

# **THE ROLE OF INPUT IN THE EARLY TRILINGUAL ACQUISITION OF ENGLISH, AFRIKAANS AND ISIXHOSA**

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Dissertation presented for the degree of Doctor of Philosophy in the Department  
of General Linguistics (Faculty of Arts and Social Sciences)

at Stellenbosch University



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December 2014

## DECLARATION

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August 2014

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## ABSTRACT

The study investigates the acquisition of vocabulary and passive constructions by 11 four-year-old children simultaneously acquiring South African English, Afrikaans and isiXhosa in low socio-economic status areas in South Africa, with specific focus on the role that input plays in this process. Input is measured in terms of quantity of exposure (at the time of testing and cumulatively over time) and in terms of quality (as determined by the proficiency levels of the speaker(s) providing the input). Results revealed a significant positive correlation between input and proficiency levels in the case of all three the trilinguals' languages. The interaction between these variables seems to be narrower at lower levels of input, and the effect of reduced quantity of exposure stronger in the case of lexical development than in grammatical development. The proficiency levels of the early developing trilinguals are furthermore compared to those of 10 age-matched monolingual controls for each language. Trilinguals are found to be monolingual-like in their lexical development in the language to which, on average, they have been exposed most over time, i.e. isiXhosa. Thus, as previously found for bilingual development, necessarily reduced quantity of exposure does not hinder lexical development in the input dominant language. Whilst the trilinguals lag behind monolinguals significantly in terms of lexical development in their languages of less exposure, no developmental delay is found in their acquisition of the passive, regardless of the language of testing. This is despite their lower lexical proficiency in English and Afrikaans and their lesser amount of exposure to all three their languages. Although the passive is considered a typically later-developing construction type across languages, research has shown it to be acquired earlier in Bantu languages (of which isiXhosa is an example) than in Germanic languages such as English and Dutch (from which Afrikaans stems). Consequently, the fact that the trilinguals do not exhibit delay in their acquisition of the passive, despite sometimes drastically reduced levels of input, is interpreted as evidence of cross-linguistic bootstrapping: trilinguals seem to be transferring their knowledge of the passive in isiXhosa to English and Afrikaans, enabling the earlier acquisition of this construction in the latter two languages. The study is the first on the trilingual acquisition of English, Afrikaans and isiXhosa by young children, and will hopefully encourage additional research on multilingual language acquisition within the African context.

## OPSOMMING

Die studie ondersoek die verwerwing van woordeskat en passiefkonstruksies deur 11 vierjarige kinders wat in lae sosio-ekonomiese areas in Suid-Afrika gelyktydig Suid-Afrikaanse Engels, Afrikaans en isiXhosa verwerf. Die fokus van die studie is op die rol van toevoer in hierdie spesifieke verwerwingsproses. Toevoer word gemeet in terme van hoeveelheid blootstelling (ten tyde van toetsing en kumulatief oor tyd heen) en in terme van kwaliteit (soos bepaal deur die vaardigheidsvlakke van die persone wat die toevoer verskaf). Die resultate toon 'n beduidende positiewe verhouding tussen toevoer en vaardigheidsvlakke in geval van al drie die drietalige kinders se tale. Die interaksie tussen hierdie veranderlikes blyk nouer te wees by laer vlakke van toevoer, en die effek van afname in hoeveelheid toevoer sterker in geval van leksikale teenoor grammatikale ontwikkeling. Die vaardigheidsvlakke van die jong ontwikkelende drietalige kinders is verder ook vergelyk met, in die geval van elkeen van die afsonderlike tale, dié van 10 eentalige sprekers van soortgelyke ouderdom. Die drietalige kinders vertoon soos eentaliges in terme van leksikale ontwikkeling in die taal waaraan hulle gemiddeld die meeste blootgestel is oor tyd heen, d.i. isiXhosa. Dus, soos vantevore bevind vir tweetalige ontwikkeling, vertraag noodwendig verminderde hoeveelhede toevoer nie leksikale ontwikkeling in die toevoer-dominante taal nie. Alhoewel die drietaliges in geval van hulle tale van minder blootstelling beduidend stadiger leksikale ontwikkeling toon as die eentaliges, is daar geen blyke van vertraagde ontwikkeling in terme van hulle verwerwing van die passief nie, ongeag die taal van toetsing – dít ten spyte van hulle laer leksikale vaardigheidsvlakke in Engels en Afrikaans en verminderde toevoer in al drie tale. Die passief word oor tale heen beskou as 'n tipies laat-ontwikkelende konstruksietipe, maar navorsing het bewys dat dit tog vroeër verwerf word in Bantoetale (waarvan isiXhosa 'n voorbeeld is) as in Germaanse tale soos Engels en Nederlands (die taal waarin Afrikaans sy oorsprong het). Die feit dat die drietaliges nie vertraagde ontwikkeling toon in hulle verwerwing van die passief nie, ten spyte van soms drasties verminderde toevoer, word gevolglik beskou as bewyse van kruis-linguïstiese ondersteuning (“bootstrapping”): die drietaliges blyk hulle kennis van die passief in isiXhosa oor te dra na Engels en Afrikaans, wat sodoende die verwerwing van hierdie konstruksie in laasgenoemde twee tale bespoedig. Die studie is die eerste oor die drietalige verwerwing van Engels, Afrikaans en isiXhosa deur jong kinders, en die hoop is dat dit sal lei tot verdere navorsing oor veeltalige taalverwerwing binne die Afrika-konteks.

## ACKNOWLEDGEMENTS

This material is based on work financially supported by the Harry Crossley Foundation and the National Research Foundation. Any opinions, findings, conclusions or recommendations expressed in this material are those of the author and therefore neither of the above foundations accepts any liability in regard thereto. Note that certain sections of the material in this dissertation have been presented orally in the form of a paper at the 13<sup>th</sup> International Congress for the Study of Child Language in Amsterdam, the Netherlands (July 14 to 18, 2014) by the author and, for the purposes of the conference, her co-author Dr Frenette Southwood.

Thanking everyone who helped me reach this goal is no simple task as so many people played a role, perhaps even without them knowing it. Perhaps I should start at the beginning, with the people who shaped my thinking and nurtured my desire for knowledge, namely my parents. You always have and continue to inspire me, not only in my pursuit of knowledge, but also in my attempts at living a meaningful life, filled with love. Thank you for your unwavering support during all my years of study (intellectually, emotionally and, for a long time, financially), for all the opportunities you have given me and, importantly, for teaching me exactly how much fun words and all things wordy can be.

Next, I owe a big thank you to the people who helped me collect and process the data which lie at the heart of this dissertation. First off, I want to thank all the teachers at the different crèches from which I sourced participants for helping me identify potential candidates and for welcoming me and my assistants into their schools week after week. To the children and their families – I would have no data if it were not for you. Thank you to every parent for allowing me and my assistants into your home, for taking the time to share your child's language exposure background with us, and for allowing him or her to participate in my study. To the children, it will be a long time before you understand exactly how much you have helped me, simply by playing along. Thank you for your enthusiasm.

Naledi Yaziyi, I am thankful that you sacrificed so much of your time and energy to contact and interview the isiXhosa-speaking parents, to transcribe the isiXhosa data and to make the isiXhosa testing sessions fun for the children, even when you must have been very tired of presenting the same material over and over again. Thanks too for all the wonderful chats in

my car whilst we (repeatedly) got lost in the townships – it was a special, enriching experience. Dirk Liebenberg, thank you for your help with the coding of much of the isiXhosa test data, for patiently and enthusiastically explaining some of the intricacies of this wonderful language to me and for taking the time to consult with first language speakers whenever you were unsure of your own judgements. For the meticulous translation and coding of all my isiXhosa examples, I am hugely indebted to Lynelle Louw, who devoted many a late night to this work at a time when she had much more interesting things to keep her busy, such as the impending arrival of her second child. Lastly, to the man behind my statistical analyses, Justin Harvey from the Centre for Statistical Consultation at Stellenbosch University, I cannot thank you enough for running my numerous tests and for explaining, always with such patience and in laymen's terms, how to interpret the results.

As regards the writing up of my dissertation, I would first like to thank Prof Marianna Visser and Prof Mawande Dlali from the Department of African Languages at Stellenbosch University for their advice on the grammatical description of the passive in isiXhosa. Many thanks too to Ms Surena du Plessis from this department for helping me get hold of isiXhosa-speaking assistants and translators. Next, I would like to turn to the three people who have played the most central role in helping me put this study onto paper, i.e. my supervisors.

For guiding me on my academic journey since my undergraduate days, I want to thank my one co-supervisor, Dr Johan Oosthuizen. Johan, in your quiet way you have become a precious mentor to me over the past eight years, guiding some of my most important academic decisions with your perfect logic. Thank you for setting out my options (always in spontaneously generated, well-organised list form at that) at times when I needed perspective, and for having endured this often emotional female for so long. I will never forget all the hours we spent editing my chapter on passives, how much I learnt from just sitting next to you and chatting about the literature, or your careful contemplation of the little details that I am sure add value to the end product I present here.

To my other co-supervisor, Prof Theres Grüter from the University of Hawai'i at Mānoa, a huge thank you for your willingness to be involved in this study, and for giving this novice academic the chance to pick your brain. I am very grateful for all the time you devoted to providing valuable feedback, insight and suggestions, always in a timely fashion despite having to put everything down in an e-mail. By your own admittance, you assumed the role

of “bad cop” at times, and I now realise fully of how much value that role was in guiding the direction of this study and in shaping its presentation. Thank you for wearing that badge.

Next, the person who picked me up, dusted me off and put me back on track every time I wanted to give up: my main supervisor, Dr Simone Conradie. Simone, you are an inspiring academic, an insanely meticulous proof-reader and the most wildly positive person I have ever met, but first and foremost you are a friend. Thank you for all your guidance since the start of my Master’s degree days, and for your unswaying support over the years, both intellectually and emotionally. Most importantly, thank you for being the “good cop” at times when I needed one and for always bringing laughter into my day.

Finally, thank you to all my colleagues and friends at the Department of General Linguistics at Stellenbosch University for showing such interest in and support for my research, especially my old classmate and roommate Erin Pretorius, who embarked on this PhD journey with me and kept me company along the way. To my oldest friend, (Dr!) Tammy Jones, thank you for encouraging me to keep at it, assuring me that there is a fulfilling end to this long road. All the laughs and the wine did much to get me here. To my family (both human and canine), thank you for keeping me sane and reminding me that work is only one of many important facets of life. And then, finally, to the most valuable travelling partner I have in life – my husband, Brendon Potgieter – thank you for putting up with me. Your patience, selfless love and support, which even went as far as helping me entertain four-year-olds at times, is the foundation on which this study is built.

**For my family**



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## LIST OF ABBREVIATIONS

3L1 = simultaneous child trilingual

ALEQ = *Alberta Language Environment Questionnaire*

BFL = bilingual first language

BFLA = bilingual first language acquisition

CAoE = current amount of exposure

CEM = Cumulative Enhancement Model

CLI = cross-linguistic interaction

CLoE = cumulative length of exposure

DP = determiner phrase

EVIP = *Épreuve de vocabulaire en images Peabody*

IQR = interquartile range

ISCED = International Standard Classification of Education

L2 = second language

L3 = third language

L3A = third language acquisition

LBQ = language background questionnaire

LITMUS-CLT-AF = *Language Impairment in a Multilingual Society: Cross-linguistic Lexical Tasks-Afrikaans*

LITMUS-CLT-SAE = *Language Impairment in a Multilingual Society: Cross-linguistic Lexical Tasks-South African English*

LITMUS-CLT-XHO = *Language Impairment in a Multilingual Society: Cross-linguistic Lexical Tasks-isiXhosa*



MCDI = *MacArthur Communicative Development Inventory*

MoI = medium of instruction

MSIH = Missing Surface Inflection Hypothesis

NC = noun comprehension

NPO = non-profit organisation

NPr = noun production

NQL = national poverty quintile level

OPOL = one-person-one-language

PPVT = *Peabody Picture Vocabulary Test*

REALt = *Receptive and Expressive Activities for Language Therapy*

SES = socio-economic status

SLI = specific language impairment

TE = translation equivalent

TEGI = *Test of Early Grammatical Impairment*

TLoE = traditional length of exposure

TPM = Typological Primacy Model

UB = usage-based

UBiLEC = *Utrecht Bilingual Language Exposure Calculator*

UG = universal grammar

VC = verb comprehension

VPr = verb production

## CHAPTER 1: INTRODUCTION

### 1.1 Introduction: Rationale and background

The primary research interest at the heart of the study reported on in this dissertation is the effect of input on lexical and grammatical development in young developing trilinguals. Also of (albeit secondary) interest to this study is possible cross-linguistic grammatical interaction between such children's three languages. The specific aspect of grammatical development of interest here is the acquisition of passive constructions, and the particular language combination that of South African English, Afrikaans and isiXhosa (Afrikaans and isiXhosa being indigenous South African languages, Afrikaans having West Germanic roots and isiXhosa being a Southern Bantu language).<sup>1</sup> These research topics are investigated in the context of multilingual, multicultural areas of low socio-economic status (SES) in the Western Cape province of South Africa. Both the interest in the specific aspects of language acquisition mentioned above, and the interest in this particular research context stem from a number of findings and gaps in the literature on monolingual and multilingual language acquisition. A brief overview of some of the relevant literature, ordered according to topic, will clarify the rationale behind the study and serve to contextualise it within the broad field of language acquisition research.

#### *The effect of input on language acquisition*

Studies such as those by Cornips and Hulk (2008); Hoff et al. (2012); Hulk and Cornips (2006); Pearson, Fernandez, Lewedeg and Oller (1997); and Unsworth (2007, 2008) have reported clear correlations between amount of exposure and lexical and/or grammatical development in bilingual language acquisition. A number of studies also specifically show bilinguals to fare better in the language to which they are exposed most (cf., for example, Blom, 2010; Gathercole, 2002a, 2002b, 2002c; Paradis, Nicoladis, & Crago, 2007; Schlyter, 1993; Schlyter & Håkansson, 1994). According to Blom (2010:422), the relevance of input

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<sup>1</sup> Note that the order in which the three languages of interest to this study are listed in this dissertation reflects not an ideological valuation of their status or relevance, but the relative amount of research that has thus far been done on each, as well as international readers' likely degree of familiarity with the respective languages. This order is, for similar reasons, also assumed in Chapter 4, which provides a formal description of the nature of passive constructions in the three languages.

has been firmly established in the case of lexical acquisition, but much less so in the case of grammatical acquisition. Indeed, a large body of studies has shown a positive correlation between quantity of input and vocabulary size among both monolinguals and bilinguals (cf., for example, Hart & Risley, 1995; Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991; MacLeod, Fabiano-Smith, Boegner-Page, & Fontolliet 2012; Pearson et al., 1997; Şakırgil, 2012). Regarding the as yet lesser established effect of input on grammatical as opposed to lexical acquisition, a number of studies have shown bilinguals capable of matching monolingual grammatical norms, despite the smaller amount of input that bilinguals necessarily receive in any one of their languages (for an overview of such studies cf., for example, Genesee, 2001; Meisel, 2001; Nicoladis & Genesee, 1997; Paradis & Genesee, 1996). It should be noted, though, that researchers have focused almost exclusively on the dominant language in terms of input (Meisel, 2007:496; Paradis, Crago, Genesee, & Rice, 2003:3; Blom, 2010:423) and that Gathercole (2002a, 2002b, 2002c), for example, found differences between monolinguals' and bilinguals' grammatical development in the case of both the bilinguals' stronger and weaker languages in terms of input. To my knowledge, there is as yet no literature available reporting on the relationship between input quantity (neither in terms of the stronger nor weaker language) and proficiency (neither in terms of lexical nor grammatical development) in the case of *trilinguals*.

A number of recent bilingualism studies investigate how acquisition is affected by some of the many variables that contribute to input quality (for example the degree to which the input is child-directed, the quantity and/or quality of television exposure, the frequency of a given structure in the input, the relative “nativeness” of the input, the possible contact-variety nature of the input, etc.), with studies on different input quality variables yielding different results (cf., for example, Barr, Lauricella, Zack, & Calvert, 2010; Hudon, Fennell, & Hoftyzer, 2013; Paradis & Navarro, 2003). As with input quantity, however, the effect of input quality on *trilingual* language acquisition is yet to be investigated (but cf. Oller, 2010, for an investigation of the effect of input quality on vocabulary acquisition in the case of a young trilingual). As such, this dissertation's focus on the effect of both quantity and quality of input on trilingual language acquisition is meant to address the dearth of available literature on this topic.

The focus of this dissertation is furthermore motivated by two important limitations of studies investigating the effect of input quantity on early bilingual grammatical development, as identified by Unsworth (2013a:86): such studies typically focus on (i) the child's current exposure situation, without consideration of the amount of exposure that the child has accumulated over time, and (ii) in the majority of cases, successive second language (L2) learners as opposed to simultaneous bilinguals. In an attempt at preventing these limitations, the study reported on here firstly investigates not only participants' exposure situations at the time of testing, but also their exposure patterns over time since birth. Secondly, the participants chosen for this study are not successive third language (L3) learners, but may be argued to be mostly simultaneous trilingual (i.e. 3L1) learners.<sup>2</sup>

### ***Trilingualism***

Turning to the present study's specific focus on *trilingual* language acquisition, relatively little literature is available on the simultaneous acquisition of three (as opposed to two) languages by very young children. Hoffmann (2001) identifies three types of studies on trilingualism, namely (i) studies in which the language learners are children simultaneously acquiring three languages, often because two languages are spoken in the home and another in the community; (ii) investigations into the effect of bilingualism on the acquisition of a third language in the school context; and (iii) investigations into linguistic processing in trilinguals who acquired their third language as a result of immigration. The scenario in the first type of study is closest to that of interest in this dissertation. Previous studies on this phenomenon are mostly observational in nature in describing the sociolinguistic context that lead to trilingualism and the difficulties encountered en route (Hoffmann, 2001:6). Unfortunately, such studies present very little linguistic data showing possible interaction between the three languages in learners' speech production and comprehension (Hoffmann, 2001:6).

### ***Cross-linguistic bootstrapping***

As the secondary focus of the study reported on in this dissertation is possible cross-linguistic grammatical interaction (or "grammatical transfer") between a young developing trilingual's

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<sup>2</sup> Chapter 2, Section 2.4.1 provides a detailed discussion of terminology, including the terms "third language acquisition", "successive bilingual/trilingual acquisition" and "simultaneous bilingual/trilingual acquisition".

three languages, the study falls within the field of bilingual first language acquisition (BFLA)<sup>3</sup>. Past concerns in BFLA research predominantly centred around two questions, namely (i) does the bilingual first language (BFL) learner have one or two language systems, and (ii) assuming there are two differentiated systems, do these systems develop autonomously or interdependently? On grounds of a substantial body of research pointing towards the existence of two systems, researchers have come to accept what is known as the separate systems hypothesis, as opposed to Volterra and Taeschner's (1978) earlier unitary language system hypothesis (Genesee & Nicoladis, 2006:3).

The debate regarding (ii) above is, however, still on-going. According to Genesee and Nicoladis (2006:3), "[i]nterdependent development would result from systemic influence of one language on the development of the other, resulting in patterns or rates of development that differ from what would be expected in monolingual children". Much research has found, however, that BFL learners' acquisition of language-specific (especially morphosyntactic) features largely mirrors the developmental sequences and rates found among monolingual learners of the same languages (Genesee & Nicoladis, 2006:4-5; cf. also Paradis & Genesee, 1996, and Meisel, 1994, in which no evidence of transfer was found). Whilst these findings thus seem to point towards autonomous development, other studies such as those by Döpke (2000), Hulk and van der Linden (1996), Müller (1999), Nicoladis (2002), Paradis and Navarro (2003) and Yip and Matthews (2000) did find evidence of cross-linguistic morphosyntactic transfer, which would indicate that there is, to some extent, interaction between the systems.

To date, a number of reasons for transfer have been suggested, including language dominance in terms of proficiency (henceforth "proficiency dominance") and asynchronous development of a BFL learner's two or more languages in terms of a specific feature (for a comprehensive review of the literature on determinants and manifestations of transfer in BFLA, cf. Serratrice, 2013). Proficiency dominance refers to a BFL learner's higher level of proficiency in one language compared to her<sup>4</sup> other language(s), where this higher level of proficiency may be a result of dominance in terms of amount of exposure (henceforth "exposure

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<sup>3</sup>Note that the term "bilingual" is here used as an umbrella term to refer to the involvement of any two or more languages, as is frequently done in the literature. This term is also sometimes substituted with "multilingual" (cf. Hoffmann, 2001, for a discussion of this terminology). Most research reported on below did, however, involve cases where there were indeed only two languages being acquired.

<sup>4</sup>The words "her" and "she" will henceforth be used to refer to both female and male children.

dominance”). Some researchers, such as Bernardini (2003), Döpke (1998) and Yip and Matthews (2000), argue that transfer is more likely to occur from the child’s proficiency dominant language to her weaker language than vice versa.

As regards the asynchronous development of a BFL learner’s languages, the acquisition of a feature in language X is said to possibly be encouraged by the earlier acquisition of the same feature in language Y – a phenomenon known as bilingual or cross-linguistic “bootstrapping” (Gawlitzeck-Maiwald & Tracy, 1996:903; Genesee & Nicoladis, 2006:6). Drawing on earlier research showing bootstrapping to occur in various linguistic domains during monolingual L1A, Gawlitzeck-Maiwald and Tracy (1996:903) first proposed the notion that one language may serve “a booster function” for another language during bilingual language acquisition, or that, at the very least, there will be “a temporary pooling of resources” during this type of acquisition. These researchers investigated the development of main clauses and infinitival constructions in the two languages of a young German-English simultaneous bilingual girl, based on voice recordings collected between the ages of two and four years. Regarding her utterances in which there was no language mixing, the researchers found evidence of separate and asynchronous development in the two languages that aligned with the respective monolingual milestones (Gawlitzeck-Maiwald & Tracy, 1996:920). However, an investigation of the subject’s mixed utterances revealed that, at different times, she also used knowledge from one language, in which a specific construction had already been acquired, to produce “mixed precursors” of that construction in the other language, pooling her resources so to speak (Gawlitzeck-Maiwald & Tracy, 1996:916).

In a similar vein, Paradis et al. (2010:20) speculate that the mechanism they believe might help bilinguals compensate for reduced input possibly takes the form of “sharing” at the cognitive-linguistic interface between their two languages. Despite differing in terms of specific morphological inflection forms, past tense forms in the two languages may, for example, share certain semantic properties that speed up the acquisition of construction schemas. This type of sharing or borrowing of earlier-acquired knowledge from one language to another would constitute a case of cross-linguistic bootstrapping and could perhaps also be found to occur between three languages. More specifically, during the acquisition of passive constructions by young developing trilinguals, semantic properties of passive constructions

that have already been acquired in one language can, perhaps on an abstract level, be employed in support of the acquisition of passive constructions in the other two languages on grounds of analogy. This type of transfer would likely be supported by surface structural overlap between passive constructions in the three languages, which could lead a child to assume further parallelism in the formation of these structures. (As will become evident from the description in Chapter 4 of the nature of passive constructions in English, Afrikaans and isiXhosa, a degree of such overlap certainly exists in the case of these three languages, despite the morphosyntactic differences between them. Although the study reported on in this dissertation seeks to determine whether there is evidence of cross-linguistic bootstrapping in young developing English-Afrikaans-isiXhosa trilinguals' acquisition of the passive, a finer analysis of the transfer of specific morphosyntactic properties or features falls outside the scope of this dissertation.)

Previous research on transfer in BFLA has been limited in a number of ways. Firstly, by far the majority of studies to date focus on the acquisition of a maximum of two languages, with a strong tendency towards Romance-Germanic language combinations. The extents to which the results of these studies may be generalised have been further restricted by their limited scope of only one or two participants, as well as an exclusive focus on production data. For this reason, Zwanziger, Allen and Genesee (2005) call for studies using combinations of languages from other language families, and larger numbers of participants. Nicoladis (2002) too calls for research based on larger participant groups, as well as a focus on comprehension in addition to production. A further limitation of previous BFLA studies, according to Blom (2010), is that most studies on the role of input in BFLA focus only on the exposure dominant language. These studies generally claim that grammatical development in BFL learners does not appear to be affected by the fact that, in comparison to monolinguals, they receive only about half the amount of input in each language. Blom (2010) argues, however, that if the language that is weaker in terms of exposure is considered, it will be shown that development is indeed delayed by reduced input. She consequently calls for more studies on the development of BFL learners' weaker language(s).

### *The acquisition of the passive*

According to Deen (2011:155), the passive might very well be the most widely researched grammatical construction in the field of child language acquisition due to the apparent delay in the acquisition thereof. This delay has been ascribed to, among other things, difficulty with the reversal of grammatical roles in passive as opposed to active sentences – the AGENT, typically associated with the subject position, is placed in an optional *by*-phrase in passives, whilst the THEME, typically associated with the object position, occurs in the subject position in passives (Deen, 2011:156). A second proposed factor is the functional similarity between active and passive constructions which de-necessitates the early acquisition of both types, leading to a delay in the acquisition of the passive given the common earlier acquisition of the active construction (Deen, 2011:155). Further proposed factors include the low frequency of passives in child-directed speech in many languages, the ambiguity between true verbal passives and adjectival passives (cf. the two meanings of *the door was broken*), and the optional omission of the *by*-phrase in many languages which possibly complicates the interpretation of the construction in hiding the AGENT (Deen, 2011:157-159).

In the case of monolingual English children, research suggests that these learners generally take up to five years or longer to fully acquire the rules relating to passive constructions (Baldie, 1976; Demuth, Moloji, & Machobane, 2010:238; de Villiers & de Villiers, 1973). In the case of Dutch (the language from which Afrikaans was largely derived), “hardly any” uses of the passive have been noted in the speech of monolingual children of pre-school age, i.e. of four years and younger (Gillis & De Houwer, 1998:28,35). Surprisingly then, the spontaneous use of the passive in the speech of children as young as three years has been reported in the case of Southern African Bantu languages, including isiZulu and Sesotho, and North American Inuit and Mayan languages (Demuth et al., 2010:238). In a study by Demuth et al. (2010), three-year-old Sesotho-speaking children were able to not only comprehend and produce passives, but also apply the rules for passive formation to novel verbs. This early age of acquisition of the passive was ascribed to increased exposure to the passive in Sesotho child-directed speech and to a lack of structural ambiguity with other structures (Demuth et al., 2010:248). As Sesotho is closely related to isiXhosa in terms of language typology, it is highly likely that isiXhosa passives too are acquired earlier than English and Afrikaans passives in the case of monolingual children.



By choosing to investigate trilingual participants who are acquiring a combination of languages in which the passive is acquired at different rates among monolinguals, an enquiry into the possibility of cross-linguistic grammatical bootstrapping is made possible. If, at an age at which isiXhosa monolinguals but not yet English or Afrikaans monolinguals have typically acquired the passive, English-Afrikaans-isiXhosa developing trilinguals exhibit more advanced passive skills in English and Afrikaans than do their monolingual counterparts, this would indicate that they may be using their more advanced knowledge of isiXhosa passives to support the development of the passive in their other two languages. The choice of passive constructions as the grammatical focus of the present study thus stems from both the widespread scholarly interest in this topic (notably also in the case of Bantu languages) among child language researchers, and from the fact that it lends itself to the investigation of cross-linguistic bootstrapping in the case of English-Afrikaans-isiXhosa developing trilinguals.

The study reported on in this dissertation was designed to offer a novel contribution to BFLA and, more specifically, trilingualism research by addressing a number of the limitations of earlier studies as well as gaps in the literature, as pointed out above. Firstly, the added effect of a third language (over and above a second) in the simultaneous acquisition process is investigated. In contrast to the purely observational methodology of much previous research on trilingualism, the present study employs experimental tasks for data collection and involves a detailed analysis of linguistic data. Secondly, in investigating the simultaneous acquisition of English, Afrikaans and isiXhosa, the focus is on a Germanic-Bantu combination of language families that has, to my knowledge, never been investigated in the context of early simultaneous trilingual (or, for that matter, bilingual) language acquisition. Next, in its use of 11 trilingual participants and 30 monolingual controls (10 per language), and in its investigation of both lexical and grammatical development in terms of both production and comprehension rather than production alone, the present study is on a larger scale in terms of sample size (so increasing the generalisability of results) and of a broader linguistic scope than the majority of previous studies on trilingual language acquisition.

The present study was also designed to allow for the testing of Blom's (2010) claim that the weaker language in terms of exposure will be developmentally delayed. This is made possible

by measuring the amount of exposure each learner has to each of her three languages as well as her proficiency in each language. The design of the present study furthermore allows an investigation into the possibility that the asynchronous development of specific features in a developing trilingual's three respective languages may be beneficial in that it leads to cross-linguistic bootstrapping. The latter is a phenomenon that provides support for arguments promoting multilingualism – a highly relevant sociolinguistic topic in the multilingual context of South Africa.

The remainder of this chapter serves to set out the three research questions that guided the ensuing investigation (Section 1.2), provide an overview of the research design and methodology (Section 1.3), and highlight the significance of the study and the contributions it may make to the field (Section 1.4). The chapter concludes with an overview of the layout of the dissertation in Section 1.5 and a list of core terminology in section 1.6.

## **1.2 Research questions**

As explained in the previous section, this dissertation is aimed at addressing a number of issues which are currently being debated in international research on BFLA and specifically trilingualism, and at acting on suggestions for future research. To this end, it involves an investigation into the acquisition of both vocabulary and passive constructions by four-year-old children who are simultaneously acquiring South African English, Afrikaans and isiXhosa, these three languages being the three official languages in the Western Cape, the province in which the study was conducted. Within the context of this specific language combination and grammatical interest, the three primary research questions (and their sub-questions) that I attempt to answer in this dissertation are:

- (i) Do trilinguals exhibit developmental delay when compared to monolinguals? If so,
  - (a) does this delay occur both in terms of lexical and grammatical development; and
  - (b) does this delay occur in the case of all three languages, or only in the language(s) that are weaker in terms of quantity of input?
  
- (ii) Is there a correlation between input and proficiency in the case of young developing trilinguals? If so,

- (a) does the correlation exist in the case of all three languages;
  - (b) does the correlation exist in the case of both lexical and grammatical proficiency;
  - (c) do different measures/conceptualisations of input quantity (specifically, as the amount of input received at the time of testing, as the length of the period over which the child has received exposure, and as the cumulative amount of input received since birth) yield similar results; and
  - (d) does the correlation exist in the case of both input quantity and quality (the latter being operationalised as, for the purposes of this dissertation, the “nativeness” of the input)?
- (iii) Can young developing trilinguals utilise their knowledge of the passive in one language to support the acquisition of the passive in their other languages, i.e. can cross-linguistic bootstrapping occur in the case of developing trilinguals?

### **1.3 Research design and methodology**

The research reported on in this dissertation takes the form of a small group study. A total of 41 four-year-old children were recruited for participation in the study: 11 English-Afrikaans-isiXhosa developing trilinguals, 10 English monolinguals, 10 Afrikaans monolinguals and 10 isiXhosa monolinguals. These participants were sourced from crèches in the Western Cape. As SES has been shown to impact on both monolingual and bilingual language acquisition (cf. Chapter 3 for further discussion) and because a high degree of multilingualism is especially common in densely populated low SES areas, SES is a variable that was kept constant by employing only participants from low SES backgrounds.

The research questions set out in Section 1.2 above were addressed using the methods detailed below, starting with the collection of data and proceeding to the linguistic and statistical analysis thereof. This is only a brief summary, seeing as the methodology is dealt with in detail in Chapter 5.

### ***Step 1***

Participants were sourced, their suitability for the study being determined on grounds of various factors, the most important being their age, status as trilingual or monolingual speakers of English, Afrikaans and/or isiXhosa, and their SES status.

### ***Step 2***

Participants' parents or primary caregivers were interviewed in order to obtain extensive information on the child's language exposure patterns. Additionally, in order to obtain more detailed information on language exposure in the crèche environment, each participant's teacher was asked to detail the function of and frequency with which different languages are used in the classroom and on the playground. The input information obtained via the parental interview and the teacher report was quantified using the *Utrecht Bilingual Language Exposure Calculator* (UBiLEC; Unsworth, 2011a, 2011b, 2013).

### ***Step 3***

Participants' lexical proficiency was established through means of a cross-linguistic vocabulary measure known as the *Language Impairment in a Multilingual Society: Cross-linguistic Lexical Tasks-South African English* (LITMUS-CLT-SAE; Southwood, 2012b), -*Afrikaans* (LITMUS-CLT-AF; Southwood, 2012a) and -*isiXhosa* (LITMUS-CLT-XHO; Southwood & Potgieter, 2013). The trilingual participants were administered all three language versions and the monolinguals only the one relevant language version of this instrument.

### ***Step 4***

Participants' knowledge of passive constructions was tested with the aid of the relevant section of Southwood and Van Dulm's (2012, 2013) *Receptive and Expressive Activities for Language Therapy* (REALt) material. As with the vocabulary test, the trilingual participants were administered all three language versions and the monolinguals only the one relevant language version of the passives section of the REALt.

### *Step 5*

The generalisability of Blom's (2010:422) finding that reduced input causes developmental delay, "but only if input is clearly reduced", was investigated through means of (i) in the case of each language, a statistical comparison of the monolinguals' and trilinguals' test scores to test for possible significant differences which could indicate a developmental delay among trilinguals; and (ii) a comparison of the trilinguals' test scores with the UBiLEC input data.

### *Step 6*

The possibility of there being a significant correlation between input measures and lexical and grammatical proficiency among the trilinguals was investigated through means of a statistical correlational analysis of the UBiLEC input data and the LITMUS-CLT and REALt test scores.

### *Step 7*

The possibility of cross-linguistic bootstrapping occurring in the trilinguals' acquisition of the passive was investigated through means of (i) statistically comparing the three monolingual groups' scores on the REALt in order to test for significant differences that could indicate asynchronous development of the passive in the three languages; and (ii) considering whether the trilinguals fared significantly worse than the monolinguals on both the LITMUS-CLT and on the REALt or only on the LITMUS-CLT, and in the case of which language(s). Cross-linguistic bootstrapping may be argued to be occurring from isiXhosa to English and/or Afrikaans (a) if the results of (i) above indicate that the passive is acquired earlier among isiXhosa monolinguals than among English and Afrikaans monolinguals (as is to be expected on grounds of the available Sesotho data); and (b) if the trilinguals have significantly lower English and Afrikaans vocabulary scores than the monolinguals, but do not fare significantly worse on the English and Afrikaans REALt.

If cross-linguistic bootstrapping is indeed found to occur among the developing trilinguals, one could argue that, compared to monolingual acquisition, the simultaneous acquisition of the three languages holds some positive effects for the acquisition of one or more of the three individual languages.

#### **1.4 Significance and contribution**

As set out in Sections 1.1 and 1.2 above, this dissertation addresses current pivotal questions within the field of BFLA as well as limitations of and suggestions in previous research on bi-/trilingualism. The novel contribution of this research is fourfold in that it involves investigating the added effect of a third language in the simultaneous acquisition process; incorporates a Germanic-Bantu combination of language families; uses a larger number of participants; and involves collecting and analysing production as well as comprehension data. To my knowledge, no research has been done to date on the trilingual acquisition of English, Afrikaans and isiXhosa by young children.

As pointed out by Montanari (2010:103), the relative lack of research on the effect of multilingual acquisition in individuals has led to divided opinions as to the advantages and disadvantages of early multilingualism. Some argue that our ability for multilingual acquisition is part and parcel of our “human language making capacity” (Meisel, as cited in Montanari, 2010:103), and so enables the effortless acquisition of multiple languages in childhood via exposure. Common public opinion, however, largely holds that children growing up in multilingual contexts will necessarily suffer developmental language delay (Montanari, 2010:103) – this perhaps on grounds of anecdotal reports of children showing an (initial) delay in vocabulary development when their two or more languages are considered separately, and perhaps on grounds of many parents’ conviction that exposure to more than one language “confuses” a young child. As explained in the previous section, if evidence of cross-linguistic bootstrapping is indeed found, the research study reported on here may inform the debate on the advantages and possible disadvantages of early multilingualism. Given the multilingual context in which the majority of South African children are immersed, such research is potentially of great practical significance.

#### **1.5 Outline of chapters**

In order to fully contextualise and motivate the study at the heart of this dissertation, a review of the relevant literature is presented in Chapter 2 (on trilingualism), Chapter 3 (on the role of input in multilingual language acquisition), and Chapter 4 (on the nature of passive constructions in English, Afrikaans and isiXhosa). A description of the methodology followed in this study is provided in Chapter 5 and the results of the empirical research

process are presented and discussed in Chapter 6. The concluding chapter, Chapter 7, reflects on how these results answer the research questions set out above, highlights the strengths and limitations of the study, and provides suggestions for future research.

## 1.6 List of terminology

The list below details the manner in which certain core terms in the relevant literature are operationalised in this dissertation. These terms are presented in the order of their appearance in the following chapters.

***Third language acquisition (L3A):*** The acquisition of a non-native language by learners who have either previously acquired or are in the process of acquiring two additional languages (cf. Cenoz, 2003:71).

***Early developing trilingual:*** A child who has received regular exposure to three languages before the age of four years, regardless of whether she is undergoing (in strict terms) successive or simultaneous acquisition; the term “L3/3L1 child learners” is also used to refer to such children.

***Cross-linguistic interaction (CLI):*** An umbrella term encompassing a variety of language contact phenomena that occur in a multilingual’s production, perception and processing of language, including interference, borrowing, avoidance and, importantly, transfer (cf. Sharwood Smith & Kellerman, 1986:1).

***Cross-linguistic bootstrapping:*** A phenomenon in which, during the asynchronous development of a BFL learner’s languages, the acquisition of a feature in language X is encouraged by the earlier acquisition of the same feature in language Y (cf. Genesee & Nicoladis, 2006:6).

***Current amount of exposure (CAoE):*** A measure of quantity of language exposure that captures the amount of exposure the child is receiving to a given language at the time of testing, calculated as a percentage of the child’s waking hours in a typical week.

***Cumulative length of exposure (CLoE):*** A measure of quantity of language exposure that captures the cumulative amount of exposure to a given language over time, this amount being calculated on grounds of the estimated proportion of each one-year period of a child's life which included exposure to the given language (cf. Unsworth, 2013a).

***Traditional length of exposure (TLoE):*** The length of the period of time over which a child has been exposed to a given language, i.e. the child's age at testing minus their age at onset of acquisition of the given language.

***Quality of exposure:*** The "nativeness" of the input a child receives in a given language, this being based on parents' and/or teachers' ratings (on a scale of zero to five) of the proficiency level of each input provider (cf. Unsworth, 2013a).



## CHAPTER 2: TRILINGUALISM

This chapter provides an overview of the emergent field of L3A and trilingualism studies. Section 2.1 serves to introduce these two terms as backdrop for the discussion in Section 2.2 of the development of this research field over the past few decades. In Section 2.3, I present an overview of studies on CLI in L3A and discuss the specific factors leading to transfer in this type of acquisition process. Section 2.4 concludes the chapter with an overview of studies focused on early trilingual development, this being the specific process under investigation in the present study.

### 2.1 Defining ‘L3A’ and ‘trilingualism’

‘L3A’ is defined by Cenoz (2003:71) as “the acquisition of a non-native language by learners who have previously acquired or are acquiring two other languages”. This acquisition process may take the form of one of four temporal possibilities: (i) the consecutive acquisition of three languages; (ii) the simultaneous acquisition of two languages, followed by the acquisition of a third language; (iii) the acquisition of an L1, followed by the simultaneous acquisition of another two languages; and (iv) early trilingualism, i.e. the simultaneous acquisition of three languages (Cenoz, 2003:71-72; Cenoz & Jessner, 2009:124-125). Narrower conceptualisations of what constitutes L3A do, however, exist. Montrul, Dias and Santos (2010:22), for example, define L3A as “the sequential acquisition of another language beyond a second language”, ultimately excluding the latter two temporal possibilities mentioned above in which the L3 is acquired through a process of simultaneous acquisition. On the other hand, broader conceptualisations also exist, such as that of Hammarberg (2010) (also adopted by Rast, 2010), according to which an L3 is the non-native language that is used or being acquired at the time of study, regardless of the number of L1s or L2s the language user may have. According to this view, chronology does not come into play in the labelling of a multilingual’s different languages.

As is the case with the *process* of L3A mentioned above, the labelling of the *users* of three languages also has researchers somewhat divided. As certain research has indicated that users of three languages differ both quantitatively and qualitatively from users of two languages

(Kemp, 2009:15), a distinction between the terms “bilingual” and “trilingual” seems justified. In referring to users of three or more languages, however, researchers often prefer not to distinguish between the numbers of languages used, opting instead for the umbrella term “multilingual”. Indeed, according to Kemp (2009:16), researchers following educational and psycholinguistic traditions seem to agree that multilingualism may be defined as “the ability to use three or more languages to some extent, whether these are in the same or different domains”. The validity of this general grouping is, however, increasingly being debated as research has come to show that just as trilinguals differ from bilinguals, multilinguals also differ from one another on grounds of the number of languages they know (Kemp, 2009:23). For this reason, I choose to follow a number of other researchers in specifying the number of languages an individual knows in the term used to denote this individual, for example “trilingual”, “quadrilingual”, etc. Where users of different numbers of languages are referred to collectively or where the number of languages is unknown, the term “multilingual” will be used.

Distinctions between different types of “trilinguals” or “trilingualism” in itself also abound, depending on what criteria (for example age or sequence of acquisition, proficiency levels, etc.) are considered (Hoffmann, 2001:3). In her 2001 review of trilingualism studies to date, Hoffmann (2001:3) distinguishes between the following five groups of trilinguals, based on the circumstances and social context under which they became trilingual:

- (i) Trilingual children who are brought up with two home languages which are different from the one spoken in the wider community;
- (ii) Children who grow up in a bilingual community and whose home language (either that of one or both parents) is different from the community languages;
- (iii) Third language learners, that is, bilinguals who acquire a third language in the school context;
- (iv) Bilinguals who have become trilingual through immigration; and
- (v) Members of trilingual communities.

## 2.2 L3A as an emergent field of research

In 2001, Cenoz, Hufeisen and Jessner (2001:1) ascribed the budding interest in L3A to sociolinguistic reasons on the one hand, and psycholinguistic reasons on the other. On a sociolinguistic level, the learning of more than two languages in both educational and naturalistic settings had become a widespread phenomenon, largely due to an increase in the status of minority languages, the global spread of English and increased international mobility (Cenoz et al., 2001:1). On a psycholinguistic level, research had started to indicate a fundamental difference between the processes and resulting competencies of L2A and L3A (Cenoz et al., 2001:1).

According to Cenoz and Jessner (2009:2), who provide a highly detailed overview of the genesis and development of the fields of L3 research, multilingualism and multiple language acquisition, research on the acquisition of more than two languages first started to consolidate in the late 1980s and early 1990s. This occurred when researchers noted that, just as bilinguals are not simply the sum of two monolinguals, so multilinguals are not simply bilinguals who have acquired one or more additional languages (Cenoz & Jessner, 2009:2). Only since the turn of the century, however, has there been a widespread recognition within more formal approaches to language acquisition that existing knowledge of two previously acquired linguistic systems impacts not only on the learning task involved in the acquisition of a subsequent language, but also the acquisition path and the questions researchers can ask (Rothman, Iverson, & Judy, 2010:6). This recognition is what led to the distinction between L2A and L3A, largely on grounds of the fact that an L3 learner is faced with more sources of transfer in formulating hypotheses about the L3 initial state than are their monolingual L2 learner counterparts (Rothman et al., 2010:7). Additionally, in the opinion of Gut (2010:19) and Falk and Bardel (2010:191), the two processes of L2A and L3A differ in that L3 learners have language learning experience (including learning strategies) and conscious linguistic knowledge of their L2 which may serve as tools in the acquisition of a subsequent language. This observation may, however, only apply to cases of the first temporal nature identified by Cenoz (2003), i.e. successive trilingualism, although even then early *child* successive language acquisition may be argued to result in unconscious, acquired knowledge of multiple linguistic systems. Either way, researchers now increasingly agree that the common use of “L2A” as an umbrella term for the acquisition of any number of languages after the first

constitutes an oversimplification that fails to acknowledge the cumulative effect that knowledge of more than one linguistic system poses for the acquisition of a subsequent language (Montrul et al., 2010:22).

The abovementioned recognition of L3A as a research field in its own right has spurred a growing number of studies. Up until the turn of the century, studies on trilingualism fell into three broad categories in terms of research interests and acquisition contexts, namely (i) studies in which the language learners are children simultaneously acquiring three languages, often because two languages are spoken in the home and another in the community; (ii) investigations into the effect of bilingualism on the acquisition of a third language in the school context; and (iii) investigations into linguistic processing in trilinguals who acquired their third language as a result of immigration (Hoffmann, 2001:4-9). The scenario in the first type of study is closest to that of interest in the present study. As will be shown in the literature review below, early studies of this scenario are mostly observational in nature in describing the sociolinguistic context that lead to trilingualism and the difficulties encountered en route (Hoffmann, 2001:6). Unfortunately, such studies present very little linguistic data showing interaction between the three languages in learners' speech production and comprehension (Hoffmann, 2001:6).

A few years later, Barnes (2006:28) noted that, along with the topic of multilingualism in school contexts, the emergent field of trilingualism had to date placed much more focus on the *adult* acquisition of an L3 (cf., for example, Hammarberg & Williams, 1993, and Clyne, 1997) than on cases of *early* trilingual acquisition. Since then, a few additional studies on trilingual language acquisition during childhood have, however, been published. These are summarised in Section 2.4.2.

That the research interest in L3A has blossomed over the last decade is today evident in the attention it has received at conferences devoted exclusively to the topic, as well as in various edited volumes (e.g. Cenoz et al., 2001; Cenoz, Hufeisen, & Jessner, 2001; Cenoz & Jessner, 2000; Hufeisen & Fouser, 2005) and a multitude of articles and other publications (e.g. Bardel & Falk, 2007; Cabrelli Amaro, Iverson, & Judy, 2009; Cabrelli Amaro & Rothman,

2010; Cenoz, 2001, 2003, 2005; De Angelis, 2007; Flynn, Foley, & Vinnitskaya, 2004; Leung, 2001, 2005, 2007a, 2007b; Montrul et al., 2010, Rothman et al., 2010). According to Rothman et al. (2010:14), a common aim of many of these studies, older and more recent, is to provide an accurate description of the L3 initial state<sup>5</sup> on grounds of research into “how previous linguistic knowledge constrains, facilitates and complicates subsequent language acquisition” – a research focus that Falk and Bardel (2010:185) describe as “the study of the role of the background languages in third language acquisition”. According to Gut (2010:20), it is vital that such research explores the effect of CLI on both production and comprehension in the L3. Most research on CLI in L3A has focused on the lexical level (cf., for example, Cenoz & Hoffmann, 2003; Dewaele, 1998; Williams & Hammarberg, 1998/2009) and, more recently, the syntactic level (cf., for example, Bardel & Falk, 2007; Flynn et al., 2004; Leung, 2005; or Falk & Bardel, 2010, which provides an overview of studies to date). A number of L3 initial state models that predict whether, when and from which source(s) CLI is likely to occur in L3 interlanguage development have been suggested and will be reviewed in Section 2.3.

Lastly, many studies on L3A aim to shed new light on the old debate around universal grammar (UG)<sup>6</sup> accessibility in adult language acquisition (cf., for example, Flynn, 2009; Flynn et al., 2004; Iverson, 2010; Leung, 2007b). As the current study is concerned with L3A during childhood, in which case access to UG is largely agreed upon (Rothman et al., 2010:11), the prior topic of UG accessibility in adult L3 learners will not be expanded on here. Cf., however, Rothman et al. (2010) for a summary of the debate around this topic and manners in which the study of adult L3A may inform it.

In summary, despite the differences in the importance attributed to certain factors in the L3 initial state, there seems to be general agreement that previous knowledge of the L1 and L2

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<sup>5</sup> Leung (2001:55) explains that the term “initial state” is commonly used as a loose reference to “the grammar at the outset of language acquisition”, whatever its duration is understood to be.

<sup>6</sup> UG is conceptualised as domain-specific knowledge situated in an innate language faculty that guides human beings through the process of language acquisition, conscious learning playing a relatively small role in this process (Chomsky, 1966; 1981). UG theory thus adopts what has become known as an “innatist” or “nativist” view of language acquisition.

linguistic systems and the interaction between these systems and the L3 do indeed impact on L3A. Montrul et al. (2010:24), however, point out some of the conceptual challenges that the emergent field of L3A research faces, such as establishing the extent to which L2 transfer plays a role in L3A and the developmental stage at which L2 transfer occurs; determining whether L2 transfer is non-selective or restricted to certain domains or structures; and, as discussed in Section 2.3.2, defining and operationalising “typology”. Over and above these conceptual challenges, the novelty of the emergent field of L3A research also means that many of the studies to date unfortunately pose certain methodological limitations. For a review, cf. Montrul et al. (2010).

## **2.3 CLI in L3A**

### **2.3.1 Defining ‘CLI’ and ‘transfer’**

According to Sharwood Smith and Kellerman (1986:1), the term “CLI” serves as an umbrella term encompassing a variety of language contact phenomena that occur in a multilingual’s production, perception and processing of language, including transfer, interference, borrowing and avoidance. Cenoz and Gorter (2011:358) point out that ‘transfer’, in turn, may range from the involvement of a single element to quite large chunks of language, as occurs in code-switching. In past L2A research, transfer was often referred to as “interference”, due to the common negative view of transfer from the L1 to the L2 as “a deficient use of the target language due to the influence of the L1” (Cenoz & Gorter, 2011:358). The term “interference” has since been largely discredited due to the association thereof with behaviouristic approaches to L2A, with many researchers preferring to use “CLI” in its stead (Cenoz & Gorter, 2011:358). Falk and Bardel (2010:186), for example, use “CLI” and “transfer” interchangeably. In contrast, though, I choose to follow Sharwood Smith and Kellerman (1986) in their understanding of CLI as including a wider range of language contact phenomena than transfer alone, albeit that transfer is often the most salient result of such contact.

Turning to my conceptualisation of the term “transfer”, Paradis and Genesee (1996) found three types of interdependence between the two languages involved in their research on the acquisition of syntax in French-English bilingual children, namely transfer, acceleration and

delay. Transfer, according to these researchers, is the application of a feature of one language in the use of another, often revealing itself in error patterns. Acceleration and delay, on the other hand, they conceptualise as, respectively, the earlier or later than expected acquisition (in comparison to monolinguals) of a feature in one language due to the influence of another. Arguably, the latter two types of interdependence may be said to be results of the first, i.e. the transfer of a given feature may be facilitative (i.e. positive) in leading to its accelerated acquisition in a language that shares the same feature value, or counter-facilitative (i.e. negative) in causing a delay in the acquisition of a language that attributes a different value to the specific feature. On grounds of this argument, acceleration and delay will henceforth be regarded as products of transfer.

### **2.3.2 Factors that determine transfer in L3A**

As mentioned above, a number of positions have been assumed in describing the nature of the L3 initial state, especially in terms of what factors cause the L1 and/or L2 to be activated as sources of morphosyntactic transfer at the onset of L3 interlanguage development. Rothman et al. (2010:8)<sup>7</sup> point out the four main positions, the first of which they term the “no transfer position”, due to its similarity to the identically-named position advocated for L2A by researchers such as Epstein, Flynn and Martohardjono (1996) and Platzack (1996). This position assumes that the initial state in all cases of adult language acquisition is the same in being “devoid of previous linguistic knowledge at the level of morphosyntactic structure”; this assumption being yet to be convincingly argued for (Rothman et al., 2010:8). The remaining three positions as well as other factors that have (less formally) been proposed to influence transfer in (adult) L3A are summarised below.

