ukuba ewe, sinike inkcazelo:		
4. Ingaba ukhona omnye efemelini (oobhuti/oosisi/abazali bodwa) onayo ingxaki yokuthetha/ingxaki yenkqubela yolwimi okanye ingxaki yokufunda kakuhle (dyslexia)?	EWE O	HAYI O
Ukuba ewe, sinike inkcazelo apha:		
5. Ingaba umntwana wakho unokukhubazeka (e.g. Cerebral Palsy, Autism Spectrum Disorder, Fragile X syndrome, Muscular dystrophy, Down's syndrome, Williams syndrome, Foetal alcohol syndrome)?	EWE O	HAYI O
Ukuba ewe, sinike inkcazelo apha:		
6. Ingaba umntwana wakho unengxaki yokuva?	EWE O	HAYI O
Ukuba ewe, sinike inkcazelo apha:		
7. Ingaba umntwana wakho unengxaki yokubona?	EWE O	HAYI O

Ukuba ewe, sinike inkcazelo apha:		
8. Wena okanye omnye umntu nakhe nakhathazeka ngongeva komntwana okanye ngothetha kwakhe?	EWE O	HAYI O
Ukuba ewe, sinike inkcazelo apha:		

C. IFEMELI YOMNTWANA WAKHO

1. Bangaphi abantakwabo bomntwana wakho (uquke nabangaphandle)	0 O	1 O	2 O	3 O	4 okanye ngaphezulu O	
2.Lo ngomntwana wokuqala kumama wakhe (umama wakhe unabanye abantwana abadala kunaye?)				EWE O	HAYI O	
2.a. Ukuba akangomtwana wokuqala, bangaphi abantwana abadala kunalo mntwana umama anabo?		1 O		2 O	3 okanye ngaphezulu O	
3. Umntwana wakho uliwele okanye bathathu nangaphezulu?		Ewe O			Hayi O	
4. Umntwana wakho uchitha ixesha elingakanini kwidilesi yakho yekhaya? _____						
5. Bangaphi abantu abangaphezu kweminyaka eyi 18 abahlala kweli khaya nalo mntwana? _____ 5a. Bangaphi kwaba bantu abayifemili kulo mntwana? _____						
5b. Sicela ubonakalise ukuba ngabaphi abantu abadala	umama O	utata O	umakhulu/utatomkhulu O		abanye abadala O	
6. Bangaphi abanye abantwana ngaphandle kwalo mntwana (abayifemeli nabangeyofemeli) abahlala kwikhaya lakho nomntwana wakho? Biyela ngokweminyaka yabo.						
Abantwana 0-18 iinyanga	0 O	1 O	2 O	3 O	ngaphezulu O	
Abantwana 19 iinyanga - 3 iminyaka 11 iinyanga (19 months-3 years 11 months)	0 O	1 O	2 O	3 O	ngaphezulu O	
Abantwana 4- 11 iminyaka	0 O	1 O	2 O	3 O	ngaphezulu O	
Abantwana 12 - 17 iminyaka	0 O	1 O	2 O	3 O	ngaphezulu O	
7. Mangaphi amagumbi okulala ekhayeni lakho?	0 O	1 O	2 O	3 O	4 O	5+ O

Sicela uphendule imibuzo 8-11 ukuba umntwana wakho uhlala kwelinye ikhaya apha enyakeni.

8.a. Bachitha ixesha elingakanani kwelinye ikhaya? _____

Ngaphantsi kwesiqingatha sonyaka	O	Malunga nesiqingatha sonyaka	O	Ngaphezulu kwesiqingatha sonyaka	O

9. Bangaphi abanye abantu abaneminyaka engaphezu kwe 18 kwelinye ikhaya eli nomntwana wakho?

umama O	utata O	umakhulu notatomkhulu O		
Abanye abantu abadala abazalana naye (sixelele bangaphi)	0 O	1 O	2 O	3 O	ngaphezulu O
Abanye abantu abangazalani naye (sixelele bangaphi)	0 O	1 O	2 O	3 O	ngaphezulu O

10. Bangaphi abanye abantwana abahlala kweli khaya? (Sichazele bangaphi ngokweminyaka yabo)

Abantwana 0- 18 iinyanga	0 O	1 O	2 O	3 O	ngaphezulu O
Abantwana 19 iinyanga - 3 iminyaka 11 iinyanga (19 months-3 years 11 months)	0 O	1 O	2 O	3 O	ngaphezulu O
Abantwana 4- 11 iminyaka	0 O	1 O	2 O	3 O	ngaphezulu O
Abantwana 12- 17 iminyaka	0 O	1 O	2 O	3 O	ngaphezulu O
11. Mangaphi amagumbi okulala kweli khaya?	1 O	2 O	3 O	4 O	5+ O