#### ***The L1 and L2 factors***

The second position is termed the “L1 factor” (cf. Håkansson, Pienemann, & Sayheli, 2002) due to the privileged status it assumes for the L1 as the exclusive source of morphosyntactic

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<sup>7</sup> Cf. also Falk and Bardel (2010) for an in-depth review of three of the most researched positions (i.e. the L2 status factor, the Cumulative Enhancement Model and the Typological Primacy Model) as well as the role of proficiency in determining CLI in the L3A initial state.

transfer in L3A. However, a study by Bardel and Falk (2007) on the placement of sentence negation in Swedish or Dutch as an L3 by L1 V2 / L2 non-V2<sup>8</sup> and L1 non-V2 / L2 V2 speakers, has since shown that morphosyntactic transfer from the L2 is indeed possible. The researchers extended this claim by proposing that the L2 blocks or complicates access to the L1 morphosyntactic system, making the L2 the easiest source of transfer. This third position claiming a privileged status for the L2 in L3A is known as the “L2 status factor” (advanced by Williams and Hammarberg, 1998/2009; supported by Bardel & Falk, 2007; Bohnacker, 2006; Rothman & Cabrelli Amaro, 2010; Falk & Bardel, 2011). Hammarberg (2001:36-37) defines the L2 status factor as “a desire to suppress L1 as being ‘non-foreign’ and to rely rather on an orientation towards a prior L2 as a strategy to approach the L3”. Whilst most of the proponents of this position believe the L2 status to override any typological similarity between the L1 and L3, which could otherwise result in transfer from the L1 to the L3, Rothman and Cabrelli Amaro (2010) concede that typological proximity may perhaps also be of influence. Leung (2005) also found a lack of transfer from the L1 to the L3 in her study of the acquisition of the determiner phrase (DP) by L2 and L3 French learners, which could provide further support for the L2 status factor. She does not, however, speculate on the possible causes underlying this phenomenon or interpret the data as absolute evidence against L1 transfer in L3A, but rather states that it shows that “transfer does not *invariably* come from L1 in L3A” (Leung, 2005:58 – my emphasis).

A number of hypotheses have been ventured in explanation of why the L2 rather than the L1 should be activated in the L3 initial state. One of these is that the L3 learner may deliberately avoid the L1 to prevent herself from sounding like an L1 speaker of a specific language in her use of the L3, as revealed in an introspective report by the learner in Williams and Hammarberg’s (1998/2009) study. According to De Angelis (2007:29), two interacting constraints may furthermore be of influence, namely “perception of correctness” and “association of foreignness”; the former referring to the multilingual learner’s avoidance of the L1 on grounds of the assumption that the L1 is “incorrect from the start” and the latter to the learner’s mental link between non-native languages on grounds of them being “foreign

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8 The difference between V2 and non-V2 languages is clear in the word order of clauses which have a non-subject (for example a topicalised object or adverbial phrase) in sentence-initial position. In such clauses, the verb appears in second position (preceding the subject) in V2 languages and in third position (following the subject) in non-V2 languages.



languages". This foreign language effect that is linked to L2 status has been noted in a number of studies in which multilingual learners tended to use any language but the L1 as the source of CLI (cf. Cenoz, 2001:9, for a list of such studies).

The fourth and final position suggested in explaining CLI in the L3 initial state assumes full access to previously acquired linguistic properties, with features and functional categories from both the L1 and L2 being equally available for transfer (Rothman et al., 2010:9). This position has been formalised into two distinct models that differ notably despite their basic shared assumption, namely the Cumulative Enhancement Model (CEM) advanced by Flynn et al. (2004), and the Typological Primacy Model (TPM), advanced by Rothman (2011).

### ***The Cumulative Enhancement Model***

Flynn et al. (2004) based the CEM on the results of their research into the oral production of restrictive relative clauses in L3 English by L1 Kazakh L2 Russian speakers. According to this model, all language learning is cumulative and non-redundant (meaning that learners may draw on any existing linguistic knowledge during the acquisition of a subsequent language), but transfer only occurs in cases where it is facilitative. Crucially, the CEM thus predicts that transfer will not occur if it does not have a positive bootstrapping effect on interlanguage development. Whilst this model is not supported by the data reported in Bardel and Falk (2007) or Rothman and Cabrelli Amaro (2007, 2010), Cenoz and Jessner (2009:125) maintain that most researchers have come to assume half of what this model proposes, i.e. that CLI is indeed possible in any direction between any of a multilingual's languages.

### ***The Typological Primacy Model***

In an attempt to refine the CEM enough in order for it to explain what factor(s) determine syntactic transfer when both the L1 and L2 provide feasible options, Rothman (2011) proposes an amendment to the CEM in the form of the TPM for adult multilingual syntactic transfer. The formulation of this model by Rothman (2011) is based on previous work by Rothman and Cabrelli Amaro (2007, 2010). Rothman and Cabrelli Amaro (2010) showed transfer of null-subject properties to L3 Italian and French in L1 English L2 Spanish learners

occurring from Spanish alone, regardless of whether this was facilitative or not. As Spanish is typologically closer to both Italian and French than English is, typology was deemed a possibly deterministic property. As this study could not, however, disentangle typology and Bardel and Falk's (2007) L2 status factor, an adapted future methodology was suggested. Rothman (2011) attempts such an adaptation on grounds of a study of adjectival placement and interpretation by L1 Italian L2 English L3 Spanish learners and L1 English L2 Spanish L3 Portuguese learners. In this regard, English is typologically the least similar to the L3 in both cases, as it does not allow noun-raising, unlike the other languages (Rothman, 2011:107). The data reveal transfer to occur, respectively, from Italian as an L1 and Spanish as an L2, so ruling out the L2 status factor as an explanation for transfer in this case of L3A.<sup>9</sup> As Rothman and Cabrelli Amaro (2007, 2010) had already presented evidence of non-facilitative transfer, the CEM in its original form could also be ruled out.

On grounds of the above findings, the TPM claims that transfer will occur from the typologically closest language, regardless of (i) whether this typology is actual or perceived (the latter constituting a case of what Kellerman, 1979, terms "psychotypology") and (ii) whether the result is facilitative or not (Rothman, 2011:108,112). Whilst the TPM does not deny the relevance of the L2 status factor, it does predict that typology will override this status in cases where there is direct competition between these two factors (Rothman, 2011:122; cf. also Cenoz, 2001, offering empirical support for this prediction). The TPM does not, however, venture any predictions regarding transfer in cases where typology is irrelevant in that the L3 is typologically equally similar or dissimilar to both the L1 and L2.

In the testing of the above model one should, however, take note of the different interpretations of the term "typology". Falk and Bardel (2010:193-194) point out that this term has three different, yet often conflated interpretations and therefore suggest a clear distinction between them as referring to, respectively, (i) "language relatedness", i.e. the overall relatedness of two languages in a genetic sense; (ii) "typology", i.e. "ad hoc similarity between linguistic features" that may occur across language families; and (iii)

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<sup>9</sup> Cf. also Montrul et al. (2010) for a report on two studies that show increased transfer from Spanish (which has object clitic pronouns) in the L3A of Brazilian Portuguese (which also has object clitic pronouns), compared to English (which does not have object clitic pronouns), regardless of the status of Spanish as L1 or L2.

“psychotypology”, i.e. Kellerman’s (1979, 1983) notion of a language learner’s subjective perception of the level of similarity between languages, originally suggested for L2A.

Whilst studies such as those by Bardel and Lindqvist (2007), Cenoz (2001), De Angelis (2005a, 2005b), Odlin and Jarvis (2004) and Ringbom (1987) indicate that languages from the same or closely related families allow for easy transfer between them, Falk and Bardel (2010:194) note that languages from the same group may select opposing parameter settings, as is the case with Spanish and French in terms of the null-subject parameter and Swedish and German in terms of the head first parameter. Such differences may result in non-facilitative transfer in cases where learners’ knowledge of the overall relatedness of the two languages overrides differences that occur at a lower level. Rothman (2010:269,271), for example, found that L3 learners of Brazilian Portuguese who have English as L1 and Spanish as L2, or vice versa, transfer word order and relative clause attachment preference exclusively from Spanish, the language most closely related to Brazilian Portuguese in a genetic sense, even though transfer from English would have proven more facilitative in terms of the two specific features tested. In explanation, Rothman (2010:271) suggests that “transfer could be negative for a principled reason, namely because one of the previous grammars is so structurally close to the target that general cognitive economy stipulates its complete transfer to aid the parser in dealing with the target input”.

Returning to the TPM, two studies that do not explicitly claim to provide support for this model, but that do show positive transfer from a typologically related L2 in L3A, are those by Leung (2005) and Jaensch (2008). Both these studies investigated the acquisition of articles in L3A. More specifically, Leung (2005) compared the acquisition of the DP and related properties in two groups of beginner French learners, i.e. L1 Vietnamese monolinguals and L1 Cantonese L2 English bilinguals proficient in their L2. A few important differences and similarities exist between the nominal properties of the four languages in this combination. For example, English and French have articles and their determiners have a [ $\pm$ definite] feature, whilst Cantonese and Vietnamese are article-less and their determiners do not have a [ $\pm$ definite] feature (Leung, 2005:43,47). Leung (2005:58) suggests that the closer typological relation in this regard between French and English, compared to French and Cantonese/Vietnamese, had “facilitative effects” in the case of L3A of French by the L1

Cantonese L2 English bilinguals, as the latter group performed better than the L1 Vietnamese monolingual learners on most of the properties tested (Leung, 2005:58). Jaensch (2008) also investigated the acquisition of the [ $\pm$ definite] feature in an L3. The experimental group in this study consisted of 39 L1 Japanese L2 English bilingual learners of German as an L3, whose L2 English proficiency levels ranged between elementary, lower intermediate and upper intermediate (Jaensch, 2008:83-84). In this language combination, German and English are typologically most similar in the marking of definiteness; a fact Jaensch (2008:87) suggests is responsible for the higher proportion of appropriate article use in L3 German in this study, compared to L2 German in studies involving similar L1 participants. This would suggest that facilitative transfer occurred from the typologically closest language, i.e. the L2 English, in the L3A of German in Jaensch's (2008) study. An additional interesting finding reported by Jaensch (2008:87) is that a higher level of L2 proficiency also seems to be facilitative in L3A, as those learners with a higher L2 English proficiency outperformed learners with a lower English proficiency, yet overall equal L3 German proficiency (Jaensch, 2008:87).

### ***Proficiency***

With regards to proficiency, research has not yet managed to provide a clear picture of the role thereof in determining the extent and direction of CLI (Rast, 2010:164). A common assumption (cf., for example, Lindqvist, 2009; Williams & Hammarberg, 1998/2009) is that the higher a learner's proficiency in their L3, the lower the degree of CLI. An interesting interaction has also been noted between a learner's proficiency in their L2 and lexical transfer to the L3. As one would expect, lexical transfer has been shown to occur from an L2 in which the learner has a high proficiency level, but more interestingly, also from an L2 in which the learner has a low level of proficiency (Falk & Bardel, 2010:196-197). Additionally, it has been found that a low proficiency in the L3 results in lexical transfer from a low proficiency L2, whilst a high proficiency in the L3 results in lexical transfer from a high proficiency L2 or from the L1 (Falk & Bardel, 2010:197). In a study of CLI in the L3A of Polish by participants with differing numbers and types of L2s, Rast (2010) at regular intervals conducted tests from first exposure to the L3 up until 8 hours of exposure. In this study, even minimal L2 knowledge of Russian, a highly inflected language typologically closely related to Polish, proved facilitative in the placement of the Polish negator, and in the learners' sensitivity to verbal morphological marking in Polish. In the case of syntax, however, a

relatively high level of L2 proficiency seems to be a prerequisite for the transfer of target-like structures to the L3, as shown by Bardel and Falk (2007) and Schmidt and Frota (1986). For a reference to studies on and an interesting discussion of the role of proficiency in determining CLI in L3A, cf. Falk and Bardel (2010).

### ***Input and dominance***

Two other factors that have received primary attention as possible determinants of the direction of transfer in multilingual acquisition are (i) differences in the amount of input a learner receives to the different languages, and (ii) the (perhaps resultant) differences in terms of dominance (Yang & Hua, 2010:106). Unfortunately, a sufficiently nuanced definition of the term “dominance” is yet to be agreed upon in the field as it has intermittently been used in reference to, respectively, proficiency levels, language preference, and degree of exposure. Given the present study’s focus on the role of input in language acquisition, this term will only be used in reference to the degree of exposure that a child has received to a specific language. As such, (i) and (ii) above converge to form a single factor that may be described as “dominance in terms of input quantity”. A detailed review of the role of input and its effect on language acquisition and, by extension, language dominance in the specific context of *early* multilingual acquisition will be provided in Chapter 3.

### ***Context, age and recency***

Finally, other factors that have been investigated as possible causes of CLI in L3A include age, recency and context (Cenoz, 2001:8-10). Firstly, age may be a factor in CLI due to its association with metalinguistic awareness and cognitive development, which may influence psychotypology in older children, increasing the accuracy of the perceived linguistic distance between languages (cf., for example, Cenoz, 2001, in which older Basque/Spanish bilingual child learners of English transferred less terms from Basque, the language typologically furthest from the target, than the younger learners). Secondly, Hammarberg (2001) suggests that recency of onset of acquisition may be a factor as the L3 learner in this study used the most recently acquired language as preferred source of transfer to the L3. Lastly, Grosjean (1998) proposes that the interlocutors, setting and conversational topic constituting the communicative context determine whether the speaker is in a primarily mono- or bilingual

mode (the modes being conceptualised as points on a monolingual/bilingual mode continuum). The mode, Grosjean argues, in turn affects CLI, as attested in studies such as those by Dewaele (2001) and Hammarberg (2001). Applying Grosjean's concept of modes to trilingualism, Hoffmann (2001:12) suggests seven different possible "constellations", namely the three monolingual modes A, B and C; the three bilingual modes A+B, A+C and B+C; and the trilingual mode A+B+C. Interestingly, in her own research, Hoffmann (2001) only finds evidence of five modes being used by trilinguals, i.e. the three monolingual modes and the bilingual modes involving the community language. The non-occurrence of evidence of a trilingual speech mode has also been noted in Widdicombe (1997) and the six studies reviewed by Quay (2001) (cf. above). Although Clyne (1997) finds some evidence indicating a trilingual mode, the trilinguals in his study also seem to act more like bilinguals than trilinguals in terms of language activation.

Note that all of the studies summarised in this section involved adult L3A. The question thus arises as to how similar or different child L3A is to adult L3A, seeing as this would influence to what extent the findings of the adult L3A studies referred to above are relevant to the study reported in this dissertation on trilingual language acquisition in children. These studies were discussed here, however, because of the wealth of studies on adult L3A, compared to those on child L3A / simultaneous trilingual language acquisition in children. We now turn to studies on the latter topic.

## **2.4 Early trilingualism**

### **2.4.1 Terminological issues**

Turning to studies on trilingualism in childhood, of which the present study is an example, a review of the relevant bi- and trilingualism terminology is necessary as introduction. Firstly, McLaughlin (1978, 1984) differentiates between the simultaneous and successive acquisition of an L2 in childhood, the former occurring in cases where a child receives exposure to two languages before three years of age, and the latter in cases where exposure to an L2 occurs only after three years (cf. also Paradis, Genesee & Crago, 2011; Paradis, 2010; Şakırgil, 2012). Hoffmann (1985:480) also adopts the cut-off point of three years suggested by McLaughlin, but uses it to draw a distinction between infant and child trilingualism. In

reaction to McLaughlin's (1978) original suggestion, Padilla and Lindholm (1984) argue that the acquisition of two languages only qualifies as "simultaneous" if the child has received exposure to both languages *from birth*. Rejecting the term "simultaneous acquisition" altogether, De Houwer (1990) adopts Meisel's (1989) term "bilingual first language acquisition" to refer to cases in which a child receives exposure to two languages from birth, and suggests the term "bilingual second language acquisition" (De Houwer, 1987) to refer to cases in which exposure to an L2 occurs after one month, but before two years of age.

In her study of a child acquiring three languages, Quay (2001) does not find empirical support for De Houwer's (1990) terminological distinction between children who receive exposure to a subsequent language within one month of birth and those who only receive it after one month, and therefore suggests an alternative criterion and terminology. On grounds of the findings of her study, she suggests that the first instance of lexical production in any of the child's languages be seen as the crucial point in time. In such cases where children are exposed to three languages "regularly before their first words", she argues, they may be said to be undergoing "early trilingual development" (Quay, 2001:153—my emphasis). In her study of an infant called Freddy, who showed only passive competence (i.e. receptive knowledge) of two of his languages by the end of the study at age 1;10, she is cautious to categorise the infant as "a trilingual", preferring to highlight the continuing nature of the acquisition process in the term "a developing trilingual" (Quay, 2001:193). Barnes (2006:10) also employs the term "early trilingualism", but in a broader sense, setting McLaughlin's (1978) age of three years as the exposure cut-off for language acquisition to qualify as simultaneous.

In her study on the role of input and age of first exposure in the acquisition of Dutch grammatical gender by English-speaking children, Unsworth (2007:451) divides her participants into two groups: one is termed the "child L2" group and the other the "child L2/2L1" group, where "2L1" refers to "two first languages", implying simultaneous acquisition of two languages as first languages. The L2 group had an average age of first exposure to Dutch of four to seven years, and the L2/2L1 group one of naught to four years. Four years was taken as the lower boundary for the process of child L2A, on grounds of the argument that "most (purely) grammatical principles (and, for example, the phonology) of the

first language” may be assumed to be in place by this age (Unsworth, 2007:451; cf. also Goodluck, 1986; Guasti, 2002). Unsworth (2007:451) purposely chose to refer to the second group as “L2/2L1”, rather than simply “L2”, as there is uncertainty as to whether children exposed to an L2 between naught and four years “pattern more” like simultaneous bilingual, i.e. 2L1, children or like child L2 learners. On grounds of this statement, one may argue that a strict terminological distinction between children who are exposed to *three* languages before the age of three years (what many researchers would most probably term “simultaneous trilinguals”), and children who receive exposure to a third language only after the age of three, but before four years (the lower boundary for child L2A, and presumably by extension also child L3A), is not as yet justified. As such, a group of child participants who were exposed to three languages between naught and four years could safely be termed L3/3L1 child learners, especially in a study where the point is not to differentiate between simultaneous and very early sequential trilingualism.

In the present study, I draw on elements from Quay (2001), Barnes (2006) and Unsworth (2007) in justifying my use of the term “early developing trilingual” to refer to a child who has received regular exposure to three languages before the age of three or four years. I borrow the term “developing” from Quay (2001), and broaden her and Barnes’s (2006) conceptualisation of the term “early trilingual acquisition” as referring to a process with an upper boundary of three years, to include acquisition that takes place before four years. Broadening the scope of the adjective “early” to include an extra year seems justified on grounds of Unsworth’s (2007) argument above regarding the grey area between what is commonly regarded as child 2L1A (before age three) and child L2A (after age four).

In opting for the term “early developing trilingual” to refer to a child who has received regular exposure to three languages before the age of three or four years, I mean to indicate that such children are undergoing an acquisition process that is on-going (hence the term “developing”) and reasonably simultaneous. This type of process stands in contrast to one that has clearly delineated, successive or sequential stages within which most of the grammatical principles of the different languages are acquired. Recognising the developing and simultaneous nature of the early trilingual acquisition process also makes it possible to explain changing transfer patterns as a result of changes in exposure patterns, language



preference and proficiency dominance. Importantly, whilst I qualify cases in which a child is regularly exposed to three languages before four years as one of early (simultaneous) trilingual acquisition, and label such children “L3/3L1 child learners”, I by no means deny the possibility that differing ages of first exposure to the three languages may have an effect on rate of acquisition, proficiency dominance and transfer.

#### **2.4.2 Previous studies on early trilingualism**

Turning to the studies that have been conducted on early trilingualism to date, a chronological summary of some of the most well-known studies is provided below.

##### *Early descriptive studies*

The first studies on trilingualism mainly offered descriptions of the language use patterns and competencies of young children born into multilingual families, and were mostly based on either a single or a limited number of participants, often from the same family. A number of such accounts were published up until 2000, for example those by Hoffmann (1985), Harding and Ridley (1986), Arnberg (1987), Helot (1988), Pérez-Vidal (1995), Juan-Garau (1996), Cenoz and Barnes (1997), Turrell (1997), Navracscics (1999) and Dewaele (2000). Only a few of these studies will be described briefly as an illustration of the nature of this early body of literature.

Hoffmann’s study published in 1985 is one of a handful of longitudinal studies on trilingual development. This study employed data collected from two young Spanish-German-English trilingual siblings over the course of seven years, and concerned itself with aspects of language development and use, as well as psychological and sociocultural issues that may affect the acquisition process. Findings included the fact that (i) the siblings’ language use reflected the linguistic constellation in the family (with Spanish and German being used with the parents and other family members, and the community language, English, with friends); (ii) the siblings had sufficient communicative competence in each language to fulfil their needs at the time of testing; and (iii) neither their trilingualism nor any one of their languages was received in a negative light.

Harding and Ridley (1986) tell the story of how a young child's exposure patterns led to changes in his competence patterns. This child initially grew up bilingually in France, acquiring French and German via his parents. When his family moved to Brazil, he started acquiring Portuguese as an L3 from his nanny. The study reports on how this child's proficiency levels in his three languages reflected the degree of exposure to and use of each, highlighting how he was most proficient in Portuguese whilst in Brazil, with French taking over upon their return to France. Arnberg (1987) also reports on changes in language use and competency patterns, this time among the children in a family living in Sweden. These children grew up trilingually as a result of their mother addressing them in Finnish, their father addressing them in Kurdish, and by overhearing their parents speak Swedish (the community language) to one another. However, reduced exposure to Kurdish as a result of their father relocating to another area resulted in these children becoming bilingual speakers with roots in three different cultures.

In 1988, Helot reported on an investigation into the function of the different languages spoken in two families in which two children each were growing up acquiring English, French and Irish. Observations of the participants in various contexts revealed that, in the first family, the status and function of a specific language in the home changed as a result of location – when the family was in Dublin, English was used most; when in France, French; and when in Gaeltacht, Irish. In the case of the second family (who did not speak English at home), their language use patterns varied only in line with the children's level of proficiency at the time, with the language(s) in which they were more proficient at a specific time being used more often.

Focusing specifically on the trilingual family and the manner in which they deal with three different languages and cultures, Barron-Hauwaert (2000) published a study based on data from questionnaires completed by 10 trilingual families residing mainly in Switzerland and other surrounding European countries. The children in these families ranged from two to 12 years of age, received input in two parental languages on grounds of the one-person-one-language (OPOL) approach, as well as input in a third, local language (Barron-Hauwaert,

2000:2,7). The language used as a lingua franca in the household was, in by far the majority of cases, the father's language, with English being the L1 of most of the fathers. Barron-Hauwert (2000:4) notes that, along with the prestige of the local language (i.e. French or German) in the relevant communities, the relative prestige of the father's language in the household may pose a "double threat" to the mother's language in cases where the latter has minority language status. She proposes that this phenomenon may lie at the root of many trilingual families' failed attempts at fostering child trilingualism (Barron-Hauwaert, 2000:4).

The parents in Barron-Hauwaert's (2000) study were asked to rate each of their child's/children's three languages as "L1", "L2" or "L3" on grounds of the child's proficiency therein. Interestingly, half of the parents reported that their child(ren) use(s) the local language as their "L1" (Barron-Hauwaert, 2000:3). Barron-Hauwaert ascribes this phenomenon to the children's ages and their resultant input levels. Three children from 2 to 3;5 years had the mother's language as "L1"; two children from 3 to 4 years had the father's language as "L1"; and the majority of the children over 6 years had the local language as "L1". Most probably, this pattern is a result of these children's input patterns: the youngest children, who most likely spent most of their time with their mothers and had little peer-group interaction, had the mother's language as "L1"; whilst the oldest children who were all school-going and had increased peer group and community interaction, had the local language as "L1" (Barron-Hauwaert, 2000:4). As for the interesting phenomenon that some of the children between 3 and 4 years had their father's language as "L1", Barron-Hauwaert proposes a number of possible explanations, such as the possibility that the fathers deliberately increased exposure to their language after the establishment of the mother's language as the "L1", or a period of "catching-up" and expanding on receptive knowledge of the father's language at an age when the child is first ready to "activate and control both languages at the same time", leading to the father's language unseating the mother's as "L1" (Barron-Hauwaert, 2000:4).

The abovementioned changes in proficiency levels at certain ages leads Barron-Hauwaert (2000:4,10) to suggest three stages in trilingual development, i.e. initial monolingualism (in the mother's language) at an early age, followed by a period of bilingualism (incorporating the father's language) at pre-school age and finally trilingualism (incorporating the local

language) at school-age. In summary, the findings of this study suggest that proficiency levels in a trilingual child's three languages are affected by input levels, which in turn are often affected by the age of the child and the input contexts in which the child consequently finds herself.

### *Early studies employing analyses of linguistic data*

In 2001, Quay (2001:153-155) compiled a summary of the only six studies on childhood trilingualism, published by 2001, that examined speech data from trilingual children, rather than simply anecdotally describing such children and the circumstances in which they became trilingual.<sup>10</sup> These studies are, in chronological order, those by Kazazis (1970), Oksaar (1978), Hoffmann (1985), Mikès (1990), Stavans (1992) and Hoffmann and Widdicombe (1999). Whilst these studies are valuable in their analysis of linguistic data, the conclusiveness of their results is questionable as most of the studies unfortunately do not provide sufficient information on the methodology used in collecting the data, or on the input their subjects received (Quay, 2001:156-157). These studies do, however, indicate the following trends in code-switching: (i) a maximum of two languages are mostly used in code-switching; (ii) the dominant language in terms of exposure is mostly used as the source language; (iii) code-switching seems to be affected by the participants and topics involved in the communicative context as well as the availability of lexical resources; and (iv) it is sometimes employed to serve an emphatic function (Quay, 2001:157-159). In conclusion to her own summary of the above studies, Barnes (2006:35) calls for not only more individual case studies, but also larger-scale studies in areas of Africa and Asia where childhood multilingualism is the norm, to better the foundation for a model of early multilingual language acquisition.

In an attempt to offer a more systematic and comprehensive account of the relationship between early developing trilinguals' linguistic exposure in context and their linguistic abilities, Quay (2001) reports on a then on-going project involving a Tokyo-based infant, Freddy (cf. Section 2.4.1), exposed to German and English from birth via his parents, and to Japanese from 0;11 via his daycare centre. Input quantity, input quality and input delay were

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<sup>10</sup> Hoffmann (2001) provides an overview of both types of studies mentioned here.

considered in order to investigate what the minimum input requirements are for multilingual language production, and what the effect is of differing ages of first exposure (Quay, 2001:160-161). Five different data collection methods were employed, namely (i) a parental questionnaire on Freddy's social background and language exposure patterns; (ii) interviews with Freddy's parents and the daycare staff at ages 1;0, 1;5 and 1;9; (iii) the *MacArthur Communicative Development Inventory* (MCDI), used not for its original normative purposes, but to determine the number of words Freddy understood and produced in each of his languages; (iv) additional diary reports by Freddy's mother and the daycare staff noting the words he understood and used at different stages; and (v) 77 weekly video recordings in both the home and daycare context – 29 in an English language context where Freddy interacted with his mother, 18 in a German context with his father and 30 in a Japanese context at the Japanese-medium daycare (Quay, 2001:161-169). Although the MCDI reports and the video recordings served as primary data sources, the questionnaire, interviews and diary reports were used in a supplementary fashion in the hope that they would offer converging evidence (Quay, 2001:169).

In terms of input quantity, the parental reports, but not the video recordings, indicated some correlation between the amount of input Freddy received to a given language at a certain point and his comprehension and production in that language (Quay, 2001:194). In terms of input quality, the home and daycare environments differed in that the parents accepted utterances in any one of Freddy's languages at home, whilst the monolingual daycare staff could only respond to Japanese utterances (Quay, 2001:195). Presumably, the aforementioned parental discourse style explains the large numbers of Japanese utterances produced by Freddy in the home environment, despite the fact that he had evidently received sufficient exposure to both German and English to develop receptive skills in these languages and had experienced a delay in receiving Japanese input. The study thus suggests that language dominance (in terms of communicative preference) is affected more by parental discourse style than amount of input or age of first input (Quay, 2001:196). Quay (2001:196) cautions, however, that the differences in the results of the five different data collection methods indicate that generalisations on grounds of one method alone may be flawed in its lack of converging evidence.

*More recent studies employing analyses of linguistic data*

Over the last few years, studies involving early trilinguals have mostly focused on the following areas: pragmatic development, phonological development<sup>11</sup>, trilingual competence and lexical differentiation. Turning to the first area, studies on early pragmatic development in trilinguals to date include Barnes (2006, 2008), Cruz-Ferreira (2006), Montanari (2009b), Quay (2008) and Safont-Jordà (2011), some of which will be summarised below.

Investigating the pragmatic development of a Chinese-English-Japanese early trilingual child named Xiaoxiao, Quay (2008) considered language mixing in 17 of Xiaoxiao's family dinner conversations occurring from the time when she was aged 1;10.17 to 2;4.18. Whilst Xiaoxiao lived in a monolingual Japanese community in Tokyo, her home context was trilingual as her L1 Chinese mother and L1 English father followed an OPOL approach in speaking to her, and switched between English and Japanese in speaking to each other (Quay, 2008:11,29). At the dinner table, Xiaoxiao's language mixing showed a clear awareness and accommodation of her parents' differing linguistic knowledge, as her choice of language(s) was mostly in accordance with the participation of one or the other parent, or both, in a given conversation (Quay, 2008:29). In fact, Xiaoxiao seemed to be adhering to very specific rules of linguistic behaviour, which Quay (2008:30) suggests she acquired by "being socialized into family-specific language practices". Whilst the parents' use of code-switching provided Xiaoxiao with a parental discourse style model that does not demand a stringent separation of languages, this model did not prevent Xiaoxiao from being able to use her languages differentially outside of the home when the context demanded it, such as in her monolingual Japanese daycare centre (Quay, 2008:30-31). Importantly, this phenomenon suggests that a multilingual's early development of pragmatic competence is not reliant on a stringent separation of languages in interaction with or within hearing distance of the child (Quay, 2008:31).

The fact that the language choices of the early trilingual child in this study are determined by child-directed and non-child-directed parental input, an acceptance of code-switching between all three languages in the family context and her awareness of the differing linguistic

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<sup>11</sup> Cf. the discussion of Yang and Hua (2010) in Chapter 3, Section 3.2.

competencies of her interlocutors, is mirrored in findings of studies on early bilingualism (Quay, 2008:29-30). The findings of this study also relate to that of Quay's (2001) earlier study of the German-English-Japanese trilingual boy named Freddy (cf. above). Although only 20% of Xiaoxiao's daily linguistic input was in the form of English, she did not show increased mixing when using English as the matrix language— in fact, her English conversational skills were sufficient to allow her to use it as the predominant language of interaction with her father (Quay, 2008:30). Quay (2008:30) regards this as an indication that as little as one fifth of a multilingual child's total linguistic input may be sufficient for the development of conversational skills in a given language. In the earlier study, Freddy received delayed exposure to Japanese, yet it soon became his language of choice, even during interaction with his German- and English-speaking parents. Whilst both pairs of parents had a permitting discourse style that allowed for code-switching, in Xiaoxiao's case, it caused her to use whatever language(s) best suited the linguistic competence of her interlocutor(s), whilst it caused Freddy to predominantly use his preferred language, Japanese, in interaction with his parents whom he knew understood Japanese, despite their choice to interact in German and English at home.

A more recent study on the acquisition of requests by early trilinguals is reported in Safont-Jordà (2011). In this study, the focus was on the pragmatic development of an L1 Catalan L2 Spanish L3 English child trilingual over a period of one year, from age 2;6 to 3;6. The child, Pau, was exposed to Catalan exclusively from birth, started using Spanish from age 2 when he first attended kindergarten and received English input for the first time at age 2;6 (Safont-Jordà, 2011:257). At this age, English exposure took the form of TV cartoons and songs, progressing to formal instruction from age 2;11. Whilst both Catalan and Spanish are commonly used in the Valencian Community in Spain where Pau lives, Catalan is the minority and Spanish the majority language in terms of exposure (Safont-Jordà, 2011:265-266). English still has a foreign language status, despite its growing social prestige and compulsory inclusion in the school curriculum (Safont-Jordà, 2011:257). Within the household, Pau's mother purposely uses both Catalan and English and his father only Catalan in communicating with him, in order to increase Pau's exposure to the two minority languages in his life and also to encourage the idea of multilingualism as the norm (Safont-Jordà, 2011:265).

The data that informed the study took the form of 35 transcriptions of audio- and video-recordings of mother-child play sessions either at home or in the car, each lasting 30 to 60 minutes (Safont-Jordà, 2011:266). Play sessions were purposely chosen as the scenario for analysis, as this is the only scenario in which Pau would use all three his languages in interaction with his mother (Safont-Jordà, 2011:266). The analysis of Pau's speech focused on the use of direct request forms, conventionally indirect request forms and peripheral request modification items (Safont-Jordà, 2011:266). It was found that, after the introduction of English, Pau's use of direct request forms decreased steadily in all three his languages, and his use of conventionally indirectness increased – Safont-Jordà suggests that this may be a result of Pau transferring the negative-politeness orientation of English to his L1 and L2 (2011:268). Unlike the beginner foreign and L2 learners of English in previous studies, Pau modified his requests in all three his languages (Safont-Jordà, 2011:272). Safont-Jordà (2011:273) concludes that these findings illustrate not only that there is interaction between the three languages, but also that the addition of a third language causes both quantitative and qualitative changes, as previously argued by scholars such as Jessner (2008) and Keszkes (2010).

Barnes (2006) reports on a study of the acquisition of English question forms and functions in a trilingual girl named Jenny, aged 1;11.23-3;6.17 at the time of the study. The partial focus on question function qualifies this study as another example of a study on pragmatic development in early trilingualism. However, only the results of this study's focus on question form (as an investigation into grammatical development) will be reported on here, as it aligns more closely with the present study's grammatically-oriented interest in the acquisition of passive constructions. Jenny, as a member of a trilingual family living in the Basque country of Spain (where Spanish is still the majority language), received exposure to English, Spanish and Basque from birth (Barnes, 2006:91). Whilst English, a minority language in the given context, was purposely chosen as the primary language of both the media Jenny was exposed to and of family interaction, Jenny and her two elder brothers often communicated with their father using Basque, exposure to which was also received in the local community (Barnes, 2006:91-92). Spanish exposure from birth was a result of the



language use of Jenny's monolingual Spanish caregiver; this exposure, however, decreased when Jenny started attending a Basque-medium nursery school at age 2;5 (Barnes, 2006:92).

Overall, Jenny's language acquisition seemed to largely mirror the routes followed in monolingual acquisition, providing support for Barnes' (2006:3,219) choice of the autonomous development hypothesis proposed by Meisel (2001) as theoretical research perspective. Lexical mixing occurred in only 2% of the utterances in the data corpus, which consisted of transcriptions of the first 30 minutes of 32 recorded English-medium mother-daughter interactions (Barnes, 2006:95,220). Additionally, Jenny's mean length of utterance and type token ratio in English were found to be similar to that of a sample of monolinguals and bilinguals (Barnes, 2006:219-220). On grounds of these findings, Barnes (2006:220) suggests that even when input is obtained from "extremely limited sources", as was the case for English in this study, it may be enough to enable successful language development.

Having found evidence of largely separate development, Barnes next investigated to what extent evidence of interaction between Jenny's three languages was still to be found in her production of English questions. On grounds of adult and developmental forms in Spanish and Basque that differ from English, Barnes (2006:222-223) predicted CLI to occur in four areas. An analysis of Jenny's questions revealed that this was indeed the case, whilst an additional seven areas were identified as "non-standard", resulting in 11 potential areas of CLI (Barnes, 2006:223). As what are perceived to be cross-linguistic errors may actually be, among other things, developmental errors, Barnes (2006:223) attempted to control for this by using question samples from two monolingual controls, i.e. Sophie (Fletcher, 1985) and Sarah (Brown, 1973). Upon comparing the data from the two monolinguals and the one trilingual, Barnes (2006:223) found only five of the areas to be unique to Jenny's questions, which would suggest that they are the result of CLI from her other language(s). These areas are: (i) the large number of questions produced in the declarative form with the aid of intonation; (ii) the use of *is + 0/it/this/that?*; (iii) subject repetition; (iv) wh-confusion and (v) translation (Barnes, 2006:224-226). Although Barnes finds these areas to be clearly related to common syntactic patterns of both Spanish and Basque, and she does venture a number of explanations, she concludes that it is difficult to distinguish exactly which of the two languages are of influence in the case of a specific area and how (Barnes, 2006:226).

Recall that the focus of recent studies involving early trilinguals has also been on trilingual competence and lexical differentiation, respectively. Investigating the notion of ‘trilingual competence’, Edwards and Dewaele (2007) examined two trilingual conversations between a mother and daughter (aged 8;5) speaking Lebanese Arabic, French and English in their London home. Upon quantitatively and qualitatively analysing the code-switching patterns employed by the two participants, a significant difference was found between them, specifically in terms of the dominant (i.e. matrix) language, the relative frequency of different types of switches and the use of hybrid constructions involving two or more languages (Edwards & Dewaele, 2007:221). Whilst both participants maintained a trilingual language mode during both conversations, the mother (who is of Lebanese origin) predominantly used Arabic, with switches to English and French mostly serving as “confirmation checks” (Edwards & Dewaele, 2007:234). The daughter also used Arabic, especially “when pressed to do so”, but clearly preferred English (the language used with her sister and in the wider London community) as her dominant language, followed by French (the language used with her teachers and friends at the French-medium school she attends) (Edwards & Dewaele, 2007:234). According to Edwards and Dewaele (2007:234), this difference in terms of language dominance is illustrative of intergenerational language shift, the phenomenon in which the younger immigrant generation shows a preference for the language of the host country (Edwards & Dewaele, 2007:234).

As for the question as to the existence of a special trilingual competence in trilingual language users, the researchers argue that switching between languages (be it two, three or more) employs “basically the same technique”, although each individual uses their own, unique code-switching patterns (Edwards & Dewaele, 2007:234-235). For this reason, they suggest the term “multicompetence” (Cook, 1991, 1992, 2002; Dewaele & Pavlenko, 2003) to describe the unique linguistic competence underlying the linguistic behaviour of a speaker of more than one language (Edwards & Dewaele, 2007:235).

Montanari (2010) reports on an investigation into lexical differentiation in a Tagalog-Spanish-English trilingual child, Kathryn, by examining her production of translation

equivalents (TEs). In previous studies, Kathryn had been shown to differentiate her languages from at least 1;10, both on a pragmatic level (Montanari, 2009b) and a syntactic level (Montanari, 2009a), as evident in her combining of words in accordance with language-specific patterns. The 2010 study involved a reconstruction of Kathryn's cumulative vocabulary on grounds of audio recordings and diary records made during the period 1;4 to 2;0 as well as an examination of the number of phonetically distinct doublets and triplets she used (Montanari, 2010:102).<sup>12</sup> The recordings were made in trilingual family contexts, employing the same toys, activities and books with each interlocutor so as to provide a true test for the existence of TEs (Montanari, 2010:107).

During the period in which the recordings were made, by far the majority of Kathryn's linguistic input was in the form of Tagalog (as she was primarily in the care of her Tagalog-speaking grandparents), followed by Spanish and then English input (Montanari, 2010:106). Tagalog was also the language in which Kathryn had the largest vocabulary size (Montanari, 2010:119). Initially, Kathryn's TEs consistently involved Tagalog (thus, her dominant language in terms of input and lexical proficiency) and one of her weaker languages, showing input to determine the number and type of TEs acquired (Montanari, 2010:121). The findings also showed TEs to be acquired from as early as 1;6, with context appropriate use increasing from this age onwards (Montanari, 2010:121). Lastly, Kathryn's acquisition of TEs was found to occur as early and at the same rate as in bilinguals, whilst learning a triplet took only half the time it took her to learn the relevant doublet (Montanari, 2010:121). Whilst these findings support Lanvers' (1999) "bilingual lexical bootstrapping" hypothesis which proposes that a child's learning of a TE is aided by her previous experience of a concept, Kathryn had a second additional benefit in her previous experience of equivalent learning (Montanari, 2010:121). Montanari (2010:102) concludes that the initial differentiation of the lexicon, as seen in the use of doublets, "might facilitate the emergence of multiple lexical systems".

In sum, early studies on child trilingualism were mostly small-scale descriptive studies focusing on language use patterns and competence, with this research interest gradually

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<sup>12</sup> The terms "doublet" and "triplet" refer, respectively, to a set of two and three TEs that a multilingual child has acquired, each word being of a different language, but all words denoting the same concept.

giving way to a more grammatically- (especially pragmatically-) oriented focus in later studies. Thus far, results of the latter type of study indicate that parental discourse style is a strong determinant of a young trilingual child's language preferences (cf. Quay, 2001; 2008); that even drastically reduced input may be sufficient to support language acquisition (cf. Barnes, 2006); that there is CLI between a developing trilingual child's three languages (cf. Barnes, 2006; Safont-Jordà, 2011:273); and that this CLI may have a boot-strapping effect (cf. Montanari, 2010). Whilst these are valuable findings, their generalisability is as yet limited by the fact that these conclusions were drawn on the basis of data obtained from a single participant in each case. To my knowledge, there are no group studies on early trilingual development to date that consider linguistic data. For this reason, the present study on the role of input and possible cross-linguistic bootstrapping in early trilingual development employs a larger sample size of 11 trilingual participants. The following chapter provides an overview of previous studies on the role of input (in terms of both quantity and quality) in multilingual language acquisition.

## CHAPTER 3: INPUT IN MULTILINGUAL LANGUAGE ACQUISITION

Research has shown that child language acquisition rates are potentially influenced by two types of factors: child-internal and child-external factors (Paradis, 2011:214). According to Paradis (2011:214,216), child-internal factors include “language aptitude, transfer of morphosyntactic features/constructions from L1 to L2, and cognitive maturity as represented by chronological age”; child-external factors are predominantly those factors that affect the quantity and quality of the input. Quantity of input varies depending on the overall length of exposure to a language and the different amounts of input received in different contexts, such as the home, school and community environment (Paradis, 2011:216). Quality of input, according to Paradis (2011:216), could be influenced by factors such as the “richness” or complexity of the input, whether or not the interlocutor is a native speaker and whether or not the interlocutor has an interactional style that supports child language acquisition. Both quantity and quality of input have been shown to be of great importance in the case of monolingual language acquisition (cf. Hart & Risley, 1995; Hurtado, Marchman, & Fernald, 2008; Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002; Bybee, 2001; Lieven & Tomasello, 2008; Lieven, 2010; Fernald & Weisleder, 2011; Hoff, 2006). The following chapter provides an overview of some of the most recent studies on the effect of input on bilingual language acquisition (Section 3.1) and also trilingual language acquisition (Section 3.2), confirming the relevance of this external factor to multilingual language acquisition. The chapter concludes with a section detailing the role of SES, a factor thought to influence both the quantity and quality of input, in language acquisition.

### 3.1 The role of input in bilingual language acquisition

To disentangle the effect of child-internal and child-external factors, one of the two types of factors should preferably be kept constant. Bilingual participants provide the ideal opportunity to do so because the child-internal factors within a single participant are kept constant, whilst the child-external factors (i.e. input in each of the participant’s languages) most likely vary. This fact has sparked a large body of research on the role of child-external factors, i.e. quantity and quality of the input, in bilingual language acquisition. Such research is of immense value given the global pervasiveness of multilingualism, half of the world’s

children being estimated to grow up learning two or more languages due to the nature of the home and/or community contexts in which they find themselves (Grosjean, 2010). Naturally, however, the challenge of conducting a bilingualism study is increased by the heterogeneous nature of bilingual populations, specifically the environments in which bilingual children undergo language acquisition (Genesee, 2006; Hammer, 2009; Place & Hoff, 2011). According to Place and Hoff (2011:1834), researchers often remark that “every bilingual child seems to have a unique constellation of language experiences and language abilities”. Bilingual children differ, for example, in terms of how balanced their amounts of exposure to their two languages are, whether or not their languages are strictly separated between contexts or shared within the same context, the extent to which the input in each language is from native and/or non-native speakers, the number of interlocutors from which they hear their two languages, etc. (Place & Hoff, 2011:1834; cf. also De Houwer, 2009; Fernald, 2006; Pearson, 2008).

Perhaps due to the greater amount of variables affecting the quality of the input, most studies to date have focused on the effect of input *quantity* on bilingual acquisition rates. A body of research including, among others, De Houwer (2009); Gathercole and Thomas (2009); Grüter, Hurtado, Marchman and Fernald (in press); Hoff et al. (2012); Oller and Eilers (2002) and Scheele, Leseman and Mayo (2010), suggests that amount of input does indeed predict acquisition rates. A short overview of some of the most prominent other studies on this topic (including, as introduction, two core studies using monolingual participants) follows below in Section 3.1.1, starting with the earlier studies that focused on lexical acquisition alone, and progressing to those that investigated both lexical and grammatical acquisition. Section 3.1.2 follows with a review of studies that address input quality, and Section 3.1.3 with a review of those that considered a combination of factors influencing both quantity and quality of input.

### **3.1.1 Input quantity**

#### **3.1.1.1 Input quantity and lexical acquisition**

Investigating vocabulary acquisition in bilinguals is important for two reasons. Firstly, if MacLeod, Fabiano-Smith, Boegner-Page and Fontolliet (2012:133) are correct in regarding lexical acquisition as “a window on bilingual language development” in general, such

research can inform and perhaps correct general assumptions about the perceived disadvantage that bilingual learners are at compared to monolinguals in terms of language development. Bilinguals should not be judged on their abilities in only one of their languages, but rather in both if an accurate estimate of their linguistic abilities is to be obtained (MacLeod et al., 2012:133). Even so, a number of studies have indicated that, when assessed in the language to which she receives the most exposure, a bilingual is often capable of matching monolingual norms (cf., for example, Umbel, Pearson, Fernández, & Oller, 1992; Thordardottir, 2011). Additionally, research has shown that, whereas some bilinguals might have a smaller lexical vocabulary (i.e. a collection of terms denoting certain referents) than monolinguals in each of their languages, they do keep pace with monolinguals in terms of their conceptual vocabulary (i.e. their knowledge of referents, independent of language) (Pearson, Fernández, & Oller, 1993).

The second reason for investigating vocabulary acquisition in bilinguals is the ability of such studies to test hypotheses surrounding the role of input in language acquisition. Most children experience a period of rapid growth in their vocabulary between the point at which the first 25 to 50 words have been acquired and the onset of syntactic acquisition (Pearson et al., 1997:42). Whereas the child's input remains relatively stable in this period, cognitive development may increase her ability to better "assimilate" the input – if so, this would suggest that there is no significant relation between amount of input and rate of early lexical acquisition (Pearson et al., 1997:42). This theory has been tested and consequently questioned by a number of studies since the early nineties. The first study offering direct evidence against this theory and, rather, in support of input quantity as determinant of vocabulary growth was that by Huttenlocher, Haight, Bryk, Seltzer and Lyons (1991). In this study, vocabulary size in 22 monolingual English children between 14 and 26 months was found to be related to how much their mothers spoke to them. The latter variable was measured by counting the number of words the mother directed at the child during the three hours of recorded mother-child interaction that had been obtained for all participants at the age of 16 months, i.e. at the first point when all the participants were observed interacting with their mothers during their daily activities (Huttenlocher et al., 1991:239). Similarly, a longitudinal study by Hart and Risley (1995) employing 42 monolingual English child participants found a strong, positive association between vocabulary size at certain points

over a two and a half year period and the number of words the participants' caretakers spoke to them at those specific points in time.

Making use of the advantage that bilingual participants offer in terms of keeping child-internal factors constant, Pearson et al. (1997) used 25 English-Spanish bilinguals aged between eight and 30 months and residing in middle class homes in Miami, Florida, to test the relationship between input quantity and vocabulary size. The specific goals of the study were to establish the strength of the relationship between lexical learning in a given language and estimated exposure to that language, investigate the factors that affect this strength, and ascertain whether the relationship remains constant across all amounts of input or whether there is a certain exposure threshold below which lexical learning does not take place (Pearson et al., 1997:44).

Vocabulary observations were conducted approximately every two to four months, with the number of observations per participant varying between one and ten. At each observation point, parents were asked to complete, for each language, the *MacArthur Communicative Development Inventory* (CDI), *Toddler and Infant forms* (1989) and its Spanish version, i.e. the *Toddler and Infant Inventario del Desarrollo de las Habilidades Comunicativas* (Jackson-Maldonado & Bates, 1988). The CDI is a standardised instrument offering a measure of a child's vocabulary based on parental reports – the parent is asked to indicate which of the words on a list the child comprehends and/or spontaneously produces at the time of filling out the form.<sup>13</sup> Whereas the CDI obviously cannot provide an exhaustive list of all words that a child might know and so does not provide an exact indication of all words in a child's vocabulary, it was highly suited to the study as it enabled a relative comparison of vocabulary size in a bilingual's two languages, using the same instrument (Pearson et al., 1997:45-46).

At the first observation, parents were also asked to complete a language background questionnaire estimating the respective amounts of time a day or week that their child

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<sup>13</sup> Cf. the CDI website (<http://mb-cdi.stanford.edu/cdiwelcome.htm>) for information on the current editions of the various different language versions of this instrument.



interacts with monolingual and bilingual speakers of English and Spanish, and, in the case of bilingual interlocutors, what percentage of the interaction is devoted to each language (Pearson et al., 1997:46). Questionnaires were updated at each subsequent observation.

Results revealed a substantial relation between input quantity and vocabulary learning in a child's second year of life in that the number of words in the participants' vocabulary in a given language was found to be largely proportional to the amount of time they spent with speakers of that language (Pearson et al., 1997:51). The researchers admit that this correlation between input and vocabulary learning is "not perfect" as the strength of the relationship could potentially be influenced by a number of factors, starting with the possible inaccuracy of the parents' estimation of input quantity in each language (Pearson et al., 1997:53). The OPOL strategy, which makes a quantification of input in each language easier, was not used in any of the participating households. Additionally, estimations of input might be skewed by the fact that bilinguals often are not conscious of the language that they are employing, and by the fact that there is inevitable uncertainty around which language a child chooses to focus on in a mixed-language environment (Pearson et al., 1997:53).

The possibility of an input threshold below which lexical learning does not take place was not supported by the data in this study – in the case of participants whose exposure to a given language constitutes as little as 20% or less of their waking hours (within a relatively stable linguistic environment) the number of vocabulary items in that language was still proportional to the amount of input time in that language (Pearson et al., 1997:55). Such participants did not, however, eagerly or freely produce utterances in the language to which they received less than 20% exposure (Pearson et al., 1997:56). Whereas this study suggests that vocabulary learning will take place even at drastically reduced input levels, the researchers caution that this premise remains to be tested for the acquisition of grammar and phonology (Pearson et al., 1997:55).

Thordardottir (2011) investigated the relationship between quantity of exposure and receptive and expressive vocabulary scores among five-year-old French-English simultaneous bilinguals (i.e. bilinguals who are exposed to both languages from birth), using monolingual

controls. The study was conducted in Montreal, Canada, using 84 participants: 19 French monolinguals, 16 English monolinguals, 20 bilinguals dominant in French (in terms of quantity of exposure), 16 bilinguals dominant in English, and 13 bilinguals receiving relatively balanced exposure to both languages. Language exposure was measured by having parents complete a detailed language background questionnaire (developed by Thordardottir et al., 2006) which enquires as to the distribution of languages in the child's life both at the time of testing and in the past, in the home, daycare and any other language environment that the child was regularly exposed to at some point in her life; and also as to the approximate amount of time she spent in each environment per week. In the case of both her languages, respectively, each participant's pattern of exposure over time was subsequently calculated as a single number, i.e. the percentage of her lifetime that was spent receiving exposure to that language (Thordardottir, 2011:431).

Receptive vocabulary was measured using the *Peabody Picture Vocabulary Test III* (PPVT-III, Dunn & Dunn, 1997) and the *Boehm Test of Basic Concepts–Preschool* (Boehm, 2001) for English and the Canadian French adaptations of these instruments, i.e. the *Épreuve de vocabulaire en images Peabody* (EVIP; Dunn, Thériault-Whalen, & Dunn, 1993) and the *Test des concepts de base de Boehm, Version Préscolaire* (Boehm, 1986) for French. Expressive vocabulary was measured using the respective expressive vocabulary subtests of, for English, the *Clinical Evaluation of Language Fundamentals–Preschool* (Wiig, Secord, & Semel, 2004) and, for French, the *Nouvelles épreuves pour l'examen du langage* (Chevrie-Muller & Plaza, 2001).

Overall, results showed “a strong and systematic relationship” between amount of exposure to a language and performance in that language, but with differences between receptive and expressive vocabulary (Thordardottir, 2011:440). Whilst the relationship was more or less linear in the case of expressive vocabulary scores, it was less linear in the case of receptive vocabulary scores, where proficiency increased in line with increases in exposure only up to a certain point beyond which little further increase in proficiency was seen, despite further increases in exposure (Thordardottir, 2011:440). Additionally, it was found that the bilingual participants with unbalanced exposure fared significantly worse than monolinguals on both receptive and expressive vocabulary measures in the case of their non-dominant language. On

the other hand, those bilinguals who received relatively balanced exposure to both English and French (i.e. between 40% and 60% exposure to each) managed to keep up with monolinguals in terms of receptive vocabulary scores, but fared significantly worse on the expressive vocabulary measures – exposure of approximately 70% was found to be a necessary requirement for matching monolinguals on the latter measures (Thordardottir, 2011:441). These results indicate that in order for bilinguals to develop advanced, native-like skills in either one of their languages, more exposure is needed in the case of expressive vocabulary than in the case of receptive vocabulary (Thordardottir, 2011:441).

In a similar study by Thordardottir and Brandeker (2010, 2013) involving three-year-old French-English bilingual children, vocabulary scores also correlated significantly with quantity of previous exposure to the relevant language. In this study, those bilinguals with unbalanced exposure fared, in the case of their non-dominant language, significantly worse than monolingual controls, as did some of the bilinguals with relatively balanced exposure.

MacLeod et al. (2012) tested nine French-German simultaneous bilinguals (mean age = 52 months) in Québec, Canada, using the noun and verb subtests of the *Patholinguistische Diagnostik bei Sprachentwicklungsstörungen* (Kauschke & Siegmüller, 2010) for German receptive vocabulary, and the *Évaluation du Vocabulaire en Images Peabody* (Dunn & Thériault-Whalen, 1993) for French receptive vocabulary. Both tests require the participant to point to the one image, in a group of four images, that matches the word produced by the administrator. Parental interviews were conducted in order to gain an estimation of each child's language exposure patterns. For this purpose, a language use questionnaire was devised, asking questions regarding the child's age at first exposure to each language; the language(s) specific interlocutors use with the child; the language(s) the child uses with them in turn; the amount of time spent with each interlocutor in a typical week day or on the weekend; the language(s) used in the media that the child is exposed to; and the child's productive and receptive abilities in each language (MacLeod et al., 2012:135). Language exposure was found to be unbalanced with all but one participant being exposed to French for at least 71% of a typical week (MacLeod et al., 2012:136).

Results revealed a statistically significant difference between participants' scores on the German noun subtest and the French test, and between their scores on the German verb subtest and the French test, with scores for German being lower than those for French (MacLeod et al., 2012:138). Also, whereas the bilingual participants' scores were comparable to those of monolinguals on the French test, their scores were lower than those of monolinguals on the German tests (MacLeod et al., 2012:140). A positive correlation was found between input and receptive vocabulary size in the case of the exposure dominant language, French, but no significant correlation was found in the case of German, the language of clearly reduced input (MacLeod et al., 2012:138). As no relationship was found between the participants' German scores and the language of the media, the language use of family members, or the participants' language preference, MacLeod et al. (2012:139-140) suggest that other factors, for example working memory, may perhaps be more determinant of lexical learning in the minority language than input.

### **3.1.1.2 Input quantity and grammatical acquisition**

According to Blom (2010:422), the relevance of input has been established for lexical acquisition, but much less so for grammatical acquisition. If quantity of input does indeed influence grammatical acquisition, one would expect to find, as with lexical acquisition, evidence of delayed development in young bilinguals, as such learners are naturally exposed to less input in each of their languages than are monolingual learners of those languages (Blom, 2010:423). This prediction does not seem to be upheld by overviews in the literature (cf., for example, Genesee, 2001; Meisel, 2001; Nicoladis & Genesee, 1997; Paradis & Genesee, 1996), although it should be noted that the research focus has been almost exclusively on the dominant language in terms of input (Blom, 2010:423; Meisel, 2007b:496; Paradis, Crago, Genesee, & Rice, 2003:3).

Studies that do indicate a relationship between input quantity and grammatical development in bilingual children and that also investigate the weaker language in terms of input include, in chronological order, Schlyter (1993); Schlyter and Håkansson (1994); Gathercole (2002a, 2002b, 2002c); Meisel, 2007b; Paradis, Nicoladis and Crago (2007); and Blom (2010). Hoff, Welsh, Place and Ribot (in press), using English-Spanish participants; Meisel (2007b), using

German-French participants; as well as Schlyter (1993) and Schlyter and Håkansson (1994), using Swedish-French participants, all report a lower mean length of utterance in young bilinguals' weaker language than in their stronger language, which suggests delayed development in the weaker language when compared to the stronger language. Paradis et al. (2007) used slightly older bilinguals (mean age = 4;9) speaking English and French to investigate the use of the regular and irregular past tense in both the stronger and weaker language in terms of input. The amount of input each child received in each of the two languages was calculated on grounds of their length of exposure since birth and their current exposure in the home and daycare/preschool environment. On grounds of the input amounts, participants were divided into two groups: an English-dominant group of 14 and a French-dominant group of 11. Results showed the English-dominant group to outperform the French-dominant group on both regular and irregular English verbs, and the French-dominant group to outperform the English-dominant group on both regular and irregular French verbs, indicating that input dominance does affect the acquisition of verb morphology.

Gathercole (2002a, 2002b, 2002c) used a grammaticality judgement task to test Spanish-English bilingual second- and fifth-graders' knowledge of the mass/count distinction in English, grammatical gender in Spanish and *that*-trace structures in both Spanish and English. On all three measures, bilingual participants could not meet monolingual norms. Additionally, input quantity (estimated on grounds of home language, SES and medium of instruction (MoI) at school) was found to explain differences between the different bilinguals' scores.

According to Blom (2010:424), the studies by Paradis et al. (2007) and Gathercole (2002a, 2002b, 2002c) only confirm the relevance of input to grammatical acquisition in older children, who might already be losing their innate ability to acquire grammar and therefore be relying more heavily on distributional properties of the input than younger children do. For this reason, she investigated grammatical development in four two- to three-year-old Turkish-Dutch bilingual children with differing input situations, as well as two Turkish and two Dutch age-matched monolingual controls. Spontaneous speech data were collected from the participants at three month intervals over the course of a year and a half, when they were aged between 2;0 and 3;6. During the data collection sessions, participants wore a jacket

fitted with a wireless transmitter and a microphone in order to capture all linguistic interaction. It was found that the three-year-old bilinguals' mean length of utterance, proportion of finite utterances and finite verb type profile was comparable to that of two-year-old monolinguals, indicating protracted grammatical development in the bilinguals (Blom, 2010:439). However, she points out that this difference between bilinguals and monolinguals was found only in the case of the bilinguals' weaker language in terms of input, suggesting that "children's ability to acquire grammar is robust: only clearly reduced input will result in a protracted development" (Blom, 2010:439).

An important contribution of the above study is its investigation of a group of bilinguals with sociolinguistic backgrounds that differ from the "one-parent, one-language, middle-class" set-up investigated in many other bilingualism studies: here, participants formed part of a large ethnic minority (i.e. Turkish labour immigrants to the Netherlands) and resided in bilingual communities that exposed them to "code-switching, convergence and ethnic varieties" (Blom, 2010:440). Blom (2010:441) suspects that aspects of this social setting may explain some of her findings, but concedes that such an investigation fell outside of the scope of her study. For this reason, she calls for studies that address not only the effect of input quantity but also input quality and social setting on the bilingual acquisition process (Blom, 2010:441).

Two important limitations of studies investigating the effect of input quantity on early bilingual grammatical development identified by Unsworth (2013a:86) are that they typically focus (i) on the child's current exposure situation, without consideration of the amount of exposure that the child has accumulated over time, and (ii) mostly on successive L2 learners as opposed to simultaneous bilinguals. Addressing this dearth in the literature, Unsworth (2013a) set out to investigate the effect of input quantity, measured in terms of both current and what she terms "cumulative" exposure, on Dutch grammatical gender acquisition by 136 simultaneous bilingual English-Dutch children (ranging in age from three to 17 years). For control purposes, she also collected data from 26 monolingual Dutch four- to six-year-olds and employed data from the most comparable study available, i.e. that by Blom, Polišenská and Weerman (2008), for comparisons with her three- and seven-year-olds.

Research (e.g. van der Velde, 2003) has shown that, in contrast to the same process in other languages, the acquisition of Dutch grammatical gender is a lengthy process, with the production of errors in this area by monolingual Dutch speakers continuing until at least age six (Unsworth, 2013a:87). Although monolingual children do eventually acquire the target system, it is not yet clear from studies using bilingual participants whether bilinguals are able to advance beyond the stage at which, like young monolinguals, they produce errors caused by overgeneralisation (Unsworth, 2013a:87). On grounds of the results of previous studies on the acquisition of Dutch grammatical gender, Blom et al. (2008:323) suggest that bilinguals might fail to acquire the relevant rules due to the fact that their necessarily reduced amount of exposure to Dutch, compared to monolinguals, prevents them from reaching the required “critical mass” of grammatical evidence needed to infer these rules before the end of what might be a critical or sensitive period, ending around six or seven years of age (cf. Meisel, 2007a; Meisel, 2009; and, for Welsh grammatical gender, Gathercole & Thomas, 2005). An alternative explanation of the fact that bilingual/L2 children struggle with Dutch gender marking relates to linguistic competence versus linguistic performance: as posited by the Missing Surface Inflection Hypothesis (MSIH) (Haznedar & Schwartz, 1997; Prévost & White, 2000), bilinguals might have acquired the relevant rules, but have problems in applying them during production.

The bilingual participants in Unsworth’s (2013a) study were all exposed to both English and Dutch in the home, mostly in an OPOL situation, and were divided into groups based on age. The following vocabulary tests were used as a measure of general proficiency: for English, depending on the child’s specific variety, either the *Peabody Picture Vocabulary Test IV* (Dunn & Dunn, 2007) or *British Picture Vocabulary Scale* (Dunn, Dunn, Whetton, & Burley, 1997); for Dutch, the PPVT-III-NL (Dunn, Dunn, & Schlichting, 2005). To test gender-marking on definite determiners, two elicited production tasks – one picture description and one story-telling task – and one grammaticality judgement task were used; to test gender-marking on adjectives in indefinite determiner phrases, only the picture description task was used (Unsworth, 2013a:91). Lastly, a very detailed parental questionnaire was used to collect information on the bilingual participants’ current exposure to Dutch and their exposure to this language over time, i.e. cumulative length of exposure, which was calculated on grounds of

the estimated “proportion of each one-year period which included exposure to Dutch” (Unsworth, 2013a:91). The latter measure was introduced as a variable to be taken into account when estimating input quantity, because it recognises the inherent variation in this regard in bilingual settings and so enables a more accurate comparison of the language development of monolingual and bilingual participants (Unsworth, 2013a:86,95). As the questions asked in Unsworth’s (2013a) questionnaire incidentally coincided quite closely with those in the questionnaire originally designed for the purposes of the current study and were later used as guideline for some alterations thereto, the design of Unsworth’s questionnaire is discussed in detail in the chapter on methodology, Chapter 5.

What is important to note here is that, whereas length of exposure in the traditional sense would be equal to chronological age in the case of simultaneous bilinguals who were exposed to two languages from birth, cumulative length of exposure in this study proved to be, on average, only about half of this value (Unsworth, 2013a:91). This meant that, using cumulative length of exposure as the basis for comparison, the bilingual participants were better compared to monolinguals of an age equal to the amount of years of cumulative exposure that the bilinguals have had (in this case, monolinguals who were about half the age of the bilinguals) rather than to age-matched monolinguals (Unsworth, 2013a:95). An age-matched monolingual-bilingual comparison showed bilinguals to fare significantly worse than monolinguals with Dutch gender-marking (Unsworth, 2013a:95). However, when matched on cumulative length of exposure, the differences between monolinguals and bilinguals disappeared in the case of both production and grammaticality judgement tasks, with bilinguals scoring as high as or even higher than monolingual counterparts matched in this manner (Unsworth, 2013a:103).<sup>14</sup> As regards the effect of the two different measures of input quantity investigated in this study, i.e. current amount of exposure and cumulative length of exposure, both were found to be significant predictors of accuracy with the marking of grammatical gender on Dutch determiners, but not on adjectives (Unsworth, 2013a:106).

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<sup>14</sup> Note, however, that the older bilinguals would have had higher levels of cognitive maturity and metalinguistic knowledge at their disposal than would the younger monolinguals, which may skew a comparison between these groups. Cf. Unsworth and Blom (2010) for methodological suggestions as to how to control for these types of differences.



As far as the relationship between input quantity and proficiency in the case of bilingual language acquisition is concerned, there is (at least to my knowledge) no available literature on investigations into this phenomenon in the context of the acquisition of the passive, the grammatical construction of interest in the present study.

### **3.1.2 Input quality**

A number of recent bilingualism studies attempt to determine the effect of some of the many variables affecting input quality on language acquisition. Some determinants of input quality are the directness versus indirectness of the input (cf. Section 3.2 for an example of a trilingualism study investigating these variables), the quantity and/or quality of television exposure, the frequency of a structure in the input and variance in the form and use of morphosyntactic structures in the child's linguistic environment (due to contact features or attrition effects in the speech of speakers residing in a majority language context, different levels of proficiency in the speech of non-native speakers, dialectal forms, etc.; cf. Paradis, 2011b:68).

As far as quantity of television exposure in infancy is concerned, there is not yet any consensus on whether it negatively affects language acquisition or not (for an overview of studies on this topic, cf. Hudon, Fennell, & Hoftyzer, 2013). However, quality of television input, i.e. the content of the television programs, does seem to play a definitive role in language acquisition and cognitive development. Researchers are increasingly finding that television exposure of poor quality negatively affects cognitive development in young children (cf., for example, Barr, Lauricella, Zack, & Calvert, 2010; Linebarger & Walker, 2005; Okuma & Tanimura, 2009). In terms of linguistic development, Linebarger and Walker (2005) report higher language skills in 30-month-old children who watch television programs that imitate "real-world learning" (by using characters that address the viewer, allowing time for a response from the viewer and employing simple narrative structures) and lower language skills in children who watch programs with complex stimuli and looser narrative structures. Similarly, Okuma and Tanimura (2009) noted protracted linguistic development in the case of 18-month-olds exposed to television content that does not inspire parent-infant interaction, for example realistic animation and programs with fast scene changes.

Additionally, researchers have begun to suspect that it is not only the content of television programs or the quantity thereof per se that can cause developmental delays, but also the fact that television viewing, and even overhearing background television intended for older viewers, discourages child-parent interaction (Barr et al., 2010; Christakis et al., 2009; Kirkorian, Pempek, Murphy, Schmidt, & Anderson, 2009; Schmidt, Pempek, Kirkorian, Lund, & Anderson, 2008).

For this reason, Hudon et al. (2013) created a comprehensive television habits questionnaire for both monolingual and bilingual populations, and used it to investigate the relationship between television exposure and vocabulary size in English monolingual, French monolingual and English-French bilingual infants and toddlers. The suitability of this questionnaire for testing bilingual populations is a valuable contribution as dual language acquisition relies heavily on social interaction in both languages, which is reduced by television viewing due to attention being drawn away from real-life interlocutors (Hudon et al., 2013:247). For the purposes of testing productive vocabulary size in their monolingual and bilingual participants, Hudon et al. (2013) employed the “Words and Sentences” version of the *MacArthur-Bates Communicative Development Inventory*, both the American English and French Canadian equivalents (Fenson et al., 1993). On the one hand, results support the findings of Schmidt, Rich, Rifas-Schiman, Oken and Taveras (2009) and Zimmerman, Christakis and Meltzoff (2007) in indicating no effect of quantity of television exposure on vocabulary size (Hudon et al., 2013:252). Quality of input, on the other hand, did affect vocabulary size: vocabulary scores were lower in children who started watching television from a young age when their comprehension abilities were still low, who regularly watched television on their own, and who were often exposed to background television and/or non-child-directed programming (Hudon et al., 2013:252).

Another factor relating to the quality of linguistic input that has received some research attention is contact-variety input, i.e. adult L1 input that contains inherent non-native features (“attrition effects”) resulting from CLI in cases where the speaker has received extensive L2 exposure in an L2 majority environment (Hauser-Grüdl, Arencibia Guerra, Witzmann, Leray, & Müller, 2010:2638; Paradis, 2011b:374). Similar to cases where children receive input from non-native speakers with differing proficiency levels and from speakers of a specific

dialect, it is important to take the possibility of contact-variety input into consideration when comparing bilinguals to monolinguals: variance in the forms and use of structures in the input may influence a bilingual learner's underlying linguistic representation, processing and use of that structure, which could lead to non-convergence with monolingual norms (Paradis, 2011b:68). These considerations are also important when attempting to determine whether transfer has occurred between a learner's two linguistic systems, or whether what appears to be CLI is simply a reflection of aspects of the learner's input.

One example of a study in which possible CLI between an individual's two languages could not be disentangled from a possible reflection of contact-variety input is that by Paradis and Navarro (2003), which reports on the use of null-subjects by an English-Spanish bilingual toddler. The participant was found to produce more redundant overt subjects in Spanish, a null-subject language, than monolingual Spanish-speakers of the same age. Whereas this could have been a result of CLI from English, a non-null subject language requiring overt subjects, evidence of an overuse of redundant overt subjects was also found in the input she was exposed to, especially that from her mother (Paradis, 2011b:388).

### **3.1.3 Studies investigating both quantity and quality of input**

The rise in awareness of the fact that both quantity and quality of input may affect bilingual language acquisition has spurred a number of studies that investigate the effect of selected input properties relating to both these aspects, as well as the possible relationship between the two aspects. Place and Hoff (2011), for example, set out to investigate how bilingual development is affected by both input quantity and variance in the bilingual experience as a result of parents' native language(s). To their knowledge, theirs was the first study to investigate whether input from non-native speakers affects language development (Place & Hoff, 2011:1835). The study employed De Houwer and Bornstein's (2003) Language Diary method to estimate the language exposure patterns of 29 two-year-old Spanish-English bilinguals who were living in South Florida in the United States, and who were exposed to both languages from birth, with no less than 10% exposure to the non-dominant language. The mothers of the bilingual participants were asked to rigorously log, for every 30 minute period of the child's waking hours across seven days, the languages used, the interactional

context and the speaker(s) addressing their child in each language (Place & Hoff, 2011:1844-1845). This method of estimating a child's language exposure was considered to provide more detailed information than retrospective reports provided by a parent or caregiver (Place & Hoff, 2011:1835).

The language diaries revealed no difference between the participants' English and Spanish exposure in terms of quantity (the averages being roughly equal), the number of different speakers supplying input, the number of single-language contexts, or the number of conversational partners that spoke only that language to the child (Place & Hoff, 2011:1839). A significant difference was, however, found in the proportion of English and Spanish input that was received from native speakers: the proportion of non-native English input was significantly more than the proportion of non-native Spanish input (Place & Hoff, 2011:1839). As in other studies, input quantity and language development were found to be related: amount of exposure proved to be a "significant predictor" of both vocabulary and grammar in the bilinguals' English, and vocabulary in Spanish (note, however, that measures of Spanish grammar suffered from floor effects) (Place & Hoff, 2011:1845).<sup>15</sup> The number of different sources from which children received English input was positively related to both vocabulary and grammar in this language, and the percentage of input from native English speakers positively related to English vocabulary scores (Place & Hoff, 2011:1847).

The finding regarding number of sources supports an argument made for phonological and lexical learning (cf. Fisher, Church, & Chambers, 2004; Richtsmeier, Gerken, Goffman, & Hogan, 2009; Singh, 2008), i.e. that exposure to variance in the linguistic signal is a necessary prerequisite for language learners to extract the categories that, at a later stage, aid recognition and production. As for the finding regarding non-native versus native input, the researchers conclude that whereas native input seems to be the more valuable source in the

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<sup>15</sup> As the children's grammar score could not take on a value lower than zero (here serving as "the floor") and 59% of the children scored zero on the Spanish grammatical complexity scale, one cannot accurately test for a relationship between amount of input and grammar skills. The large number of children scoring zero (also in the case of English, at 38% of the participants) is most probably reflecting the fact that the test instruments, designed for children aged 16 to 30 months, were intended for and normed on monolinguals – at as late as 25 months, the bilinguals in this study often did not yet produce the grammatical constructions tested by these instruments (Place & Hoff, 2011:1841).

acquisition process, the exact reason is not yet clear (Place & Hoff, 2011:1847). Some researchers (e.g. Liu, Kuhl, & Tsao, 2003; Thiessen & Saffran, 2003) have speculated that, in terms of phonology, non-native speech provides a “less consistent signal from which to extract language-specific phonological categories and stress patterns” (Place & Hoff, 2011:1835). Place and Hoff (2011:1835) also venture that the lexical, morphosyntactic and pragmatic properties of child-directed speech that aid the acquisition process may be affected in the case of speech produced by non-native speakers. To address this issue, they suggest future research should investigate the differences between the child-directed speech of non-native and native speakers (Place & Hoff, 2011:1847).

Paradis, Nicoladis, Crago and Genesee (2011) set out to test whether input properties like exposure time and type/token frequency<sup>16</sup> of morphosyntactic structures (an aspect of input quality) affect acquisition rates in children. These researchers compared French-English bilinguals (mean age = 4;10) to monolingual peers with regard to their acquisition of past tense forms in both languages. The purpose of the study was to see whether differences in input quantity among bilinguals and differences in type/token frequency between regular and irregular past tense forms affect acquisition rates in bilinguals, and to see how bilinguals compare to monolinguals (Paradis et al., 2010:2).

Differing amounts of exposure to each language in the home, as measured by parental reports, was found to affect accuracy with the past tense among bilinguals on the one hand and between bi- and monolinguals on the other (as a group, bilinguals scored lower than monolinguals on both regular and irregular verb forms in English, and on irregular forms in French) (Paradis et al., 2010:19). With regards to type/token frequency, both the bi- and monolingual groups scored lower on irregular past tense forms than on regular forms (Paradis

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<sup>16</sup> “Token frequency” refers to the frequency of individual forms (e.g. verb forms) in the input; “type frequency” refers to the frequency of other forms of the same form, i.e. “the number of unique stem+morpheme constructions in the speaker’s lexicon, or in the input, of that type” (Paradis et al., 2010:5-6). For example, counting the number of occurrences of the past tense verb form *worked* in a certain corpus will provide a token frequency, and counting the number of occurrences of the past tense verb form pattern [V+-ed] will provide one with a type frequency. In the usage-based (UB) model of the lexicon, lexical strength (a factor thought to increase the chances of a word being “accessed appropriately and produced accurately”), is in turn thought to be increased by both token and type frequency (Paradis et al., 2010:5-6). English irregular past tense forms are unique and do not follow the standard [V+-ed] pattern and as such, their lexical strength can only be increased via token frequency (Paradis et al., 2010:6).

et al., 2010:1). In showing bilingual acquisition rates to be sensitive to both input quantity and type/token frequency of morphological structures, this study adds to a growing body of research in support of usage-based (UB) theory (cf., for example, Gathercole, 2007; Gathercole & Thomas, 2005; Nicoladis, Palmer, & Marentette, 2007; Paradis, 2010; Paradis, Tremblay, & Crago, in press).<sup>17</sup>

An important finding of the above study was that, in their exposure dominant language, bilinguals were largely able to match the accuracy of monolinguals on past tense forms, with the exception of English irregular verbs (Paradis et al., 2010:1). This finding supports other studies such as those by Gutiérrez-Clellen, Simon-Cerejido and Wagner (2008); Paradis (2010); Paradis, Crago and Genesee (2005/2006); Paradis and Genesee (1996); and Thordardottir, Rothenberg, Rivard and Naves (2006) that have shown that bilinguals do not always lag behind monolinguals in their acquisition of morphosyntax if one considers differing amounts of exposure.

In explanation of this phenomenon, Paradis et al. (2010:20) suggest that there might be additional mechanisms available to bilinguals that help them “compensate for reduced input”, and in so doing, enable them to keep pace with monolingual morphosyntactic acquisition rates. As pointed out by Paradis (2011:219), existing knowledge of an L1 is a child-internal factor that may play a role in the L2 acquisition process. Working within a UB framework, Gathercole (2007) and Odlin (2008) argue that the expected conceptual “sharing” between a bilingual’s two languages could “facilitate transfer in the domain of lexical semantics, including the semantics of grammatical concepts encoded by functional morphemes, such as tense” (Paradis, 2011:218). Studies have shown that within a single language, existing morphosyntactic constructions can serve as a basis for building new ones in a process that

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<sup>17</sup> UB theory forms part of a group of approaches to language acquisition that all adopt an “emergentist” or “constructivist” view of the acquisition process: rather than domain-specific knowledge, domain-general perceptual and cognitive learning mechanisms are believed to be responsible for guiding the child through the acquisition process (Bybee, 2001; O’Grady, 2008; Tomasello, 2003). Such domain-general learning mechanisms include, for example, cognitive learning mechanisms such as attention, memory, generalisation, categorisation, the statistical calculation of distributional likelihoods and analogical reasoning; awareness of pragmatic aspects of social interaction; and input processing capabilities (Paradis, 2010:657; Paradis, 2011:219). According to UB theory, these learning mechanisms are sensitive to input properties such as salience, semantic complexity, distributional consistency, and token, type and collocation frequency (Bybee, 2001, 2008; Lieven & Tomasello, 2008; Tomasello, 2003).

Abbot-Smith and Behrens (2006) term “construction conspiracy”; the development of verb constructions in an L2 could therefore be aided by transfer of schemas for analogous verb constructions from the L1 (Paradis, 2011:219). This process would then constitute a case of what Genesee and Nicoladis (2006:6) term “cross-linguistic bootstrapping” (cf. Chapter 1). Following the above authors, Paradis et al. (2010:20) speculate that the mechanism they believe might be helping bilinguals compensate for reduced input takes the form of “sharing” at the cognitive-linguistic interface between their two languages, where past tense forms in the two languages, albeit different in terms of specific morphological inflection forms, share certain semantic properties that speed up the acquisition of construction schemas.

A study focusing both on input quantity and the distributional properties of words as a factor influencing input quality is that by Chan and Nicoladis (2010). The aim of this study was to test the hypotheses that a bilingual child’s early words will correlate with input quantity in her two languages, and that words that typically occur in utterance-initial or utterance-final position are more likely to be acquired first by children (Chan & Nicoladis, 2010:237). Spontaneous language use samples were collected at three month intervals in the homes of two Mandarin-English bilingual children, from age 0;6 to 1;6. Exposure time to a language was found to be “a good but not perfect” predictor of the percentage of the child’s first 50 words that constitute words from that language (Chan & Nicoladis, 2010:237). This finding partly supports the findings of other studies that have shown the language of a bilingual preschooler’s primary caregiver to be the language in which the child has the largest vocabulary (cf., for example, David & Li, 2008; Genesee, Nicoladis, & Paradis, 1995; Nicoladis & Secco, 2000; Paradis & Nicoladis, 2007).

With regards to the frequency of specific words in the input, Huttenlocher, Haight, Bryk, Seltzer and Lyons (1991) have shown that this variable in a mother’s speech is directly related to the speed at which her child acquires specific words. Chan and Nicoladis (2010:238) argue, however, that whilst word frequency is undeniably an important factor influencing a child’s early words, it cannot fully explain all empirical findings, such as the fact that children tend to acquire content words before function words (Bates et al., 1994; Gentner, 1982; Huttenlocher et al., 1991; Nelson, 1973; Tardif, 1996; Westbury & Nicoladis, 1998), and quite often nouns before other types of content words. Apart from the frequency

with which nouns are used, the position in which nouns typically occur in utterances has also been suggested as a possible explanation for a noun bias in children's early vocabulary (Chan & Nicoladis, 2010:239).

According to Au, Dapretto and Song (1994), Cohen (1969), Goldfield (1993), Naigles and Hoff-Ginsberg (1998), Slobin (1973) and Tardif (1996) (as cited in Chan & Nicoladis, 2010:239), children experience words in utterance-initial and utterance-final position as perceptually most salient. English is an SVO language in which pronouns cannot be dropped; Mandarin also has an SVO order, but allows the dropping of subject and object pronouns (Chan & Nicoladis, 2010:239). As this fact would predict, the utterance-initial and -final positions in the speech of English-speaking mothers typically contain more nouns (Goldfield, 1993), whereas these same salient positions in the speech of Mandarin-speaking mothers typically contain more verbs (Tardif, 1996; Tardif, Shatz, & Naigles, 1997). For this reason, Chan and Nicoladis (2010) were interested in seeing whether there is a correlation between the nouns that English-Mandarin bilingual children hear in salient utterance positions and the words that they acquire first. Results showed the salient positioning of nouns to have "at best a minimal effect", as participants proved to know a larger number of nouns in each language than the proportion of nouns in utterance-initial and -final position in the input would have suggested (Chan & Nicoladis, 2010:261).

A number of studies have investigated the effect of input quantity and structure complexity (as a factor influencing input quality) on morphosyntactic acquisition rates in bilingual versus monolingual children. Overall, studies indicate that the differences between bilingual and monolingual morphosyntactic acquisition rates (which are mostly in favour of monolinguals), are influenced by both these variables (Paradis, 2010:652). Studies involving Spanish-English bilinguals (Gathercole 2002a, 2002b, 2002c; Pearson, 2002) and Welsh-English bilinguals (Gathercole & Thomas, 2005; Gathercole, Laporte, & Thomas, 2005) report that increased exposure to a language at home and, to a lesser extent, at school as MoI positively influences morphosyntactic acquisition. Furthermore, other studies on Spanish-English bilinguals aged four to six years (i.e. Gutiérrez-Clellen, Restrepo, & Simón-Cereijido, 2006; Gutiérrez-Clellen & Simón-Cereijido, 2007), and on French-English bilingual four-year-olds (Paradis et al., 2007) and three-year-olds (Paradis, Crago, & Genesee, 2005/2006) have shown bilingual



group averages on morphosyntactic measures to match those of monolingual groups when bilinguals are tested in their proficiency dominant language.

The relative complexity of the structure being acquired, in conjunction with the amount of exposure to that structure, has also been found to affect acquisition rates significantly in studies testing bilinguals' acquisition of Welsh grammatical gender (cf. Gathercole & Thomas, 2005; Gathercole et al., 2005). In studies by Nicoladis et al. (2007) and Paradis et al. (2007) on bilinguals' acquisition of regular versus irregular past tense forms, bilinguals and monolinguals diverged more in their scores on the more complex irregular English verb forms than on regular forms. Paradis et al. (2007) additionally cite an interaction between input quantity and structure complexity in that those bilinguals with greater exposure to English were able to match monolinguals in their knowledge of regular English past tense forms but not in their knowledge of irregular forms.

Paradis (2010) investigated the knowledge and use of English verb morphology by French-English children (mean age = 6;10) and their monolingual peers, and the possible effects on their performance of (i) amount of exposure to English; (ii) structure complexity; and (iii) task type. Test instruments included two production probes (testing use of the third person singular and past tense morphology, respectively) and a grammaticality judgement task (consisting of three probes testing knowledge of subject-verb agreement, tense morphemes and the progressive *-ing* morpheme, respectively) (Paradis, 2010:663-664). Of the three grammaticality judgement probes, the one testing tense marking was considered to test a more complex target structure than the target structures in the other two probes (Paradis, 2010:665).

Firstly, input quantity proved a determinant of the bilinguals' accuracy on grounds of the following two reasons: (i) the group of bilinguals, who naturally receive less exposure to any one of their languages than monolinguals do, scored lower than monolinguals on both production probes and on the grammaticality judgement probe testing tense morphemes; and (ii) bilinguals from French-dominant homes scored lower than those from English-dominant homes on all probes (Paradis, 2010:671).

Secondly, structure complexity also proved of influence as there was barely any difference between the bilinguals' and monolinguals' performance on the control morphemes in the grammaticality judgement probes testing subject-verb agreement and progressive *-ing*, but not so in the case of the probe testing tense morphology, i.e. the probe testing more complex structures (Paradis, 2010:671). Finally, task type effects were also reported: bilinguals scored closer to monolinguals on the grammaticality judgement task than on the production probes (Paradis, 2010:673). Paradis (2010:673) speculates that this could be because the processing competition between a bilingual's two languages, despite promoting the development of superior executive control skills, may unfortunately also result in "performance limitations in speech production". The possibility is also mentioned that production demands more "attentional resources" than do other types of linguistic tasks, especially those that allow more time for reflecting on linguistic knowledge, such as grammaticality judgement tasks (Paradis, 2010:674).

Recall that input properties qualify as a type of child-external, as opposed to child-internal, factor affecting the process of language acquisition. Building on previous research indicating that both quantity and quality of input influence language development, Paradis (2011a) set out to investigate the effect of child-internal and child-external factors, as well as the comparative weight of these two types of factors, on the acquisition of English vocabulary and verb morphology by L2 learners. The child-internal factors investigated are language aptitude, L1 morphosyntax and age; the child-external factors that were of interest are quantity and quality of English input (Paradis, 2011a:220). On grounds of the present study's focus on input, only those aspects of the study by Paradis (2011a) relating to child-external factors will be discussed in further detail here.

Participants were sourced from immigrant or refugee families in Edmonton, Canada and included 169 bilingual children aged between 4;10 and 7;0, with between three and 62 months of exposure to English (Paradis, 2011a:220). The participants were classified as early L2 learners as they acquired their languages sequentially, with acquisition of the L2 starting, on average, around age 4;2 (Paradis, 2011a:220). The PPVT-III (Dunn & Dunn, 1997) was

employed as a vocabulary measure and the *Test of Early Grammatical Impairment* (TEGI; Rice & Wexler, 2001) as a measure of verbal morphology. The *Alberta Language Environment Questionnaire* (ALEQ) was used to collect information on children's language exposure during oral interviews with parents. The child-external factors considered in this study that relate to input quantity are months of exposure to English, proportion of English spoken in the home and number of older siblings (thought to bring more English into the home due to lengthier exposure to the English school environment); the child-external factors in this study that relate to input quality are the mother's self-rated fluency in English, maternal education in years (seen as an indicator of SES), and the richness of the English exposure (Paradis, 2011a:223). The latter variable was estimated by asking parents about their child's weekly exposure to television, books, computer games, organized activities and friends, and then awarding points depending on which language(s) are used in each exposure context and how often this context arises (Paradis, 2011a:223).

Only months of exposure (a quantity-oriented factor) and richness of exposure (a quality-oriented factor) proved to be significant predictors of vocabulary and morphology scores among the bilingual children (Paradis, 2011a). According to Paradis (2011a:230), this finding supports that of other L2 studies such as Bohman, Bedore, Peña, Mendez-Perez and Gillam (2010); Jia and Aaronson (2003); Jia and Fuse (2007); Oller and Eilers (2002); and Scheele et al. (2010). In the latter study, for example, researchers found a significant correlation between the L2 vocabulary scores of 46 immigrant bilingual Moroccan-Dutch and 55 Turkish-Dutch three-year-olds in the Netherlands and the amount of L2 input-enriching language activities in the home such as educational television, reading, story-telling and conversations.

In the study by Paradis (2011a), two factors that previous research has shown to be significant predictors of bilingual/L2 children's acquisition rates, i.e. language exposure at home and level of maternal education (as indication of SES), proved of limited influence (Paradis, 2011a:230). The inconsistent findings around language exposure at home, Paradis (2011a:231) suggests, might be a result of the fact that the mothers of the participants in this study had a rather low self-rating of their own English fluency (an average of 2.31 on a scale of zero to four), and that the non-proficient L2 English input they provide at home is perhaps

not conducive to their children's acquisition of English (Paradis, 2011a:231). As for the contradicting findings between this and other studies (see below) in terms of level of maternal education, Paradis (2011a:231) suggests that this may be a result of differing design analyses, or a possible modulating interaction between maternal education and other factors.

### **3.2 The role of input in trilingual language acquisition**

As should be evident from Chapter 2, trilingual language acquisition has as yet received far less research attention than bilingual language acquisition. Recall that of this much smaller number of studies on trilingualism, the majority are descriptive in nature with a focus on language use patterns and competence. Far fewer studies have a more grammatically-oriented focus, with even fewer studies explicitly addressing the relationship between proficiency and input quantity and/or quality in trilingual development, on grounds of an analysis of linguistic data. A few of those studies that do indeed do this will be discussed in the following section. (Also see the study by Quay, 2001, reported on in Section 2.4.2 in the previous chapter.)

Yang and Hua (2010) report on an investigation into phonological acquisition in a simultaneous trilingual child acquiring Spanish, Mandarin and Taiwanese from birth, on grounds of natural speech data collected between the ages of 1;3 and 2;0. The study set out to test the effect of differing amounts of input and dominance levels (in terms of language preference) as well as the relevance of typological relatedness in the acquisition of each of the languages (Yang & Hua, 2010:107). According to family diary reports, the trilingual learner received, at the time of testing, roughly equal exposure to Spanish and Mandarin, input in each accounting for approximately 40% of the learner's time, with Taiwanese input accounting for the remaining 20% (Yang & Hua, 2010:112). In terms of production, measured in the number of recorded utterances, Spanish predominated as the language of preference at 54%, followed by Mandarin at 39% and Taiwanese at 7% (Yang & Hua, 2010:113).

On the one hand, the data show that the necessarily decreased amount of exposure the trilingual learner receives to each of the three languages, compared to monolingual learners

of each, does not cause a delay in phonological acquisition (Yang & Hua, 2010:122). On the other hand, there is also not necessarily a straightforward correlation between amount of input and rate of phonological acquisition – whilst the learner’s Spanish sound inventory grew fastest, the language in which he received the least input, i.e. Taiwanese, developed faster than Mandarin, in which he received significantly more input (Yang & Hua, 2010:122).

One of the suggestions Yang and Hua (2010:122) offer in accounting for the latter phenomenon is differences in the phonological saliency of Taiwanese compared to Spanish and Mandarin. The latter concept, introduced by Zhu and Dodd (2000) and Zhu (2002), is language-specific and syllable-based: the phonological saliency of a syllable component is determined primarily by its semantic importance, whether or not it is obligatory, and the number of allowed choices within the component (Yang & Hua, 2010:122). The rate at which a syllable component is acquired is said to be determined by its phonological saliency in that a higher frequency equals earlier acquisition (Yang & Hua, 2010:122). According to Yang and Hua (2010:122), Taiwanese consonants have a higher phonological frequency than those of Spanish and Mandarin as there are only 16 consonants in Taiwanese, but 19 in both Spanish and Mandarin. For this reason, they suggest, the learner’s Taiwanese sound inventory developed faster than his Mandarin inventory. The advantage Taiwanese holds over Spanish in terms of saliency is, however, ruled out by the significantly larger amount of input the learner received in Spanish (Yang & Hua, 2010:122). Lastly, in terms of typology, Yang and Hua (2010:123) hypothesise that the typological similarities between Mandarin and Taiwanese “help the child to abstract the phonological saliency of the languages involved more efficiently”. Interestingly, this concept of phonological saliency was also regarded as the reason why isiXhosa monolingual children acquired most consonants earlier than their English monolingual counterparts in a study by Mowrer and Burger (1991).

An earlier study that seems to contradict the findings of Yang and Hua (2010) in a number of respects is Maneva (2004). In her longitudinal study of language acquisition in a young child acquiring four languages, Maneva (2004:119) found a direct positive correlation between amount of input and competence levels (judged, it seems, on grounds of the learner’s preference for the relevant language). This leads her to suggest that balanced input is a prerequisite for achieving high competence levels in all the languages being acquired

(Maneva, 2004:119). Also, whereas Yang and Hua (2010) found the same phonemes to be acquired at different stages in the learner's different languages, Maneva (2004:119) found the acquisition process to follow the same time frame in the case of all the languages due to the acquisition of a given grammatical category in one language rapidly spreading to the other languages.

To my knowledge, the only study other than that by Quay (2001) that explicitly investigates the effect of input quality on trilingual acquisition is that by Oller (2010). This study focused on the effect of direct (i.e. child-directed) versus indirect (i.e. overheard) input on language acquisition in the second year of life of a child growing up with German, English and Spanish. In the extreme nativist view, language acquisition is conceptualised as such a robust process that it is largely insensitive to the manner in which children are spoken to (Oller, 2010:214). Sometimes, child-directed input is even viewed as unnecessary: Pinker (1994:155), for example, claims that there are cultures in which language acquisition proceeds normally, despite the fact that children are not viewed as worthy conversational partners and therefore are not exposed to child-directed speech, but only to overheard speech between adults. Constructivist views, however, regard direct input as an important factor in language acquisition in young children as acquisition is thought to be aided by scaffolding, i.e. the tendency of adult speakers, when addressing a child, to adjust their way of speaking to the child's level of comprehension (Oller, 2010:214).

Oller (2010) investigated these two divergent viewpoints by measuring both the amount of direct input and the trilingual participant's productive vocabulary (based on representative sampling) in her second year of life. The participant received considerable direct input in German from her Austrian mother (a native speaker of German with English as L2) and from her father (a competent L2 German speaker with English as L1), less but still significant direct input in Spanish from her Latin American governess (a native speaker of Spanish) and consistent indirect input in English in the form of overheard conversations between her parents (Oller, 2010:215).

The light-weight LENA recording device was attached to special clothing that the child wore on the 11 data collection days throughout the year, and used to record all-day interaction in the child's naturalistic environment (Oller, 2010:216). The LENA analysis software was used to detect periods of linguistic interaction and produce a count of adult words and child vocalizations (Oller, 2010:216). The data on the number of (directed and undirected) words the child heard and the number of words she used in each language were analysed as both a raw count tabulation and as a rebalanced tabulation (Oller, 2010:216). The latter was used to adjust the data in line with the distribution of the caregiving circumstances over the research period, on grounds of parental recollections and written records of the frequency of each interactional context in this specific year (Oller, 2010:216). Both types of tabulation revealed the same results: the directedness of lexical input in each of the three languages was "strongly predictive of both the number of tokens and the number of types of words that the trilingual child used in each" (Oller, 2010:216). Oller (2010:220) views this finding as reason to doubt the extreme nativist view of language acquisition as indirect input, compared to direct input, played "at most a very small role" in lexical acquisition.

### **3.3 The role of SES in language acquisition**

Although SES (estimated on grounds of level of maternal education) proved to have a limited effect in the study just discussed, a number of other studies have shown a relationship between this variable and language development in monolinguals (cf. Hoff, 2006) and L2/bilingual children (cf., for example, Blom, Paradis, & Sorenson Duncan, 2010; Bohman, Bedore, Peña, Mendez-Perez, & Gillam, 2010; Goldberg, Paradis, & Crago, 2008; Oller & Eilers, 2002; Paradis, 2009; Scheele et al., 2010). SES is often estimated on grounds of a family's financial and cultural resources, the level of "symbolic content" of parents' professions and the parents' level of formal education (Scheele et al., 2010:135).

On the one hand, some studies suggest that the relationship between SES and language development is a result of qualitative differences between the speech of mothers from different social classes, as mothers with post-secondary education tend to have larger vocabularies than those with lower levels of education (cf. Goldberg et al., 2008; Paradis, 2009). It was for this reason that Paradis (2011a) considered level of maternal education to be

a more quality-oriented child-external factor in language acquisition (Paradis, 2011a:218). On the other hand, SES has also been considered to be a factor influencing input quantity as determinant of language acquisition, as studies such as those by Hart and Risley (1995) and Hoff-Ginsberg (1991) report a relationship between SES and the amount of talking in the home, which in turn has been shown to affect language development in children, as discussed earlier in this chapter.

When one considers those characteristics of maternal speech that have widely been considered to be most supportive of language acquisition in children and how these characteristics vary with SES levels (Hoff-Ginsberg, 1991:783), it seems likely that SES affects language development because it influences both the quality and quantity of input that children are exposed to.<sup>18</sup> The abovementioned characteristics of maternal speech include a shared focus between mother and child on the same activity or object, maternal responses that are contingent on the child's speech and increased numbers of mother-child conversations through child-directed questions demanding verbal replies (Hoff-Ginsberg, 1991:782). Studies by Bee, van Egeren, Streissguth, Nyman and Leckie (1969); Farran and Haskins (1980); Heath (1983); Hess and Shipman (1965); Hoff-Ginsberg (1991) and Schacter (1979) have shown that the child-directed speech of mothers of low SES, compared to mothers of mid- and high SES, diverges most from this type of supportive interactional style in that it is mostly directive in nature, less contingent on the child's speech and contains fewer questions asked for the purpose of eliciting conversation. Thus, mothers of low SES typically spend less time playing with and talking to their children (Hoff-Ginsberg, 1991:783). In the case of mothers living in poverty, Snow, Dubber and de Blauw (1982) suggest that this may be because such mothers simply do not have the same resources in terms of time and energy that other mothers have to play and converse with their children. Even in the case of mothers from less affluent, but not necessarily extremely poor households, Hoff-Ginsberg (1991:783) suggests, "mothers may have less leisure time or, for other reasons, be less inclined to play with their children, and therefore their style of talking to their children may be developed primarily in goal-directed caretaking settings that demand a less conversational, more directive maternal style".

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<sup>18</sup> For references to numerous studies investigating the role of SES as a factor influencing both quantity and quality of input and, in turn, language development, cf. Scheele et al. (2010).



An interesting finding by Hoff-Ginsberg (1991:794), however, is that the differences in maternal language use across social classes are perhaps a reflection of broader linguistic differences across social classes, i.e. these differences are perhaps not limited to child-directed speech. Additionally, the specific conversational setting was found to affect characteristics of maternal child-directed speech and to mitigate the scope of differences between mothers of different social classes (Hoff-Ginsberg, 1991:794).

Note that the majority of the studies that indicate a clear relationship between SES and language development employed monolingual children as participants. As far as multilingual language acquisition is concerned, the specific role of SES in trilingualism has, at least to my knowledge, not yet received any attention, whilst those few studies that employed bilingual (mostly immigrant) children offer a less clear picture than that found in studies with monolinguals (cf. Duursma, Romero-Contreras, Szuber, Proctor, & Snow, 2007; Leseman & van Den Boom, 1999; Oller & Eilers, 2002; Scheele et al., 2010).

A study by Scheele et al. (2010), for example, revealed a significant positive association between SES and input quantity in a monolingual Dutch control group, but the pattern proved more complicated in the case of bilingual participants: in both the Moroccan-Dutch and Turkish-Dutch bilingual groups employed in the study, the effects of SES on L1 input quantity were almost non-existent, whilst SES had a significant positive effect on L2 input quantity in the case of the Moroccan-Dutch group, but no effect whatsoever in the case of the Turkish-Dutch group (Scheele et al., 2010:135). Additionally, both bilingual groups scored lower on the L1 and L2 parallel vocabulary tests than did the monolingual native Dutch control group (Scheele et al., 2010:134). As the bilingual and monolingual participants proved to have equal domain general cognitive abilities – as measured by *Raven's Coloured Progressive Matrices* (Raven, 1995) – the researchers relate the bilinguals' lower linguistic proficiency to the finding that they receive less L1 and L2 input through oral and literate language activities in their low SES bilingual immigrant homes, as a result of the already limited time for linguistic child-directed interaction being divided between two languages (Scheele et al., 2010:137). The researchers conclude that their study provides “support for the

hypothesis that the language disadvantages of bilingual immigrant children cannot be attributed to their general learning capacity, but likely stem from differences in language input” (Scheele et al., 2010:137).

As the overview of the literature on the role of input in multilingual language acquisition provided in this chapter has shown, both input quantity and quality seem to be of effect. Input quantity has been shown to be a variable that hinges on both current and cumulative exposure, and input quality a variable that is affected by a large number of different factors, ranging from the interactional richness of the input to the frequency in the input of the specific morphosyntactic construction under investigation. Importantly, SES has been shown to affect both quantity and quality of input, perhaps in an interconnected way.

The exact nature of the relationship between input and multilingual (specifically also trilingual) development is, however, as yet unclear. As far as input quantity is concerned, the little available literature on trilingualism suggests that the correlation between input and proficiency is perhaps weaker than that generally reported in bilingualism studies: Yang and Hua (2010) found that their trilingual subject’s necessarily decreased amount of exposure to each of her three languages did not cause phonological developmental delay, and Quay (2001) found some correlations between amount of input and proficiency when exposure is calculated on grounds of parental estimations, but not when calculated on grounds of video recordings of interaction in the home and daycare contexts. Importantly, however, these findings are based on single case-studies, which limits their generalisability. Chapter 5 provides a description of the methodology used in the current study which was designed to contribute to the pool of knowledge on the role of input in multilingual language acquisition through its investigation of, in a group of 11 early developing trilinguals from low SES backgrounds, the relationship between input quantity and quality on the one hand, and lexical and grammatical proficiency on the other. Before turning to the methodology of the current study, however, a discussion of the specific grammatical construction under investigation, i.e. the passive, is necessary. This is provided in the following chapter, with specific reference to the languages of interest, namely English, Afrikaans and isiXhosa.

## CHAPTER 4: PASSIVES IN ENGLISH, AFRIKAANS AND ISIXHOSA

At first glance, there seems to be little semantic difference between the active and passive voice, which calls into question the purpose of the passive construction. Various factors determining the use of the passive construction have been identified in the literature. For instance, the use of the passive (i) allows the object argument (typically the THEME/PATIENT argument) of the verb to surface as the sentence topic in the structural subject position, thereby indicating the perspective of the speaker; (ii) places emphasis on a “heavy/lengthy” AGENT argument through the use of a long passive, i.e. presenting it as the complement of a preposition (e.g. *by* in English and *deur* in Afrikaans); or (iii) allows the AGENT argument to be (deliberately) left unspecified through the use of a short/agentless passive (cf., for example, Stein, 1979; Ponelis, 1989:324-326; Baratta, 2009). With these functions of passive constructions as background, this chapter provides a description of the grammar of passive constructions in, respectively, English (Section 4.1), Afrikaans (Section 4.2) and isiXhosa (Section 4.3), with points of similarity and difference being noted throughout. The description is non-formalistic in the sense that it is presented in a predominantly theory-neutral manner rather than within a particular theoretical framework. The chapter concludes with an overview of the literature on the acquisition of passives by child learners of English, Afrikaans and isiXhosa, and/or closely related languages (Section 4.4).