D. UMAMA WOMNTWANA

12. Iminyaka yomama womntwana	Ukuya kutsho kwi-20 yeminyaka	O	Phakathi ko-21 ukuya ku-25 yeminyaka	O

Phakathi ko-26 ukuya ku-30 yeminyaka	O	Phakathi ko-31 ukuya ku-35 yeminyaka	O	36 nangaphezulu yeminyaka	O

13. Umama womntwana ebenangaphi ukuzalwa komntwana wakhe wokuqala?		Ukuya kutsho kwi-20 yeminyaka	O	Phakathi ko-21 ukuya ku-25 yeminyaka	O
Phakathi ko-26 ukuya ku-30 yeminyaka	O	Phakathi ko-31 ukuya ku-35 yeminyaka	O	36 nangaphezulu yeminyaka	O

14. Umama …					
Akanaqabane	O	Utshatile/Civil Union	O	Uhlala neqabane	O
Uneqabane angahlali nalo	O	Uhlukene notata womntwana/Udivosile/ Uqhawukile umtshato	O	Ngumhlolokazi	O

15. Imfundo kamama ephakamileyo …					
Ugqibe amabanga aphantsi	O	Akafundanga	O	Akagqibanga amabanga aphantsi	O
Ufunde ekholejini okanye eyunivesithi afumane isatifikethi, i-diploma okanye idigri	O	Akagqibanga amabanga aphezulu	O	Uyigqibile i-High School	O

16. Umsebenzi kamama… (umsebenzi anawo ngoku okanye umsebenzi wokugqibela owamrholisayo)		Zange asebenze, wawufundela umsebenzi	O
Uyaphangela	O	Uyazisebenza/akanamlungu (akanabasebenzi)	O
Uyasebenza ngeli xesha efunda	O	Uyazisebenza/akanamlungu (unabasebenzi)	O

17. Igama lomsebenzi wokugqibela kamama: (Khawuchaze kakuhle)_____

E. UTATA WOMNTWANA

1. Iminyaka yotata womntwana ….		Ukuya kutsho kwi-20 yeminyaka	O	Phakathi ko-21 ukuya ku-25 yeminyaka	O
Phakathi ko-26 ukuya ku-30 yeminyaka	O	Phakathi ko-31 ukuya ku-35 yeminyaka	O	36 nangaphezulu yeminyaka	O
2. Utata…					
Akanaqabane	O	Utshatile/Civil Union	O	Uhlala neqabane	O
Uneqabane angahlali nalo	O	Uhlukene nomama/Udivosile	O	Ngumhlolo	O

23. Imfundo katata ephakamileyo ...					
Ugqibe amabanga aphantsi	O	Akafundanga	O	Akagqibanga amabanga aphantsi	O
Ufunde ekholejini okanye eyunivesithi afumane isatifikethi, i-diploma okanye idigri	O	Akagqibanga amabanga aphezulu	O	Uyigqibile i-High School	O

4. Umsebenzi katata… (umsebenzi anawo ngoku okanye umsebenzi wokugqibela owamrholisayo)		Zange asebenze, wawufundela umsebenzi	O
Uyaphangela	O	Uyazisebenza/akanamlungu (akanabasebenzi)	O
Uyasebenza ngeli xesha efunda	O	Uyazisebenza/akanamlungu (unabasebenzi)	O

5. Igama lomsebenzi wokugqibela katata: (Khawuchaze kakuhle)_____

F. ABANTU ABAHLALA EKHAYA

21. **Khetha imali apha echazayo eyenu eniyifumanayo ngonyaka (kuquke neegranti)**									
R0-R36 000	O	R36 001 - R72 000	O	R72 001 - R108 000	O	R108 001 - 144 000	O	R144 001 okanye ngaphezulu	O

22. **Yimalini eniyichithayo ekutyeni ngenyanga kwikhaya lenu? _____**

Ugqibile!

Uncedile ukugqibezela uphando lokuqala olukhulu ngokufunda amagama kwabantwana boMzantsi Afrika

Siyabulela wena ngexesha negalelo lakho.