### 4.1 Passive constructions in English

#### 4.1.1 Morphosyntactic structure

Consider the sentence pairs in (1)-(5) below. The (a)-sentences represent typical passive constructions in English; the (b)-sentences represent the active counterparts of the respective passives.

- (1) (a) Slick is (being) cleaned (by Debbie).  
 (b) Debbie is cleaning Slick.
- (2) (a) John was knocked over (by the car).  
 (b) The car knocked over John.

- (3) (a) The schoolchildren were recognised (by Mr Zulu).  
 (b) Mr Zulu recognised the school children.
- (4) (a) [When John arrived home yesterday,] the cake had been eaten (by Boxer).  
 (b) [When John arrived home yesterday,] Boxer had eaten the cake.
- (5) (a) [Granny Gogo would like] the clothes to be washed (by Debbie).  
 (b) [Granny Gogo would like] Debbie to wash the clothes.

As illustrated in each of the (a)-sentences above, the main verb (*cleaned, knocked over, recognised, eaten, washed*) is in the form of a passive participle, i.e. a non-finite verb which encodes passive voice (Radford, 2009:471). The passive participle (or passive verb, for short) is derived by attaching a passive morpheme in the form of the *-ed* or *-(e)n* suffix to the verb stem (Ouhalla, 1999:170). Whilst all regular verbs and many irregular verbs take the *-ed* ending, the passive participle form of many irregular verbs is derived by either (i) adding *-en* (or *-n*) to the verb stem, as in *eaten* and *shown*; (ii) changing the middle vowel, as in *rung*; or (iii) combining these two means, as in *gotten* (McArthur, 1992:751-752). In English, the passive participle form of a verb is generally homophonous with the past perfect participle form of that verb (e.g. *dropped, eaten, seen, stolen, taken, shown*, etc.). Verbs that take the *-ed* suffix in their simple past tense form (e.g. *dropped, chewed, listened*), as well as certain irregular forms (e.g. *taught, hurt, sought*) are also homophonous with the passive participle form.

The passive construction additionally requires the presence of a free morpheme in the form of the passive voice auxiliary BE.<sup>19</sup> This auxiliary can take various forms: *is* (denoting present tense, as in (1a)), *was/were* (denoting past tense, as in (2a) and (3a)), *been* (denoting perfect aspect, as in (4a)), or *be* (denoting a lack of tense in passive infinitival clauses, as in (5a)). Note that the perfect form of the passive auxiliary (i.e. *been* in (4a)) is obligatorily preceded

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<sup>19</sup> Where BE represents the uninflected form of the auxiliary.

by the aspectual auxiliary HAVE ((*to have, has, had, having*)), which serves to express past tense.<sup>20</sup>

Sometimes, the passive auxiliary BE is substituted with GET (*get, got, gotten*).<sup>21</sup> GET-passives are largely limited to informal registers and even then are infrequent compared to the more common BE-passive (Quirk et al., 1985:161). GET is much more commonly employed as a “resulting copula” in what Quirk et al. (1985:161) term a “pseudo-passive” construction; the latter resembles a passive, but cannot express an AGENT, e.g. *My mother is getting old* (Quirk et al., 1985:161). However, if a GET-passive is indeed used, it will most often not contain an overt expression functioning as an animate AGENT (Quirk et al., 1985:161). Example (6a) below, when considered without the optional *by*-phrase, thus illustrates the most commonly occurring type of GET-passive. The fact that the AGENT in (6a) is animate is evident from the *by*-phrase, but even if this phrase were to be omitted, the implied AGENT would still clearly be animate. However, if the *by*-phrase in (6b) containing an inanimate AGENT were to be omitted, the verb does not imply that the AGENT is necessarily inanimate.

- (6) (a) John got beaten up at school (by the bullies from sixth grade).  
 (b) John got knocked over (by the car).

In both BE- and GET-passives, emphasis is placed on the expression occupying the structural subject position (*John* in the above examples) rather than on the AGENT. A distinguishing feature of GET-passives, however, is that emphasis is also placed on the usually negative effect that the action has on the entity denoted by this expression (Quirk et al., 1985:161). According to Quirk et al. (1985:161), the emphasis on the unfavourable condition of the

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<sup>20</sup> The rule regarding the obligatory presence of the aspectual auxiliary HAVE in the case of perfective passive constructions does not apply to present tense passive constructions. In the latter case, the presence of the progressive aspectual auxiliary *being* is optional (cf. (1a)). Note that the aspectual auxiliary *being* follows the passive auxiliary, whereas the aspectual auxiliary HAVE precedes the passive auxiliary.

<sup>21</sup> It is not clear whether GET (when used in place of the passive auxiliary BE) should also be analysed as an auxiliary or rather as some other type of verb. It does not seem to qualify as an auxiliary when measured against most of the syntactic criteria for this grammatical category (Quirk, Greenbaum, Leech, Swartvik & Crystal, 1985:160). For analyses of so-called GET-passives, cf. for example Alexiadou (2005), Brownlow (2011), Butler and Tsoulas (2006), Embick (2004) and Hoekstra (1984).

subject may account for the fact that GET-passives often have an unspecified AGENT and convey a negative attitude towards the action.<sup>22</sup> Consider the following example, which refers back to the situation depicted in (4) above. Here, the implication is that the cake should have been stored in a safe place.

(7) How did the cake get eaten before the party?

As illustrated in (1a)-(6a), an English passive sentence may optionally contain a *by*-phrase, where the complement of the preposition *by* thematically corresponds to the expression functioning as the subject in the active counterpart of the sentence. For instance, in (1a) the AGENT argument *Debbie* is represented by the complement of *by*, whereas in (1b) this argument is represented by the subject of the sentence. Passives containing a *by*-phrase are often referred to as “long” or “agentive” passives, as opposed to “short” or “agentless” passives where the AGENT is unspecified through the omission of this phrase.<sup>23</sup> According to Svartvik’s (1966) analysis of corpus data, four out of every five English passive sentences are short passives.

As a general rule, the expression functioning as the object argument of the passive verb occupies the (clause-initial) structural subject position in passive constructions.<sup>24</sup> This is

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<sup>22</sup> Some languages – for example Japanese, Taiwanese and Sesotho – contain passive constructions which seem to be similar to GET-passives where the subject is interpreted as being negatively affected in some way. These constructions are referred to as “adversity constructions” by Crawford (2012:23).

<sup>23</sup> Note that arguments with thematic roles other than that of AGENT may also occur as the complement of *by* in long passives. According to Alexiadou and Anagnostopoulou (2007:2), the argument in the *by*-phrase of an English passive sentence can be either an AGENT (e.g. *John* in (ia) below), CAUSER (i.e. a natural force such as *the storm* in (ia)), INSTRUMENT (e.g. *a stone* in (ia)), or CAUSING EVENT (e.g. *Will’s banging* in (ib)).

- (i) (a) The window was broken by John/by the storm/with a stone.  
 (b) The window was shattered by Will’s banging.

It could be argued that a fifth thematic role, EXPERIENCER, may also be expressed by the complement of *by* in long passives, as in the example in (3a) above.

<sup>24</sup> By “object argument” is meant an expression that is selected by a verb/preposition from which it receives its specific thematic role. Within the framework of Government and Binding (GB) theory, the object argument is generally referred to as the “internal argument” of the verb (or preposition) and the subject argument as the “external argument” of the verb. The object argument typically receives the thematic role of THEME or PATIENT from the selecting verb/preposition, whereas the subject argument typically receives the thematic role of AGENT or EXPERIENCER (cf. Haegeman, 1994:180-182). Within Minimalist Syntax, the (clause-initial)

illustrated by the examples in (1a)-(6a) where the object occurs preverbally. In addition, English also allows passive constructions in which the object argument remains in its original postverbal position, as in (8b) below. This possibility is, however, restricted to constructions where the object argument is an indefinite expression (Radford, 2009:256). In such cases, the structural subject position is filled by the expletive (i.e. existential) pronoun *there*, which does not receive any thematic role.

- (8) (a) *No evidence of any corruption* was found.  
 (b) There was found *no evidence of any corruption*. (Radford, 2009:256)

The sentences in (1a)-(6a) and in (8a) all represent main clauses, with the object argument of the passive participle surfacing in the structural subject position. Consider by contrast the examples in (9) which contain a main clause and an infinitival clause. In (9a) the expression occurring in the structural subject position of the main clause (i.e. *many books*) represents the object argument of the passive participle of the infinitival clause (i.e. *stolen*) rather than the passive participle of the main clause (i.e. *believed*). Clearly, then, in the case of infinitival clauses the object argument of a passive participle can be moved across a clausal boundary. In the event that the object argument is not fronted, the structural subject position of the main clause is filled by the expletive *there* as in (9b) (although some speakers seem to find such examples only marginally acceptable).

- (9) (a) Many books are believed to have been stolen.  
 (b) <sup>?</sup>There are believed to have been stolen many books.

With regard to case assignment, the nominal expression occurring in the complement position of the main verb in an active sentence (i.e. the object argument of the verb) receives accusative case. In (non-existential) passive sentences, in contrast, the object argument surfaces in the clause-initial structural subject position where, in tensed clauses, it displays nominative case. To illustrate, consider the examples below in which the form of the pronoun representing the object argument signals its case value. In the active sentence in (10a), *her* has accusative case and in the passive sentence in (10b), *she* has nominative case.

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structural subject position is the specifier position of the functional category T(ense) (cf. for example Adger, 2003:229), or I(inflection) in earlier versions of generative syntactic theory.

- (10) (a) Grandpa George scolded *her* for coming home after dark.  
 (b) *She* was scolded (by Grandpa George) for coming home after dark.

Note, however, that the object argument receives accusative case in the structural subject position of non-finite subordinate passive clauses. This is shown by the examples in (11): in both the non-finite active clause in (11a) and the corresponding non-finite passive clause in (11b), the pronoun representing the object argument has accusative case.

- (11) (a) [Grandpa George believed] robbers to have attacked *her* on the way home.  
 (b) [Grandpa George believed] *her* to have been attacked (by robbers) on the way home.

As regards the case value of the prepositional object in long passives (typically, the AGENT), this expression receives accusative case from the preposition *by* (cf. (12a) below). In the corresponding active sentence, this expression surfaces in the derived subject position with nominative case, as is shown in (12b).

- (12) (a) Debbie was scolded by *him* for coming home after dark.  
 (b) *He* scolded Debbie for coming home after dark.

#### 4.1.2 Restrictions on passivisation

Not all English verbs can undergo passivisation. According to Pinker (1989:136), the broad generalisation is that only transitive verbs may undergo passivisation, provided they have both an AGENT and THEME/PATIENT argument. Crawford (2012:18), however, notes that this claim does not hold for verbs such as *see*, which are transitive, but non-actional, i.e. they do not award a thematic role of AGENT to the subject argument.<sup>25</sup>

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<sup>25</sup> According to Quirk et al. (1985:746), it is likely that non-actional verbs – including perception verbs such as *see* and *hear* and cognitive/emotive verbs such as *feel* and *dream* (generally referred to as psychological verbs) – assign the thematic role of EXPERIENCER (or THEME; cf. for example Thatcher, Branigan, Mclean and Sorace, 2008:196).



Transitive verbs that select more than one object (i.e. ditransitive verbs), can generally undergo passivisation, although languages vary as to whether both the direct and indirect object (typically, the BENEFACTIVE and THEME) or only a specific one of them may surface in the structural subject position in a passive construction (Crawford, 2012:28). English is an example of a language with asymmetric passives, i.e. a language in which only the direct object (typically, the BENEFACTIVE) may surface in the structural subject position of a passive construction (Crawford, 2012:28,30).<sup>26</sup> Consider the examples in (13).

- (13) (a) I sent Pat a letter.  
 (b) Pat was sent a letter.  
 (c) \*A letter was sent Pat. (Crawford, 2012:31)

Based on Pinker's (1989:136) claim above that only transitive verbs may conditionally undergo passivisation, one can infer that intransitive verbs conversely may not undergo passivisation. According to Crawford (2012:19), English does not allow unergative or unaccusative verbs<sup>27</sup> to passivise, as illustrated by the ungrammaticality of (14) below.

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<sup>26</sup>Crawford (2012:30) notes that some speakers of English find THEME subjects in passive constructions acceptable, although this judgement is typically restricted to verb phrases containing *give*, and to a lesser extent to cases where the indirect object is a pronoun. Consider her examples below containing *give*:

- (i) (a) He was given a watch.  
 (b) A watch was given him.

<sup>27</sup> Unergative verbs are verbs that do not take a direct object argument (hence, are intransitive), and award the thematic role of AGENT (or EXPERIENCER) to their subject; cf. *He might protest* (Radford, 2009:354). Ergative verbs, in contrast, are transitive in the sense that they take an object argument; however, although such verbs assign a THEME role to their direct object, the latter surfaces in the structural subject position (the reason being that the verb cannot assign case, i.e. it is unaccusative). For example, *broke* in *The window broke* functions as an ergative verb (cf. for example Radford, 2009:455-456). Unaccusative verbs include ergative verbs, passive verbs and verbs of movement and (change of) state such as *arise*, *occur*, *remain*, *come* and *arrive* (as in (14b)). With unaccusative verbs, what seems to be the subject actually originates as the complement of the verb; cf. *Several complications have arisen* and the corresponding expletive construction *There have arisen several complications* (Radford, 2009:249,483). In the latter example, the argument *several complications* remains in situ as the complement of the verb. As the name suggests, unaccusative verbs do not assign accusative case; rather, the object argument surfaces with nominative case (Radford, 2009:250). In contrast to unergative verbs that assign the thematic role of AGENT to their subject, unaccusative verbs assign the thematic role of THEME to their complement, which surfaces as the subject (Radford, 2009:251).

- (14) (a) \*Mary was laughed.  
 (b) \*The chief was arrived by visitors. (Crawford, 2012:19)

The aspectual properties of a verb further determine whether it may undergo passivisation. According to Chomsky (as cited in Crawford, 2012:18), English transitive stative verbs like *cost*, *weigh* and possessive *have* may not undergo passivisation. This is illustrated by the ungrammaticality of the passive sentences in (15) below.

- (15) (a) \*Twenty rand is costed by the movie ticket.  
 (b) \*Five kilograms are weighed by the onions.  
 (c) \*A headache was had by me.

#### 4.1.3 Verbal versus adjectival passives

An important distinction relevant to the semantics of passive constructions is that between verbal and adjectival passives and the related distinction between eventive and stative readings. The passive constructions that have been discussed above are all of the type that Deen (2011:158) considers “true verbal passives”, which have clear active counterparts; adjectival passives, in contrast, “look deceptively like [short – AP] passives, but are not true verbal passives”. Consider the example below which may be interpreted as either a verbal or an adjectival passive.

- (16) The door was broken. (Deen, 2011:158)

If (16) is regarded as a (short) verbal passive, *broken* serves as a passive participle with its object argument *the door* having been raised into the structural subject position (Deen, 2011:158). This verbal passive is interpreted as a description of an event – someone broke the door. Conversely, if (16) is interpreted as an adjectival passive, *broken* is an adjectival participle and *the door*, serving as the logical subject of the sentence, originated in the subject position rather than being raised to it (Deen, 2011:158). This adjectival passive is interpreted as a description of a state – the door is in a state of having been broken. Accordingly, verbal passives typically have what is called an “event reading” and adjectival passives typically have what is called a “state reading” (Crawford 2012:21)

As is evident from the example in (16), verbal and adjectival passives are homophonous in English, which may cause ambiguity in interpretation. As Conradie (1969:55) points out, this type of ambiguity may be irrelevant to the hearer/reader in certain contexts, but in other contexts it may be of importance to know whether the speaker/writer is simply describing a state or implicating someone in a given action. This ambiguity can be avoided by using GET rather than BE (Quirk et al., 1985:162). For instance, rephrasing (16) as *The door got broken* allows for only a verbal (i.e. event) reading.

## 4.2 Passive constructions in Afrikaans

### 4.2.1 Morphosyntactic structure

Afrikaans is an indigenous South African language with strong West Germanic roots, specifically in 16<sup>th</sup> century Dutch. The inflectional system of its parent having largely fallen away, Afrikaans is extremely impoverished on a morphological level. The only remnants of overt (verbal) inflection are to be found in the case of (i) the specific past, present and future tense forms of the verb *hê* (“have”) and the auxiliary *wees* (“be”), none of these forms being marked for person, number or gender; and (ii) the prefix *ge-*, which serves to introduce both the past and the passive participle (Biberauer, 2002:20-21). Consider the sentence pairs in (17)-(20) below. The (a)-sentences illustrate the typical structure of an Afrikaans passive sentence; the (b)-sentences represent the active counterparts of the respective passives.

(17) (a) Die appel word (deur mnr Zulu) geëet. (Southwood & Van Dulm, 2012a)  
 the apple is-being (by Mr Zulu) eaten  
 “The apple is being eaten (by Mr Zulu)”

(b) Mnr Zulu eet die appel.  
 Mr Zulu eats the apple  
 “Mr Zulu eats the apple”

(18) (a) [Die storieboek blyk] gelees te word (deur die kinders).  
 [the storybook seems] read to be (by the children)  
 “The storybook seems to be read (by the children)”

- (b) [Die kinders blyk] die storieboek te lees.  
[the children seem] the storybook to read  
“The children seem to read the storybook”
- (19) (a) Die klere is (deur Ouma Gogo) gewas. (Southwood & Van Dulm, 2012a)  
the clothes BE-past (by Grandma Gogo) washed  
“The clothes were washed (by Grandma Gogo)”
- (b) Ouma Gogo het die klere gewas.  
Grandma Gogo has the clothes washed  
“Grandma Gogo washed the clothes”
- (20) (a) [Toe John gister by die huis aangekom het,] was die bank  
[when John yesterday at the house arrived has,] BE-perfect the couch  
reeds (deur die honde) stukkend gekou.  
already (by the dogs) broken chewed  
“When John arrived home yesterday, the couch had already been badly chewed  
on (by the dogs)”
- (b) [Toe John gister by die huis aangekom het,] het die honde die bank  
[when John yesterday at the house arrived has,] have the dogs the couch  
reeds stukkend gekou.  
already broken chewed  
“When John arrived home yesterday, the dogs had already badly chewed on the  
couch”

The Afrikaans passive verbal sequence contains, at the very least, a distinct passive participle and a free morpheme in the form of a passive auxiliary. As in English, the Afrikaans passive participle is a non-finite verb that serves to encode the passive voice. In the case of regular verbs, this participle is derived by attaching a passive morpheme in the form of the prefix *ge-*

to the verb stem, as mentioned above.<sup>28</sup> In the (a)-sentences above, the main verbs *geëet*, *gelees*, *gewas*, and *gekou* are all in the passive participle form.

Similar to the case of BE in English, the Afrikaans passive auxiliary is phonetically realised as some form of WEES (“be”). This auxiliary can take one of four forms. Firstly, the form *word* is used to denote both present tense and progressive aspect as in (17a); this is in contrast to English where two distinct auxiliaries are required to express tense and aspect (cf. Section 4.1.1). Secondly, like with *wees* in (21) below, the form *word* is also used to denote a lack of tense in passive infinitival clauses as in (18a).<sup>29</sup> Thirdly, the form *is* is used to denote past tense as in (18a). Lastly, the form *was* serves to denote both past tense and perfect aspect as in (20a).<sup>30</sup> Note that, unlike in English where the perfect form of the passive auxiliary (i.e. *been*) is obligatorily preceded by the aspectual auxiliary HAVE, the Afrikaans perfective passive auxiliary *was* usually occurs on its own, independent of an aspectual auxiliary.

- (21) [Die gereg blyk] (deur haar man) gemaak te wees.  
 [the dish seems] (by her husband) made to be  
 “The dish seems to be made (by her husband)”

<sup>28</sup> Note that, similar to past participles, irregular passive verbs starting with the prefix *be-*, *ge-*, *her-*, *er-*, *ont-* or *ver-* do not take the prefix *ge-*. Cf. Taalkommissie van die Suid-Afrikaanse Akademie vir Wetenskap en Kuns (2009:162-166) for the morphological and prosodic conditions under which the addition of *ge-* is allowed, prohibited or optional.

<sup>29</sup> When used to express a lack of tense in passive infinitival clauses, *wees* is associated with a state reading and *word* with an event reading; cf. Section 4.2.3 below.

<sup>30</sup> According to Ponelis (1979:267), the use of *was* is more common in formal writing than in colloquial speech, in which case *is* is preferred; in such cases the past perfect interpretation is dependent on the particular context. In some varieties of Afrikaans the passive auxiliary *was* is used only to express the past tense in passive sentences, with the perfect aspect being expressed by the auxiliary WEES in its participial form, i.e. *gewees*, as shown in (i). In this case, the Afrikaans passive auxiliary *was* precedes the aspectual auxiliary *gewees*; this is in contrast to English which shows the reverse order, as in (ii). The passive auxiliaries in the examples below are italicised and the aspectual auxiliaries bolded.

- (i) [Toe John gister by die huis aangekom het,] *was* die bank reeds (deur die honde) stukkend gekou **gewees**.  
 [when John yesterday at the house arrived has,] *was* the couch already (by the dogs) broken chewed been  
 “When John arrived home yesterday, the couch had already been badly chewed on (by the dogs)”
- (ii) [When John arrived home yesterday,] the cake **had** *been* eaten (by Boxer).

Afrikaans and English are largely similar in their use of a passive affix in the marking of the passive participle, and the use of a free morpheme as passive auxiliary. As noted in Section 4.1.1, in English the passive participle form of a regular verb is generally homophonous with the past perfect participle form of that verb. The same applies to verbs that take the *-ed* suffix in their simple past tense form as well as certain irregular verb forms. These remarks hold for Afrikaans as well, with passive, past perfect and simple past participles all displaying the same form, i.e. prefixed with *ge-*, as shown in (22a-c), respectively.

- (22) (a) Die koekies is (deur Ouma Gogo) gebak.  
 the cookies were (by Grandma Gogo) baked  
 “The cookies were baked (by Grandma Gogo)”
- (b) Teen gistermiddag het Ouma Gogo reeds die koekies klaar gebak.  
 by yesterday-afternoon has Grandma Gogo already the cookies finished baked  
 “By yesterday afternoon, Grandma Gogo had already finished baking the cookies”
- (c) Ouma Gogo het die koekies gebak.  
 Grandma Gogo has the cookies baked  
 “Grandma Gogo baked the cookies”

As illustrated in (17a)-(20a), (21) and (22a), an Afrikaans passive sentence may optionally contain a *deur*-phrase, forming a long passive. As in the case of the English *by*-phrase, the complement of the preposition *deur* thematically corresponds to the expression functioning as the subject in the active counterpart of the sentence. For instance, in (17a) the AGENT argument *mnr Zulu* is represented by the complement of *deur*, whereas in (17b) this argument is represented by the subject. According to Poneis (1989:323), the long passive is used much less in Afrikaans than the short passive. Conradie (1969:6) goes as far as to state that the AGENT argument in a(n Afrikaans) passive construction is “typically and characteristically” not present, i.e. it is not the case that it may be optionally omitted, but rather optionally added.<sup>31</sup> With regard to the frequency of long passives, Afrikaans is thus similar to English

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<sup>31</sup> Cf. Poneis (1979:414-415) for possible reasons regarding the preference for short passives over long passives.

(cf. Section 4.1.1). Note, however, that whereas the English *by*-phrase has a fixed postverbal position, the Afrikaans *deur*-phrase may occur both preverbally and postverbally without any apparent effect on interpretation, as in the following examples:<sup>32</sup>

(23) (a) Die wasgoed word deur Debbie opgehang. (Southwood & Van Dulm, 2012a)  
 the washing is-being by Debbie up-hung  
 “The washing is being hung up by Debbie”

(b) Die wasgoed word opgehang deur Debbie.  
 the washing is-being up-hung by Debbie  
 “The washing is being hung up by Debbie”

As regards the positioning of the object argument in a passive sentence, Afrikaans is largely similar to English. As a general rule, the expression functioning as the object argument of a passive verb surfaces in the structural subject position, as illustrated by the examples in (17a)-(20a) and (22a). Also, more commonly than in English, Afrikaans allows passive constructions in which the expression in the structural subject position is the thematically empty expletive pronoun *daar* (“there”), provided the object argument is an indefinite expression (Ponelis, 1979:23-25). This is illustrated in (24) below, where the indefinite expression serving as the object argument of the passive verb is italicised.

(24) Daar is *geen noemenswaardige vordering* gemaak nie. (Ponelis, 1979:413)  
 there was no noteworthy progress made NEG  
 “There was no noteworthy progress made”

In (17a)-(20a), (22a) and in (23) the object argument occurs preverbally in the structural subject position; in (24) the object argument is preceded by the passive auxiliary, but still occurs preverbally, i.e. before the passive participle. This is in contrast to English where an indefinite object argument may occur either preverbally or postverbally (as in the case of *there*-constructions). On the assumption that Afrikaans is underlyingly a verb-final language, the Afrikaans [object argument]-[passive participle] surface order can be ascribed to the fact

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<sup>32</sup> For a discussion of the general phenomenon involving preverbal and postverbal prepositional phrases in Afrikaans and related languages, cf. Biberauer (2003), Biberauer and Roberts (2006), and Oosthuizen (2013).

that the object initially occupies a preverbal position, thus ruling out the possibility of this expression surfacing in postverbal position, as is evident from the ungrammaticality of (25d) below.<sup>33</sup> The (b) and (d) sentences in (25) are the Afrikaans counterparts of (a) and (c); the object arguments are italicised.

- (25) (a) *No evidence of any corruption* was found. (preverbal)
- (b) *Geen bewyse van enige korrupsie* is gevind nie. (preverbal)  
 no evidence of any corruption was found NEG  
 “No evidence of any corruption was found”
- (c) There was found *no evidence of any corruption*. (postverbal)
- (d) \*Daar is gevind *geen bewyse van enige korrupsie* nie. (postverbal)  
 there was found no evidence of any corruption NEG

The grammatical counterpart of the *daar*-construction in (25d) is given in (26) below. Here, as in (24) above, the object argument precedes the passive participle.

- (26) Daar is *geen bewyse van enige korrupsie* gevind nie.  
 there was no evidence of any corruption found NEG  
 “There was no evidence of any corruption found”

Turning to movement across clause boundaries, Afrikaans, like English, allows the object argument of a passive verb to be moved out of a subordinate infinitival passive clause. With the exception of examples (18), (20) and (21), the examples of (non-existential) Afrikaans

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<sup>33</sup> There are two exceptions to this general rule. In subject-initial main clauses lacking an auxiliary, the object argument follows the verb, as in (ia). This ordering is also found in finite subordinate clauses that lack an overt complementiser, as in (ib).

- (i) (a) Jan lees die boek.  
 Jan reads the book  
 “Jan reads the book”
- (b) Ek weet Jan lees die boek.  
 I know Jan reads the book  
 “I know Jan reads the book”



passives discussed above all function as main clauses, with the object argument of the passive verb surfacing in the structural subject position. The example in (27), in contrast, contains a main clause and an infinitival clause (cf. (18a) and (21) for similar examples). The expression occurring in the structural subject position of the main clause represents the object argument of the passive verb of the infinitival clause (i.e. *vertrou*) rather than of the verb of the main clause (i.e. *blyk*).

- (27) Die onderwysers blyk [(deur die ouers) vertrou te word].  
the teachers seem [(by the parents) trusted to be]  
“The teachers seem to be trusted (by the parents)”

As in English, the object argument of the infinitival clause can remain in its original position with the structural subject position of the main clause being filled with an expletive pronoun (*daar*), as illustrated in (28).

- (28) Daar blyk [baie onderwysers (deur die ouers) vertrou te word].  
there seem [many teachers (by the parents) trusted to be]  
“‘There seem to be many teachers trusted (by the parents)”

Afrikaans is similar to English with regard to case assignment in passive sentences. The object argument of an active verb receives accusative case; this same object argument, when surfacing in the clause-initial structural subject position of a tensed clause in a (non-existential) passive sentence, displays nominative case. To illustrate, consider the examples below in which the form of the pronoun representing the object argument signals its case value (pronouns providing the only morphological reflection of case in Afrikaans). In the active sentence in (29a), *hom* has accusative case and in the passive sentence in (29b), *hy* has nominative case.

- (29) (a) Ouma Evelyn versorg *hom*.  
Grandma Evelyn looks-after him  
“Grandma Evelyn looks after him”

- (b) *Hy* word deur Ouma Evelyn versorg.  
 he is-being by Grandma Evelyn looked-after  
 “He is (being) looked after by Grandma Evelyn”

Note, however, that the object argument receives accusative case in the structural subject position of non-finite subordinate passive clauses. This is shown by the examples in (30): in both the non-finite active clause in (30a) and the corresponding non-finite passive clause in (30b), the pronoun representing the object argument has accusative case.<sup>34</sup>

- (30) (a) [Ek verkies] vir Ouma Evelyn om *hom* te versorg.  
 [I prefer] for Grandma Evelyn COMP him to look-after  
 “I prefer for Grandma Evelyn to look after him”
- (b) [Ek verkies] vir *hom* om versorg te word (deur Ouma Evelyn).  
 [I prefer] for him COMP look-after to be (by Grandma Evelyn)  
 “I prefer for him to be looked after (by Grandma Evelyn)”

As regards the case value of the prepositional object in long passives (typically, the AGENT), this expression receives accusative case from the preposition *deur* (cf. (31a) below). In the corresponding active sentence, this expression surfaces in the derived subject position with nominative case, as is shown in (31b).

- (31) (a) Ouma Evelyn is deur *hom* aangemoedig om die kind te versorg.  
 Grandma Evelyn was by him encouraged COMP the child to look-after  
 “Grandma Evelyn was encouraged by him to look after the child”
- (b) *Hy* het Ouma Evelyn aangemoedig om die kind te versorg.  
 he has Grandma Evelyn encouraged COMP the child to look-after  
 “He encouraged Grandma Evelyn to look after the child”

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<sup>34</sup> Note that *om* in (30) and (31), co-occurring with the infinitive marker *te* in infinitival clauses, is regarded as a non-finite complementiser. This is also the case in Dutch (cf. for example Zwart, 1997:109-116).

#### 4.2.2 Restrictions on passivisation

It was noted in Section 4.1.2 that not all English verbs can undergo passivisation. This holds for Afrikaans as well: the verb needs to be transitive, unless an expletive *daar*-construction is used (cf. below and also Section 4.2.1 above).<sup>35</sup> In the case of sentences with a monotransitive verb (i.e. a verb taking a single object argument), the nature of the verb may sometimes render the object “inaccessible” and so make passivisation impossible or, at best, “difficult” (Ponelis, 1979:420). According to Ponelis (1979:420), this is the case with monotransitive main verbs that co-occur with linking verbs (i.e. “skakelwerkwoorde”, such as *gaan* (“go”) and *kom* (“come”)), as well as monotransitive perception verbs. Consider the examples below adapted from Ponelis (1979:420); the relevant verbs are italicised.

- (32) (a) Hulle het die kinders *gaan* wegbring. / \*Die kinders is gaan wegbring.  
they have the children go dropped-off / the children were go dropped-off  
“They went to drop off the children”
- (b) Hulle het die boeke *gesit* en lees. / \*Die boeke is gesit en lees.  
they have the books sat and read / the books were sat and read  
“They sat and read the books”
- (c) Hulle het die radio *hoor* speel. / ?Die radio is hoor speel.  
they have the radio hear play / the radio was heard play  
“They heard the radio play”

As for ditransitive verbs (i.e. verbs taking two object arguments), recall that English is an asymmetric language that, for most speakers, does not allow indirect objects (mostly, THEMES) to surface as the subject of a passive construction (cf. Section 4.1.2). Afrikaans, in contrast, is a symmetric language in that generally either one of the direct or indirect object may surface as the subject in a passive construction without impacting on meaning (Conradie, 1969:73). Only in certain cases is there a preference for either the one or the other to occur in the subject position in passive sentences (Conradie, 1969:74). Regardless of which object

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<sup>35</sup>As in English, the aspectual properties of Afrikaans verbs also play a role in determining whether they may be passivised. As is the case with their English counterparts, Afrikaans transitive stative verbs such as *kos* (“cost”), *weeg* (“weigh”) and possessive *het* (“have”) do not passivise.

surfaces in the subject position, the other is said to be “retained” as object in the passive construction (Conradie, 1969:73). Consider the examples below in which the case forms of the personal pronouns indicate whether they serve as subject or retained object in the respective passive constructions in (33b) and (33c).<sup>36</sup> (Note that the examples in (33) do not lend themselves to fully idiomatic translations into English, with some native speakers finding such translations only marginally acceptable.)

- (33) (a) Pieter gun                      (aan) hom haar.  
           Pieter grants/allows (to) him her  
           “Pieter grants him her”
- (b) Hy word    haar gegun                      (deur Pieter).  
           he is-being her granted/allowed (by Pieter)  
           “He is being granted her (by Pieter)”
- (c) Sy word    (aan) hom gegun                      (deur Pieter).  
           she is-being (to) him granted/allowed (by Pieter)  
           “She is being granted to him (by Pieter)”

As mentioned above, intransitive verbs cannot undergo passivisation, unless an expletive *daar*-construction is employed. For example, the ungrammatical sentence in (34a) below contains an intransitive verb in passive form, but without any expression in the structural subject position; this is in contrast to the grammatical sentence in (34b) where the subject position is thematically empty, but filled with the expletive *daar*.

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<sup>36</sup> The preposition *aan* (“to”) in the (a) and (c) sentences serves to mark the indirect object argument. Without this preposition, these sentences are ambiguous with *hom* and *haar*, respectively, allowing both an indirect and a direct object reading. In (33b) the nominative form of the fronted pronoun cannot be preceded by *aan*; if this preposition is pied-piped along with the pronoun, the latter is assigned accusative case as in (i). It should be noted, though, that many speakers find such sentences at most marginally acceptable. Cf. Oosthuizen (2013:Section 3.2.3) for an analysis of such ditransitive constructions in Afrikaans.

(i)       <sup>?</sup>Aan hom word    haar gegun.  
           to him is-being her granted/allowed  
           “To him, she is being granted”

- (34) (a) \*Word geslaap (deur Pieter).  
is-being slept (by Pieter)
- (b) Daar word geslaap (deur Pieter).  
there is-being slept (by Pieter)  
“Pieter is sleeping”

Note that English does not allow the type of *there*-construction in (34b), as only transitive verbs may be passivised in English (cf. Section 4.1.2). Consider the ungrammaticality of (35) below.

- (35) \*There is being slept (by Peter).

The class of Afrikaans intransitive verbs that may occur in a passive *daar*-construction is semantically restricted. Firstly, (ergative) unaccusative verbs such as *gebeur* (“happen”) and *vergaan* (“perish/decay”) do not passivise (Conradie, 1969:82). To illustrate, consider the ungrammaticality of the following examples of a non-existential and existential passive construction containing an ergative unaccusative verb:

- (36) (a) \*Dinge word hier gebeur. / \*Word (deur dinge) hier gebeur.  
things are-being here happen / are-being (by things) here happen
- (b) \*Daar word dinge hier gebeur. / \*Daar word (deur dinge) hier gebeur.  
there are-being things here happen / there are-being (by things) here happen

A second semantic restriction on the class of verbs that may occur in a passive *daar*-construction relates to the thematic role of the subject argument of the verb. Conradie (1969:81) states that, generally, only intransitive (specifically, unergative) verbs that express a deliberate human action (and therefore take an AGENT argument) are allowed in passive *daar*-constructions, e.g. *bedel* (“beg”), *besluit* (“decide”) and *bad* (“bathe”).<sup>37</sup> As regards the deliberateness of the action, Ponelis (1979:408-409) supports Conradie’s claim in arguing

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<sup>37</sup> Conradie (1969:82) further states that it is doubtful whether passive *daar*-constructions containing verbs expressing a deliberate animal action such as *blaf* (“bark”), *runnik* (“whinny/neigh”) and *blêr* (“bleat”) are grammatical. The accuracy of this statement, however, seems to be contentious.

that only actional verbs (“handelingswerkwoorde”, i.e. verbs that assign the AGENT role to the subject argument) may occur in Afrikaans *daar*-constructions. This is illustrated by the ungrammaticality of the passive sentence in (37b), where the verb is non-actional.

(37) (a) Die meisie lyk mooi.  
the girl looks pretty  
“The girl looks pretty”

(b) \*Daar word mooi *gelyk*. (adapted from Ponelis, 1979:409)  
there is-being pretty looked

The above claim that only AGENT subject arguments can occur in passive *daar*-constructions is, however, too strong. In fact, some verbs which take an EXPERIENCER argument – e.g. psychological verbs such as *droom* (“dream”), *bloos* (“blush”) and *skrik* (“become frightened”), and perception verbs such as *sien* (“see”), *ruik* (“smell”) and *hoor* (“hear”) – can also occur in passive *daar*-constructions. This is clear from the following examples:

(38) (a) Daar is groot geskrik (deur die kinders) toe hulle uitgevang is.  
there was big shocked (by the children) when they out-caught were  
“The children had a big scare when they were caught out”

(b) Daar is (deur die onderwysers) gesien hoe die kinders skelm rook.  
there was (by the teachers) saw how the children slyly smoke  
“The teachers saw the children smoking on the sly”

In summary, recall that, according to Crawford (2012:19), English does not allow unergative or unaccusative verbs to passivise under any circumstances (cf. Section 4.1.2). Afrikaans is largely similar, although this restriction can sometimes be overcome through the use of the existential *daar*-construction. Assuming, as argued above, that an AGENT argument is not a prerequisite for the derivation of an Afrikaans passive *daar*-construction, any unergative verb such as *bedel* (“beg”), *lag* (“laugh”), *slaap* (“sleep”), *dink* (“think”) and *skrik* (“become frightened”; cf. (38a)) may be passivised in such a construction. Additionally, it seems that some unaccusative verbs of movement or (change of) state can also occur in Afrikaans

passive *daar*-constructions, as illustrated in (39); it should be noted, though, that many speakers find such sentences only marginally acceptable.

- (39) (a) <sup>3</sup>Daar word (deur die gaste) gearriveer.  
 there is-being (by the guests) arrived  
 “The guests are arriving”
- (b) Daar is (deur die deelnemers) met die kompetisie begin.  
 there was (by the participants) with the competition begin  
 “The participants started with the competition”

### 4.2.3 Verbal versus adjectival passives

Consider next the ambiguity between event and state readings. It was pointed out in Section 4.1.3 that English verbal and adjectival passives are homophonous, which gives rise to the ambiguity in question. This type of ambiguity is also found in Afrikaans, albeit to a lesser extent. In Afrikaans passive constructions expressing the present progressive, the form of the passive auxiliary (i.e. *word*) unambiguously signals an event reading in which the action expressed by the verb is in progress. However, in the case of the passive auxiliary *is*, which indicates that the action expressed by the verb is completed, ambiguity does exist between an event and state reading since a completed action may be said to closely resemble a state (Ponelis, 1979:221). Consider (40) below. Two interpretations are possible: on the one hand a reading describing an action in the past (“someone bent his gun”), and on the other hand a reading describing a state in the present (“the gun is crooked”) (Conradie, 1969:53).

- (40) Sy geweer is gebuig.  
 his gun was/is bent  
 “His gun was bent” / “His gun is bent”

The same two interpretations illustrated in (40) are also found with the passive auxiliary *was*. For instance, (41) below allows for both an event and a state reading. On the event reading,

*was* is interpreted as expressing the past perfect; on the state reading, it expresses the simple past tense (Conradie, 1969:15,55).<sup>38</sup>

- (41) Die huis was verkoop.  
 the house had-been/was sold  
 “The house had been sold” / “The house was sold”

Ponelis (1979:267), who claims that the use of the passive auxiliary form *was* is uncommon in colloquial speech (cf. note 21), does not note any ambiguity relating to this auxiliary form. According to him, *was* usually signals an adjectival, active voice reading, whereas *is* evokes a verbal, passive voice reading.

### 4.3 Passive constructions in isiXhosa

#### 4.3.1 Morphosyntactic structure

As a member of the Southern Bantu language family<sup>39</sup>, isiXhosa is typologically very different from Germanic languages such as English and Afrikaans. Like English, most Bantu languages display a basic subject–verb–object (SVO) word order as well as subject-verb agreement (Doke & Mofokeng, 1985); this is in contrast to Afrikaans which is underlyingly a subject-object-verb (SOV) language and which does not display any subject-verb agreement. As regards verbal morphology, however, Bantu languages differ significantly from both English and Afrikaans: typically, Bantu languages have very rich systems of agglutinating verbal morphology, compared to the relatively impoverished verbal morphology of English and especially Afrikaans. In all Bantu languages, nouns belong to specific noun classes, each indicated by a specific noun class prefix (or marker) (Demuth, Moloi, & Machobane,

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<sup>38</sup> The verbal expression occurring with *is* and *was* in sentences like (40) and (41), and that may be interpreted as either a participial adjective or as a passive participle is referred to as a “potential participle” by Conradie (1969:15).

<sup>39</sup> The Southern Bantu family consists of the following four subgroups (Herbert & Bailey, 2002):

- (i) the Nguni group, i.e. isiXhosa, isiZulu, isiNdebele and SiSwati;
- (ii) the Sotho-Tswana group; i.e. Sesotho sa Leboa (Northern Sotho), Sesotho (Southern Sotho), and Setswana;
- (iii) the Tswa-Ronga group, i.e. Xitsonga (Shangaan), Ronga, and Tswa; and
- (iv) the Venda group, consisting of Tshivenda alone.



2010:239).<sup>40</sup> The particular class to which a noun belongs is further marked on the verb in the form of an agreement affix, the form of which is determined by the specific noun class prefix on the subject (Demuth et al., 2010:239). In Southern Bantu languages specifically, the verb complex is made up of a semantically meaningful stem, in combination with affixes that indicate grammatical characteristics and relationships such as subject and object agreement, tense-aspect, mood and negation, and various affixes such as the applicative and causative that serve to introduce further arguments (cf., for example, Du Plessis & Visser, 1992; Zeller, 2008). To illustrate, consider the example of a simplex isiXhosa active sentence in (42) below.<sup>41</sup> The prefix *u-* on the subject *uJohn* indicates that this expression belongs to noun class 1a; the specific subject-verb agreement marker, i.e. subject concord marker (SC), associated with nouns in this class (here, incidentally also *u-*) is attached to the verb as a prefix. Similarly, the prefix *izi-* on the object *izipho* indicates noun class 8, with the corresponding object-verb agreement marker, i.e. object concord marker (OC), of this class (i.e. *-zi-*) being attached to the verb. Note that the example in (42) displays the so-called “long form” of the present tense, indicated by the affix *-ya-* that occurs between the SC and the OC (or, in cases where the OC is absent, between the SC and the verb stem).

- (42) UJohn uyazithenga                                izipho.  
       u-John u-ya-zi-theng-a                        izi-pho  
       1a-John 1a.SC-PRES-8.OC-buy-PRES 8-gifts  
       “John is buying gifts”

Note that whereas subject-verb agreement is mandatory in isiXhosa, the marking of object-verb agreement is largely optional (Saule, Moropa, Zililo & Hadebe, 2007; Oosthuysen, 1958:25). For example, if the object is represented by means of a full nominal expression, e.g. *izipho* (“gifts”), the OC can be omitted. If, however, the object is not represented by

<sup>40</sup> In the literature, the isiXhosa noun class prefix itself is analysed as a morphologically complex unit, with the initial vowel in prefixes such as *um-* (class 1), *aba-* (class 2), *imi-* (class 4), etc. regarded as a “pre-prefix”; cf. for example Du Plessis (1978) and Du Plessis and Visser (1992). For the purposes of this study, such pre-prefixes will not be indicated in the glosses given for the isiXhosa examples.

<sup>41</sup> The abbreviations used in the glosses are as follows: numeral = noun class and agreement; 1<sup>st</sup>/2<sup>nd</sup> person sing = first/second person singular; ADJ = adjectival concord; CAUS = causative; COP = copula; DEM = demonstrative; LOC = locative; NEG = negative; NEUT = neutro-passive; OC = object concord; PASS = passive; PAST = past tense; PRES = present tense; REL = relative (this marker entailing both a prefix and suffix); SC = subject concord. For a descriptive grammar of isiXhosa, cf. Oosthuysen (1958), Louw and Jubase (1963), Du Plessis and Visser (1992) and Munnik (2006).

means of an overt nominal expression, the OC is obligatory, in which case the covert/implied object receives a pronominal reading. In the event that object-verb agreement is indeed marked, the relevant OC is attached immediately to the left of the verb stem, as seen in (42) (Oosthuysen, 1958:26). If the SC consists of a vowel and a consonant, the corresponding OC takes the same form as the SC; if the SC consists of a vowel only, the corresponding OC takes the form of this same vowel preceded by a specific semi-vowel (e.g. *a-* becomes *-wa-* and *i-* becomes *-yi-*) (Oosthuysen, 1958:26). Moreover, in the case of noun classes 1 and 1a singular, the OC is *-m-* (“him”/“her”); and in the case of the object being second person singular in nature, the OC is *-ku-* (“you”) (Oosthuysen, 1958:26).

In isiXhosa, the passive voice is also expressed by means of a verbal affix. Consider the passive counterpart of (42) in (43) below:

- (43) Izipho ziyathengwa (nguJohn)  
 izi-pho zi-ya-theng-w-a (ng-u-John)  
 8-gifts 8.SC-PRES-buy-PASS-PRES (1a.COP<sup>42</sup>-1a-John)  
 “Gifts are being bought (by John)”

The object of the active sentence in (42) has been raised into the structural subject position in the passive construction in (43). Here, the verb is in agreement with the noun class of the expression occupying the structural subject position, regardless of the thematic role of this expression – this is indicated by the SC *zi-*. As there is no expression occupying the structural object position in the passive sentence in (43), the verbal complex does not contain an OC. As for the subject argument of the active sentence in (42), this expression occurs in a copular noun phrase (i.e. *nguJohn*) in the passive sentence in (43).

As is evident from the example in (43), an isiXhosa sentence is marked as expressing the passive voice through the use of a bound morpheme that is attached to the verb stem. This affix commonly takes one of two forms:<sup>43</sup> (i) *-iw-* in the case of monosyllabic verb stems as

<sup>42</sup> On the copula status of *ng-*, cf. Du Plessis and Visser (1992).

<sup>43</sup> Two other morpheme forms found with passive constructions in isiXhosa are *-ek-* and *-akal-*. The form *-ek-* is used when the expression representing the object argument is neutral (or unspecified) with regard to grammatical gender; Du Plessis and Visser (1992:71) refer to verbal complexes with this passive morpheme as

in (44a) and verb stems beginning with a latent *i-* as in (44b); or (ii) *-w-* in the case of bisyllabic verb stems, as in (44c) (Louw & Jubase, 1963:111).<sup>44</sup>

- |          |        |               |
|----------|--------|---------------|
| (44) (a) | -tya   | -tyiwa        |
|          | “eat”  | “being eaten” |
| (b)      | -(i)va | -viwa         |
|          | “hear” | “being heard” |
| (c)      | -bona  | -bonwa        |
|          | “see”  | “being seen”  |

(Louw & Jubase, 1963:111)

The addition of the passive affix *-w-* to the verb stem results in various (morpho-) phonological changes. Firstly, a bilabial consonant occurring in the final syllable of a verb stem is palatalised (Louw & Jubase, 1963:112; cf. also Du Plessis, 1978:162). To illustrate, consider (45) below, which shows the specific changes that *m* ([m]) and *ph* ([p<sup>h</sup>]) undergo in these conditions.

- |        |   |       |        |   |                |
|--------|---|-------|--------|---|----------------|
| (45) m | → | ny :  | -luma  | → | -lunywa        |
|        |   |       | “bite” |   | “being bitten” |
| ph     | → | tsh : | -bopha | → | -botshwa       |
|        |   |       | “tie”  |   | “being tied”   |

(Du Plessis, 1978:162)

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“neutro-passive verbs”. The less productive form *-akal-* is related to *-ek-* in its neutro-passive meaning, the main difference being that *-ek-* is used in cases where the object argument “came into a certain state of affairs or condition by itself, while in the case of *-akal-* it came into this condition through external factors” (Du Plessis & Visser, 1992:74; cf. also Section 4.3.3 below).

<sup>44</sup> By “latent *i-*” is meant a phonetically unrealised vowel *i-* whose effect is seen in certain vowel coalescence contexts (cf. Louw & Jubase, 1963:76-77). Louw and Jubase (1963) seem to analyse the FV as forming part of the passive affix (i.e. *-iwa* and *-wa*). In this study, however, the general practice will be followed of analysing the passive affix *sans* the FV. The FV will furthermore be denoted as either “PRES” or “PAST” in the glosses, in order to indicate the tense it serves to express in the given example.

Demuth et al. (2010:239) note that the majority of Bantu languages have a simple consonant-vowel (CV) syllable structure, with coda consonants and clusters being prohibited. The only complex onset, i.e. the glide [w], is sometimes omitted by children younger than three years due to its relatively difficult pronunciation. Consequently, the passive morpheme is also occasionally omitted in the speech of young children, causing the Sesotho word *bonwa* (“be seen”) to be pronounced *bona* (Demuth, 1989, as cited in Demuth et al., 2010:239).

Note that whilst the above changes still occur even if the relevant labial consonant is not immediately adjacent to the *-w-*, these changes do not apply to a labial consonant occurring in stem-initial position (Du Plessis, 1978:162). The changes affecting *m* and *ph* under these conditions are illustrated in (46) below. In (46a), the labial consonant is separated from the passive affix by the causative affix *-is-*, and in (46b) by the applicative affix *-el-*.

- (46) (a) *-lumisa* → *-lunyiswa*  
 “let bite” “let be bitten”
- (b) *-bophela* → *-botshelwa*  
 “tie for” “being tied for”

(Du Plessis, 1978:162)

Secondly, in the case of verb stems ending on *-ml-* ([ml]) or *-mk-* ([mk]), these consonant clusters are replaced by *-nyul-* ([njœl]) and *-nyuk-* ([njœk]), respectively, when the passive *-w-* is attached to the stem (Du Plessis, 1978:162). This is illustrated in (47) below.

- (47) (a) *-xhamla* → *-xhanyulwa* (Du Plessis, 1978:162)  
 “overwork” / “waste” “being overworked” / “being wasted”
- (b) *-lumkela* → *-lunyukelwa* (Du Plessis, 1978:162)  
 “beware” “being beware”

As seen above, isiXhosa is evidently similar to English and Afrikaans in that all three languages use an affix to mark the voice of the verb as passive. However, in contrast to the other two languages, isiXhosa does not indicate tense by means of a free morpheme in the form of a passive auxiliary (or, in some cases, the aspectual auxiliary HAVE in English; cf. Section 4.1.1). Whereas the main verb in English and Afrikaans tensed passive constructions takes the form of a non-finite passive participle, the agglutinating nature of isiXhosa verbal morphology renders the main verb finite in that tense is indicated by means of a specific affix on the verb itself. The affixes that mark the tense of passive isiXhosa verbs are generally the

same ones also found with active verbs. In the case of the perfective, however, distinct tense markers are used in the active and passive voice.

Tense is associated with a variety of verbal affixes in isiXhosa. Moreover, two general forms of tense indication are employed, namely a “long” and a “short” form. For example, the final vowel (FV) *-a* marks the present tense. As touched on above in reference to example (42), in an expression denoting the present tense, the affix *-ya-* may be inserted between the SC and the OC (or, in cases where the OC is absent, between the SC and the verb stem). Such a construction is termed the “long form” of the present tense. Generally, *-ya-* is found with “unexpanded predicates”, i.e. where the verb is not followed by an object, an adverbial expression, etc.; however, if the verb receives primary stress, it may occur with *-ya-* irrespective of whether it is followed by any other expression (Louw & Jubase, 1963:39). The “short form” of the present tense is found in cases where the verb is unstressed and is followed by some other expression such as an object or an adverb; this form being marked by the omission of *-ya-* (Oosthuysen, 1958:6-7).<sup>45</sup> To indicate the perfect past tense, the FV is replaced by the affix *-ile* (in the long form) or *-e* (in the short form). The affix *-a-* may be inserted to the right of the SC to mark the remote completed past, also known as the “A-past” (this affix often replacing the final vowel of the SC). Furthermore, the suffix *-ya/-za* may be attached to the SC to mark the future tense, in conjunction with the prefix *(u)ku-* that is attached to the verb in this case (Oosthuysen, 1958:39-44). For a detailed description of tense indication in isiXhosa, cf. Oosthuysen (1958), Louw and Jubase (1963), Du Plessis (1978) and Du Plessis and Visser (1992).

Recall that the passive participle form of a regular verb is generally homophonous with the past perfect participle form of that verb in the case of both English and Afrikaans (and with the simple past participle form in the case of Afrikaans), this phenomenon often leading to ambiguity in interpretation (cf. Sections 4.1.1 and 4.2.1). This is not, however, the case in isiXhosa. In this language, regular active verbs that are not followed by any other expression(s) such as an object or an adverb are marked as the long form of the perfective by

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<sup>45</sup> Cf. Du Plessis (1978:115-121) for a more detailed discussion of the specific grammatical contexts that govern the presence/absence of *-ya-*, as well as the possible semantic features that may be associated with, respectively, the long and short form of the present tense.

substituting the FV *-a* with *-ile*, as mentioned above (Louw & Jubase, 1963:41; Du Plessis, 1978:126). If the passive affix *-w-* is added to such an active verb, the *-l-* is omitted, so that the verb ends on *-iwe* (Louw & Jubase, 1963:111). In the case of regular active verbs that are followed by one or more expressions, the short form of the perfective is used, i.e. the FV *-a* is substituted with *-e* (Louw & Jubase, 1963:42; Du Plessis, 1978:127). In the passivisation of this type of active verb, *-w-* is infixes before the perfective *-e*, so that the verb ends on *-we* (Louw & Jubase, 1963:111). Hence, ambiguity in interpretation is avoided by the clear (morpho)phonological differences between the perfective form and the passive form of a verb. To illustrate, consider the following examples: (48a) illustrates the difference between the forms of the verb *bona* (“see”) when used to express the long perfective in the active and passive voice, respectively; (48b) similarly illustrates the difference between the forms of this verb when used to express the short perfective in the two voices.

- |          |               |                |                |                 |
|----------|---------------|----------------|----------------|-----------------|
| (48) (a) | Active voice: | <b>-bonile</b> | Passive voice: | <b>-boniwe</b>  |
|          |               | “had seen”     |                | “had been seen” |
| (b)      | Active voice: | <b>-bone</b>   | Passive voice: | <b>-bonwe</b>   |
|          |               | “had seen”     |                | “had been seen” |

As illustrated in (43), isiXhosa allows for both long and short passives. In a long passive, the expression functioning as the subject in its active counterpart surfaces as the complement of the passive verb in the form of a copular noun phrase (Du Plessis & Visser, 1992:81). This phrase is introduced by a copular prefix which serves the same semantic function as the English preposition *by* and the Afrikaans preposition *deur* in the context of passive sentences. The form of the copular prefix is determined by the class of the noun to which it attaches (Louw & Jubase, 1963:106).<sup>46</sup> As in the case of the English *by*-phrase and Afrikaans *deur*-

<sup>46</sup>Munnik (2006:143-144) explicates three forms that are commonly displayed by the copular prefix:

- (i) in the case of nouns from classes 1, 1a, 2, 2a, 3 and 6 (where the relevant class prefix starts with *u-* or *a-*), the copular prefix is *ng-*, as in e.g. *umntu* (class 1 singular, “person”) which becomes *ngumntu* (“it is a person”), *abantu* (class 2 plural, “people”) which becomes *ngabantu* (“it is people”), and *amahashe* (class 6 plural, “horses”) which becomes *ngamahashe* (“it is horses”);
- (ii) in the case of nouns from classes 4 (plural) and 9 (singular) where the relevant prefix starts with *i-*, the semivowel *y-* serves as the copular prefix, as in e.g. *imithi* (class 4, “trees”) which becomes *yimithi* (“it is trees”) and *inkomo* (class 9, “ox”) which becomes *yinkomo* (“it is an ox”); and

phrase, the argument in the copular noun phrase of an isiXhosa passive construction displays the same thematic role as that displayed by the argument in the subject position of the corresponding active sentence (Du Plessis & Visser, 1992:81). For instance, in the active sentence in (42), the AGENT argument *uJohn* is represented by the subject, whereas in the passive counterpart of this sentence in (43), this same AGENT is the complement of the copula *ng-* in the copular noun phrase. Note that, similar to the English *by*-phrase but in contrast to the Afrikaans *deur*-phrase, the isiXhosa copular noun phrase may occur only postverbally. The exact postverbal position in which this phrase occurs may, however, differ according to discourse factors (Du Plessis & Visser, 1992:84).

With regard to the positioning of the object argument in a passive sentence, isiXhosa is largely similar to English and Afrikaans. As a general rule, the expression functioning as the object argument of an isiXhosa passive verb surfaces preverbally in the structural subject position (Du Plessis & Visser, 1992:72). Recall that the SC appended to the verb agrees with the nominal expression occurring in the structural subject position, irrespective of whether this expression functions as the subject or object argument of the verb. In other words, in the case of passive sentences, the SC on the verb agrees with the noun class prefix of the object argument that has been raised into the structural subject position. The preverbal positioning of this argument is evident in (43) above where the object argument is *izipho*.

However, like English and Afrikaans, isiXhosa also allows passive constructions in which the structural subject position is thematically empty due to the object argument remaining in its original position (in English and isiXhosa, this is a postverbal position, both languages being underlyingly SVO). In this case, the passive verb takes the expletive prefix *ku-* (Du Plessis & Visser, 1992:70).<sup>47</sup> In English and, as a general rule, also in Afrikaans, such expletive

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(iii) in all the remaining cases, the copular prefix attached to the noun is identical to the consonant that occurs in the relevant (verbal) SC, as in e.g. *iintsana* (class 10 plural, “babies”, SC = *zi-*) which becomes *ziintsana* (“it is babies”).

<sup>47</sup> According to Zeller (2008:224), the expletive affix in Bantu languages is a “non-agreeing default marker from a locative noun class” (e.g. class 17 *ku-* in isiZulu and class 16 *ha-* in Kinyarwanda); in isiXhosa this affix belongs to class 15, and also takes the form *ku-*. As this marker is attached to the verb in the SC slot in cases where non-raising of the predicate-internal subject argument would have resulted in this position being left empty, Zeller (2008:224) assumes that this marker serves a purely morphological purpose. In their description of expletive passive sentences, Du Plessis and Visser (1992) do not specifically characterise the isiXhosa expletive affix *ku-* as belonging to a locative noun class; in their (1992:292) discussion of demonstratives they do, however, refer to *ku-* as a “locative head”.

constructions are restricted to cases where the object argument is an indefinite expression. IsiXhosa, in contrast, allows both definite and indefinite expressions to serve as the object argument in expletive (passive) constructions. This is illustrated by the grammaticality of the sentence in (49) in which the italicised object argument is a definite expression occurring in its original postverbal position. Note that in isiXhosa, as in English and Afrikaans, the structural subject position is thematically empty. However, unlike in the other two languages, in isiXhosa this position is not filled by a free morpheme (such as *there/daar* in English/Afrikaans), but is left phonetically empty, with subject-verb agreement being expressed by the SC *ku-* that is attached to the verb. Underlyingly, however, the structural subject position in the isiXhosa construction at hand is filled by a phonetically empty existential pronominal element that is associated with *ku-* (Du Plessis & Visser, 1992:72).<sup>48</sup>

- (49) Kubhalwa                                    iincwadi (ngababhali).  
       ku-bhal-w-a                                iin-cwadi (ng-aba-bhali)  
       15.SC-write-PASS-PRES 10-book (2.COP-2-writer)  
       “Books are being written (by writers)”

Not only may the object argument of a passive verb occupy either a preverbal or a postverbal position (as in *ku-*constructions), it may also be omitted. As pointed out by Du Plessis and Visser (1992:73), the *ku-*construction allows for a transitive passive verb to undergo “argument reduction”. This means that the verb can be used without any expression occupying the available object argument position. For instance, the absence of such an expression in (50b) makes it unclear, if no context is supplied, who/what underwent the action expressed by the verb. In this regard, isiXhosa differs from both English and Afrikaans in that it allows impersonal expletive passive constructions where an obligatory transitive verb is used without any object argument. This difference between the three languages is illustrated by the examples in (50). Note that some native speakers of Afrikaans may find such constructions grammatically acceptable in the case of psychological verbs such as *gehaat* (“hated”), but not in the case of actional verbs such as *gered* (“saved”).

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<sup>48</sup> For (minimalist) generative analyses of the expletive construction in Bantu languages, cf. Zeller (2008).



- (50) (a) Kucatshukelwe                      abantu. / Kusindiswe                      abantu.  
 ku-caphukel-w-e                      aba-ntu / ku-sind-is-w-e                      aba-ntu  
 15.SC-offend-PASS-PAST 2-person / 15.SC-save-CAUS-PASS-PAST 2-person  
 “People were hated” / “People were saved”
- (b) Kucatshukeliwe.                      / Kusindisiwe.  
 ku-caphukel-i(w)e                      / ku-sind-is-i(w)e<sup>49</sup>  
 15.SC-offend-PAST(PASS) / 15.SC-save-CAUS-PAST(PASS)  
 “There was hated” / “There was saved”
- (c) \*There was hated / saved.
- (d) Daar is     ?gehaat / \*gered.  
 there was hated / saved.

In short, the object argument in an isiXhosa passive sentence may, as in English, occur either preverbally (in non-existential constructions) or postverbally (in *ku*-constructions, where the object argument may be a definite expression, unlike in English). This is in contrast to Afrikaans which does not allow the object argument to occur in the postverbal position, not even in existential *daar*-constructions. Moreover, the object argument in an isiXhosa passive sentence may also be omitted altogether, unlike in English and Afrikaans.

According to Du Plessis and Visser (1992:70), passive constructions with *ku*- are “quite general” in isiXhosa. In fact, it seems as if the expletive passive construction might be more frequently used in isiXhosa than in English and Afrikaans, for two reasons. Firstly, isiXhosa passive *ku*-constructions are not limited by the (in)definiteness of the object argument, as is the case in English and Afrikaans. Secondly, the negative counterparts of passive sentences introduced by *ku*- are often used to express “prohibitions”, as in (51) (Du Plessis & Visser, 1992:71). The discussion of the expletive *ku*-construction is continued in Section 4.3.2.

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<sup>49</sup> Here, the long form perfective marker *-ile* was changed as a result of the addition of the passive affix *-w-*, which replaces the *-l-* (as discussed above). In the gloss, this complex morpheme is indicated as PAST(PASS).

(51) (a) Akungenwa.  
 a-ku-ngen-w-a  
 NEG-15.SC-enter-PASS-PRES  
 “There is not being entered (no admittance)”

(b) Akutshaywa.  
 a-ku-tshay-w-a  
 NEG-15.SC-smoke-PASS-PRES  
 “There is not being smoked (no smoking)”

Let us now turn to movement across clause boundaries. Recall that, in the case of subordinate infinitival passive clauses, both English and Afrikaans allow the object argument of the passive verb to be moved out of the subordinate clause into the main clause. However, a direct comparison between English and Afrikaans, on the one hand, and isiXhosa on the other is not possible in this regard: isiXhosa does not employ a comparable construction type to express meanings conveyed by sentences such as (52a) below (Visser, personal communication, February 5, 2013). In the isiXhosa example in (52b), *-ya-* (the long form marker of the present tense, which also encodes aspectual properties) and the FV *-a* both signal the present tense. IsiXhosa thus utilises a finite subordinate passive clause to express a similar meaning to that expressed by an infinitival subordinate passive clause in English and Afrikaans. No direct comparison can therefore be drawn here in terms of movement across clause boundaries.

(52) (a) [The teachers seem] to be trusted (by the parents).

(b) [Ootitshala ingathi] bayathenjwa (ngabazali).  
 [oo-titshala ingathi] ba-ya-themb-w-a (ng-aba-zali)  
 [2a-teachers as-if] 2a.SC-PRES-trust-PASS-PRES (2.COP-2-parents)  
 “The teachers seem to be trusted by the parents”

IsiXhosa seems to be similar to English and Afrikaans with regard to structural case assignment. Simplifying somewhat, the object argument is assigned accusative case by the verb in an active sentence; in a passive sentence, however, the passive verb lacks this ability

to assign accusative case (Du Plessis & Visser, 1992:72).<sup>50</sup> Upon surfacing in the clause-initial structural subject position of a tensed clause in a (non-existential) passive sentence, this same object argument receives the nominative case value; according to Du Plessis and Visser (1992:72), this case value is assigned by the SC on the passive verb. It was noted that, in the case of English and Afrikaans non-finite subordinate passive clauses, the object argument receives accusative case in the structural subject position. A direct comparison cannot be drawn in this regard between English and Afrikaans, on the one hand, and isiXhosa on the other as the subordinate clause in a semantically comparable isiXhosa construction can only be finite, as opposed to non-finite (Visser, personal communication, February 5, 2013). Furthermore, whereas English and Afrikaans display overt case marking on certain pronouns, case is not marked overtly in isiXhosa. For this reason, illustrative examples cannot be provided here.

Recall that in a passive expletive *ku*-construction where the object argument is realised (cf. above), this argument does not surface in the structural subject position, but remains unraised in its original postverbal position. Here, the object argument cannot receive accusative case as the passive verb has lost the ability to assign this case; instead, according to Du Plessis and Visser (1992:73), the object argument “occurs in a chain with *ku*- to receive nominative case”.<sup>51</sup> Note that, as the object argument cannot acquire accusative case due to the nature of the passive verb, it cannot occur in conjunction with an OC on the main verb (Du Plessis & Visser, 1992:73). This is shown by the difference in grammaticality between the (a) and (b) sentences below (adapted from Du Plessis & Visser, 1992:72-73).

- (53) (a) Kukhiwe                                    umbona.  
          pro<sub>i</sub> ku<sub>i</sub>-kh-iw-e                        u-mbona  
          pro<sub>i</sub> 15.SC<sub>i</sub>-pluck-PASS-PAST 1a-mealie  
          “There were plucked mealies”

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<sup>50</sup> In terms of the proposals concerning case assignment within the framework of GB theory, the verbal passive morphology is said to “absorb” the accusative case; cf. for example Haegeman (1994:182-185) and, for isiXhosa, Du Plessis and Visser (1992:72).

<sup>51</sup> According to Du Plessis and Visser (1992:73), the structural subject position is filled by the covert pronominal element *pro*, which receives nominative case through being in agreement with the verb. They (1992:80) go on to state, that it is actually *pro* which enters into a case-agreement relation with the object argument, rather than *ku*-.

- (b) \*Kuwukhiwe umbona (where *wu-* = OC)  
 ku-wu<sub>i</sub>-kh-iw-e                                      u-mbona<sub>i</sub>  
 15.SC-15.OC<sub>i</sub>-pluck-PASS-PAST 1a-mealie<sub>i</sub>

Recall that in English and Afrikaans long passives, the argument in the *by-/deur*-phrase receives accusative case from the preceding preposition. In isiXhosa, the expression serving as the argument in the copular noun phrase present in long passives (typically, the AGENT) likely receives (abstract) accusative case from the copula (cf. (54a) below). In the corresponding active sentence, this argument surfaces in the derived subject position with nominative case assigned by the SC on the verb (cf. (54b)).

- (54) (a) UDebbie    ubethwe                                      ngye ngenxa yokufika sekumnyama.  
 u-Debbie    u-beth-w-e                                      ng-(u)ye  
 1a-Debbie 1a.SC-beat-PASS-PAST 1/1a.COP-1/1a.PRO(him/her)  
 (ngenxa ya-uku)<sup>52</sup>-fik-a                      se-ku-mnyama  
 (because of-to)-arrive-PRES    already-15.COP-dark  
 “Debbie was beaten by him/her because she arrived when it was already dark”

- (b) Ubethe                                      uDebbie    ngenxa yokufika sekumnyama.  
 u-beth-e                                      u-Debbie    (ngenxa ya-uku)-fik-a  
 2<sup>nd</sup> person sing-beat-PAST 1a-Debbie (because of-to)-arrive-PRES  
 se-ku-mnyama  
 already-15.COP-dark  
 “He/she beat Debbie because it was already dark when she arrived”

### 4.3.2 Restrictions on passivisation

Like Afrikaans, isiXhosa allows both transitive and intransitive verbs to undergo passivisation, provided an expletive construction is used in the case of the latter verb type (which, in contrast, is not allowed to undergo passivisation in English). In the case of

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<sup>52</sup> Note that *ngenxa yoku-* is a set expression denoting cause or reason; in loose translation it equates to “because of”.

monotransitive verbs, the isiXhosa passive morphology has the effect of rendering the verb unaccusative. This is evident in *ku*-constructions: despite the object remaining in its postverbal position, the obligatory absence of the OC on the verb means that there is no overt morphological agreement between the verb and its object. If the OC is taken to be involved (either directly or indirectly) in the assignment of accusative case, its absence would account for the unaccusative nature of the verb. Hence, as suggested above, the object in such constructions is assigned nominative case by virtue of occurring in a chain with *ku*- (cf. also Section 4.3.1). The obligatory absence of an OC in the construction under discussion is illustrated by the following example adapted from Du Plessis (1978:163):

(55) (a) Le                    ndoda ilima                    intsimi  
           le                    ndoda i-lim-a                    intsimi  
           9.DEM.this man    9.SC-plough-PRES land  
           “This man ploughs the land”

(b) Kulinywa                                    intsimi yile                                    ndoda.<sup>53</sup>  
       ku-lim-w-a                                    intsimi yi-le                                    ndoda  
       15.SC-plough-PASS-PRES land    9.COP-9.DEM.this man  
       “There is being ploughed a land by this man”

(c) \*Kuyilinywa                                    (intsimi) yile                                    ndoda.  
       ku-yi-lim-w-a                                    (intsimi) yi-le                                    ndoda  
       15.SC-9.OC-plough-PASS-PRES (land)    9.COP-9.DEM.this man

With regard to ditransitive verbs, isiXhosa, like Afrikaans, is a symmetric language in that either one of the direct or indirect object may surface in the structural subject position of a passive construction (Du Plessis, 1978:164). For example, in (56b) the indirect object was raised and in (56c) the direct object, yet both express the same meaning; note that the verb complexes in these two sentences do not contain any OCs.

<sup>53</sup> For the form of the passive morpheme, cf. Section 4.3.1.



\*Umntwana unikwa ndim.  
 um-ntwana u-nik-w-a ndim  
 1-child 1.SC-give-PASS-PRES 1<sup>st</sup> person sing.COP

(adapted from Du Plessis, 1978:164)

(b) \*Iilekese zimnikwa ndim.  
 ii-lekese zi-m-nik-w-a ndim  
 10-sweets 10.SC-1.OC-give-PASS-PRES 1<sup>st</sup> person sing.COP

(adapted from Du Plessis, 1978:164)

(c) Geluk is (aan) haar gegun.  
 happiness was (to) her granted/allowed  
 “Happiness was granted her”

\*Geluk is (aan) gegun.  
 happiness was (to) granted/allowed

\*Is (aan) haar gegun.  
 was (to) her granted/allowed

(d) Peter was given an award. / \*Peter was given. / \*Was given an award.

Apart from mono- and ditransitive verbs, isiXhosa, like Afrikaans, also allows intransitive verbs to undergo passivisation, provided that they are used in an expletive construction, as in the isiXhosa example in (58a) below (Du Plessis, 1978:163). However, such constructions are restricted in two ways: (i) in cases where the tense can normally be expressed by either a long or a short form, only the long form may be used; and (ii) the AGENT/EXPERIENCER which occurs in the copular noun phrase must be unspecified (i.e. non-specific) and usually also plural (Du Plessis & Visser, 1992:82).<sup>55</sup> These restrictions are evident from the ungrammaticality of (58b-d) below. The (b) sentence is ungrammatical because the short form of the present tense is employed (i.e. the form without the morpheme *-ya-*). In (58c-d)

<sup>55</sup> Du Plessis and Visser (1992:83) state that these restrictions seem to be partially applicable to *ku-*constructions containing *transitive* verbs as well, as the grammaticality of the latter type of construction is questionable when the AGENT/EXPERIENCER is in the first or second person (i.e. specified rather than unspecified).

the long form is employed, but these sentences are nevertheless (at least marginally) ungrammatical because in (c) the EXPERIENCER is singular and in (d) the EXPERIENCER is specified and singular.

- (58) (a) Kuyalilwa                                  ngabantwana.  
           ku-ya-lil-w-a                                ng-aba-ntwana  
           15.SC-PRES-cry-PASS-PRES 2.COP-2-children  
           “There is being cried by the children”
- (b) \*Kulilwa                                      ngabantwana.  
           ku-lil-w-a                                  ng-aba-ntwana  
           15.SC-cry-PASS-PRES 2.COP-2-children
- (c) <sup>?</sup>Kuyalilwa                                  ngumntwana.  
           ku-ya-lil-w-a                                ng-um-ntwana  
           15.SC-PRES-cry-PASS-PRES 1.COP-1-child  
           “There is being cried by a child”
- (d) \*Kuyalilwa                                  ndim.  
           ku-ya-lil-w-a                                ndim  
           15.SC-PRES-cry-PASS-PRES 1<sup>st</sup> person sing.COP

Recall that both English and Afrikaans exhibit, to different extents, a restriction on the class of intransitive verbs that may undergo passivisation. According to Crawford (2012:19), English does not allow unergative or unaccusative verbs to passivise under any circumstances (cf. Section 4.1.2). Afrikaans is largely similar, although this restriction can sometimes be overcome through the use of the existential *daar*-construction, allowing unergative verbs such as *bedel* (“beg”), *lag* (“laugh”) and *slaap* (“sleep”) and perhaps some unaccusative verbs of movement or (change of) state such as *arriveer* (“arrive”) and *begin* (“begin”) to be passivised in such a construction. As for isiXhosa, none such restrictions on the class of intransitive verbs that may undergo passivisation apply (Visser, personal communication, February 5, 2013).



IsiXhosa does, however, share with English and Afrikaans two other restrictions relating to passivisation. Firstly, transitive stative verbs may not undergo passivisation. It should be noted, however, that a direct comparison in this regard between English and Afrikaans, on the one hand, and the isiXhosa on the other is not possible: the categorical and structural realisations in isiXhosa of meanings expressed in English by stative verbs such as *cost*, *weigh* and possessive *have* differ, with adjectival predicate phrases, among others, being employed. Secondly, according to Visser (personal communication, February 5, 2013), isiXhosa weather verbs such as *netha* (“rain”), *khithika* (“snow”), *duduma* (“thunder”), and *-wa isichotho* (“hail”, literally “-falls hail”) may not be passivised, not even in an existential construction. This is also the case in English and Afrikaans, as the ungrammatical examples in (59) show.

- (59) (a) \*Kuyanethwa.  
           ku-ya-neth-w-a  
           15.SC-PRES-rain-PASS-PRES
- \*Kuyadudunjwa.  
           ku-ya-dudum-w-a  
           15.SC-PRES-thunder-PASS-PRES
- \*Kuyawiwa                               isichotho.  
           ku-ya-wa-iw-a                           isichotho  
           15.SC-PRES-fall-PASS-PRES hail
- (b) \*There is being rained / thundered / hailed.
- (c) \*Daar word     gereën / gedonder / gehael.  
           there is-being rained / thundered / hailed

### 4.3.3 Verbal versus adjectival passives

As pointed out in Section 4.1.3, English verbal and adjectival passives are homophonous, which gives rise to the ambiguity in question. Afrikaans also displays this type of ambiguity,

albeit to a lesser extent, with the passive auxiliaries *is* and *was* allowing both event and state readings (cf. Section 4.2.3). This type of ambiguity does not, however, occur in isiXhosa. According to Alcock et al. (2011:474), Bantu languages do not have “adjectival passives”, i.e. passives with a state reading. In their acquisition studies of passive constructions in Sesotho, a Bantu language closely related to isiXhosa, Demuth et al. (2010:239-240) and Kline and Demuth (2010:223) state that passive constructions are (morpho)syntactically distinct from adjectival constructions: in the formation of adjectives, a unique form of double adjectival agreement is used. This lack of ambiguity between passive and adjectival constructions is also found in isiXhosa, for the same reason. As is evident from the form of the passive verb in (60a) versus the form of the adjective in (60b) below, short passives are thus syntactically transparent, giving rise to an unambiguous event reading with an implied AGENT – a fact that has been cited in attempts to explain the generally early acquisition of passives in Sesotho (Demuth et al., 2010:239-240; Kline & Demuth, 2010:223).

- (60) (a) Isibane siphukiwe (ngabafazi).  
 isi-bane si-phuk-iw-e (ng-aba-fazi)  
 7-light 7.SC-break-PASS-PAST (2.COP-2-women)  
 “The lamp was broken (by the women)”
- (b) Isibane esiphukileyo siwe emngangathweni.  
 isi-bane esi-phuk-ile-yo si-w-e e-mngangathu-eni  
 7-light 7.ADJ-break-PAST-ADJ 7.SC-fall-PAST LOC-floor-LOC  
 “The broken lamp fell on the floor”

The isiXhosa construction that most closely resembles an adjectival passive is the one containing a neuter form (referred to as the neutro-passive in Section 4.3.1), an example of which is supplied in (61) below. However, the neuter-containing construction differs morphologically, syntactically and semantically from the isiXhosa passive construction. Firstly, the neutro-passive morpheme forms *-ek-* and *-akal-* are distinct in form from the passive morpheme forms *-iw-* and *-w-*. Secondly, the neutro-passive cannot, unlike long passives, take a copular noun phrase specifying an AGENT argument, as shown in (61) below.

- (61) Le           ncwadi iyafundakala                                       (\*ngabantwana).  
 Le           ncwadi i-ya-fund-akal-a                                       (\*ng-aba-ntwana)  
 9.DEM.this book   9.SC-PRES-read-NEUT-PRES (\*2.COP-2-children)  
 “This book is (in a state of being) readable/understandable (\*by the children)”

Thirdly, the neutro-passive morpheme indicates that the verb stem denotes a state, or the entering of a state (Du Plessis, 1978:174). For instance, whereas *-gobwa* means “be bent (by an AGENT)”, *-gobeka* means “be in a state of being bent”. The isiXhosa neutro-passive construction can furthermore have the English “-able” reading: whereas *-fundwa* means “be read (by an AGENT)”, *-fundeka* means “be readable”, as illustrated in (61) above (Du Plessis, 1978:174). Accordingly, the inherent differences in form and meaning between the passive morpheme and the neutro-passive morpheme rule out any possible ambiguity between an event and state reading in isiXhosa.<sup>56</sup>

#### 4.4 Acquisition of passive constructions in English, Afrikaans and isiXhosa

Over the past four decades, much child language research has focused on the acquisition of the passive voice, motivated largely by the common delay in the acquisition of passive constructions across languages, both in terms of production and comprehension (Deen, 2011:155). Overall late acquisition of the passive voice has been documented for many European languages – e.g. English at four to five years (cf. Maratsos, Fox, Becker, & Chalkley, 1985) and German at five years (cf. de Villiers, 1984) – as well as Hebrew at eight years (cf. Berman, 1985; Mills, 1985).<sup>57</sup> In the case of certain types of passive constructions,

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<sup>56</sup> According to Demuth et al. (2010:240), this is also the case in Sesotho as neuter-containing constructions in this Bantu language differ morphologically, syntactically and semantically from passive constructions in several ways. First, the form of the neuter morpheme, i.e. either *-eh-* or *-ahal-*, is distinct from that of the passive morpheme *-w-* or *-uw-*. Second, the neuter morpheme is infixed at the end of the verb stem before the perfective marker *-il-*, whereas the passive morpheme is infixed after *-il-*. Third, as in isiXhosa, the neuter-containing construction cannot include a copular noun phrase specifying an AGENT argument, unlike long passives. And fourth, whereas passive constructions have only an event reading, the neuter has an adjectival/state-like reading corresponding to the English interpretation expressed by the suffix “-able”; for instance, *-ratwa* means “be loved” and *-rateha* means “be lovable”. As mentioned above, this is also one of the possible interpretations of the isiXhosa neutro-passive.

<sup>57</sup> Note that the majority of studies do not provide a clear description of what exactly having “acquired” the passive entails, neither in terms of a minimum accuracy score on a passives test nor in terms of the skill type (for example comprehension versus production) that has purportedly been “acquired”. As such, all references in this dissertation to specific ages at acquisition of the passive are quoted in line with the specific authors’

ages as late as nine and eleven years have been cited (Horgan, 1978; Maratsos, Kuczaj, Fox, Becker, & Chalkley, 1979). For example, in a large-scale study by Horgan (1978) that employed 234 children aged between two to fourteen years, instrumental non-reversible passives (e.g. *The window was broken by the boys*) were reportedly only produced spontaneously after the age of nine years.

Whereas early research suggests that the passive voice is generally only fully acquired after the age of five years, more recent research indicates that this general estimate may be exaggerated and that children perhaps have knowledge of the passive voice at a “significantly earlier” stage (Deen, 2011:184). In some languages, knowledge of the passive appears as early as three years or younger (Alcock et al., 2011:459). Regardless of the exact age at which the passive is acquired in specific languages, however, it may still be considered a typically later developing construction across languages (Southwood & Van Dulm, 2012:48). So widespread is the scholarly interest in this general delay in acquisition that Deen (2011:155) claims the passive voice to be “arguably the most well-studied phenomenon in all of child language [research – AP]”.

The primary focus in most of these studies has been on potential reasons for the delay in the acquisition of the passive voice, resulting in various theories to account for this general phenomenon. For a detailed overview and appraisal of such theories, cf. Crawford (2012) and Deen (2011); for some of the explanations offered for the comparatively *early* acquisition of the passive voice in some languages, cf. Alcock et al. (2011). An inquiry into the possible factors that may determine the comparatively late or early acquisition of the passive voice in various languages falls outside the scope of the current study. However, one attempt at explaining the late acquisition of passives, namely that of Seymour, Roeper and de Villiers (2005), will be touched on here, as it is the one that was drawn on in the design of the passive construction section of the REALt (the instrument used to assess knowledge of passives in the present study). These researchers propose that passive constructions are typically late-acquired because of the following “hidden properties” that children must decipher: (i) there is always an AGENT argument, even if unspecified in the case of short passives; (ii) there is a

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conceptualisations (albeit sometimes vague or arbitrary) of what constitutes the completed acquisition of passive constructions.

difference between activity and consequence (i.e. the activity described in *The paper is torn* leads to the consequential state described in *The paper is torn*); and (iii) there is a difference between an agentive *by*-phrase and a prepositional *by*-phrase (i.e. *The cars were driven by the men* describes an action performed by the men, whereas *The cars were driving by the men* describes an unspecified agent's action of driving the car past the men).

Not only typically developing children, but also those with language impairment (the specific population targeted in the design of the REALt) often find both the comprehension and production of passive constructions difficult (Southwood & Van Dulm, 2012:49). Leonard, Wong, Deevy, Stokes and Fletcher (2006) highlight three possible reasons for this phenomenon. Firstly, passive sentences have an atypical word order in that the AGENT argument does not occur in the typical sentence-initial, pre-verbal position found in most active sentences, but occurs post-verbally as part of a prepositional phrase. This means that a passive sentence cannot accurately be interpreted in a typical linear fashion where the first noun phrase is considered representative of the AGENT argument and the second noun phrase representative of the THEME; such interpretations are, however, common among children with language impairment and among young typically developing children (Southwood & Van Dulm, 2012:48). Secondly, active and passive sentences differ in terms of verb morphology: in the active sentence *Christine baked the cheesecake*, the verb *baked* expresses the past tense, but in the passive equivalent *The cheesecake was baked by Christine*, the past tense is expressed not by the main verb but by the auxiliary *was*, with the main verb now serving to express the passive voice (Southwood & Van Dulm, 2012:49). A third reason offered by Leonard et al. (2006) in explanation of the trouble children with language impairment have with comprehending and producing passive constructions is the fact that the generation of a passive construction requires a relatively complex syntactic computation (cf. Leonard et al., 2006, for an accessible account of this computation).

As regards the different types of passive constructions, there appears to be a specific order of acquisition (Israel, Johnson, & Brooks, 2000). Both corpus studies and empirical studies that investigate the comprehension and production of passive constructions report that the acquisition of short passives precedes that of long passives, and that the acquisition of actional passives (i.e. passive constructions in which a physical action is expressed) precedes

that of non-actional passives (i.e. passive constructions containing perceptual verbs or psychological verbs) (Alcock et al., 2011:461; Crawford, 2012:5; Southwood & Van Dulm, 2012a:47).<sup>58</sup> The tendency among monolingual English learners to produce predominantly short as opposed to long passives has led researchers such as Horgan (1978) to suggest that these learners' short passives are in fact adjectival rather than verbal in nature.<sup>59</sup> Recall that short passives allow both an adjectival and verbal reading in English, whereas long passives are unambiguously verbal. According to Alcock et al. (2011:459), true verbal passives seem to be fully acquired only by age six in the case of English monolinguals. If verbal passives prove more challenging to acquire for whatever reason, a preference for adjectival passives thus seems motivated, thereby explaining the predominance of short passives in early production.

As regards the order in which actional versus non-actional passives are acquired, Southwood and Van Dulm (2012) found evidence of a clear sensitivity to the distinction between psychological and perceptual verbs on the one hand and actional verbs on the other in the piloting of their REALt instrument among 57 typically developing monolingual English children (ranging from four to eight years in age) and 29 typically developing monolingual Afrikaans children (ranging from four to nine years in age). Southwood and Van Dulm (2012:53) report that in the case of both languages, those comprehension items that elicited incorrect responses contained either a perceptual or psychological (as opposed to actional) verb, or a “counter-intuitive AGENT-THEME relationship” such as the one in *Thandi was dressed by Bubbles*, where *Thandi* is a girl and *Bubbles* a dog (the items with perceptual and psychological verbs forming part of the reversible passives subsets – cf. below). Southwood and Van Dulm's analysis of their data on the reversible passives production subset revealed a similar trend: across age groups, children performed worse on this subset than on the subsets targeting the production of “straightforward” actional passives, with the items including

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<sup>58</sup> Babyonyshev, Hart, and Grigorenko (2005) report a further distinction in the case of children with Specific Language Impairment (SLI), namely that the acquisition of actional passives is followed first by the acquisition of passives containing psychological verbs and then by that of passives containing perceptual verbs. They state, however, that typically-developing children's acquisition does not seem to be influenced by this fine distinction between verb types.

<sup>59</sup> Borer and Wexler (1987) suggest that the argument chain underlying verbal passives matures relatively late, causing adjectival passives to be acquired earlier in comparison. Their explanation is in line with a broader maturational account for the delayed acquisition of the passive voice according to which the “cognitive architecture” of passive constructions matures later than that of other constructions (Alcock et al., 2011:460).

perceptual and psychological passives proving the most difficult. For example, the responses to two items using the verbs *upset* and *thought of / onthou* (“remembered”) remained incorrect in the case of 35% of the English and 34% of the Afrikaans participants, even after the administrator’s follow-up stimulus (Southwood & Van Dulm, 2012:55).

As for reversible passives, this type of construction too has been shown to be especially vulnerable to late acquisition. Such passives contain two animate noun phrases (denoting the AGENT argument and the THEME argument, respectively) that are interchangeable, even if such an alteration renders the interpretation somewhat improbable, e.g. *The cat was chased by the dog* versus *The dog was chased by the cat*. The creators of the REALt decided to target reversible passive constructions in both comprehension and production as there has been agreement in the literature, over the past decades, that children with language impairment find this type of construction particularly challenging (cf. Bishop, 1979, as cited in Southwood & Van Dulm, 2012). This challenge is reportedly increased in the case of improbable scenarios, limited contextual cues and/or unfamiliar verbs (Van der Lely, 1994; Van der Lely & Dewart, 1986). Southwood and Van Dulm (2012:51) argue that a child who has truly mastered the comprehension and production of passive sentences will necessarily be able to comprehend and produce reversible passives, however improbable the scenario denoted by the sentence. For this reason, both probable and improbable scenarios were included in the choice of reversible passive sentences for this instrument.

The results of the piloting of the REALt instrument suggest that difficulty with reversible passives is not limited to children with language impairment. Southwood and Van Dulm (2012:51,55) found that among typically-developing children, performance on the subsets targeting the comprehension and production of reversible passives (including passive sentences with counter-intuitive AGENT-THEME relationships) was rather lower across age groups than on the subsets targeting “straightforward” actional passives (all displaying the expected/traditional AGENT-THEME relationship), with an apparent increase in accuracy with age. More specifically, in the case of English, the scores for the comprehension of reversible passives improved from 81% to 94% between the ages of four and eight, whereas the scores for the comprehension of “straightforward” actional passives improved from 90% to 98% over time. A similar pattern is found among the Afrikaans monolinguals: their scores

for the comprehension of reversible passives improved from 53% to 84% between four and nine years, whilst their scores for the comprehension of “straightforward” actional passives improved from 62% to 96%. In terms of production, too, reversible passives proved more difficult than “straightforward” actional passives for the English monolinguals: their scores for reversible passives improved from 67% to 83% between four and eight years, whilst their scores for “straightforward” actional passives improved from 75% to 96%. (Among the Afrikaans monolinguals, however, the production scores for reversible passives are not consistently lower than the scores for “straightforward” actional passives.)

Turning to monolingual English children specifically, research suggests that these learners generally take up to five years or longer to fully acquire the rules relating to passive constructions (Demuth et al., 2010:238). An early study by de Villiers and de Villiers (1973) tested English monolingual children’s comprehension of the passive using an act-out methodology in which participants were given both active and passive sentence prompts to act out using toys. The oldest group of participants, aged between 32 and 37.5 months, exhibited a correct response to 87.8% of the active sentence prompts, but to only 34.4% of the passive sentence prompts. In another early study, that by Baldie (1976), English monolingual children were shown capable of imitating passive constructions before five years, but only capable of comprehending them around the age of six years. The ability to produce this type of construction reportedly occurred as late as 7;6 in this sample of participants. According to Vasilyeva, Huttenlocher and Waterfall (2006:170), the fact that English monolinguals have been shown to be able to, at the age of four years, produce at least some full passives and on grounds of their responses in conversations with adults, comprehend at least some such sentences, one may conclude, “on the basis of the analysis of spontaneous speech, that sometime around the age of 4 years the basic elements of the passive construction have been mastered” by monolingual English children.

As regards the acquisition of passive constructions by monolingual Afrikaans children, there is, to my knowledge, no available literature providing normative data indicating the age at which the passive voice is typically acquired. Some indication may, however, come from Dutch (the language from which Afrikaans was largely derived) – in this language, “hardly any” uses of the passive have been noted in the speech of monolingual children of pre-school



age, i.e. of four years and younger, although there may be “precursors of the passive” at this age (Gillis & De Houwer, 1998:28,35). Southwood and Van Dulm’s initial testing of the REALt also provides some information (cf. above for participant numbers). Despite all their participants having a mid-SES background (contrary to the low SES background of the participants in the present study) and the sample sizes of their two groups differing largely, the results of these pilot tests provide an indication of the relative difficulty of English versus Afrikaans passives for typically developing children.

In the case of all items testing comprehension (i.e. the comprehension of long “straightforward” actional passives, short “straightforward” actional passives and long reversible passives, the latter including a mixture of actional, psychological and perceptual verbs) as well as the items testing the production of long or short actional passives, the Afrikaans monolinguals lagged behind their English peers across all age groups (Southwood & Van Dulm, 2012b:51-55). However, like the English monolinguals, the Afrikaans monolinguals showed an improvement on all four of the above measures over time and, in the case of items testing the comprehension of short actional passives, caught up to their English peers by the age of eight years. Also, in the case of items testing the production of reversible passives, the Afrikaans group managed to outperform the English group by the age of seven years, despite the younger Afrikaans groups consistently having fared worse than the younger English groups on this measure. On average, these REALt data thus seem to indicate that the passive is acquired later in Afrikaans than in English, although this difference may be overcome from the ages of seven to eight years onwards.

Let us now turn to the acquisition of passive constructions by monolingual child learners of the Southern Bantu language isiXhosa. The context-appropriate spontaneous use of the passive voice in the speech of children as young as three years has been reported for languages belonging to several different families, including (i) languages of the North American Inuit family (Allen & Crago, 1996); (ii) various Mayan languages (Pye & Quixtan Poz, 1988); (iii) Eastern Bantu languages, e.g. Kiswahili and Kigiriyama (Alcock et al., 2011); and (iii) importantly, Southern Bantu languages, e.g. isiZulu (Suzman, 1985, 1987, 1990) and Sesotho (Demuth, 1989, 1990). With regard to verb types, non-actional passives (a typically rare construction in European languages) are reportedly produced at as early an age as 2;1 in

the case of Kiswahili and Kigiriama (Alcock et al., 2011:459). Three-year-old monolingual Sesotho learners are also capable of matching both actional and non-actional reversible passives to pictures, and of successfully generalising passive syntax to novel verbs without priming, as reported in Demuth et al. (2010).

The latter study consisted of three experiments: a picture-based comprehension task (Experiment 1), an elicited production picture description task (Experiment 2), and a novel verb generalisation / syntactic priming task (Experiment 3). Three different groups of 16 three-year-old lower to lower-middle class monolingual Sesotho children were employed, all of them having had little experience with looking at picture books (Demuth et al., 2010:241). In Experiment 1, 12 sets of two pictures each were employed, each picture containing a boy, a girl and a mother, half of the verb stimuli being actional verbs and the other half non-actional verbs. Each of the 12 picture sets was presented twice, once with an active prompt, and once with a passive prompt. Results revealed participants to have fared significantly better at comprehending pictures of active verbs (82%) than passive verbs (73%), as was expected, but that the use of actional versus non-actional verbs did not result in a significant difference in scores, despite the scores for actional verbs being higher (Demuth et al., 2010:242)

In Experiment 2, the goal was to test whether the participants could, upon being presented with a picture of an actional verb with patient-focused prompt (e.g. *What's happening to the boy?*), produce a (long) passive. The stimuli included 12 pictures depicting actional verbs, each picture again containing a boy, a girl and a mother. Each verb was tested with both an AGENT- and PATIENT-focused question in order to elicit, respectively, active and passive answers. Of the agent-focused prompts, 95% elicited the production of an active verb, whilst 98% of the patient-focused prompts elicited a passive verb, there being no significant difference between these results (Demuth et al., 2010:245). At 25%, the proportion of the participants' passives that constitutes long passives aligned closely with the 21% reported for spontaneous speech by Kline and Demuth (2008), verb type not affecting truncation rates. However, in a second round of testing, upon being encouraged to tell the complete depicted story to the experimenter who could not see what was happening in the picture, participants'

production of long passives increased to 91% in the case of the active recasts and 71% in the case of the passives recasts (Demuth et al., 2010:245).

Lastly, in Experiment 3, participants were presented with two novel Sesotho verbs, each verb being paired with a novel toy and two bean-bag dolls (a boy and a girl). The goal was to test whether the participants could, when given an agent-focused active prompt or a patient-focused passive prompt, respectively, generalise novel verbs that were familiarised in one syntactic frame (i.e. active or passive) to the other syntactic frame (i.e. passive or active) (Demuth et al., 2010:246). The experimenter taught the two verbs with the aid of the toys and dolls, modelling each verb eight times in only the target frame. Next, children were encouraged to “manipulate the toy using different patients and agents (boy and girl puppet, self) while answering the experimenter’s questions” (Demuth et al., 2010:246). In the case of the verb modelled in the active voice, the experimenter would ask eight patient-focused passive questions in an attempt at eliciting a passive answer, whilst in the case of the verb modelled in the passive voice, eight agent-focused active questions were asked in order to elicit active answers. On nearly all the question prompts, in the case of both novel verbs, all 16 participants successfully generalised the verb, resulting in an accuracy rate of 99% in the case of generalisation from the passive to the active frame, and 95% in the case of generalisation from the active to the passive frame. The results of all three experiments considered, Demuth et al.’s (2010:238) findings “provide strong evidence that Sesotho-speaking 3-year-olds have robust, abstract knowledge of passive syntax”.

As regards the age at which the passive construction is acquired in isiXhosa specifically, there are no normative data available. However, isiXhosa, isiZulu and Sesotho are all closely related languages of the Southern Bantu family (Demuth et al., 2010:239). As such, the isiZulu and Sesotho data on the age of acquisition of the passive voice (referred to above) could provide a fairly reliable indication of what to expect in the case of isiXhosa, i.e. that monolingual children ought to be able to produce passives by the age of three years (the assumption being that the comprehension of passives would have preceded the development of productive skills). Recall that the youngest age that has been suggested as the point by which English monolinguals have typically “acquired” the passive is between four and five years (according to Maratsos et al., 1985), Vasilyeva et al. (2006:170) claiming this to be true

for only “the basic elements of the passive construction” and Baldie (1976) reporting comprehension skills to emerge only around six years and productive skills as late as 7;6. On grounds of Dutch data as well as the results of Southwood and Van Dulm’s (2012b) initial testing of their REALt instrument, it seems plausible that monolingual Afrikaans learners will acquire the passive even later than English monolinguals. As such, for the purposes of the present study, it will be assumed that passives are acquired earlier in isiXhosa than in both English and Afrikaans.

As mentioned above, the focus of the present study is not on the factors that may determine the comparatively late or early acquisition of the passive voice in various languages. However, apart from the factors suggested by Seymour et al. (2005) to underlie the overall later acquisition of passives across languages (cf. above), one other possible factor will be discussed in more detail here, namely the frequency of passive constructions in the input that a learner is exposed to. The focus on this specific factor is merited by the fact that it may explain cross-linguistic differences in age of acquisition of the passive, and by the amount of supporting literature involving Bantu languages. Studies have shown that in those languages in which passive constructions are produced relatively early, adult speech generally exhibits a high percentage of such constructions (Alcock et al., 2011:459). In contrast, in those languages where the passive voice is generally acquired late – such as English, German and Hebrew – adult speech includes relatively few passives (cf. Gordon & Chafetz, 1990; Pinker, Lebeaux, & Frost, 1987).

In their study of the Eastern Bantu languages Kiswahili and Kigiriama, Alcock et al. (2011:474) found two- and three-year-old children to be capable of using passive verbs “productively in appreciable quantities”, provided those verbs were part of the input they received. The researchers (2011:474) argue that this phenomenon cannot be explained by any maturational account of the production of passives, and that a frequency account seems more plausible. Whilst they do not deny the possibility that the specific structure of passive constructions may also contribute to the early acquisition thereof in Eastern Bantu languages, they do maintain that the more often a given construction is heard in the input, the more likely it is to be acquired and, more importantly, to be acquired early (Alcock et al., 2011:473-474). Although Alcock et al. (2011:475) concede that more research on the

production and comprehension of the passive voice in different languages is needed, they speculate that such research will most likely support their hypothesis that “high frequency in child-directed speech is a necessary, and likely sufficient, condition for early learning of the passive”.

A high frequency of passive constructions in child-directed input has been noted for a number of Bantu languages, including Kiswahili (cf. Deen, 2002, for data), Kigiriyama (cf. Alcock et al., 2011:464, in which adult native speakers report this), and Sesotho (cf. Kline & Demuth, 2008, for corpus data from the CHILDES database (MacWhinney, 2000)). In the latter case, corpus data revealed Sesotho caregivers to use passive constructions 10 times more frequently than what has been reported for English child-directed speech by Gordon and Chafetz (1990). Of the passive constructions occurring in the speech of the Sesotho caregivers, 60% were long passives – significantly more than the 4% reported for English. According to Demuth et al. (2010:240), this difference may partially be explained by the fact that, in Sesotho, logical subjects cannot be questioned in situ, but only from the *by*-phrase of a passive construction (e.g. *The food is being cooked by who?*), or as part of a cleft/relative construction (e.g. *It is who that is cooking (the) food?*), the passive here being the more common, unmarked construction type choice. As subject questions constitute a large portion of child-directed speech, Sesotho children are exposed predominantly to long passives (Demuth et al., 2010:240). This is most likely also the case where isiXhosa children are concerned, given that isiXhosa is similar to Sesotho with respect to the manner in which logical subjects may be questioned. The isiXhosa example in (62a) below illustrates the ungrammaticality caused by questioning a logical subject in situ in this language; whilst the other two examples illustrate the acceptability of doing so using a passive construction (62b), or a relative construction (62c).

- (62) (a) \*Ngubani upheka    ukutya?  
             ng-ubani u-pheka                                         uku-tya  
             1/1a.COP-who 2<sup>nd</sup> person singular-cook 15-food

(b) Ukutya kuphekwa                      ngubani?  
 uku-tya ku-phek-w-a                      ng-ubani  
 15-food 15.SM-cook-PASS-PRES 1/1a.COP-who  
 “The food is being cooked by whom?”

(c) Ngubani              ophekileyo                      ukutya?  
 ng-ubani              o-phek-ile-yo                      uku-tya  
 1/1a.COP-who 1/1a.REL-cook-PAST-REL 15.food  
 “It is who that is cooking the food?”

Kline and Demuth (2008) propose that the acquisition of the passive voice by Sesotho learners is aided by the high frequency of passive constructions in general and long passives specifically, because of the structural priming effect of the repeated occurrence of these constructions in the input. The latter serves to strengthen developing syntactic representations, so enabling learners to formulate abstract patterns on grounds of the individual examples they hear. Demuth et al. (2010:248), too, argue that the relatively high frequency of (mostly long) passives in the input from adult Sesotho speakers, along with the lack of morphological ambiguity between the passive and other constructions, “provides an ideal context for early learning of the passive”. This is in all likelihood also the case as far as isiXhosa is concerned, and will serve as premise in the present study.

Studies such as those by Bencini and Valian (2008); Brooks and Tomasello (1999); Huttenlocher, Vasilyeva, Cymerman and Levine (2002); Huttenlocher, Vasilyeva and Shimpfi (2004); and Savage, Lieven, Theakston and Tomasello (2003) have shown that monolingual English learners, when exposed in either a natural or experimental environment to an increased frequency of passive constructions, start producing such constructions at earlier ages than otherwise reported in the literature.

For example, in the case of Bencini and Valian’s (2008) study, 53 middle- to upper-middle class monolingual English participants (aged 2;11 to 3;6, with a mean of 3;2) were employed to complete two passive construction comprehension tasks, with a production task in the middle. All tasks were picture-based and participants were divided into three groups: 18 were

prompted with a passive sentence in the production task and another 18 with active sentences, whilst the remaining 11 control participants were not prompted at all. In each of the two comprehension tasks, the participants' comprehension of eight different fully reversible passives with animate agents and animate patients was tested. In the case of the two different priming production tasks, there were eight items in which the participant had to listen and then attempt to repeat the active or passive priming sentence (all sentences describing pictured transitive events with inanimate participants), and eight items where the participant had to look at a different pictured transitive event (again with inanimate participants) and then describe the depicted action. The repetition and description items were alternated in presentation. Results revealed that the group who had been primed with passives produced more passives (i.e. 11% of their overall responses if strict scoring is used, 16% with soft scoring) than (i) the group who had been primed with active sentences (2%, regardless of scoring scheme), and (ii) the group who had not received any priming, who did not employ any passives in their descriptions (Bencini & Valian, 2008:104-105). In the case of the participants who received priming during the production task, comprehension of reversible passives in the second round of comprehension items did not, however, increase as a result of the priming received during production tasks (Bencini & Valian, 2008:97).

The above priming effect in the production of passives was also reported in an early study by de Villiers (1984): three- and four-year-old monolingual English learners were found to be more likely to employ not only actional, but also the reportedly more difficult non-actional passives in their description of events, provided that they had repeated these verbs in a passive construction at an earlier point. Apart from production, the comprehension of passive constructions can also be experimentally enhanced by providing children with increased exposure to such constructions at a time when they would normally struggle comprehending them.

Vasilyeva et al. (2006), for example, showed this to be the case in their study involving 72 monolingual English four-year-olds (mean = 4;4) from middle and lower-middle class homes. In this study, the authors tried to experimentally manipulate the input that children receive in a more naturalistic setting than that investigated in previous experimental studies, such as Bencini and Valian's (2008) priming study discussed above. As such, their study

involved having half the participants listen to stories containing a high proportion of passive sentences (i.e. 61% of the total number of verb phrases), and the other half to the same stories, in which all passives had been replaced with active sentences. Participants were exposed to these stories across 10 story sessions (the average length of a single story being 33 sentences). Rather than, as in many previous studies, presenting unconnected passive sentences in isolation during one-on-one adult-child interaction, Vasilyeva et al. (2006:165) incorporated such constructions into meaningful narratives, where the child's focus is supposedly drawn more to the meaning than the processing of the form of constructions. Participants underwent a production pre-test and, following the 10 story sessions, a comprehension test, neutral production test and enforced production test, all tests being picture-based.<sup>60</sup>

Results showed performance to be affected by intervention type in that, on average, the participants who had heard stories with passive sentences fared better on the comprehension test than those participants exposed to stories with only active sentences and, during the production post-tests, they also produced more passive constructions, with an additional higher accuracy rate (Vasilyeva et al., 2006:168-170). Cf. also, for example, Whitehurst, Ironsmith and Goldfein (1974) who, in their study involving four- and five-year-old English learners, report similar findings for the enhancement of the comprehension of passives through the experimentally increased frequency of such constructions in the input.

Frequency may furthermore account for differences in the ages at which the same learner acquires different types of passive constructions. As mentioned above, much recent data suggest that non-actional passives are acquired later than actional passives. Studies such as Alcock et al. (2011:474) and Gagarina (2007) show that this supposed differential difficulty relates to the amount of exposure a learner receives to the two types of passives at hand, i.e. the percentage of passive constructions of a certain type that a learner produces reflects the

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<sup>60</sup> In the neutral production test, participants were shown a picture and asked *What's happening here?*, whilst in the enforced production test, the question would be formulated as *What's happening to X?*, X being the patient of the action. According to Vasilyeva et al. (2006:168), "focusing the responder's attention on the patient may create a conversational pressure to produce a passive because the responder may be more likely to put the patient ... in the subject position". The production pre-test in this study resembled the neutral production post-test.



percentage of the input that this passive construction comprises. That monolingual English learners hear fewer non-actional than actional passives is suggested by Sudhalter and Braine (1985) and confirmed by Gordon and Chafetz (1990). As with passives in general, learners' production of non-actional passives specifically can also be experimentally enhanced by increasing their exposure to this type of construction, as shown by Maratsos et al. (1985) for English learners and Pye and Quixtan Poz (1988) for Quiche Mayan learners.

Worth mentioning at this point, however, is that Crawford (2012) argues against a frequency account for the different ages at which the passive is acquired cross-linguistically. The four- to six-year-old Sesotho monolinguals in Crawford's (2012) study did not prove any more adult-like in their knowledge of passives than did the English monolingual peers in a study by Hirsch and Wexler (2006), despite passive constructions being 10 times more frequent in Sesotho than in English child-directed speech. Crawford does not, however, specify the SES level of her or Hirsch and Wexler's (2006) participants. Hence, this factor cannot be eliminated as a possible explanation for the lack of the predicted developmental advantage among Sesotho learners. One direct way in which SES could have affected Crawford's results relates to differences in familiarity with the medium of testing, i.e. a computer: if the Sesotho participants were of a lower SES than the English participants, they most probably would have had far less (if any) exposure to a computer, this likely impeding their ability to respond accurately to test items.

Also note the following observation by Alcock et al. (2011:463, drawing on Allen and Crago, 1996). On the one hand, as the frequency of passives in the spontaneous speech of young learners of especially European languages is very low, capturing spontaneous data for these languages is quite difficult. As a result, the majority of data containing spontaneously produced passives represents those languages with a typically higher frequency of passives in child speech, i.e. primarily non-European languages (Alcock et al., 2011:463). On the other hand, little *experimental* data exists for non-European languages, due in part to the settings in which they are acquired: like most children from poverty-stricken areas in developing countries, child learners of these languages are generally "unused to interaction with strangers" (Alcock et al., 2011:463). Sometimes, as pointed out above, unfamiliarity with the

task type used in experimental data collection also poses a problem in the case of such children.

For instance, in the previously mentioned study by Demuth et al. (2010) on the acquisition of the passive voice in Sesotho, more than half of the participants dropped out of the study. According to Demuth (personal communication, July 27, 2014), this was a result of many of the children simply not wanting to look at the pictures they were presented with, or choosing a picture before listening to the entire sentence, despite being told to wait until the entire stimulus sentence had been presented. As such, these children were unable to pass the baseline test in this study (including simple instructions such as “point to the girl”), much less react correctly to active and passive sentence stimuli. Demuth (personal communication, July 27, 2014) suspects that this may be due to a lack of print exposure both at home and at crèche and because of an overall unfamiliarity with looking at pictures, listening to an adult’s comment or question, parsing the sentence and then responding appropriately.

The latter type of activity forms part of the typical read-aloud story sessions in crèches in mid- and high SES areas, where teachers read a book, show children the pictures and then ask them questions about the story. Demuth points out that in their study, the likelihood of children being exposed to this type of activity in the crèche context was severely limited by class sizes of up to 40 children and a general lack of resources. Furthermore, this type of activity is typical of the bedtime-story scenario that is common in mid- and high-SES households, but not in the households of the participants in the study reported on in this dissertation, who (according to their parents’ reports in a language background questionnaire) are very seldom read to, with oral storytelling playing a more central role.

These types of practical problems might partially explain the dearth of experimental data based on participants who are comparable to those of interest in the present study, i.e. low SES learners of isiXhosa and Afrikaans. Additionally, like many African languages, isiXhosa and also Afrikaans are under-researched in general, regardless of variables such as age and SES. Regardless of the potential difficulty in capturing experimental data, an important conclusion based on the literature reviewed above is that the acquisition of passive

constructions can be enhanced, in terms of both production and comprehension, under certain conditions. Accordingly, one of the pivotal questions to be investigated in the current study is whether the (assumed) relatively high frequency of passive constructions in the input that a developing trilingual receives in one of her three languages (here, isiXhosa) can enhance its acquisition in her other two languages (here, Afrikaans and English).

In conclusion, this chapter highlighted the various similarities and differences between passive constructions in English, Afrikaans and isiXhosa, in terms of both their grammatical aspects and the respective ages at which they seem to be acquired by monolinguals. The following chapter details the exact methodological process employed in the present study to investigate the acquisition of both vocabulary skills and passive constructions in early developing trilingual learners of English, Afrikaans and isiXhosa, with particular emphasis on the role of input and possible cross-linguistic bootstrapping in this process.

## **CHAPTER 5: METHODOLOGY**

This chapter details the methodology employed in the present study, starting with an overview of the data collection process in Section 5.1. Section 5.2 provides a description of both the trilingual and monolingual participants, detailing the exact selection criteria that were applied in each case, whilst Section 5.3 provides detail relating to the different crèches from which the respective participants were sourced. Section 5.4 discusses the design and the administering of the instruments used to capture language exposure data, and those used to assess language proficiency (in terms of vocabulary and knowledge of passive constructions). The manner in which the data obtained by means of the various instruments were coded is also explained in this section.

### **5.1 Overview of the data collection process**

#### **5.1.1 Ethical aspects**

The first step in planning data collection was to obtain ethical clearance from the university with which the researcher is affiliated. This involved, among other things, detailing the purpose of the study, whether participation in the study was to be voluntary, what was to be expected of participants, any risks or benefits participants could possibly experience, the exact manner in which data was to be obtained and whether permission had been sought from any relevant authorities. Along with the study proposal, the language background interview schedule, the informed consent form for parents and teachers, the assent form for child participants and the teacher report form had to be presented (cf. Appendices 1-5). As the proposed study qualified as low-risk in terms of potential discomfort or inconvenience for participants, and all necessary documentation was provided, ethical clearance was readily granted (cf. Appendix 6 for confirmation).

Participation in the study occurred on a completely voluntary basis, with no participant being coerced into or monetarily rewarded for participation. Only those children who personally gave assent and whose parents gave their informed consent were considered as participants. It was made clear that parents could withdraw their children from the study at any stage, as

could the children themselves, and that the anonymity of both parents and children would be protected. As such, the 11 trilinguals who are referred to individually in this dissertation have been given code names, ranging from “T1” to “T11”.

### 5.1.2 Selecting crèches

As a first point of contact in recruiting prospective participants, crèches situated in low SES, mostly multilingual areas in the Cape Town and Cape Winelands municipal districts were approached. These areas were mostly townships (i.e. urban residential areas outside town limits that were historically designated for “black” migrant labourers under the Apartheid regime) and informal settlements (i.e. unplanned settlements, consisting mostly of shacks, on land that has not been proclaimed a residential area) (Statistics South Africa 2001, 2003:9,15). Telephone numbers for crèches in these areas were found on the internet, in telephone directories and informally via informants living in the relevant areas. In total, approximately 40 crèches were called, and a short telephonic interview with the principal conducted. The aim was to recruit as many trilingual participants as possible from a variety of crèches in different low SES areas, and an equal number of monolingual controls for each language group. In the case of only eight of these crèches did the principals report both a willingness to have children from their crèche participate in the study and the availability of English-Afrikaans-isiXhosa trilingual four-year-old prospective participants. The principals of an additional six crèches reported both a willingness to help, and the availability of monolingual English/Afrikaans/isiXhosa four-year-old controls.

Each of the 14 principals were subsequently sent an email (where computer and internet access was available), or delivered a letter by hand detailing the purpose of the study, the type of participant needed and their exact involvement as crèche principal in the data collection process. In sum, the principals were to (i) provide the researcher with a list detailing the names and contact numbers of the parents<sup>61</sup> of suitable prospective participants; (ii) provide information on the distribution of languages at the crèche; (iii) allow the relevant teacher(s) time to complete a report on each participant’s language skills and the language use patterns

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<sup>61</sup> Note that the term “parents” will henceforth be used to refer to any type of primary caregiver, whether or not they are biologically related to the relevant child.

in the classroom; and (iv) for a number of hours on each day of testing, make available to the researcher and/or her assistants a quiet room where the testing session could be recorded.

In the case of the trilingual participants, the same children were to be tested three times (once in each of their languages), with a week in between each testing. On the one hand, a week was considered a short enough period of time to minimise the effect of natural language development (i.e. if the three testing sessions were to be conducted too far apart in time, age might well have had a substantial effect on performance). On the other hand, a week was considered a long enough period of time to minimise the chance of practice/priming effects (i.e. the effect of participants' memory of a test) associated with retesting using the same test instrument. Such effects could apply to the participants in the present study, given that they were to complete the same tests three times, albeit in three different languages. However, an additional measure to prevent these effects was taken by making every effort to counterbalance the order of the language tests between children, taking into account the availability of assistants and participants, as well as crèche schedules.

In the case of the monolingual participants, a single testing session for each child was necessary. It was estimated that one testing session with a single participant would last approximately 90 minutes. Written informed consent to involve her crèche in the study was obtained from each principal.

### **5.1.3 Selecting participants**

The parents of prospective participants were called to ascertain whether their child adheres to the selection criteria described in Section 5.2.1 below. In the case of candidates who seemed suitable, a meeting was scheduled between the researcher/research assistant and the parent(s), for a time and place of the parent's choosing. In the case of L1 isiXhosa parents, this meeting was set up and conducted by a young female research assistant of the same race and L1 as the parents. In the case of English- and/or Afrikaans-speaking so-called "coloured"<sup>62</sup> parents, the

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<sup>62</sup> In South Africa, this term is used to refer to persons of mixed ethnic origin, this mixed ancestry having roots in two or more of the following areas/groups: Europe, Asia and various indigenous Khoisan and Bantu tribes.

researcher herself (a white, L1 Afrikaans L2 English speaker) conducted the interviews, using the language in which the parents felt most comfortable. During these audio recorded interviews, the content of the parental informed consent form was discussed and, if this form was signed, a language background questionnaire (LBQ) was administered. The parent was also asked to explain to their child their potential involvement in the study (i.e. to undergo a play session involving picture selection and naming tasks) and to have the child “sign” the child assent form by writing their name (where possible) or drawing an “X”. After interviewing the first half of monolingual participants’ parents in person, it became evident that the LBQ contained many questions (especially those requiring a detailed account of the child’s language exposure patterns) that were largely irrelevant to monolinguals. As such, a shortened version of this questionnaire (cf. Appendix 7) was used to elicit the necessary information from the remaining monolingual participants’ parents during a telephonic rather than face-to-face interview.

In order to fully capture the reality of doing sociolinguistic research in the low SES African context of this study, it is worth remarking at this point on some of the factors that made the data collection process an extremely time-consuming task. Additional comments to this end will be made, where relevant, in the subsequent sections of this chapter. The first hurdles were encountered in the process of getting hold of parents telephonically, and arranging and conducting the above interviews. Firstly, in many cases, the contact numbers that the crèche has on record for the parents of a certain child are incorrect or no longer exist. Secondly, the parents quite often simply did not answer the researcher’s/research assistant’s phone calls, possibly because the call was from an unknown number.

Additionally, many of the parents who initially agreed to an appointment, but asked to be called back later to arrange a time, date and venue after they had spoken to their spouse/partner, subsequently did not answer when these follow-up calls were made. This may be a result of the fact that, in the moment of being directly asked a favour by someone of

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Although this term is viewed as derogatory in certain contexts, no suitable alternative has unfortunately yet been established – hence the cautious use of the term in this dissertation. The term “black” will be used with similar caution to refer to people of Bantu descent when specific ethnic/tribal affiliation is either not of importance, or when wanting to refer to this group as a whole.

perceived higher social status (in this case, someone affiliated with a tertiary institution), these parents felt obliged to agree to participation, without actually having the desire or intention to do so, for whatever reason(s). By screening or blocking the relevant number, future conversations that place the parent under what feels like an obligation to participate (so causing social discomfort) could be avoided.

All but three of the parents preferred for the meeting to take place in their home, on a Saturday or Sunday. In the majority of cases, the female L1 isiXhosa assistant accompanied the researcher to serve as interpreter and cultural broker. In many of the areas where parents of participating trilinguals reside, streets are often unnamed (or the name not indicated). As a result, many hours were lost trying to find the way to a child's home, frequently calling her parents for directions and stopping to enquire from passers-by in the area. Furthermore, on a number of occasions, the parent was as much as two hours late because of their reliance on public transport to get from work, church, shops, etc. to their home. On days when a number of interviews were scheduled to take place consecutively, this often resulted in appointments having to be rescheduled for the next week. On some occasions, many of the above hurdles were overcome, only for it to be revealed (minutes into the interview) that the child does not qualify for the study on grounds of her age and the number of languages she speaks, contrary to what was reported during the earlier telephonic interview.

After all interviews with the parents of prospective trilingual participants (18 in total) had been conducted, only 10 children were found to be suitably qualified for participation in the study. The same number of monolingual controls for each language group was subsequently sourced. Near the end of the data collection process, however, the researcher came across an eleventh suitable trilingual participant who, incidentally, lives next door to and is the best friend of one of the first 10 qualifying trilinguals. Due to time constraints, it was decided to include this child in the study but not to repeat the data collection process for another three monolinguals solely for the sake of having equal numbers of participants in the test and control groups.



#### 5.1.4 Play sessions

All “play sessions” (i.e. the administering of both a vocabulary and a passive construction test – cf. Sections 5.4.3 and 5.4.4 below) were conducted and audio recorded at the respective crèches. As mentioned earlier, in the case of the trilingual participants, the order of the three different language testing sessions was counterbalanced as far as practical circumstances allowed it. In order to put the participants at ease and familiarise them with the testing situation, participants underwent the first testing in, as far as possible, the language in which they are most comfortable, this being isiXhosa in by far the majority of cases. Hereafter, the order of the subsequent English and Afrikaans testing sessions was varied.<sup>63</sup>

Whenever possible, the sessions took place in a quiet area where there would be minimal distraction. Unfortunately, this was not always possible – in some crèches the only available room was right next to the playground, and in the case of one crèche, the researcher and child had to sit outside on the pavement, immersed in the noise of general township life. However, it was usually only towards the end of the play session that children started to become distracted by sounds in the background. Fortunately, in most cases, the participants were so excited about receiving extended individual attention that they were engrossed in the tasks.

Most of the testing was done between 8:00 and 11:30 in the morning, i.e. between the end of breakfast and the start of the lunch and naptime routine. Testing immediately before or after naptime proved counter-productive as children were too sleepy; in such cases, testing consequently had to be interrupted and continued at another time. In each play session, sections of the two tests were alternated, so as to avoid the child getting bored with either one.<sup>64</sup> The first half of the vocabulary test would be administered first, followed by the first half of the passive construction test, then the second half of the vocabulary test and finally the

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<sup>63</sup> Specifically, participants T8 to T11 underwent testing in the order of isiXhosa-English-Afrikaans, whilst participants T1, T2 and T6 underwent testing in the order isiXhosa-Afrikaans-English. Due to circumstances, participants T3 to T5 underwent testing in the order Afrikaans-isiXhosa-English and participant T7 in the order English-Afrikaans-isiXhosa.

<sup>64</sup> Note that this specific manner of administering the two tests will be different to the manner in which they were administered in their authors’ respective experimental/norming samples. As such, care should be taken when comparing the results of the present study with those of other samples, also because of the specific low SES levels of the participants in the present study.

second half of the passive construction test. After each half, the child was awarded with a few colourful stickers, which were pasted onto a piece of paper. When a child became visibly tired or bored, the researcher/research assistant would encourage them to move around a bit – jump up and down and run around the room a few times. On average, the play session lasted about an hour.

### **5.1.5 Coding of the data**

All audio recordings of the LBQ interviews with the parents of qualifying trilinguals were transcribed orthographically in MS Word and, in the case of the isiXhosa interviews, translated into English by the L1 isiXhosa assistant. The results of the Afrikaans and English tests were coded by the researcher. The first half of the isiXhosa test data was coded by the L1 isiXhosa assistant, and the second by a near-native L2 speaker who, as an Honours student in Linguistics, has sound knowledge of linguistic terms and concepts, and a high metalinguistic awareness. As a university-level isiXhosa language tutor, he also has sound knowledge of the isiXhosa language. The exact process involved in the coding of the LBQ and test data is described in the sections below that detail the respective instruments (cf. Sections 5.4.1 to 5.4.4).

## **5.2 Description of participants**

### **5.2.1 Selection criteria**

Four groups of four-year-old participants were recruited for the current study: (i) 11 developing trilingual speakers of English, Afrikaans and isiXhosa (mean age 54.1 months at time of first testing)<sup>65</sup>; (ii) 10 monolingual speakers of English (mean age 54.1 months at time of first testing); (iii) 10 monolingual speakers of Afrikaans (mean age 51.2 months at time of first testing); and (iv) 10 monolingual speakers of isiXhosa (mean age 55.2 months at time of first testing). Selection criteria applying to all groups included a low SES background (cf. Section 5.2.1.1 for further detail) and an age between four and five years (i.e. from 48 to 59

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<sup>65</sup> Note that, in the previous chapters, age was indicated as years and months (4;6, for example, denoting four years and six months), this being the typical notation in language acquisition literature. However, from this point onwards in the dissertation, the UBiLEC convention is followed, with age being indicated as years and fractions of years and not as years and months (a mean age of 4.5 years thus equates to four years and six months); similarly, an age in months is here indicated as months and fractions of months, and not as months and days.

months). All participants furthermore had to qualify as typically developing on grounds of parents' answers to the questions in this regard included in the LBQ (cf. Section 5.4.1.1 for more detail).

Among prospective trilingual participants, an age of first exposure before four years in the case of each of the child's three languages (cf. Section 5.2.1.2 for the reasoning), as well as a reported ability to communicate meaningfully in all and only the three languages of interest to this study were considered selection criteria. As for the monolingual group, finding prospective participants with exclusive exposure to only one language is rendered highly unlikely by the specific sociolinguistic context in which the majority of children from low SES backgrounds in the Western Cape are growing up (cf. Section 5.2.1.3 for more detail). As such, the criteria according to which a prospective participant qualified as monolingual in the present study are necessarily less stringent than those employed in studies in other contexts; the term "monolingual", when used in reference to the participants in the present study, thus has a somewhat atypical meaning. The selection criteria specific to the monolingual group relate to the child's linguistic proficiency in one or more languages. Parents were asked whether the child is able to speak and/or understand any language other than the one of interest, to the extent that she can follow/conduct a conversation in that language. If the answer was "yes", the prospective participant was not considered a suitable monolingual control subject. If the answer was "no", parents were next asked whether only the language of interest is spoken in the home. If the answer was "no", prospective participants were only considered to be "suitably monolingual" if they reportedly do not receive enough exposure to the other languages in the home to cause them to, on a regular basis, spontaneously use lexical items from these languages.

Finally, gender was not controlled for in the trilingual group; seven of the final qualifying trilingual participants turned out to be female and the remaining four male. In each monolingual group, however, half the participants were female and the other half male. The subsections below offer a more detailed discussion of some of the more complex selection criteria mentioned above.

### 5.2.1.1 SES

As mentioned in Chapter 3, SES is often estimated on grounds of a family's financial and cultural resources, the level of "symbolic content" of parents' professions, and the parents' level of formal education (Scheele et al., 2010:135). However, the researcher did not want to include questions that *directly* enquire as to a family's financial resources (e.g. "What is your gross monthly income?" or "Do you receive state-funded child grants?") in the LBQ, as such questions could cause the informant social discomfort. This concern is based on the fact that (i) the LBQ would be administered in a personal, one-on-one interview in which an informant's face is more easily threatened than in the case of a typed LBQ that is completed in privacy and then simply returned to the researcher; (ii) the researcher, who was to administer the LBQ to the L1 Afrikaans and L1 English informants, is of a different race (and, arguably, culture) than the informants; (iii) the researcher speaks a different variety of Afrikaans and of South African English than the informants<sup>66</sup>; and (iv) there would possibly be a mismatch between the perceived SES level of the interviewer and the prospective informants, at least as far as educational level and professional affiliation are concerned (this also in the case of interviews with L1 isiXhosa parents, as the L1 isiXhosa assistant employed to conduct these interviews was a university student).

A popular way of deducing income levels and, by extension, SES (originally considered an option in the present study) is by means of the national poverty quintile level (NQL). In the context of national schooling, NQL refers to the poverty level (measured from 1 to 5, with 1 being the poorest) of the area surrounding a school (Giese, Zide, Koch, & Hall, 2009:7). This grading system is used as the basis for determining the recommended annual amount per learner that the state awards ordinary public schools in South Africa (Giese et al., 2009:7). A school's NQL is determined on grounds of national data on the surrounding community's levels of income, dependency ratios and literacy rates (Giese et al., 2009:8). Potentially, the NQL of the primary schools nearest to the crèche that a specific child attends could be regarded as an indication of the SES of families living in the surrounding area.

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<sup>66</sup> The researcher speaks so-called Standard Afrikaans and Standard South African English, whilst the informants speak non-standard varieties of these languages.

However, using NQL as indication of SES proved to be an inherently flawed method as many of the primary schools situated closest to the crèches of interest had NQL 4 and 5 rankings, despite the immediate surrounding areas evidently being lower income areas. Whilst the majority of the relevant primary schools rank between NQLs 1 and 3, the primary schools nearest to one of the crèches from which trilinguals were sourced, and those schools nearest to one of the crèches from which isiXhosa monolinguals were sourced, all rank at level 4, with the schools closest to another of the crèches supplying trilinguals, and all the schools near to the crèches supplying English monolinguals, all ranking at level 5. These differences in primary school NQLs do not correspond accurately with differences in the monthly crèche fees, with some of the crèches associated with lower NQLs even charging more than those associated with higher NQLs. Concerns regarding the inaccuracy of NQL rankings based on national statistical data have been aired by many school principals whose schools, situated in areas with high poverty and unemployment rates, receive an inaccurately high NQL ranking (and, consequently, less state funding) due to close proximity to more affluent areas (Giese et al., 2009:36). This problem arises from the fact that the national data source employed to calculate NQL cannot analyse spatial areas below municipal ward size, resulting in an insensitivity to pockets of poorer areas inside larger, generally wealthier communities (Giese et al., 2009:36).

The large variance in the average income level of households in close proximity to one another is not surprising when considering South Africa's Gini coefficient. The Gini index offers an international measure of "the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution", with 0 representing perfect equality and 100 representing perfect inequality ("GINI index in South Africa", 2014). South Africa has a Gini coefficient of 63.14 (as last measured in 2009), making it the country with the fourth highest level of income inequality in the world (after Seychelles at 65.77, Comoros at 64.3, and Namibia at 63.9, according to the most recent data available) (Pasquali, 2012).

For the reasons set out in the previous paragraphs, it was decided to take the monthly fee the parents pay for full-day crèche care (including meals) for the child in question, as relayed by the crèche principal, as indicator of the family's financial resources. This, in turn, was

regarded as the primary indicator of SES, with parents' formal education level and profession serving as support for this judgement in as far as they may be taken to indicate cultural resources or social standing.

The 11 trilingual participants were sourced from eight different crèches and their parents paid an average monthly fee of R442 (range R160-R850). The 10 English monolinguals were sourced from three crèches and the parents paid an average monthly fee of R553 (range R400-R800). At one of the crèches from which trilinguals were sourced, and also at one of the crèches from which English monolinguals were sourced, the monthly fee is lowered in the case of certain children, in accordance with their parents' monthly income. The 10 Afrikaans monolinguals were sourced from a single crèche that charges R100 per month (note, however, that they only provide half-day care). This crèche is subsidised by a large non-profit organisation (NPO) serving, among others, the farming community in which the crèche is situated. Accordingly, the crèche has a policy of not showing away any children whose parents are not in a position to regularly pay the monthly crèche fee, and some children are thus exempted from these fees. Finally, the 10 isiXhosa monolinguals were sourced from three crèches as well as informally from the isiXhosa assistant's neighbourhood, with parents of the five crèche-going children paying an average monthly fee of R280 (range R120-R450). The remaining five participants in this group do not attend a crèche as their mothers and/or fathers are unemployed and reportedly unable to afford crèche fees.

Taken together, the 41 participants' parents paid a monthly average of R369 (range R100-R850), assuming the half-day fee of the Afrikaans monolinguals may simply be doubled to give an indication of what their full-day fee would be, if the crèche were to offer such a service. In comparison, the average monthly fee for full-day care (with meals) charged by three crèches situated in middle-class areas in the university town in which the researcher resides, is R1933 (range R1520-R2180). This amount is 5.2 times more than the average monthly amount parents of the participants in the present study spend on crèche care.

Whereas the large differences between the average monthly crèche fees paid by the parents of the 41 participants and that paid by parents in middle-class areas may be interpreted as a

reasonably clear indication of the participants' low SES, this judgement was verified by considering average parental education level and profession. Parental education level was scored in line with the 2011 version of the International Standard Classification of Education (ISCED) ranking system (UNESCO Institute for Statistics, 2011). The ISCED 2011 serves as an international framework for the classification of educational activities and their resultant qualifications, in order to enable statistical cross-national comparisons (UNESCO Institute for Statistics, 2011:6). The table below shows the different levels of educational attainment identified in this system.

<b>ISCED 2011 Level</b>	<b>Description of level</b>
0	Less than primary education
1	Primary education
2	Lower secondary education
3	Upper secondary education
4	Post-secondary non-tertiary education
5	Short-cycle tertiary education
6	Bachelor's or equivalent level
7	Master's or equivalent level
8	Doctoral or equivalent level
9	Not elsewhere classified

**Table 5.1: ISCED 2011 levels (adapted from UNESCO Institute for Statistics, 2011:21)**

Parental education level was calculated by adding the values of the education levels that the two parents had respectively attained by the time of the study, and then dividing this value by two to obtain an average value.<sup>67</sup> In cases where, at the time of the study, a child was exposed to only one parent – due to the other parent never having been a part of the child's life,

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<sup>67</sup> I follow Hoff-Ginsberg (1991) and Scheele et al. (2010) in considering both maternal and paternal education level in my gauging of SES, rather than only maternal education level (as is often done in child language acquisition studies). The reasoning here is that few of the participants in the present study spend significantly more time with their mother than father (often being looked after by a grandparent or other family member in the first months of their lives, before being sent to full-day crèche care). Additionally, in some of the cultural groups represented by the participants in this study, the descent, education and profession of the male head of the household are important determinants of the social status of the family, often more so than that of the female head.

divorce, separation, imprisonment, or death – the education level of that parent was regarded as the “average level”. The trilingual group was found to have an average parental education level of 3 (range 1.5-6); the English monolingual group one of 3.05 (range 2-4); the Afrikaans monolingual group one of 1.75 (range 1-2.5) and the isiXhosa monolingual group one of 1.94 (range 1-3.5). Thus, on average, all groups have an ISCED rating of no higher than 3, i.e. upper secondary education.<sup>68</sup> By far the majority of parents who are employed perform unskilled or semi-skilled labour, working as cashiers, cooks, cleaners, maids, farmhands, factory workers, gardeners, etc. As such, on grounds of average level of parental education and parental profession, the parents in this study qualify as “working class” according to the two criteria employed by Hoff-Ginsberg (1991:785) in her study on mother-child conversations in different social classes, i.e. (i) “no education past high school other than technical training”, and (ii) currently unemployed or working in “unskilled, semi-skilled, or service positions”.

### 5.2.1.2 Age and length of exposure

As mentioned earlier, all prospective child participants had to be aged between 4.0 and 4.99 years. Recall from Chapter 4, Section 4.4 that the youngest age that has been suggested as the point by which English monolinguals have typically acquired the passive is between four and five years (according to Maratsos et al., 1985). On grounds of Dutch data as well as the results of Southwood and Van Dulm’s (2012b) initial testing of their REALt instrument, it was argued that monolingual Afrikaans learners would acquire the passive even later. On grounds of Sesotho data, on the contrary, it was assumed that monolingual isiXhosa learners would acquire the passive around the age of three years. In order to test whether cross-linguistic bootstrapping (a central focus of this study) is occurring from isiXhosa to English and Afrikaans, so speeding up the acquisition of this construction in the latter two languages, it was thus necessary to test children who were (on analogy with monolingual norms) likely

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<sup>68</sup> In the case of three of the 41 participants, all of them trilinguals, the average parental education level was, however, higher than level 4 (which would serve as the cut-off for qualifying as “working class” according to Hoff-Ginsberg, 1991). Specifically, T2’s parents had an average ISCED level of 6, and both T3’s and T4’s parents had one of 5.5. As is to be expected, these parents also occupy skilled employment positions. It was decided that participants T2, T3 and T4 would still be included in the study on grounds of the fact that they live in the same three areas as the other eight trilingual participants, and because their parents send them to the same two crèches that four other participants attend, with these crèches charging monthly fees associated with low SES groups (cf. argument above).



to have already acquired passive skills in isiXhosa, but unlikely to have fully acquired these skills in their other two languages. As such, they needed to be older than three, but younger than five, leaving four years as the ideal age for the purposes of this investigation.

An age of first exposure before four years in the case of each of the child's three languages was considered a selection criterion for trilingual participants. As such, this group of participants may be described as early developing (simultaneous) trilinguals or L3/3L1 child learners (cf. Chapter 2, Section 2.4.1 for a justification of this terminology). Initially, teacher and parental reports claiming that a child is four years old and able to understand and use all and only the three languages of interest to this study, albeit to different extents, were deemed sufficient justification for considering the child a prospective trilingual participant. In the case of each such child, a meeting with the parent(s) was arranged and the LBQ administered. Only after eliciting detailed information on the contexts in which the child was exposed to each of the three languages at different ages, could a decision be made as to the age at which the child arguably received a sufficient amount of input in a language for it to be considered the "age of first exposure".

In only three of the cases (i.e. T3, T4 and T10) were L3/3L1 child learners first exposed to one of their languages after turning three years old. As such, the majority of the trilingual participants in this study match the common conceptualisation of a "simultaneous" child trilingual (i.e. a 3L1 learner) as a child who was exposed to three languages before the cut-off point of three years (cf. Chapter 2, Section 2.4.1 for a discussion of the relevant terminology). As the aim of this study was not to focus exclusively on participants who strictly qualify as "simultaneous" trilinguals, however, all prospective trilingual participants with an age of first exposure to each language before four years were retained. Those who had only received significant exposure after four years were disregarded, this age being regarded as the lower boundary for child L2A by some researchers (cf., for example, Unsworth, 2007:451). An additional argument for this exposure cut-off lies in the fact that children between the ages of four and five years would, by the time of testing, most probably not have received a significant enough amount of exposure to the particular language to enable the level of proficiency needed to undergo testing in that medium.

### 5.2.1.3 Language proficiency and exposure

A minimum level of performance on a proficiency test in each language was not used as a selection criterion, as this would have disallowed testing the relationship between differing amounts of linguistic exposure and proficiency levels in the case of the trilingual participants' three languages, including those languages to which they perhaps have limited exposure. Recall that the majority of studies on the relationship between input and proficiency in bilingual language acquisition have focused almost exclusively on the dominant language in terms of the proportion of the child's input constituted by this language (Meisel, 2007:496; Blom, 2010:423), and that there have been calls for more studies on the development of bilingual learners' weaker language(s) in terms of proportion of input (cf. Chapter 1, Section 1.1).

Recall from Chapter 3 that Pearson et al. (1997) had trouble capturing spontaneous speech data from some of their participants (aged between eight months and two and a half years) during the numerous play sessions conducted with them over time, this despite the children being comfortable with the familiar people and toys encountered during these sessions. This phenomenon was especially common among those children who, at the time of the specific play session, received less than 20% exposure to the language in which they were reluctant to produce any utterances (Pearson et al., 1997:56).<sup>69</sup> This led to a suggestion that, for practical purposes alone, children with exposure patterns less balanced than 75:25 should perhaps not be included in bilingualism studies (Pearson et al., 1997:56). However, a number of studies – including those by Place and Hoff (2011), Marchman, Fernald and Hurtado (2010) and Marchman, Martínez-Sussmann and Dale (2004) – have employed an exposure criterion of not 25% but 10% of total language exposure for any one of a multilingual child participant's languages, seeing as this low minimum requirement “allows capturing the full range of variability in bilingual experience that exists in this population” (Place & Hoff, 2011:1836).

In the present study, the percentage exposure a child typically received to a specific language at the time of testing was not considered a selection criterion. This was done in order to

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<sup>69</sup> Note, however, that in Pearson and Amaral (in press), it is pointed out that this was not an experimental result and that its limits were not tested, i.e. the purpose of the study was not to test whether 20% exposure is the cut-off point for the development of productive lexical abilities. As such, the exposure percentage point of 20 should not be interpreted and applied as a hard number, but rather as a guideline percentage below which children may be less likely to spontaneously produce utterances in the relevant language.

capture the full range of variability in the *trilingual* experience, in which a child's exposure to one of her three languages may quite likely constitute less than 10% of her overall language exposure. Incidentally, however, the information on the 11 trilingual participants' language exposure patterns that was gained via the LBQ (cf. Section 5.4.1 below) revealed only two participants to have had a current amount of exposure below 10% for one of their languages at the time of testing (T3 = 8%, T9 = 8%). When taking into account cumulative length of exposure (cf. Section 5.4.1.1), however, both these participants were shown to have had exposure to that specific language for 10% or more of their lives at the time of testing (T3 = 33%, T9 = 10%). On these grounds, one may argue that the trilingual participants in the present study all qualify in terms of the 10% exposure criterion previously used in other studies.

In the case of prospective monolingual participants, finding children with exclusive exposure to only one of the three languages in low SES contexts proved a largely unattainable ideal, given the specific socio-cultural context of the Western Cape, the province in which this study was conducted. On the one hand, a degree of exposure to English, at least via television, is inevitable – by far the majority of child programming screened on local television channels (as well as the international children's channels screened via satellite) is in this language. Children's books in languages other than English are also relatively rare, with Afrikaans being the second most common medium in which such books are published. As a result, in those homes where children are read to, the chances are great that at least some of these books will be in English. Additionally, in many crèches in which both the language of instruction and informal classroom interaction is almost exclusively Afrikaans or isiXhosa, some well-known English songs, rhymes, colour terms, etc. are also taught.

On the other hand, finding English monolinguals from low SES backgrounds in the Western Cape with no exposure to Afrikaans also proved nearly impossible. The last decades have seen a large-scale language shift in the coloured population, especially on the Cape Flats (a large, low-lying, flat and predominantly low SES area situated in the greater Cape Town area), with L1 Afrikaans parents choosing to raise their children in English. This choice is often inspired by political reasons stemming from the negative association of Afrikaans with the ruling powers of the Apartheid era (cf. De Klerk & Bosch, 1996). As a result, the

coloured families in this area at present often include L1 Afrikaans elders who speak Afrikaans to one another, English or a mix of English and Afrikaans to their children, and English or a mix of English and Afrikaans to their grandchildren; parents who speak English or a mix of English and Afrikaans to one another, and English only to their children; and children who speak English only to their parents and grandparents, but who also have some degree of at least receptive skills in Afrikaans as a result of overhearing Afrikaans conversations between adults in the family.<sup>70</sup>

The three “monolingual” control groups thus necessarily included (i) predominantly Afrikaans- and isiXhosa-speaking (respectively) children who receive some limited degree of exposure to English; and (ii) predominantly English-speaking children who receive varying degrees of exposure to Afrikaans by overhearing conversations among adult family members, and perhaps also teachers and other adults in the community. Although this fact makes a perfectly controlled, clear comparison between monolinguals and trilinguals impossible, it attests to the complicated socio-linguistic environment that often forms part of the reality of field research in multilingual contexts such as those described here.

### **5.3 Description of the participants’ crèches**

All the crèches from which participants were sourced are situated in the City of Cape Town or Winelands Municipal Districts of the Western Cape province of South Africa. Each of these crèches, except the one from which Afrikaans monolinguals were sourced, offers a full-day service, with meals included. All of the participants attending these crèches make use of this service, spending an average of 10 hours at the crèche on all five week days. Of these 10 hours, approximately 1.5 hours constitute naptime, with the remaining hours being divided between teaching, meal and play time.

#### **5.3.1 Crèches from which trilingual participants were recruited**

Of the eight crèches supplying trilingual participants, Crèches 1, 7 and 8 are situated in areas that are extremely diverse in terms of race, culture and language. The remaining crèches are situated in areas with more homogenous populations. Mostly, however, the eight crèches

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<sup>70</sup> For more information on the Afrikaans to English language shift in the Western Cape, cf. Anthonissen (2009), De Klerk and Bosch (1996), Farmer (2008), Farmer and Anthonissen (2012) and Fortuin (2009).

serve children from a range of different racial, cultural and linguistic backgrounds who do not necessarily live in close proximity to the crèche, but whose parents prefer for them to undergo schooling in this area and are consequently transported there daily. This parental choice is, according to the principals of these crèches, often based on the higher standard of education associated with the area in which the crèche is situated, compared to the area in which the families reside. Some parents who live in isiXhosa-dominant areas reportedly also make this choice on grounds of a desire to increase their child's English and/or Afrikaans proficiency through exposure to these languages as MoI and as the dominant language(s) used on the playground. This is the case for Crèches 2, 4 and 6.

As a result, both the aforementioned groups of crèches (i.e. Crèches 1, 7 and 8 on the one hand and Crèches 2, 4 and 6 on the other) have child populations consisting mostly of English- and Afrikaans-speaking coloured children, followed in number by isiXhosa-speaking black children, and then black children of immigrant descent, speaking other indigenous African languages as L1, with mostly English as L2. The levels of multilingualism in these groups vary, but the majority of the children are at least functionally bilingual, knowing either Afrikaans or English (to whatever extent) as one of their languages.

As for the remaining two crèches, Crèche 3 is situated between wine farms, and serves the farm worker population of that area which consists largely of monolingual Afrikaans coloured workers and monolingual isiXhosa black workers. Finally, Crèche 5 is situated in a nearby, largely monolingual isiXhosa township. Each of these two crèches supplied one trilingual participant, who was either receiving exposure to the two languages not supported at their current crèche in other contexts, or who had previously received such exposure at a different crèche. Table 5.2 below indicates which trilingual participants were sourced at each of the eight crèches discussed above, and provides a percentage-wise distribution of the different L1s spoken in the relevant classroom, as well as the average percentage of the instruction in the relevant classroom and of the between-child playground interaction that occurs in Afrikaans/English/isiXhosa/other languages. The distribution of L1s is based on the crèche's record of the L1 of each child in the classroom (as reported by the parent upon the enrolment of their child), and the number of children in the classroom. The percentages relating to the distribution of languages during instruction and playground interaction are the estimations that were provided by the relevant child(ren)'s teacher in the teacher report (cf. Section 5.4.2 below).

Crèche	Nr of trilinguals sourced	L1s in classroom (%)	MoI (%)	Playground interaction (%)
Crèche 1	2 (= T1, T2)	59 Afr; 23 Eng; 18 Xho	75 Eng; 25 Afr	60 Eng; 30 Afr; 10 Xho
Crèche 2	2 (= T3, T4)	74 Eng; 15 Xho; 11 Afr	75 Eng; 25 Afr	70 Eng; 20 Afr; 10 Xho
Crèche 3	1 (= T5)	53 Afr; 47 Xho	90 Afr; 10 Eng	70 Afr; 25 Xho; 5 Eng
Crèche 4	1 (= T6)	53 Xho; 29 Eng; 18 Other	100 Eng	35 Xho; 35 Eng; 30 Afr
Crèche 5	1 (= T7)	85 Xho; 15 Oth	75 Xho; 12.5 Eng; 12.5 Afr	90 Xho; 10 Oth
Crèche 6	2 (= T8, T9)	60 Xho; 24 Oth; 9 Afr; 7 Eng	60 Eng; 40 Afr	75 Eng; 12.5 Xho; 12.5 Afr
Crèche 7	1 (= T10)	67 Xho; 33 Afr	65 Eng; 35 Afr	75 Eng; 12.5 Xho; 12.5 Afr
Crèche 8	1 (= T11)	60 Xho; 40 Afr	50 Xho; 50 Eng	75 Xho; 25 Eng

**Table 5.2: Language distribution at crèches from which trilinguals were sourced**

Abbreviations: Afr = Afrikaans; Eng = English; MoI= medium of instruction; Oth = other African languages; Xho = isiXhosa

### 5.3.2 Crèches supplying monolingual participants

The English monolingual participants were sourced from three crèches, i.e. Crèches 9, 10 and 2 (the latter being one of the crèches that supplied trilingual participants). All three of these crèches are situated in an area on the Cape Flats that is undergoing the large-scale language shift mentioned earlier. As a result, the predominantly coloured population residing in this area has varying levels of proficiency in both Afrikaans and English, with higher proficiency in Afrikaans being more common among the older generations and higher proficiency in English (as well as English monolingualism) being more common among the younger generations (Smit, 2009:19). These crèches are more examples of those crèches mentioned above that serve not only the immediate community, but also children from areas further

afield. As a result, the largest proportion of children in these crèches is monolingual English coloured children, with the remaining percentage being divided between Afrikaans-English bilingual coloured children and black isiXhosa-dominant multilingual children (mostly isiXhosa-English bilinguals and isiXhosa-English-Afrikaans trilinguals). Reportedly, the MoI in these three crèches is English, with some degree of Afrikaans also being used. Informal classroom observation revealed that teachers often switch to Afrikaans during informal teacher-child interaction and for reprimanding purposes.<sup>71</sup>

The crèche from which all 10 Afrikaans monolingual participants were sourced, i.e. Crèche 11, is situated in a valley that is renowned for its wine farms, in the near vicinity of a large university town. The crèche serves the largely Afrikaans monolingual, coloured community of farm workers (the majority of whom live on the wine farms that provide them with employment) and employees of a nearby sewage treatment works that also supplies employee housing. As touched on in Section 5.2.1.1, this crèche is funded by a large NPO that aims to develop self-reliance in disadvantaged areas of South Africa by providing healthcare, education and training. All but one of the children at this crèche are monolingual Afrikaans speakers. The MoI in this crèche is Afrikaans, with English terms for colours, seasons, etc. occasionally also being taught.

The five isiXhosa monolinguals who attend a crèche were sourced from three different crèches, i.e. Crèches 12, 13 and 14. Crèche 12 is situated in a racially, culturally and linguistically diverse area. As such, the learner demographics and MoI at this crèche are similar to that of Crèches 1, 2, 4, 6, 7 and 8 (which supplied trilingual participants). However, the two monolingual participants sourced from this crèche had only been attending the crèche for a couple of months each, with their English proficiency (according to the parents and teachers) being limited to the recitation, but non-comprehension, of a few English rhymes/songs, with no Afrikaans proficiency to speak of. Crèches 13 and 14 are both situated in the same largely monolingual isiXhosa township as Crèche 5 (from which one trilingual participant was sourced), and have the same predominantly monolingual isiXhosa child population and MoI.

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<sup>71</sup> Incidentally, a number of the parents who are L1 Afrikaans L2 English bilinguals raising their children almost exclusively in English, also noted that they find themselves unconsciously switching to Afrikaans when they reprimand their children, reportedly because they feel it comes most naturally to them in an emotionally-laden situation.

## 5.4 Instruments used to assess language exposure and proficiency

### 5.4.1 LBQ and UBiLEC

#### 5.4.1.1 Design of the LBQ

The original design of the LBQ employed in the present study was inspired by some of the questionnaires used in the large-scale international collaborative research action known as *COST IS0804, Language Impairment in Multilingual Society: Linguistic Patterns and the Road to Assessment* (for example questionnaires, cf. Tuller, 2010; Gutiérrez-Clellen & Kreiter, 2003; Li, Sepanski, & Zhao, 2006). Certain questions were added and others removed or rephrased, on grounds of the specific research interest of this study, and to make it suitable to the specific low SES context in which the study was to be conducted.

Halfway through the data collection process, the researcher came across an instrument that enables the easy quantification and interpretation of the type of language exposure data collected by means of the LBQ, i.e. the *Utrecht Bilingual Language Exposure Calculator* (UBiLEC; Unsworth, 2011a, 2011b, 2013b). This instrument was originally designed for use with bilingual children, but was recently updated to make it suitable for trilingual populations. The instrument consists of a LBQ and an accompanying Excel document (cf. Section 5.4.1.3 below) that contains the necessary algorithms to calculate, on grounds of the data elicited by means of the LBQ, (i) current amount of exposure (CAoE) to each language, as percentage of the child's waking hours in a typical week; (ii) the average quality (in terms of "nativeness") of this exposure, graded on a scale of zero to five; (iii) the amount of exposure in years that the child has had to each of her languages over time when considering varying amounts of exposure in different years, i.e. her cumulative length of exposure (CLoE) to each language in years; and (iv) traditional length of exposure (TLoE) to each language in years, i.e. for each language, her age at testing minus the age at which she first received significant exposure to that language. As this Excel document was deemed the ideal instrument for quantifying and interpreting the data elicited during the interviews with parents, it was decided that the few questions in the UBiLEC questionnaire that were not already included in the LBQ originally designed for the present study, would be included in an updated version of the latter questionnaire. Those parents who had already been interviewed using the original LBQ were subsequently contacted and asked the extra questions over the telephone.



Below, an overview is given of the information elicited by the LBQ employed in this study, ordered according to topic. The complete final version of the LBQ appears as Appendix 1.

- ***Personal details of informant***

Elicits personal information pertaining to the informant, such as their full name, contact number, address and their relationship to the child.

- ***Personal details of child***

Elicits personal information pertaining to the child, such as their full name, sex, birth date and place, the number and age of any siblings, and the name of the crèche that she attends.

- ***SES level***

Ascertains the level of education completed by each of the child's parents, as well as the nature of their current occupation (where relevant).

- ***Developmental history of child***

Ascertains whether the child seems to be typically developing on grounds of questions regarding developmental milestones and possible developmental problems. Parents are asked the age at which the child (i) first started walking (before 18 months taken as the norm); (ii) produced her first word (before 18 months taken as the norm); and (iii) produced her first multi-word phrase (before 24 months taken as the norm) (cf. Tuller, in press, with regard to norms). Parents are furthermore asked about past and/or present concerns regarding their child's language development. Information regarding ear problems is lastly also elicited, in order to ascertain whether there was ever a period in which the child was hard of hearing, which could have reduced the amount of input she could access. Children who did not adhere to any one or more of the developmental milestones, whose parents were concerned about their linguistic development for reasons that seemed justified, and children who were unable to hear properly for a period of time were not considered suitable participants for the present study and the interview was discontinued.

- ***Language exposure***

Elicits information about the specific languages that the child is exposed to in various contexts (both at present and in the past) and their percentage-wise distribution at home and in other contexts. This is done by asking the parents which persons the child has frequent contact with at home or in the community; what languages these persons are

able to speak; which languages they use with the child and which languages the child uses with them in return; and (following one of the language history questionnaires used in the COST Action IS0804, i.e. that developed by Li et al., 2006) what percentage of the interaction between each of these persons and the child takes place in Language A, B and/or C. The same questions are asked in the case of the teacher, class mates and best friends. How frequently the child is exposed to each of the three languages via the television, via being read to and via oral story telling, as well as the distribution of languages in each case is also ascertained, alongside a description of the context in and age at which the child first received significant exposure to each of the three languages. Lastly, in order to quantify the child's exposure, the parents are asked to give a detailed description of a typical week day, and a typical Saturday or Sunday in the child's life. Parents are encouraged to be as specific as possible, detailing the average length of each activity and the number of people and languages involved in each activity.

- ***Proficiency levels***

In the case of each language, parents are asked to rate the average productive and receptive proficiency of the child, themselves, and any other person who has frequent contact with the child and therefore serves as input-provider. The purpose of collecting this type of data was primarily to enable an estimation of the average quality (in terms of "nativeness") of the input that the child receives in each language. In order for the parents to rate proficiency levels, the researcher presented them with the following simple, descriptive options as they relate to productive and receptive skills respectively: "Very good", "Good", "Not so good", "Bad" and "I do not feel competent to evaluate this". Upon entering these data into the UBiLEC spreadsheet, the ratings had to be reinterpreted and assigned a value between zero and five, in order for these data to be interpretable by the specific algorithms. The descriptive options presented to respondents in the case of the original UBiLEC questionnaire (Unsworth, 2011a, 2011b, 2013b), along with their respective values, are given below. Note that in the calculation of the average quality of current exposure, the UBiLEC algorithms make use of the ratings of productive skills only (Unsworth, 2011a:8), the ratings of comprehension skills being considered additional information.

<b>Language proficiency: speaking</b>	<b>Score</b>
Hardly any fluency	0
Limited fluency	1
Fairly fluent	2
Quite fluent	3
Very fluent	4
Native fluency	5
<b>Language proficiency: understanding</b>	
Virtually no understanding	0
Limited understanding	1
Some understanding	2
Good understanding	3
Excellent understanding	4
Native understanding	5

**Table 5.3: UBiLEC proficiency rating scale (Unsworth, 2013b)**

In reinterpreting the data elicited in the present study's LBQ to align with the UBiLEC scoring system detailed above (so that the UBiLEC spreadsheet could be used to analyse the data), "Very good" was interpreted as a score of five in the case of native speakers (i.e. informants who refer to themselves / the relevant person reported on as an "L1 speaker") and four in the case of highly proficient L2/L3 speakers (who, despite this high level of proficiency, do not consider the relevant language to be an L1, but rather an additional language); "Good" was interpreted as a score of three; "Not so good" as a score of two in the case of speakers who can reportedly produce and understand short, simple sentences, and as a score of one in the case of speakers who can reportedly understand and produce only a few words; and "Bad", finally, was interpreted as a score of zero.<sup>72</sup> In the few cases where a respondent did not feel competent to offer an evaluation of another person's proficiency based either on their own low proficiency in the given language, or on the fact that they do

<sup>72</sup> Ideally, there should of course be a one-to-one mapping of the descriptive options on the questionnaire to the numerical options in the UBiLEC Excel spreadsheet. The reason why this is not the case in the present study is simply because the UBiLEC was discovered only after the LBQ had been designed and the data collection process had already started. The ad hoc conversion of the original four ratings on the LBQ (*Very good*, *Good*, *Not so good*, *Bad*) into the six UBiLEC ratings (zero to five) is thus not ideal and an alternative conversion could be proposed as superior. Ultimately, however, there is no perfect way of conducting such a conversion. In future research, the UBiLEC Excel spreadsheet should of course be used in conjunction with the UBiLEC LBQ.

not know the other person well, the other parent could often supply a rating or, in the case of the teacher's and class mates' proficiency ratings, the information could be gained from the teacher report (cf. Section 5.4.2 below).

#### **5.4.1.2 Administering the LBQ**

The low SES context of the present study dictated the oral administering of the LBQ in order to control for varying literacy levels among respondents, especially since the LBQ constituted quite a lengthy document. This also allowed the administrator the opportunity to ask for clarification or additional information when necessary, whilst ensuring that all questions were answered. Administering the questionnaires orally furthermore ensured a quicker response time compared to having the printed questionnaire sent home with the child, and then waiting for it to be completed by the parent in their own time, returned to school and then returned to the researcher. Other researchers have also warned that sending a questionnaire home sometimes results in not all questionnaires being returned to the school, so leaving the researcher with an incomplete data set.

The questions were posed in an informal manner to mimic a casual conversation rather than an interview, so as to encourage honest, detailed answers from the parent(s). Sometimes, when asked to estimate what percentage of the interaction between their child and another person is in Language A and what percentage is in Language B and/or C, the informant would state that they did not understand the question, would simply keep quiet, or would provide an answer from which it was clear that they had misunderstood the question. In such cases, it was assumed that the concept of percentage was proving problematic, and therefore the question would be rephrased as follows: "How often do you speak Language A to your child? Is it (almost) all the time; most of the time; half of the time; seldom; or (almost) never?" The response would then be interpreted as 100%, 75%, 50%, 25% or 0%, in accordance with the respective descriptive option the parent chose.<sup>73</sup> Admittedly, in cases where one person speaks all three languages to the child, the interpretation of answers to this type of circumscription became quite complex.

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<sup>73</sup> Note that this quantification of language use patterns happened to be in line with that employed in the UBiLEC Excel spreadsheet. In retrospect, the questionnaire designed for the purposes of the present study should not have asked for, as in Li et al. (2006), a percentage-wise breakdown of language use patterns, but rather, as in the UBiLEC LBQ, for a choice between the type of descriptive options detailed above.

When aiming to ascertain the SES of the child's family by enquiring as to levels of education and the nature of the parents' occupations, the administrator posed these questions informally, starting with "I'd now like you to tell me a bit more about your life story... Where did you grow up?", "Did you finish school there?", and progressing to "And what did you do after finishing school? Did you go straight to work?" If the answer to the latter question was "no", the administrator would ask what course was enrolled for and whether the respondent had the opportunity to finish this course. The final questions regarding SES were: "Are you currently employed and if so, where do you work and what exactly do you do there?" These questions were repeated for each of the child's primary caregivers.

As mentioned earlier, the interviews were mostly conducted in the parents' home environment on a Saturday or Sunday. In the majority of cases, the female L1 isiXhosa assistant accompanied the researcher to serve as interpreter and cultural broker. In the case of L1 isiXhosa parents, the assistant conducted the interview in isiXhosa, whereas the researcher conducted the interview in the case of both L1 Afrikaans and L1 English parents, in the language in which they were most comfortable. All interaction during the 18 interviews with the parents of prospective trilingual participants and during the first 15 face-to-face interviews with the parents of prospective monolingual participants was audio recorded. Each interview lasted approximately 45 minutes, unless discontinued due to disqualifying information becoming known. The audio recordings were later transcribed in Microsoft Word and, in the case of the isiXhosa-medium interviews, translated to English by the L1 isiXhosa assistant. Cf. Section 5.1.3 above for a description of some of the practical difficulties experienced in the arranging and conducting of these interviews. In the case of the 15 telephonic interviews (using the condensed version of the LBQ) with the parents of prospective monolingual participants, the elicited responses were noted by hand and later typed up in Microsoft Word.

#### **5.4.1.3 Use of UBiLEC Excel spreadsheet to quantify LBQ data**

The UBiLEC (Unsworth, 2011a, 2011b, 2013b) Excel spreadsheet was employed for the purposes of capturing and analysing the exposure data elicited through means of the LBQ that

was designed specifically for the purposes of the present study. The UBiLEC is suitable for use with bilingual and trilingual populations aged between 2 and 18 years. As mentioned above, it consists of a LBQ and an accompanying Microsoft Excel document that contains the necessary algorithms to calculate values for a number of different exposure variables, based on the data captured via the LBQ. Unsworth (2011a) provides a detailed description of how the algorithms in the Excel spreadsheet work, instructions on how to enter the data collected via the LBQ into the Excel spreadsheet and a copy of the UBiLEC LBQ. Only a brief description of the type of data that is used to calculate certain variables (rather than the exact algorithms), and the resultant output of a completed UBiLEC Excel spreadsheet will be supplied below.

Recall that the output of the spreadsheet, once all exposure data have been entered, is (i) CAoE to each language as percentage of the child's waking hours in a typical week; (ii) CLoE to each language in years; (iii) TLoE to each language in years; and (iv) quality (in terms of "nativeness") of the input the child has in each of her three languages at the current time, given as a value between zero and five.

The data entered into the spreadsheet to enable a calculation of CAoE firstly includes information on every person with whom the child has regular contact at home and outside of the home environment (specifically, at daycare, school and out-of-school care, with a distinction between the person offering the instruction in this context and the other children in this context). This information includes a rating of the ability every person/group of people has to understand and speak each of the three languages, the percentage of the speech every person/group of people directs at the child that is in language A, B and/or C, and the percentage of the speech that the child in turn directs at this person/group of people that is in language A, B and/or C.

Next, the data collected via the LBQ in description of a typical weekday and Saturday/Sunday in the child's life is entered into the relevant table, each row in this table representing a period of thirty minutes in the case of a week day and an hour in the case of a day at the weekend. Finally, extra information on other sources of language exposure that the child is perhaps not exposed to on a daily basis, is captured in a separate table. Such sources include, but are not limited to, sports/clubs, friends, reading, television and the computer. The output of the spreadsheet includes a differentiation between quantity of exposure calculated

using only the home and school context data, and quantity of exposure including these extra sources of exposure.

In the majority of the cases in the current study, cousins and good friends were listed as siblings in order for exposure from these peers to be captured in the calculation that includes only exposure at home and school, and not only in the calculation that includes exposure at home, school and from other sources. This is because, in the low SES areas the participants were sourced from, there are often a number of families residing together in one house or on one property (usually including a house, with a shack or other form of informal dwelling beside it). Also, because of parents' long working hours and resultant absence or fatigue, children spend a lot of time playing with neighbouring children, either outside in the street or in each other's homes. As such, the participants in the current study often spend as much time on a daily basis with cousins and/or friends as with siblings.

As illustration of how the UBiLEC spreadsheet calculates CAoE, consider the following example, based on a child who spends 10 waking hours per weekday at a crèche where English and Afrikaans are used equally as the MoIs, and where the children in the classroom use English, Afrikaans and isiXhosa in equal amounts (exposure via instruction being considered to constitute two thirds, i.e. 67%, of the total exposure in the crèche context, and exposure via classmates one third, i.e. 33%):  $10 \text{ hours} \times 0.67 = 6.7 \text{ hours}$  language exposure per day via instruction;  $6.7 \times 0.5 = 3.35 \text{ hours}$  exposure per day to English and to Afrikaans, respectively, via instruction;  $10 \text{ hours} \times 0.33 = 3.3 \text{ hours}$  language exposure via classmates;  $3.3 \times 0.33 = 1.1 \text{ hours}$  exposure per day to English, Afrikaans and isiXhosa, respectively, via classmates;  $3.35 + 1.1 = 4.45 \text{ hours}$  total exposure per day to English and Afrikaans in the crèche context;  $0 + 1.1 = 1.1 \text{ hours}$  total exposure per day to isiXhosa in the crèche context;  $4.45 \times 5 = 22.25 \text{ hours}$  exposure per week to English and Afrikaans, respectively, in the crèche context;  $1.1 \times 5 = 5.5 \text{ hours}$  exposure per week to isiXhosa in the crèche context. In the case of each language, the aforementioned weekly total number of hours is added to the number of hours of exposure to that language that is received in all other contexts that the child is immersed in during the work week, the latter number being calculated in a similar fashion as the number for exposure in the crèche context. This total number of hours of exposure to a given language during the work week is then added to the number of hours of exposure calculated for the weekend (the numbers for a typical day at the weekend being

timed by two). Finally, the sum of the two numbers for each language is recalculated as a percentage of the child's waking hours per week.

Recall from Chapter 3 that the majority of bilingualism studies operationalise 'length of exposure' as the child's age at testing minus their age at onset of acquisition, a variable Unsworth (2011a) terms "traditional length of exposure" (TLoE). According to this conceptualisation of length of exposure, a child aged exactly four years on the day of testing and who had received exposure to three languages from birth, would have had exactly four years of exposure to each language on the day of testing. Such a conceptualisation does not take into account that, given the nature of the multilingual experience, a trilingual child will most likely have varying amounts of exposure to each of her languages on any given day and over time, making the above four years of exposure incomparable with the four years of exposure that an age-matched monolingual child would have had. It was to overcome this fallacy that Unsworth (2011a) first introduced the notion of 'CLoE', a measure that provides a more accurate reflection of a multilingual child's length of exposure, based on extensive data regarding the child's language exposure in the past. The UBiLEC spreadsheet provides an estimation of both TLoE and CLoE, the former simply being calculated on grounds of the date of testing, the child's birth date and the age at which she first received significant exposure to a given language.

The data entered into the UBiLEC spreadsheet for the calculation of CLoE includes, for each year in the child's life, information on the number of days per week that the child attended daycare/school and the number of hours spent at out-of-school care per week, followed by the percentage of the interaction at daycare/school/out-of-school care that took place in each language, and the percentage of interaction between the child and each person in the home environment that took place in each language. Capturing these data for each year in the child's life allows the measure of CLoE to be sensitive towards changing crèche contexts and changes in language use patterns in the home (often as a result of changes in the child's proficiency in given languages, in turn a result of changes in the crèche context). The UBiLEC suggestions (based on international norms) for typical number of hours spent at daycare and typical number of hours spent napping at daycare per day, in each year of the child's life, were altered to more accurately reflect the lives of the participants in the present study. These children typically spend 10 rather than eight hours at crèche per day, and still



nap at least 1.5 hours at crèche daily between the ages of four and five, as opposed to not napping at all.

Unsworth (2011a:3,5) concedes that both the measures of CAoE and CLoE are based on parental report data and therefore serve only as estimations of the child's actual exposure, these estimations being only as reliable as the reports are accurate. Whereas there is some debate regarding the accuracy of parental recall, Unsworth (2011a:3), like Paradis, Emmerzael and Duncan (as cited in Unsworth, 2011a), argues that as far as linguistic milestones are concerned, parental recall is typically regarded as a "valid tool". Studies indicating the reliability and validity of this method of capturing data on children's linguistic behaviour include, among others, Marchman et al. (2004) and Rodriguez et al. (2009). Unsworth (2011a:5) furthermore notes that the accuracy of the parental reports on changes in language use in the home over time may, especially in cases where parents made conscious, strategic language choices, be increased by the fact that parents are asked to report on their own behaviour and not on that of their child.

The final exposure variable that the UBiLEC spreadsheet calculates is quality of exposure. As mentioned above, 'quality of exposure' is operationalised in the UBiLEC as the proficiency level of each input provider in the language of input, proficiency being measured on a scale of zero to five (cf. Section 5.4.1.1 above for a description of each level). This conceptualisation is based on the assumption that more proficient speakers provide better quality language exposure, where 'quality' may be interpreted as greater grammatical accuracy, richer vocabulary, etc. (Unsworth, 2011a:4).

#### **5.4.2 Teacher report**

In order to collect accurate data concerning the child's language exposure in the crèche context, teachers were asked to provide a short report on this matter (cf. Appendix 5 for the teacher report form). Their report was guided by questions regarding the number of languages spoken at the crèche, who the speakers of these languages are, what purposes these languages are used for, and the average amount of between-child interaction that takes place in each language on the playground and in the classroom. Teachers were also asked to detail what language(s) they use to address the specific child in question, what language(s) the child responds in, and what language(s) the child uses to communicate with her classmates. An

indication of the distribution of the different languages in terms of percentage was requested for each context. The teacher was finally asked to rate their own proficiency in the three languages, as well as that of the child in question.

In most cases, teachers completed the report in their own time, in writing. In some cases, the information was elicited orally and written down by the researcher. The information in these reports was used to verify or correct parents' estimations of the nature of language exposure at the crèche, and as such was eventually captured in the UBiLEC spreadsheet. Occasionally, the parents' and the teacher's ratings of the child's proficiency in a given language would differ when either the parents or the teacher rated their own proficiency in that specific language as quite low. In such cases, the rating offered by the party who rated their own proficiency in that language as the highest would be considered the most accurate indication of the child's abilities.

### **5.4.3 Vocabulary test (LITMUS-CLT)**

#### **5.4.3.1 Design**

Recall from Chapter 3, Section 3.1.1.1 that according to researchers such as MacLeod et al. (2012:133), lexical acquisition may serve as “a window on bilingual language development” in general. As such, lexical measures are often used as an indication of overall language proficiency in childhood bilingualism studies. Perhaps for this reason, the majority of studies on bilingual and trilingual language acquisition focus on vocabulary development alone, especially in researching the relationship between input and linguistic development (cf. Chapter 3, Section 3.1.1.1 for examples of such studies). In the present study, a vocabulary measure was included for two reasons: (i) in order to enable comparisons with previous studies on the role of input in multilingual language acquisition in the early years; and (ii) to contribute to the international body of data already collected with the purpose of establishing monolingual and trilingual norms in early lexical development.

The latter ideal correlates with the motivation behind the COST IS0804 action, the research action responsible for the design of the vocabulary tests employed in the present study. These tests are known as the *Language Impairment in a Multilingual Society: Cross-linguistic*

*Lexical Tasks-South African English* (LITMUS-CLT-SAE; Southwood, 2012), *-Afrikaans* (LITMUS-CLT-AF; Southwood, 2012a) and *-isiXhosa* (LITMUS-CLT-XHO; Southwood & Potgieter, 2013). More specifically, this research action aimed to disentangle bilingualism and specific language impairment (SLI) from one another and to profile bilingual SLI in children from bilingual migrant communities in Europe (COST Action IS0804, n.d.).

This research interest stems from a growing awareness that many bilingual children, upon having their linguistic skills compared to monolingual norms, are being misdiagnosed with SLI and word finding disorder, when in reality these bilingual children may be typically developing bilinguals who, given sufficient time and exposure, would likely catch up to their monolingual peers (cf. COST Action IS0804, n.d.; Paradis, 2005; Paradis, 2010; Thordardottir, Rothenberg, Rivard, & Naves, 2006). A core reason for this misdiagnosis is the fact that, on the one hand, delayed lexical development is one of the earliest indicators of SLI and, on the other hand, bilingual children typically have a smaller vocabulary size in each language than monolinguals do, and may exhibit slower lexical processing and hindered lexical access (Baker, 2013). The need to establish norms for bilingual development across languages is thus evident, although a bilingual child's score on any standardised test should still be interpreted alongside information regarding her exposure patterns as such patterns may vary widely between bilinguals, which in turn may affect proficiency levels and, ultimately, test scores (Paradis, 2010:675-676; cf. also Gutiérrez-Clellen & Simón-Cerejido, 2007; Gutiérrez-Clellen, Restrepo, & Simón-Cerejido, 2006).

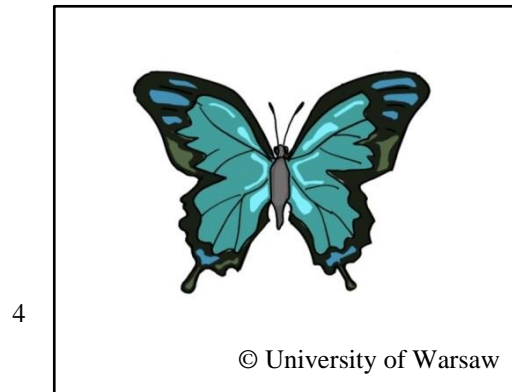
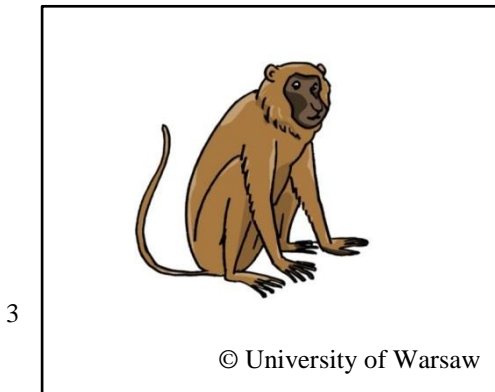
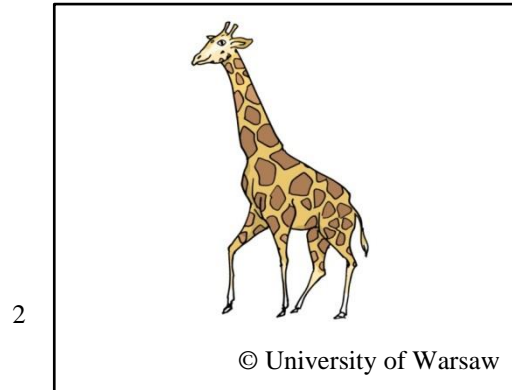
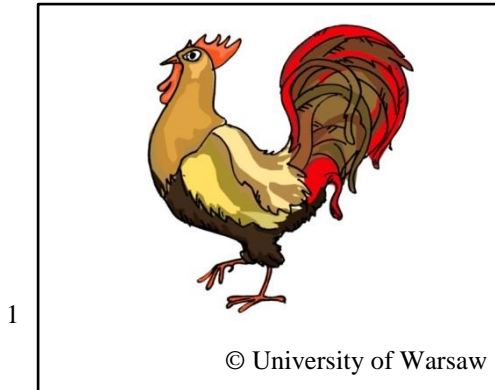
The LITMUS-CLTs designed within COST Action IS0804 are intended to enable the fully comparable assessment of vocabulary and lexical processing in 34 different languages (Haman, Łuniewska & Pomiechowska, in press:3). In the design of these instruments, a list of approximately 300 candidate words was compiled, along with accompanying pictures that are all culturally appropriate for the speakers of the 34 targeted languages. In the design of a specific language version of the LITMUS-CLT, target words are selected from this list of candidate words on grounds of the "difficulty rating" of the word on a scale of one to four. This rating is determined on grounds of the complexity index of the word (based on the structural and syntactic properties of the word in the relevant language) and the age at which that word is typically acquired by monolingual L1 speakers of the relevant language (Haman et al., in press:20-21). The different language versions are thus not identical in terms of the target word selection, but the procedure followed in their construction "assures that they are

fully comparable across all languages and within any language pair” (Haman et al., in press:4). The creators believe the strength of these instruments to be the fact that they enable a comparison between a bilingual child’s lexical ability in her two languages, based on her LITMUS-CLT scores for these languages (Haman et al., in press:4-5). In the present study, a sound comparison between a trilingual’s scores on the relevant three different language versions of the LITMUS-CLT, and between the monolingual groups’ performance on the three different tests is thus possible.

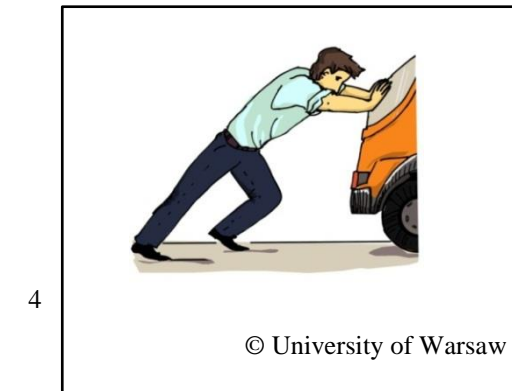
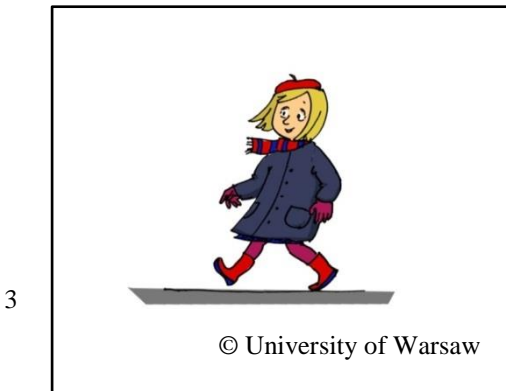
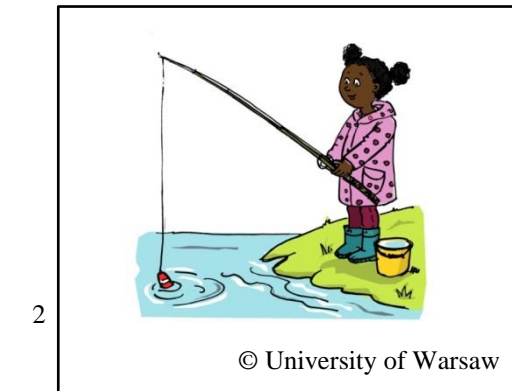
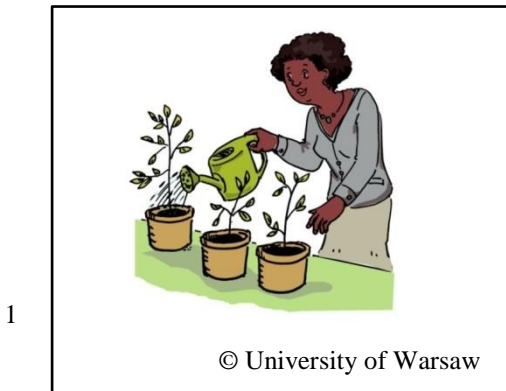
The LITMUS-CLT instruments use picture tasks to test the comprehension and production of both nouns and verbs. A comprehension measure was included because this skill developmentally precedes production and the testing thereof is less sensitive to the effect of confounding variables such as pronunciation and general temperament, than is the testing of production (Haman et al., in press:8). Additionally, a production measure was included as children with SLI may have word finding difficulties, leading to disproportionately low scores on production items compared to comprehension items, and because disproportionately different comprehension and production scores have also been found to be associated with unbalanced bilingual development (Baker, 2013). As regards the testing of both nouns and verbs, this decision was motivated by the fact that these word classes exist across all languages, and by the fact that children with SLI may have more difficulty learning verbs than they have learning nouns (Haman et al., in press:8).

The LITMUS-CLT thus consists of four sections, i.e. noun production, verb production, noun comprehension and verb comprehension. Each section contains 32 test items. The comprehension sections constitute a picture-selection task: in the case of each test item, the child is shown a collection of four simple pictures and instructed to identify a certain object or action by pointing at the picture that denotes it. In each case, there is a target, an opposer from the same semantic field as the target, and two distracters. The four items have highly similar “difficulty ratings”. For example, in (1a) below – this being number 21 in the noun comprehension (NC) section of the LITMUS-CLT-SAE – the child will be asked “Where is a monkey?”; in (1b) below – this being number 16 in the verb comprehension (VC) section of the LITMUS-CLT-SAE – the child will be asked “Who is watering?”.

(1) (a)

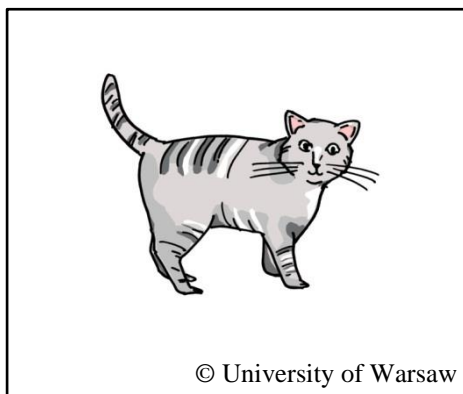


(1) (b)

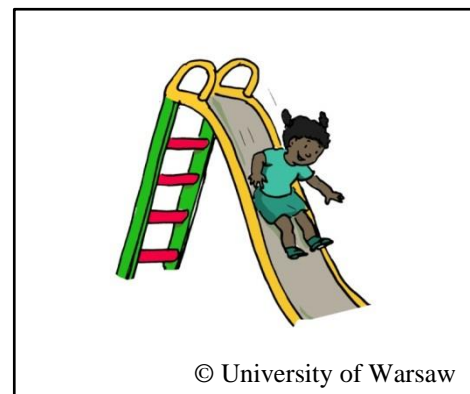


The production items constitute a picture-naming task: in the case of each test item, the child is shown a single picture and asked the equivalent of “What is this?” (for noun items) or “What is this person doing?”/“What is happening here?” (for verb items). For example, (2a) and (2b) below are, respectively, the pictures intended to elicit the noun *cat*, this being number 1 in the noun production (NPr) section of the LITMUS-CLT-SAE; and the verb *slide*, this being number 4 in the verb production (VPr) section.

(2) (a)



(b)



#### 5.4.3.2 Administering of test and coding of test data

On average, the administering of the comprehension sections of the LITMUS-CLT took about five minutes each and the production sections about eight minutes each, but this varied widely across individual children. As mentioned in Section 5.1.4, the administering of sections of the vocabulary test and passive construction test were alternated during each play session so as to prevent the child from becoming bored with either test, and stickers were used as reward for the child’s participation. The order in which the four sections of the LITMUS-CLT (i.e. NC, VC, NPr and VPr) were administered was counterbalanced to the extent that within each language group, half of the monolinguals were tested in the order NC-VC-NPr-VPr and the other in the reverse order, i.e. VPr-NPr-VC-NC.<sup>74</sup> As for the trilingual participants, six were tested in the first order in the case of English and isiXhosa, and in the second order in the case of Afrikaans; the remaining five trilinguals were tested in the first

<sup>74</sup> This order of presentation is in line with the recommendation by the creators of the LITMUS-CLT that an equal number of children receive production/comprehension tasks first, with a varied order of noun versus verb sections within the production and comprehension tasks.

order in the case of Afrikaans and in the second order in the case of English and isiXhosa. The child's answers to the LITMUS-CLT were written down, and later verified by the audio recording of the relevant play session.

In capturing participants' responses to the LITMUS-CLT test items, the Microsoft Excel spreadsheet supplied by the COST IS0804 action for this purpose was employed as template. In this spreadsheet, entering the number of the picture a child selected when presented with a given comprehension item allows for the automatic calculation of a score for that item: every correct answer (i.e. every answer that coincides with the number of the target picture) is awarded a mark of one and every incorrect answer a mark of zero. Ultimately, a total score out of 32 is calculated, indicating overall performance on the relevant section of the test.

In the case of production items, the child's answer is first logged verbatim by the person responsible for the data entry. If this answer corresponds with the target answer, a score of one is automatically awarded. Alternatively, an error sign appears, signalling that the child's answer needs to be captured in the noun or verb "production dictionary", i.e. a sheet in which all produced answers are categorised as being of a specific nature, and consequently worth either one or zero marks. For example, if the target form for NPr item number one was *cat* and the child produced *dog*, this answer would be logged under "semantic confusion" in the NPr dictionary, under item number one. The entry for NPr item number one in the NPr sheet (i.e. *dog*) is then cross-referenced with all possible entries for this number in the NPr dictionary until a match is found, in this case under "semantic confusion". This data is then presented in the NPr sheet as "Error: semantic" and the associated mark of zero awarded.

The dictionary sheets contain a detailed list of both correct and incorrect answer types, ranging from categorisations such as "phonological confusion", "incorrect inflection" and "regional variant" to "perceptual confusion" and "gesture". All of these options are also available for cases of language mixing (i.e. when a child's answer constitutes a word in a language other than the one being tested), allowing descriptions such as "Mixing: correct". Within the section on language mixing, there are also options relating to language blending, i.e. where a given word contains morphemes from two or more languages.

With regard to the scoring of production items, the spreadsheet presents one with three different scores for each participant's performance on the production section as a whole (out

of 32): a soft, hard and language mixing score. The soft score recognises as correct regional variants and synonyms, which the hard score does not; the language mixing score is the sum of all correct answers that constitute a case of language blending or mixing (i.e. the subscore that one could add to the soft score to obtain a total score in which credit is given to accurate cases of language blending and mixing).

In the present study, only the soft score was considered. The hard score was disregarded as it was considered too stringent. The Afrikaans monolingual group, for example, almost consistently produced a regional variant of the target form *leer* (“ladder”), namely *trappies* (“steps-DIMINUTIVE”), whilst many of the English monolinguals used, for example, the Cape Flats English<sup>75</sup> form *scissor* for the target item *scissors*. Not giving credit for a form that might be the only lexical entry a child has in their lexicon for an item due to the specific variety of a given language that they are exposed to, would result in an inaccurate reflection of their lexical abilities. A similar argument may be made for synonyms. As for the decision not to include the score for language mixing in the total score, the intention in the present study was to discern between trilinguals’ proficiency in their three languages. Confounding scores awarded for accurate answers in the target language and accurate answers in another language would, of course, disable such a comparison. In the case of a few trilinguals who produced answers almost exclusively in a language other than the target language, such a confounded score would give a highly erroneous reflection of the child’s ability in the target language, in which they really produced very few answers.

In the case of the LITMUS-XHO, the assistant doing the data entry (an L1 Afrikaans highly proficient L2 speaker of isiXhosa) was sometimes uncertain as to whether certain words are acceptable in the local isiXhosa vernacular and/or in other regional dialects, and had trouble discerning whether certain English or Afrikaans words in the isiXhosa test data constituted recognised loan words or cases of idiosyncratic language mixing. As many recognised isiXhosa words visibly have their origin in English and Afrikaans (e.g. *itumato* for the English *tomato* and Afrikaans *tamatie*), he was also uncertain whether certain “Xhosa-lised” English or Afrikaans words were accepted words in the local isiXhosa dialect or simply cases

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<sup>75</sup> Cape Flats English is a non-standard dialect of Standard South African English that is mostly spoken by the coloured population of the greater Cape Peninsular area in the Western Cape province (Smit, 2009:19). Resulting from English-Afrikaans language contact in the communities based in this area, Cape Flats English contains many features that are transferred from Afrikaans, but also certain distinctive features. Cf. McCormick (1989; 1993) and Stone (1995) for more information on this dialect.



of idiosyncratic language blending. Consequently, he often could not make use of his own judgement in deciding whether or not a certain response should rightly be included in the LITMUS-CLT-XHO spreadsheet as a possible correct answer of the nature “synonym”, “regional variant”, “language blending”, etc.

In an attempt at overcoming these problems, the researcher decided to test the intuitions of a panel of five young L1 isiXhosa adults who all grew up in or near the areas from which participants for the current study were sourced. The assistant was asked to make a list of all the words in the isiXhosa data that were as yet uncategorised due to their ambiguous nature. Each of the words on this list was presented to the panel of L1 speakers, who were asked to state whether, in their opinion, the specific word would likely be used by a young isiXhosa monolingual child growing up in the areas where the data were collected. If so, the word was listed as a synonym on the LITMUS-CLT-XHO spreadsheet. If the panel pointed out that the word was acceptable in another dialect of isiXhosa, it was listed as a regional variant. In many cases, the panel argued that the amount of exposure the hypothetical monolingual child has to English television or English songs and rhymes at crèche would determine whether they would use the English, “Xhosa-lised” English or “true” isiXhosa word when speaking isiXhosa. As even the monolingual participants in the current study all had some exposure to English via these media, it was decided that such words would be given credit in scoring. It is believed that the re-evaluation of the list of possible correct answers in the LITMUS-CLT-XHO was a valuable exercise in assuring a fair reflection of participants’ lexical knowledge, given the specific sociolinguistic context in which they are growing up.

#### **5.4.4 REALt passive construction test**

##### **5.4.4.1 Design**

###### ***Background information***

The instrument employed to test the acquisition of passive constructions in the present study is a subsection of Southwood and Van Dulm’s (2012) language therapy instrument known as *Receptive and Expressive Activities for Language Therapy* (REALt). This instrument was designed to enhance the language intervention process in the case of L1 and L2 English- and Afrikaans-speaking children with SLI or a language delay/disorder stemming from some other condition (Southwood & Van Dulm, 2012:1). The instrument has since also been

translated into isiXhosa, but this version (Southwood & Potgieter, 2013) is as yet unpublished and available only from the authors. Included in the target population of this instrument are children from low SES communities whose general and classroom-relevant linguistic skills may be developed through the type of language stimulation that the use of this instrument can offer (Southwood & Van Dulm, 2012:1). As by far the majority of child language therapy material focuses on the development of vocabulary and basic sentence structure in very young children, the focus of this instrument is the remediation of later-developing language skills in children of early school-going age who struggle with syntax and pragmatics (Southwood & Van Dulm, 2012:1). The development of this instrument was further motivated by the lack of standardised language assessment instruments that are culturally and linguistically suited for use with South African children. As a result, the REALt instrument was designed to serve both language remediation and informal language assessment purposes in the South African context (Southwood & Van Dulm, 2012:1).

The REALt material consists of 361 colour picture-based items for use as therapy material and/or informal assessment material; 140 reproducible take-home colour-in story booklets; a CD with electronic copies of the aforementioned booklets for office photocopying and assessment/progress record forms; an A3 poster depicting the two families used as characters in the REALt; and lastly also a user manual. The picture items in the REALt all depict scenes from the lives of two neighbouring middle- to lower-middle-class South African families of different ethnic backgrounds, viz. the Zulus (a black family) and the Martins (whose skin tone suggests they are either white or of mixed race). The scenes and activities in the items are “simple enough for children from economically deprived backgrounds to identify with, yet interesting enough for economically privileged children to enjoy”, whilst culture-, race- and religion-specific activities and socio-cultural taboos were avoided wherever possible (Southwood & Van Dulm, 2012:2-3). The various sections of the REALt allow the remediation and/or assessment of aspects of articles, binding, conjunctions, ellipsis, narratives and role-taking, quantifiers, *wh*-questions and passive constructions, with each section including a number of subsections targeting subsets of these features, constructions and skills.

### *Comprehension subset*

Because of the difficulties language-impaired children experience with passives, and also because these constructions are very common in the type of academic writing found in school text books, the creators of the REALt decided to include a section on passives in their instrument, focusing on both comprehension and production (Southwood & Van Dulm, 2012:49). The comprehension section constitutes a picture-selection task and includes 10 items targeting “agentive” or “long” passives (i.e. passives containing a *by*-phrase), 10 items targeting “agentless” or “short” passives (i.e. passives in which the AGENT is unspecified through the omission of the *by*-phrase) and 15 items targeting reversible long passives. All the sentences in the sections on long and short passives are actional passives (cf. the section below on verb types). As for the section on reversible passives, recall from Chapter 4, Section 4.4 that these are passives in which the expression denoting the animate AGENT argument and that denoting the animate THEME argument are interchangeable, even if such an alteration renders the interpretation somewhat improbable, e.g. *The cat was chased by the dog* versus *The dog was chased by the cat* (cf. (3c) and (4b) below for more examples of improbable scenarios).

In the case of each individual comprehension item, the child is presented with a selection of three pictures. One picture denotes the target passive construction that the child is presented with orally, another picture depicts the opposing form, and the final picture serves as a distracter that is semantically less related to the target. In the case of items targeting the comprehension of agentive and agentless actional passives, the opposing picture depicts an active sentence in which the same argument featuring in sentence-initial position in the passive stimulus sentence occurs at the start of the sentence, this time in the role of AGENT rather than THEME. In such cases, differences between the target passive sentence presented to the child and the sentence associated with the opposing picture are limited to a few function words or bound morphemes (Southwood & Van Dulm, 2012:49). Below are examples of the options that a child is presented with visually in the case of the agentive subset (cf. (3a), which corresponds with item 1 in this subset), the agentless subset (cf. (3b),

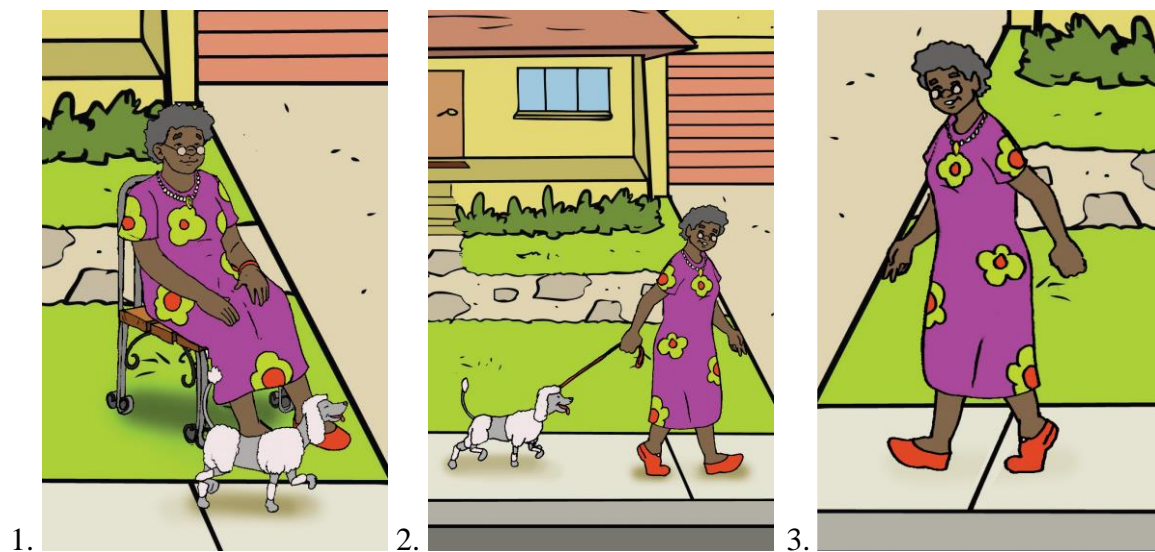
which corresponds with item 5 in this subset), and the reversible subset (cf. (3c), which corresponds with item 6 in this subset).<sup>76</sup>

(3) (a) **Passive sentence stimulus:** *Bubbles is walked by Granny Gogo.*

**Picture 1 [opposer]:** Bubbles is walking by Granny Gogo.

**Picture 2 [target]:** Bubbles is walked by Granny Gogo.

**Picture 3 [distracter]:** Granny Gogo is walking without Bubbles.



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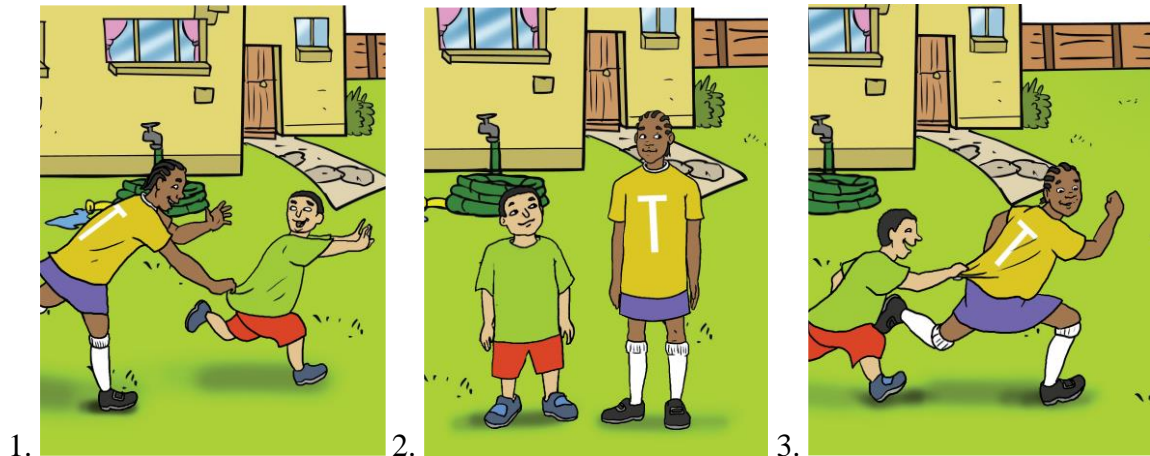
(3) (b) **Passive sentence stimulus:** *Thandi was caught.*

**Picture 1 [opposer]:** Thandi is catching Stevie (depicting *Thandi was catching*).

**Picture 3 [distracter]:** Thandi and Stevie are standing.

**Picture 2 [target]:** Stevie is catching Thandi (depicting *Thandi was caught*).

<sup>76</sup> Due to space limitations, examples from only the English version of the REALt are provided in this chapter. For a detailed description as well as examples of the relevant types of passive constructions in Afrikaans and isiXhosa, cf. Chapter 4.



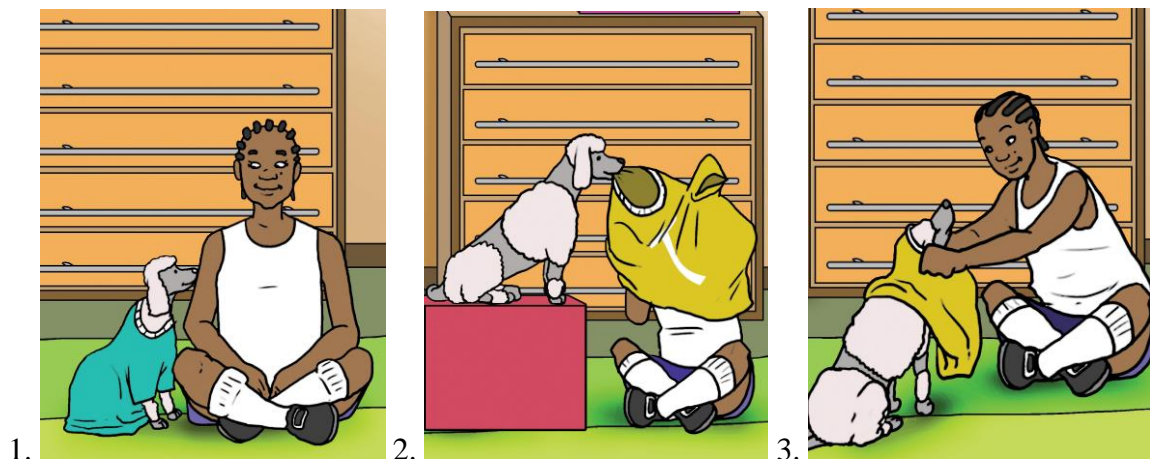
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(3) (c) **Passive sentence stimulus:** *Thandi is dressed by Bubbles.*

**Picture 1 [distracter]:** Bubbles has clothes on and is sitting next to Thandi.

**Picture 2 [target]:** Bubbles is putting a shirt on Thandi (depicting *Thandi is dressed by Bubbles*)

**Picture 3 [opposer]:** Thandi is putting a shirt on Bubbles (depicting *Bubbles is dressed by Thandi*)



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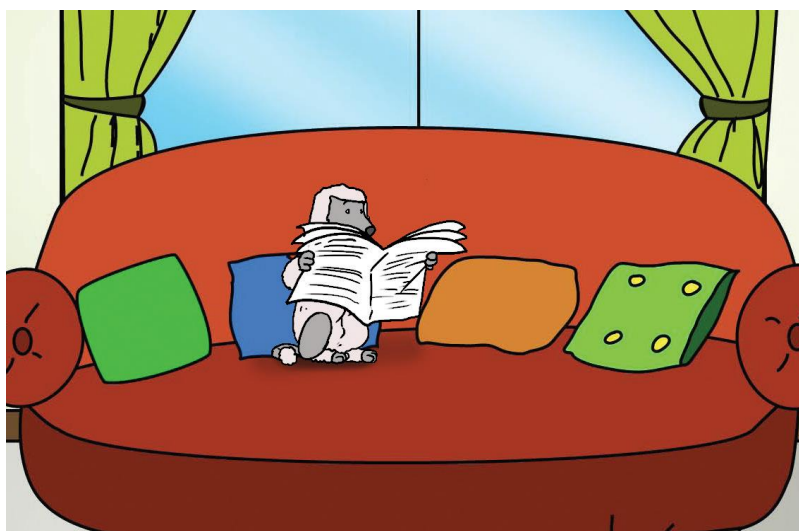
### ***Production subset***

The production section constitutes a sentence completion task and includes 10 items targeting actional passives (cf. the section below on verb types) and 15 items targeting reversible passives. The Afrikaans and isiXhosa versions also have an additional five items each targeting existential passives, i.e. five *daar*-passives in Afrikaans and five *ku*-passives in isiXhosa. In the case of each item, the child is presented with a single picture and a

descriptive active sentence detailing the action depicted in the picture. The child is then prompted to reformulate the sentence so that the semantic content stays the same, but the structure differs. The examples below illustrate how this is done in the case of (4a) item 2 on the action subset; (4b) item 3 in the reversible subset; and (4c) item 3 in the *daar*-passives subset in the Afrikaans and the *ku*-passives subset of the isiXhosa version of the instrument (Southwood & Van Dulm, 2012:50). In all cases, the child is free to produce either a long or a short passive, as there is no way to elicit the production of a long passive without excessive prompting, which would most likely result in an inaccurate reflection of the child's true ability, and would make the data unrepresentative of what a child might produce spontaneously.

- (4) (a) **Stimulus:** *Look how funny this is. Bubbles is reading the newspaper! We can say it another way. We can start with The newspaper. The newspaper...*

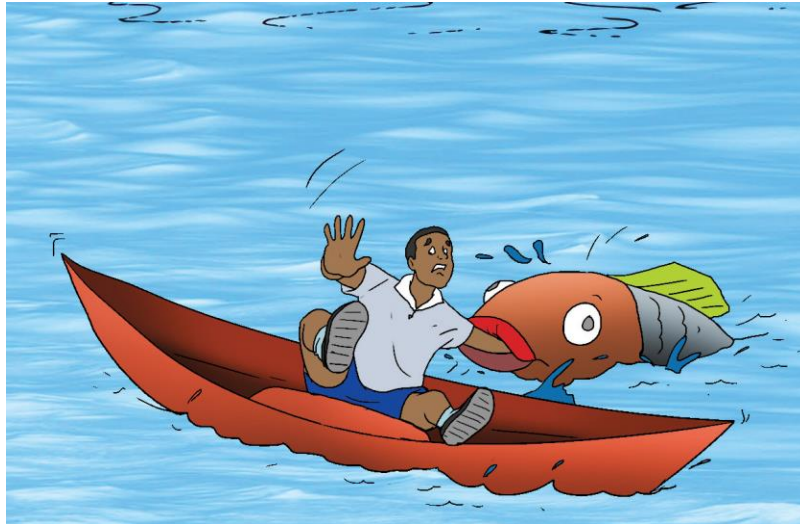
**Target:** *...was/got read by Bubbles.*



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- (b) **Stimulus:** *In this picture, a great big fish has caught John. We can say that in another way; we can put John first and say John...*

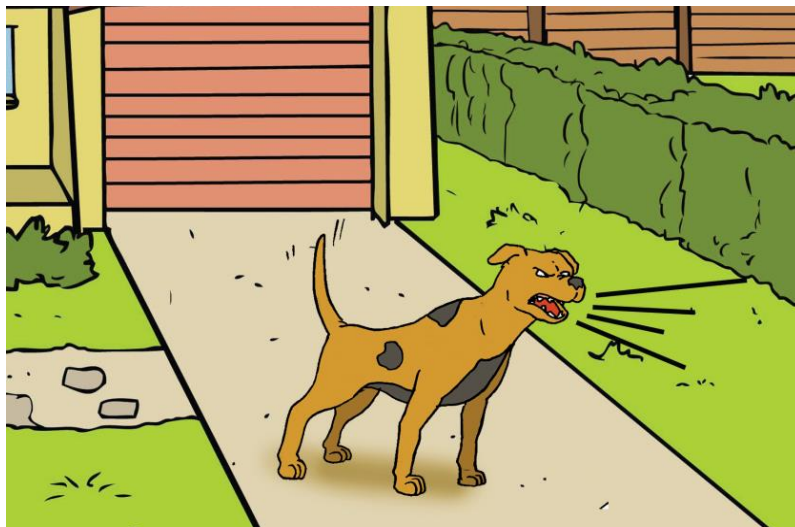
**Target:** *...was/got caught (by the fish).*



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- (c) **Stimulus:** *Hierdie hond blaf hard. Ons kan dit anders ook sê. Ons kan sê Daar word... [This dog is barking loudly. We can also say it another way. We can say There gets...]*

**Target:** *...geblaf [...barked]*



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### ***Types of verbs***

Three different types of verbs were targeted in both the comprehension and production subsets of the passives section of the REALt: action verbs (denoting a physical action, e.g. *push, pinch, catch, teach, swallow*); psychological verbs (denoting a psychological state/action, e.g. *bother, scare, upset, think, quieten*); and perceptual verbs (denoting acts of

sensory perception, e.g. *see, feel, taste, smell, hear*). This decision was guided by the fact that, according to research by Babyonyshev, Hart and Grigorenko (2005), language-impaired children fare best with actional passives, less well with psychological passives and worst with perceptual passives. As a result, the authors of the REALt decided to include in the reversible passives comprehension subset nine actional, three psychological and three perceptual passives (the agentive and agentless comprehension subsets contain only straightforward actional passives). In the case of the production section, the 15 items in the reversible passives subset are divided equally between items targeting actional, psychological and perceptual passives.

#### **5.4.4.2 Administering of test and coding of test data**

As mentioned above, the two halves of the passive test were alternated with the two halves of the vocabulary test in each play session. All child responses were written down and later verified with the audio recording of the interaction. Administering the comprehension items, where the child simply had to select the target picture from a selection of three pictures, typically took far less time than administering the production items. Problems with testing production included the following: (i) in order to keep testing time to a minimum to prevent participant fatigue, the administrator often had to curb the enthusiasm of children who would provide lengthy, creative descriptions of the action depicted in the picture (mostly using only active constructions); (ii) the administrator regularly had to make up answers to the numerous questions about the depicted scenario that some children would ask, and then try to revert their attention back to the stimulus; (iii) trying to focus the child's attention on the target action rather than on some other visual detail in the picture that peaked her interest; (iv) trying to discourage the rote repetition of the stimulus (complete with an accurate mimicking of the administrator's intonation pattern) which would mostly be unaccompanied by the completion of the target sentence; (v) preventing code-switching in the case of trilinguals; and (vi) trying to coax a verbal response from children who were hesitant to produce anything, for whatever reason.

The latter type of null response to production items was predominant among the trilingual participants and may thus be a result of low proficiency levels in the language of testing.



However, this type of response was also found, albeit to a lesser extent, among monolinguals, and therefore may also be a result of personality factors such as shyness and/or fatigue. In the case of shy children, this trait may have been exacerbated by the fact that the administrator was an outsider to the community and sometimes of a different race. Additionally, the possibility of erring (which may be humiliating or discouraging) is decidedly greater when having to formulate one's own sentence, than when having to choose a target picture from only three given options during the comprehension task. Silence, in this case, may thus have been an avoidance strategy.

Trouble with eliciting production data from young children is not in any way unique to the present study. According to Paradis (2010:661,674-675), there is common agreement in the literature that production tasks are more "demanding" than comprehension tasks and in the case of bilinguals, the competition between a speaker's two languages may be more severe during production than during other linguistic tasks, especially in the non-dominant language. Significantly reduced exposure may furthermore increase the challenge that production poses to multilinguals, as suggested by Pearson et al. (1997) upon observing that those children in her study who received less than 20% exposure to a given language produced the least spontaneous speech in that medium (cf. Section 5.2.1.3 above). Recall, however, my earlier argument for including participants with as little as 10% exposure to one or more of their languages as a way of capturing the full range of variability in the trilingual experience. Low production rates among such participants, albeit frustrating in the testing scenario, may thus constitute an important phenomenon to note in researching the relationship between input and proficiency.

With regard to scoring participants' responses to the passive section of the REALt, no existing score sheet was available as the instrument was not designed to serve as a formal test instrument. The researcher thus developed her own scoring system. As such, a mark of one was awarded for every answer in the comprehension section that corresponded with the number of the target item (the latter being a number between one and three, representing one of the three pictures that the child is presented with). In the case of incorrect answers, a mark of zero was awarded. As for the production items, the child's verbatim response was entered into a spreadsheet, and a score of 0, 1 or 2 awarded, depending on the extent to which it

approached or deviated from the target answer. All responses to production items were additionally classified as being of a certain nature, this nature determining the score. The categories of response types were based on the predominant response patterns, i.e. these categories were not conceived prior to the analysis of the data, but represent the most common response types found during the analysis of the data. Only once these categories had been defined was each of the responses labelled as being of a specific type. The system of categorisation is detailed below, the numeral indicating the score awarded and the letter in brackets detailing the response type.

- 2(a): A passive sentence that is exactly on-target (disregarding any possible concord or tense errors on the passive auxiliary in the case of English and Afrikaans); OR  
An accurate passive sentence using a verb other than the one provided in the stimulus, but that is still suited to the depicted scenario (disregarding any possible concord or tense errors on the passive auxiliary in the case of English and Afrikaans), e.g. *The apple is chewed by Mr Zulu* instead of *The apple is eaten by Mr Zulu*.
- 2(b): A passive sentence that is on-target, except for a change of verb class in the sense that a target psychological or perceptual passive verb was substituted by an actional passive verb, e.g. *The elephant was cut by Stevie* instead of *The elephant was bothered by Stevie* (thus, the targeted psychological verb *bothered* is substituted by the actional verb *cut*).
- 1(a): A passive sentence that is on-target, except for a morphological error on the passive verb (such as the incorrect form of the passive affix, or an omitted passive affix), e.g. *Boxer was seed through the window* instead of *Boxer was seen through the window*;  
OR  
A long passive sentence that is on-target, except for an error of some sort in the agentive phrase (such as an omission of the preposition *by/deur* in the case of English and Afrikaans respectively or the omission of the *ku-* morpheme in the case of isiXhosa); e.g. *Pam is being smelled Boxer* instead of *Pam is being smelled by Boxer*.
- 1(b): A passive sentence using a verb other than the one provided in the stimulus, with a morphological error on the passive verb (e.g. *The couch was bite by the dogs* instead of *The couch was chewed by the dogs*), and/or an omitted passive auxiliary (e.g. *John*

*eating by a fish* instead of *John was caught by the fish*; the child's response here involving both a morphological error on the passive verb and an omission of the passive auxiliary).

- 0(a): Incorrect: an active sentence using the verb provided in the stimulus/a very similar, context-appropriate verb, with the original AGENT argument retained at the start of the sentence, e.g. *The fish did bite John*<sup>77</sup> instead of *John was caught by the fish* (the latter being an example of a reversible passive). This type of response is typically an exact repetition or close approximation of the stimulus sentence (here, *A great big fish has caught John*).
- 0(b): Incorrect: an active sentence using the verb provided in the stimulus/a very similar, context-appropriate verb, with the original THEME argument serving as the AGENT argument, e.g. *Pam is pushing Debbie* instead of *Pam is being pushed by Debbie* or *Boxer is eating* instead of *Boxer is swallowed (by the bone)*. This type of response is typically an exact repetition or close approximation of the stimulus sentence, with a simple role reversal between AGENT and THEME.
- 0(c): Incorrect: a non-passive sentence<sup>78</sup> using a verb other than the one provided in the stimulus, with the original THEME argument serving as the AGENT argument, e.g. *John did fall* instead of *John was knocked over by the car*; *The tea is getting cold* instead of *The tea is being poured*; or *Pam is sad* instead of *Pam is upset (by Thandi)*. This type of response typically involves an explanation of the state that the original THEME argument is in, or a description of how that argument came to be in the situation depicted in the picture.

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<sup>77</sup> Note that the auxiliary verb *did* is not used for emphasis here, but is simply used to mark the past tense. This is a feature of Cape Flats English, which (as mentioned in Chapter 5, Section 5.4.3.2) is strongly influenced by Afrikaans. Compare, for example, the Cape Flats English sentence *The fish did bite John* with its translation equivalent in Standard South African English, *The fish bit John*, and in Afrikaans, *Die vis het John gebyt*. Directly translated, the Afrikaans equivalent would be "The fish has John bitten" as past tense can only be expressed with the aid of an auxiliary verb in Afrikaans. Alternative accounts in explanation of the non-emphatic use of *did* in Cape Flats English also exist, such as that put forward by Mesthrie (1999), according to which this phenomenon is a remnant of missionary English.

<sup>78</sup> "Non-passive" is here used to refer to active constructions such as *Pam is crying*, but also to other types of constructions that are not passive in nature, for example stative constructions such as *Pam is sad* or *Pam was having a sore*; declarative constructions such as *The lion, he must wake up*; and interrogatives such as *Boxer, why is you laying so?*

0(d): Incorrect: a partial utterance (e.g. a single word) / no utterance at all / an utterance in a language other than the language of testing / an utterance consisting of one or more active sentences that do not fit any of the other response options above.

Recall from Chapter 4 that, in English and Afrikaans, there is sometimes ambiguity in the case of short passives as they may be intended/interpreted either as verbal or adjectival, i.e. either as describing an action, or as describing a state. This ambiguity does not exist in the case of long passives, as the agentive *by*-phrase clearly indicates agency and thus elicits an eventive rather than stative reading. If a child produces the utterance *The couch was chewed* one cannot be certain whether it was formulated as a “true verbal passive” (Deen, 2011:158), with the *by*-phrase *by the dogs* incidentally having been omitted, or whether it was formulated as an adjectival passive, relaying that the couch was in a state of having been chewed. Many would argue that an adjectival passive is not a “true passive”, but rather a type of non-passive stative construction. This poses a problem for the scoring of such responses: does one trust that it was formulated as a “true”, short verbal passive which should receive a mark of either one or two according to the above categorisation, or does one assume that it was formulated as a stative non-passive construction, which should receive a mark of zero?

Some participants showed evidence in their responses to other items/stimuli of having mastered long verbal passives (which would increase the chance that their ambiguous short passives are true verbal passives in which the *by*-phrase was incidentally omitted), whilst other participants produced no or very few long passives (which would increase the chance that their ambiguous short passives are stative non-passives). Although a consistent application of either scoring method across all participants may, to some extent, unfairly increase or decrease the score of individual participants, awarding scores on grounds of a subjective case-by-case analysis of a participant’s other responses would be too speculative. As such, all participants were given full credit for context-appropriate short passives. (As a matter of interest, the proportion of the passives produced by the participants that constitute long versus short passives was calculated – cf. Chapter 6, Section 6.3 for these results.)

With the methodological procedures discussed in this chapter as background, the next chapter presents the results of the data collection process, both descriptively and in terms of the statistical analysis of the data.

## CHAPTER 6: RESULTS

This chapter presents and discusses the results of the quantification of the trilingual group's language exposure data (Section 6.1), as well as the results of both the LITMUS-CLT vocabulary test (Section 6.2) and the REALt passive construction test (Section 6.3), including the results of the various statistical tests performed on these data. The latter tests include, among others, those that were performed in order to test for a possible correlation between test scores and input patterns in the trilingual group, as well as those aimed at identifying any statistically significant differences between and within the monolingual and trilingual groups. Section 6.4 concludes the chapter with an in-depth description of each of the 11 trilingual participants' input patterns and test scores, revealing certain additional trends in terms of the relationship between input and test scores.

### 6.1 Results of the trilingual group's language exposure measures

Recall from Chapter 1 that the primary research interest of the present study is the relationship between input and lexical and grammatical proficiency in young developing trilinguals, and that language exposure data for each trilingual participant was therefore captured through means of a LBQ. This section presents the results of the quantification of these exposure data through means of the UBiLEC Excel spreadsheet, which uses specific algorithms to calculate the following exposure measures:

- current amount of exposure (CAoE)<sup>79</sup>
- cumulative length of exposure (CLoE)
- traditional length of exposure (TLoE)
- current quality of exposure (in terms of parents' rating of the proficiency levels of each input-provider, on a scale of zero to five)

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<sup>79</sup> Recall that CAoE refers to the collective percentage of the child's waking hours in a typical week (at the time of testing) that constitutes exposure to the specific language in question. This percentage is calculated on grounds of the typical distribution of the child's three languages in all contexts, in every one of the child's waking hours in a typical week. (Cf. Chapter 5, Section 5.4.1.3 for a more detailed description of how this variable is calculated.) Note that the UBiLEC spreadsheet allows for two versions of the CAoE and the "average quality of exposure" variables to be calculated: one including only the data on exposure patterns in the home and school contexts, and the other including all the data on exposure patterns, i.e. the data on exposure in the home, school and all other contexts (indicated as "home/school/extra" in the UBiLEC spreadsheet). The latter version of these variables was the only one of interest in the present study.

Also recall (from Chapter 5) that CLoE is equivalent to the amount of exposure in years that the child has had to each of her three languages over time when considering varying amounts of exposure in different years, and that TLoE is equivalent to the child's age at testing minus their age at onset of acquisition. Given the fact that the participants in the present study varied in age between 4.0 and 4.99 years (mean = 4.5; SD = 0.3), CLoE and TLoE in years were recalculated to present a percentage portion of the child's age in years in order to render it suitable for a descriptive statistical analysis across children of different ages.<sup>80</sup> Similarly, in order to test for correlations between quality of current exposure and other exposure variables, the ratings of quality on a scale of zero to five were also converted to percentage scores. The descriptive statistics for the trilingual group's exposure data are provided in the table below.

	<b>Mean</b>	<b>Standard deviation</b>
<b>CAoE (as % of total exposure p/w)</b>		
English	49.1	14.3
Afrikaans	16.6	8.6
isiXhosa	34	14.1
<b>CLoE (as % of age in years)</b>		
English	19.4	15.7
Afrikaans	18.4	19.7
isiXhosa	58.2	22.2
<b>TLoE (as % of age in years)</b>		
English	67.5	25.9
Afrikaans	60.1	34.7
isiXhosa	100	0
<b>Current quality of exposure (as %)</b>		
English	80	8
Afrikaans	84	14
isiXhosa	92	8

**Table 6.1: Trilingual group's language exposure data**

<sup>80</sup> Note that Thordardottir (2011), in her study of five-year-old French-English bilinguals (cf. Chapter 3, Section 3.1.1.1 for an overview), also calculates the cumulative amount of exposure that a child has received to each of her languages since birth up until the time of testing as a percentage of the child's lifetime.

As is evident from Table 6.1, the majority of the exposure that the 11 trilingual participants in the present study were receiving at the time of testing was, on average, in the medium of English at 49.1%, followed by isiXhosa and then Afrikaans. Over time, however, by far the majority of the cumulative exposure that these children were exposed to took the form of isiXhosa at an average of 58.2%, with English and Afrikaans trailing behind at around 19% each. The values for TLoE indicate that all 11 participants received exposure to isiXhosa from birth, with exposure to English starting, on average, slightly earlier than exposure to Afrikaans. Considering the respective percentage portions of the children's lifetimes during which they received exposure to the latter two languages (i.e. their average TLoEs of 67.5% and 60.1% respectively), and given their average age of 4.5 years, they were on average first exposed to English around the age of 1.5 years and to Afrikaans around the age of 1.8 years.

In terms of the average quality of the input that the trilingual participants were receiving at the time of testing, there is not much difference between the three languages, although isiXhosa is of the highest quality at 92%. This is to be expected, given the fact that, in the case of nine of the 11 trilingual participants, either one or both the parents speak isiXhosa as an L1. The fact that English is of the relatively lowest quality is in turn explained by the fact that this language is commonly used as a lingua franca by speakers of various L1s (with various levels of English proficiency) in the participants' communities and crèches.

In order to confirm that each of the four different exposure measures indeed measures a different variable, the Spearman Rank-Order Correlation Test was run on the trilinguals' exposure data. In the latter test, the  $r$ -value varies between -1 and 1, the specific value indicating the strength and the direction of the correlation (negative values indicate a negative correlation, positive values indicate a positive correlation). The values of the correlations are reported in Table 6.2 below. Note that here, as with all other statistical tests reported on in this chapter,  $p < 0.05$  qualifies as significant.



Variable 1	Variable 2	Spearman r-value	p-value
CAoE	Quality of exposure	0.15	0.4
CAoE	CLoE	0.47	<0.01
CAoE	TLoE	0.1	0.58
Quality of exposure	CLoE	0.48	<0.01
Quality of exposure	TLoE	0.32	0.07
CLoE	TLoE	0.68	<0.01

**Table 6.2: Correlations between exposure measures**

As can be seen in Table 6.2, the strongest correlation between two input measures in the present study's data set is that between CLoE and TLoE ( $r = 0.68$ ), both of these measures being concerned with exposure over time. However, the coefficient of determination ( $r^2$ ) of this correlation is 0.46, indicating that the one variable explains only 46%, i.e. less than half, of the other's variation. Consequently, each of the four measures can be assumed to be capturing different aspects of exposure. For this reason, all four these measures were included in all remaining statistical tests that were run on exposure data.

## 6.2 Results of the vocabulary measure (LITMUS-CLT)

### 6.2.1 Monolinguals

#### 6.2.1.1 Descriptive statistics

Table 6.3 below presents the descriptive statistics for the three different monolingual groups' performance on the three different language versions of the LITMUS-CLT. The scores on the test as a whole, as well as on each of the subsections of this instrument are reported. Because the data were not normally distributed, the median (i.e. the 50<sup>th</sup> percentile, "middle score" or second/middle quartile) rather than the mean provides the most accurate reflection of the "average" percentage score in each group. For the same reasons, the interquartile range (IQR) or "middle fifty" (i.e. the range within which the middle 50% of the data points are distributed) more accurately reflects the dispersion of the bulk of the data than total range does, hence the use of median and IQR in the table below.

	<b>Median</b>	<b>IQR</b>
<b>Test as a whole (/128)</b>		
English	67.6	23.4 (58.6–82)
Afrikaans	75.4	29.7 (56.3-85.9)
isiXhosa	53.1	13.3 (45.3-58.6)
<b>Comprehension total (/64)</b>		
English	80.5	23.4 (65.6-89.1)
Afrikaans	79.7	26.6 (64.1-90.6)
isiXhosa	68	15.6 (59.4-75)
<b>Production total (/64)</b>		
English	54.7	23.4 (48.4-71.9)
Afrikaans	71.9	32.8 (48.4-81.3)
isiXhosa	35.9	9.4 (31.3-40.6)
<b>Nouns</b>		
<b>Total score (/64)</b>		
English	77.3	18.8 (70.3-89.1)
Afrikaans	81.3	26.6 (59.4-85.9)
isiXhosa	59.4	12.5 (51.6-64.1)
<b>Comprehension (/32)</b>		
English	87.5	15.6 (81.3-96.9)
Afrikaans	84.4	28.1 (68.8-96.9)
isiXhosa	71.9	12.5 (68.8-81.3)
<b>Production (/32)</b>		
English	70.3	25 (56.3-81.3)
Afrikaans	73.4	25 (56.3-81.3)
isiXhosa	43.8	9.4 (37.5-46.9)
<b>Verbs</b>		
<b>Total score (/64)</b>		
English	58.6	25 (46.9-71.9)
Afrikaans	69.5	32.8 (53.1-85.9)
isiXhosa	48.4	12.5 (37.5-50)
<b>Comprehension (/32)</b>		
English	73.4	25 (56.3-81.3)
Afrikaans	73.4	31.3 (59.4-90.6)
isiXhosa	62.5	18.8 (50-68.8)
<b>Production (/32)</b>		
English	43.8	28.1 (34.4-62.5)
Afrikaans	68.8	40.6 (40.6-81.3)
isiXhosa	29.7	9.4 (25-34.4)

Table 6.3: Monolingual groups' performance on the LITMUS-CLT (as percentages)

Note that, in all three language groups, the median scores for the comprehension section as a whole are higher than those for the production section as a whole. This lag between the development of comprehension and production skills has been widely reported in the literature on child language acquisition and has been found to exist across many languages, and to occur among both monolinguals and bilinguals. Cf., for example, Benedict (1979); Harrisa, Yeelesa, Chasina and Oakley (1995); Windsor and Kohnert (2004); and, for studies on the acquisition of grammatical agreement by monolingual isiXhosa speakers, Gxilishe, Smouse, Xhalisa and de Villiers (2009) and Smouse, Gxilishe, de Villiers and de Villiers (2012). Also, Smolensky (1996) offers a discussion of the debate around what this lag may indicate about the difference between children's competence and performance.

Also note that the scores on the noun sections are consistently higher than the scores on the verb sections, in the case of all three monolingual groups. These data align with a large body of studies that have shown the acquisition of nouns to precede the acquisition of other lexical categories across many languages, with some studies using bilingual participants (cf. Chan & Nicoladis, 2010, for references to numerous relevant studies). Gentner (1982) first hypothesised that there is a universal noun bias in child language acquisition because nouns' referents (specifically the referents of object names) are more perceptually available than the referents of words from other lexical categories, making nouns conceptually easier to learn (cf. also Chan & Nicoladis, 2010; Imai, Haryu, & Okada, 2005). Gentner (1982) also argued that the lesser degree of cross-linguistic variation in the meaning of nouns renders them the simplest semantic category to learn, which causes them to be acquired first.

### **6.2.1.2 Comparisons across groups**

A comparison of the three monolingual groups' performance on the LITMUS-CLTs was thought valuable as the results add to the literature on monolingual language acquisition in low SES contexts. The comparison also provides a framework within which to interpret some of the findings of the comparison of trilinguals' and monolinguals' performance on the three language versions of the tests, the latter comparison being central to the answering of specific research questions (cf. Section 6.2.3). Recall from Chapter 5 that the procedure followed in the construction of the different language versions of the LITMUS-CLT "enables impartial testing of vocabulary and processing skills in any pair of languages included in the process",

so enabling a comparison between a bilingual child's lexical ability in her two languages, based on her LITMUS-CLT scores for these languages (Haman et al., in press:3,4-5) and, by extension, between a trilingual child's lexical ability in her three languages.

As the comparison of monolinguals involved three groups and because the LITMUS-CLT data were mostly not normally distributed, the Kruskal-Wallis (non-parametric) ANOVA Test was used to test for significant differences between the three monolingual groups' scores. Only the scores on those (sub-)sections that are directly relevant to the purposes of this study, i.e. overall test scores (/64), overall comprehension scores (/32) and overall production scores (/32) were statistically compared across languages.

The ANOVA tests revealed a significant difference between the three language groups in terms of their overall test scores ( $H(2) = 9.11, p = 0.01$ ). Bonferroni-adjusted post-hoc tests revealed this to be due to the total scores of the isiXhosa group ( $mdn = 53.1$ ) being significantly lower than the total scores of the English group ( $mdn = 67.6$ ),  $p = 0.049$ , and the Afrikaans group ( $mdn = 75.4$ ),  $p = 0.02$ . A second significant difference between the three language groups is found in the case of the overall production scores ( $H(2) = 15.09, p < 0.01$ ). This is again due to the isiXhosa group's overall production scores ( $mdn = 35.9$ ) being significantly lower than those of the English group ( $mdn = 54.7$ ),  $p < 0.01$ , and those of the Afrikaans group ( $mdn = 71.9$ ),  $p < 0.01$ . In terms of overall comprehension scores, however, the English ( $mdn = 80.5$ ), Afrikaans ( $mdn = 79.7$ ) and isiXhosa ( $mdn = 68$ ) monolingual groups do not differ from one another significantly ( $H(2) = 4.39, p = 0.11$ ). This overall pattern of results is also reflected in participants' scores when the respective sections of the LITMUS-CLTs that test knowledge of verbs and nouns are considered in their own right, rather than subsumed under the total score or overall comprehension/production scores. This is evident from the descriptive statistics for these variables in Table 6.3 above.

To summarise, the four-year-old English and Afrikaans monolinguals in this study seem to be on par with one another in terms of lexical development, but their isiXhosa monolingual counterparts seem to have significantly lower (at least productive) vocabulary skills. The exact reason why the isiXhosa monolinguals seem to be trailing behind is not clear. One

possible explanation could be that there is a (perhaps inevitable) slight imbalance in the degree of difficulty of the LITMUS-CLT-XHO and that of the other two language versions, despite the great care taken to make the different LITMUS-CLT language versions “fully comparable” across grammatically highly divergent languages such as English and Afrikaans versus isiXhosa. Alternative explanations include, among others, (i) culture-related differences between child-rearing practices and child-socialisation styles in black African versus Cape Coloured groups (the English and Afrikaans monolinguals belonging to the latter cultural group and the isiXhosa monolinguals to the former); and (ii) despite a shared SES level, possibly lower print exposure among the “deep” township isiXhosa monolinguals than among the English monolinguals from more suburban areas and among the Afrikaans monolinguals who live on farms, but attend a crèche that has a small library.

## 6.2.2 Trilinguals

### 6.2.2.1 Descriptive statistics

Table 6.4 below presents the descriptive statistics for the trilingual group’s performance on the three different language versions of the LITMUS-CLT. As before with the monolingual data, the scores on the test as a whole, as well as on each of the subsections of this instrument are reported, with medians and IQRs being used to report the non-normal data.

	Median	IQR
<b>Test as a whole (/128)</b>		
English	43.8	18 (37.5-55.5)
Afrikaans	31.3	7 (25-32)
isiXhosa	50	15.6 (40.6-56.3)
<b>Comprehension total (/64)</b>		
English	62.5	12.5 (56.3-68.8)
Afrikaans	54.7	12.5 (46.9-59.4)
isiXhosa	62.5	15.6 (57.8-73.4)
<b>Production total (/64)</b>		
English	20.3	28.1 (12.5-40.6)
Afrikaans	18.8	25 (6.3-31.3)

	<b>Median</b>	<b>IQR</b>
isiXhosa	34.8	18.8 (23.4-42.2)
<b>Nouns</b>		
<b>Total score (/64)</b>		
English	48.4	26.6 (39.1-65.6)
Afrikaans	35.9	10.9 (29.7-40.6)
isiXhosa	56.3	17.2 (45.3-62.5)
<b>Comprehension (/32)</b>		
English	71.9	15.6 (65.6-81.3)
Afrikaans	56.3	12.5 (50-62.5)
isiXhosa	71.9	21.9 (59.4-81.3)
<b>Production (/32)</b>		
English	25	40.6 (15.6-56.3)
Afrikaans	15.6	21.9 (9.4-31.3)
isiXhosa	40.6	25 (28.1-53.1)
<b>Verbs</b>		
<b>Total score (/64)</b>		
English	37.5	15.6 (29.7-45.3)
Afrikaans	34.4	25 (20.3-45.3)
isiXhosa	43.8	28.1 (23.4-51.6)
<b>Comprehension (/32)</b>		
English	53.1	18.8 (43.8-62.5)
Afrikaans	53.1	21.9 (37.5-59.4)
isiXhosa	59.4	34.4 (37.5-71.9)
<b>Production (/32)</b>		
English	15.6	15.6 (9.4-25)
Afrikaans	12.5	28.1 (3.1-31.3)
isiXhosa	31.3	34.4 (9.4-43.8)

**Table 6.4: Trilinguals' performance on the LITMUS-CLT (as percentages)**

Note that, as with the monolinguals' data, the trilinguals' median scores for the comprehension section as a whole are higher than those for the production section as a whole,

and their median scores for noun-related measures are consistently higher than those for verb-related measures, this being true for all three languages. The data in this study thus confirm that the common delay in the acquisition of lexical production skills (compared to comprehension skills) and in the acquisition of verbs (compared to nouns) is to be found not only among monolinguals and bilinguals, but also among trilinguals, in all three of their languages.

### **6.2.2.2 Comparisons across languages**

Recall that one of the primary research questions that this study aims to answer is whether there is a correlation between input and lexical and grammatical proficiency in the case of young developing trilinguals, with the first sub-question asking whether, if there is such a correlation, it exists in the case of all three languages (cf. Chapter 1, Section 1.2). An across-language comparison of the trilinguals' LITMUS-CLT scores will therefore help interpret the answer to the aforementioned sub-question, as far as lexical proficiency is concerned.

As the across-language comparison of the trilinguals' data involved three data sets and because their LITMUS-CLT data were mostly not normally distributed, the Kruskal-Wallis (non-parametric) ANOVA Test was again used to test for significant differences. As with the monolinguals, only the scores on those (sub-)sections that are directly relevant to the purposes of this study, i.e. overall test scores (/64), overall comprehension scores (/32) and overall production scores (/32) were statistically compared across languages.

Results revealed a significant difference between the trilinguals' three languages in terms of their overall test scores ( $H(2) = 13.81, p < 0.01$ ). Bonferroni-adjusted post-hoc tests revealed this to be due to their test totals for Afrikaans ( $mdn = 31.3$ ) being significantly lower than their test totals for English ( $mdn = 43.8$ ),  $p = 0.02$ , and for isiXhosa ( $mdn = 50$ ),  $p < 0.01$ . In terms of overall comprehension scores, the same pattern exists with a significant difference between the trilinguals' three languages ( $H(2) = 9.94, p < 0.01$ ) being due to their significantly worse performance in Afrikaans ( $mdn = 54.7$ ) than in English ( $mdn = 62.5$ ),  $p = 0.03$ , and than in isiXhosa ( $mdn = 62.5$ ),  $p = 0.01$ . In terms of overall production scores, there

is no significant difference between the trilinguals' English (mdn = 20.3), Afrikaans (mdn = 18.8) or isiXhosa (mdn = 34.8) scores ( $H(2) = 5.52$ ;  $p = 0.06$ ), although numerically, their isiXhosa scores were higher than those for English and Afrikaans. On grounds of the descriptive data in Table 6.4 above, this same pattern of results seems evident in the case of the overall noun section and also the noun comprehension and production subsections, but not in the case of sections testing verbs.

The trilinguals' significantly lower Afrikaans vocabulary scores are easily explained when exposure patterns are considered. Recall from Section 6.1 that, on average, Afrikaans is their weakest language in terms of CAoE, CLoE and TLoE. On grounds of an across-language comparison of the trilinguals' LITMUS-CLT scores (indicating that these children fare significantly better in the two languages that they receive the most exposure to) it thus seems as if test scores are positively correlated with exposure patterns. This general finding is supported by the results of a statistical analysis of this relationship, presented in Section 6.2.2.3 below. These results also indicate that this correlational relationship seems strongest in the specific case of Afrikaans, the trilinguals' weakest language in terms of quantity of input.

### **6.2.2.3 Correlational analyses with exposure measures**

Recall from Chapter 1, Section 1.2 that one of the research questions of interest to this study asks whether there is a correlation between input and proficiency in the case of young developing trilinguals and if so, (i) whether this correlation exists in the case of all three languages, and (ii) in the case of both lexical and grammatical proficiency; (iii) whether different measures/conceptualisations of input quantity (specifically, as CAoE, CLoE and TLoE) yield similar results; and (iv) whether the correlation exists in the case of both input quantity and quality (in terms of the "nativeness" of the input). Given these questions, statistical analyses were performed to test for a correlation between, in the case of each of the trilinguals' three languages, their LITMUS-CLT scores (reported above in Table 6.4) and their exposure data (as these relate to the specific language of testing). The latter data take the form of the percentage values for each of the four UBiLEC exposure variables (cf. Section 6.1). The Spearman Rank-Order Correlation Test was used to perform the correlational



analyses; the results are reported in Table 6.5 below. (Note that no correlations could be done between the values for TLoE and test scores in the case of isiXhosa, as all children had a TLoE to this language of 100%, creating a constant.)

Variables	CAoE	CLoE	TLoE	Quality
Test total: English	0.56	0.24	-0.25	0.41
Test total: Afrikaans	0.58	0.73*	0.53	0.34
Test total: isiXhosa	0.3	0.43		0.47
Comprehension total: English	0.27	0.22	-0.15	-0.18
Comprehension total: Afrikaans	0.63*	0.81**	0.77**	0.22
Comprehension total: isiXhosa	0.59	0.46		0.36
Production total: English	0.68*	0.3	-0.23	0.61*
Production total: Afrikaans	0.47	0.68*	0.51	0.54
Production total: isiXhosa	0.02	0.23		0.5

**Table 6.5: R-values for correlations between the trilingual group's exposure variables and LITMUS-CLT scores (\*p < 0.05, \*\*p < 0.01)**

Before considering each of the exposure variables individually, it is worth noting two general trends. Firstly, there were no significant correlations found between exposure variables and LITMUS-CLT scores in the case of the trilinguals' isiXhosa. This finding is unexpected, given the multitude of studies that have shown a clear relationship between input and proficiency (cf. Chapter 3). Secondly, all the significant correlations found in the above data are positive correlations, i.e. as the values of the exposure variable increase, the test scores increase and as the values of the exposure variable decrease, the test scores decrease. Given what much literature has already shown regarding the effect of amount of input on proficiency levels (cf. Chapter 3), this result is in line with expectations. (Note that the r-values of non-significant correlations (including the non-significant negative correlations) should not be interpreted at all: their non-significance indicates that the correlation is due to random variance in the specific sample's dataset and, as such, that these r-values do not indicate any systematic relationship between the two variables in the larger population.)

**CAoE**

CAoE is significantly correlated only with overall production scores in the case of English ( $t(N-2) = 2.79$ ,  $r = 0.68$ ,  $p = 0.02$ ) and with overall comprehension scores in the case of Afrikaans ( $t(N-2) = 2.41$ ,  $r = 0.63$ ,  $p = 0.04$ ), but both these correlations are strong, indicating a large effect size in terms of Cohen's convention.<sup>81</sup>

**CLoE**

This exposure variable yielded interesting results when considering the three languages in comparison to one another. No significant correlations were found in the case of isiXhosa or English. In the case of Afrikaans, however, a significant, strong correlation was found between CLoE and the total test scores ( $t(N-2) = 3.21$ ,  $r = 0.73$ ,  $p = 0.01$ ), as well as the overall scores for production ( $t(N-2) = 2.77$ ,  $r = 0.68$ ,  $p = 0.02$ ). Additionally, CLoE proved to be very strongly correlated with the overall scores for comprehension on the Afrikaans version of the LITMUS-CLT ( $t(N-2) = 4.09$ ,  $r = 0.81$ ,  $p < 0.01$ ), all three the correlations with CLoE indicating a large effect size.

**TLoE**

This exposure variable is significantly correlated with only one set of LITMUS-CLT scores, i.e. the total scores for comprehension on the Afrikaans version of the test ( $t(N-2) = 3.64$ ,  $r = 0.77$ ,  $p < 0.01$ ), the correlation again being strong. Recall, however, that no tests for a correlation between the isiXhosa test data and TLoE could be performed, as all 11 trilinguals had a TLoE equal to 100% of their respective lifetimes. This fact naturally decreases the number of possible correlations between test scores and TLoE. Note that it is the only language which exhibited significant correlations between CLoE and LITMUS-CLT scores (i.e. Afrikaans) that is also the only language exhibiting a significant correlation between a set of test scores and TLoE.

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<sup>81</sup> Note that the following convention for the interpretation of the strength of a correlation is applied in this dissertation:  $r = 0.0 - 0.19 =$  "very weak";  $r = 0.2 - 0.39 =$  "weak";  $r = 0.4 - 0.59 =$  "moderate";  $r = 0.6 - 0.79 =$  "strong";  $r = 0.8 - 1 =$  "very strong" (cf., for example, Landis & Koch, 1977). Correlation coefficients (denoted by r-values) are also described in terms of effect size, following Cohen's (1988) convention according to which an r-value of 0.1 indicates a "small" effect size, an r-value of 0.3 a "moderate" effect size and an r-value of 0.5 a "large" effect size.

### *Current quality of exposure*

In the comparison between current quality of exposure and LITMUS-CLT scores, only one significant correlation was found, i.e. between the current quality of the trilinguals' English exposure and their overall production scores on the English test ( $t(N-2) = 2.33$ ,  $r = 0.61$ ,  $p = 0.045$ ), this again being a strong correlation.

In answer to the research question and sub-questions of interest in this section, a significant positive correlation does exist between input (both in terms of quantity and quality) and lexical proficiency (both in terms of comprehension and production) among the trilinguals in the present study. However, this correlation is only evident in the case of the trilinguals' two weaker languages (in terms of CLoE), i.e. English and Afrikaans. When only input quantity is taken into account, five of the six cases in which a significant correlation was found between an input variable and a set of test scores involve Afrikaans as the language of exposure and testing, with four of these five correlations with Afrikaans test data being equal to or stronger than the correlation that exists between English test scores and input quantity (i.e.  $r = 0.68$ ,  $0.73$ ,  $0.77$  and  $0.81$  versus  $r = 0.68$ ). Recall that Afrikaans is the trilinguals' weakest language in terms of all three measures of quantity of exposure, i.e. CAoE, CLoE and TLoE. It thus seems as if the effect of variances in input quantity is strongest in the language of least exposure, i.e. Afrikaans, and weakest in the language of most exposure, i.e. isiXhosa (discounting exposure in terms of CAoE in the latter case).

As for the question whether different measures/conceptualisations of input quantity yield similar results when correlated with test scores, the only case in which a single set of test scores correlates with two or more input variables is that of the overall comprehension scores for Afrikaans correlating significantly with all three measures of input quantity, i.e. CAoE, CLoE and TLoE. On grounds of the  $r$ -value for CLoE (i.e.  $0.81$ ) indicating a stronger correlation with the Afrikaans comprehension scores than the  $r$ -values for CAoE (i.e.  $0.63$ ) and TLoE (i.e.  $0.77$ ), it seems as if CLoE is more closely related to proficiency levels (at least in terms of Afrikaans receptive vocabulary) than CAoE and TLoE. Furthermore, if one were to compare the relative values of CLoE and TLoE as indicators of amount of exposure over time, the fact that the significant correlation between TLoE and the Afrikaans comprehension

scores is slightly weaker than that between CLoE and the Afrikaans comprehension scores perhaps suggests that TLoE should not be used to deduce information regarding *quantity* of exposure over time. Rather, it should perhaps only be used as an indication of the period over which a child has been receiving exposure to a given language and, by deduction, the age at which this exposure started.

### 6.2.3 Comparison between monolinguals and trilinguals

Recall that another research question that this dissertation aims to address is whether trilinguals exhibit developmental delay when compared to monolinguals and if so, whether this delay occurs (i) both in terms of lexical and grammatical development, and (ii) in the case of all three languages, or only in the language(s) that are weaker in terms of quantity of input. In order to answer this research question (in as far as it relates to lexical development alone), the following section reports on a comparison between the trilingual and monolingual groups' performance on the three different language versions of the LITMUS-CLT.

In the case of each of the three languages, the participants' percentage scores on the following measures were compared: (i) the test as a whole (i.e. the sum of NC, NProd, VC, and VProd scores; /128); (ii) the comprehension sections (i.e. the sum of NC and VC scores; /64); and (iii) the production sections (i.e. the sum of NProd and VProd scores; /64). As the majority of the data were not normally distributed, the non-parametric Mann Whitney U Test was used to test for significant differences between every two groups' performance.

In the case of both English and Afrikaans, the trilingual group (mdns: English = 43.8, Afrikaans = 31.3) scored significantly lower than the monolingual groups (mdns: English = 67.6, Afrikaans = 75.4) on the test as a whole (English:  $Z = -3.38$ ,  $U = 6.5$ ,  $p < 0.01$ ; Afrikaans:  $Z = -3.63$ ,  $U = 3$ ;  $p < 0.01$ ). On the comprehension sections of the English and Afrikaans tests too, the trilingual group (mdns: English = 62.5, Afrikaans = 54.7) was significantly outperformed (English:  $Z = -2.36$ ,  $U = 21$ ,  $p = 0.02$ ; Afrikaans:  $Z = -2.92$ ,  $U = 13$ ,  $p < 0.01$ ) by the monolingual groups (mdns: English = 80.5, Afrikaans = 79.7). Finally, this same pattern is found in the case of the production sections (English:  $Z = -3.45$ ,  $U = 5.5$ ,  $p < 0.01$ ; Afrikaans:  $Z = -3.27$ ,  $U = 8$ ,  $p < 0.01$ ), with the trilinguals (mdns: English = 20.3,

Afrikaans = 18.8) faring significantly worse than the monolingual groups (mdns: English = 54.7, Afrikaans = 71.9). In the case of isiXhosa, however, there were no significant differences between the trilingual and monolingual groups' performance on any of the three compared measures, i.e. not in terms of their overall test scores ( $Z = -0.67$ ,  $U = 45$ ;  $p = 0.5$ ), comprehension scores ( $Z = -0.67$ ,  $U = 45$ ;  $p = 0.5$ ) or production scores ( $Z = -0.49$ ,  $U = 47.5$ ,  $p = 0.62$ ). This overall pattern of results is also reflected in participants' scores when the respective sections of the LITMUS-CLTs that test knowledge of verbs and nouns are considered in their own right, rather than subsumed under the total score or overall comprehension/production scores. This is evident from the descriptive statistics for these variables in Tables 6.3 and 6.4 above.

Recall that the LITMUS-CLT test is aimed at gauging overall lexical proficiency. The above findings are not surprising when considering the differing amounts of exposure that the trilingual group and monolingual groups have had to the respective languages. On average, the trilinguals have a CLoE to English that equates to only 19% of their lifetimes and their CAoE per week to English amounts to an average of no more than 49%. In the case of Afrikaans, the trilingual group's average CLoE equates to only 18.4% of their lifetimes, and their average CAoE is only 16.6%. It is thus understandable that the trilingual group was consistently outperformed by the English and Afrikaans monolingual groups, who have a CLoE and CAoE to the respective languages of close to 100%. The trilingual group average for CLoE to isiXhosa equates to 58.2% of their lifetimes and their CAoE to isiXhosa to 34%. This means that, with a CLoE to isiXhosa that is roughly three times that of their CLoE to other languages, but still nearly 40% less than that of monolinguals, the trilingual group was able to keep pace with their monolingual isiXhosa counterparts. Thus, in answer to the research question of interest in this section, the trilinguals in this study do show lexical developmental delay when compared to age-matched monolinguals. However, this delay occurs only in the two languages that are weakest in terms of input quantity (measured in terms of CLoE), despite these trilinguals' exposure to their strongest language also being significantly less than what monolinguals are privy to.

### 6.3 Results of passive development (REALt)

#### 6.3.1 Monolinguals

##### 6.3.1.1 Descriptive statistics

Table 6.6 below presents the descriptive statistics for the three different monolingual groups' performance on the passives section of three different language versions of the REALt. Because these data are, like the LITMUS-CLT data, not normally distributed, medians and IQRs provide the most accurate indication of the "average" percentage scores. The last three variables provided in Table 6.6 below are not included as measures in the REALt, but were calculated here for the purposes of indicating to what extent participants favoured short passives over long passives in production. The average number of times (out of a maximum of 25) that the participants produced a passive construction in the production section is indicated first, followed by an indication of what percentage of these passives were typically long and what percentage typically short.

	<b>Median</b>	<b>IQR</b>
<b>Total score (/60)</b>		
English	33.3	29.2 (25-54.2)
Afrikaans	30	19.2 (20-39.2)
isiXhosa	50.4	14.2 (42.5-56.7)
<b>Comprehension sections</b>		
<b>Total score (/35)</b>		
English	52.9	17.1 (42.9-60)
Afrikaans	47.1	22.9 (34.3-57.1)
isiXhosa	52.9	22.9 (42.9-65.7)
<b>Long actional passives (/10)</b>		
English	55	30 (40-70)
Afrikaans	35	30 (20-50)
isiXhosa	55	20 (50-70)
<b>Short actional passives (/10)</b>		

	<b>Median</b>	<b>IQR</b>
English	60	30 (40-70)
Afrikaans	55	30 (40-70)
isiXhosa	60	40 (40-80)
<b>Reversible passives: total (/15)</b>		
English	46.7	20 (26.7-46.7)
Afrikaans	50	6.7 (46.7-53.3)
isiXhosa	40	26.7 (33.3-60)
<b>Reversible passives: actional (/9)</b>		
English	44.4	44.4 (22.2-66.7)
Afrikaans	55.6	11.1 (44.4-55.6)
isiXhosa	44.4	22.2 (33.3-66.7)
<b>Reversible passives: perceptual (/3)</b>		
English	33.3	33.3 (33.3-66.7)
Afrikaans	66.7	33.3 (33.3-66.7)
isiXhosa	50	33.3 (33.3-66.7)
<b>Reversible passives: psychological (/3)</b>		
English	33.3	33.3 (33.3-66.7)
Afrikaans	33.3	33.3 (33.3-66.7)
isiXhosa	33.3	33.3 (33.3-66.7)
<b>Production sections (/25)</b>		
English	2	38 (0-38)
Afrikaans	0	22 (0-22)
isiXhosa	51	38 (26-64)
<b>Actional passives (/10)</b>		
English	0	55 (0-55)
Afrikaans	0	35 (0-35)
isiXhosa	55	30 (40-70)
<b>Reversible passives: total (/15)</b>		
English	0	26.7 (0-26.7)
Afrikaans	0	10 (0-10)

	<b>Median</b>	<b>IQR</b>
isiXhosa	43.3	43.3 (16.7-60)
<b>Reversible passives: actional (/5)</b>		
English	0	40 (0-40)
Afrikaans	0	0 (0)
isiXhosa	50	30 (30-60)
<b>Reversible passives: perceptual (/5)</b>		
English	0	20 (0-20)
Afrikaans	0	0 (0)
isiXhosa	40	20 (20-40)
<b>Reversible passives: psychological (/5)</b>		
English	0	20 (0-20)
Afrikaans	0	0 (0)
isiXhosa	20	40 (0-40)
<b>Daar-passives (/5)</b>		
Afrikaans	0	30 (0-30)
<b>Ku-passives (/5)</b>		
isiXhosa	20	80 (0-80)
<b>Nr of passives produced (/25)</b>		
English	0.5	12 (0-12)
Afrikaans	0	8 (0-8)
isiXhosa	14	13 (7-20)
<b>Percentage long passives produced</b>		
English	12.5	68.8 (0-68.8)
Afrikaans	0	0 (0)
isiXhosa	55	8.3 (50-58.3)
<b>Percentage short passives produced</b>		
English	0	31.3 (0-31.3)
Afrikaans	0	100 (0-100)
isiXhosa	45	8.3 (41.7-50)

Table 6.6: Monolingual groups' performance on the REALt (as percentages)



Note firstly that, as with the LITMUS-CLT data, the three monolingual groups generally scored lower on production-related measures than on comprehension-related measures, most of the medians for production measures being 0% in the case of the English and Afrikaans groups. As is the case with lexical development, this delay in the acquisition of grammatical production skills fits with a large body of research on this topic. According to Paradis (2010:661), “[i]t is commonly understood that comprehension-style receptive tasks are less demanding than expressive tasks and, therefore, children often show superior performance on the former than the latter, for the same structure.” For example, in a study by Hirsh-Pasek and Golinkoff (1996), toddlers were found to have knowledge of verb argument structure when this knowledge was assessed through comprehension tasks, at a point when they were not yet regularly and spontaneously producing these structures. Paradis (2010:675) adds that production tasks are even more demanding for bilingual children than for monolingual children, and cautions that such tasks may therefore produce an inaccurately poorer picture of bilinguals’ knowledge of a specific structure than is actually the case.

Secondly, note that within each one of the three language groups, the monolinguals’ median score for the comprehension of short passives is higher than the score for the comprehension of long passives, this finding supporting previous literature indicating the earlier acquisition of short passives (cf. Chapter 4, Section 4.4). Interestingly, however, in terms of production, both the English and isiXhosa groups have higher median scores for the number of long passives produced, compared to the number of short passives produced.

### **6.3.1.2 Comparisons across groups**

As with the LITMUS-CLT data, a comparison of the three monolingual groups’ performance on the passives section of the REALt was thought valuable as the results add to the literature on monolingual language acquisition in low SES contexts in general and, more specifically, enrich the scarce literature available on the different ages at which monolingual speakers of the three languages typically seem to have acquired the passive voice. The comparison furthermore provides a framework within which to interpret some of the findings of the comparison of trilinguals’ and monolinguals’ performance on the three language versions of

the REALt, the latter comparison being central to the answering of specific research questions (cf. Section 6.3.3). Care was taken in the design of the REALt to ensure that each test item, across the different language versions, targets the same structure and is comparable in terms of its degree of difficulty (Southwood & Van Dulm, 2012:4). However, this instrument was not designed with a statistical across-language comparison of results in mind, but for the purposes of serving as remedial language therapy material, which may also be used for informal language assessment. As such, the statistical analysis reported on below should be interpreted with caution.

Because the REALt data were mostly not normally distributed, the Kruskal-Wallis (non-parametric) ANOVA Test was used to test for significant differences between the three monolingual groups' scores. The (sub-)sections that are directly relevant to the purposes of this study are overall test scores (/60), overall comprehension scores (/35) and overall production scores (/25). Because the English and Afrikaans production data evidently suffered from floor effects (the median scores for all but one of the production subsections being 0%), these data were not deemed fit for statistical analysis. As such, the data for the overall test scores and overall comprehension scores were statistically compared across languages, and the overall production scores compared only in a descriptive fashion. Additionally, given the clear interest in the literature in the acquisition of long versus short passives, the data for the subsections on the comprehension of long versus short (actional) passives, and the data concerning the proportion long versus short passives in the participants' production of passives were also considered in the present study. Possible differences between the acquisition of actional, perceptual and psychological passives were not investigated in the present study because (i) it was not of direct relevance to the research questions; (ii) the number of times each of these types of passives is tested in the comprehension section is unbalanced; and (iii) the number of available data points for production is already very low, without these points being divided in terms of verb type.

The ANOVA tests revealed a significant difference between the three language groups in terms of their overall test scores ( $H(2) = 7.55, p = 0.02$ ). Bonferroni-adjusted post-hoc tests revealed this to be due to the total scores of the isiXhosa group ( $mdn = 50.4$ ) being significantly higher than the total scores of the Afrikaans group ( $mdn = 30$ ),  $p = 0.02$ . This significant difference in terms of overall test scores must be a result of differences in terms of production, as the English, Afrikaans and isiXhosa monolingual groups do not differ

significantly from one another in terms of their overall comprehension scores ( $H(2) = 0.86$ ,  $p = 0.65$ ), their scores for the comprehension of long actional passives ( $H(2) = 5.5$ ,  $p = 0.06$ ) or their scores for the comprehension of short actional passives ( $H(2) = 0.11$ ,  $p = 0.95$ ). Recall that in the case of the LITMUS-CLT data too, the three monolingual groups did not differ significantly in terms of comprehension skills. It is clear from the raw median scores on the REALt, however, that the English and Afrikaans monolinguals fared much worse than the isiXhosa monolinguals in terms of their overall production scores and their scores on all the production subsections. Additionally, both the English and isiXhosa monolinguals typically produced more long passives than supposedly “easier” short passives, in contrast to what the literature predicts (the Afrikaans group having a median score of 0% for both types of passives). This unexpected outcome should, however, be retested using a larger sample size, which would increase the number of data points for production items.

The fact that the English and Afrikaans monolinguals fared worse than the isiXhosa monolinguals in their production of passives constitutes the exact opposite pattern of that found in the LITMUS-CLT data, where the isiXhosa group was consistently outperformed by the English and/or Afrikaans group. For the sake of the argument, let us assume that the significantly lower LITMUS-CLT scores among isiXhosa monolinguals is not a result of the LITMUS-CLT-XHO’s difficulty level being higher than that of the other two language versions. The opposing production patterns in the three monolingual groups’ lexical and grammatical test data may then be argued to indicate that, even if cultural child-rearing practices lower the quantity of child-directed input that the isiXhosa monolinguals receive, the negative effect of lowered quantity of exposure on the acquisition of passive constructions is cancelled out by the positive effect of the assumed higher frequency of such constructions in the isiXhosa child-directed speech that these children do receive. Also recall from Chapter 4, Section 4.4 that the ability to produce passive constructions seems to emerge in English and Dutch monolinguals only after the pre-school years, whilst the context-appropriate spontaneous use of the passive voice in the speech of children as young as three years has been reported for other Southern Bantu languages, namely isiZulu (Suzman, 1985, 1987, 1990) and Sesotho (Demuth, 1989, 1990), and also for the Eastern Bantu languages Kiswahili and Kigiriana (Alcock et al., 2011). Hence, the fact that the monolingual isiXhosa four-year-olds in the present study seem to be more capable of producing passives than English and Afrikaans monolinguals is not surprising.

## 6.3.2 Trilinguals

### 6.3.2.1 Descriptive statistics

Table 6.7 below presents the descriptive statistics for the trilinguals' performance on the passives section of three different language versions of the REALt. Again, because these data are not normally distributed, medians and IQRs provide the most accurate indication of the "average" percentage scores.

	<b>Median</b>	<b>IQR</b>
<b>Total score (/60)</b>		
English	26.7	5.8 (25-30.8)
Afrikaans	31.7	6.7 (26.7-33.3)
isiXhosa	49.2	22.5 (37.5-60)
<b>Comprehension sections</b>		
<b>Total score (/35)</b>		
English	45.7	8.6 (42.9-51.4)
Afrikaans	51.4	11.4 (45.7-57.1)
isiXhosa	54.3	11.4 (48.6-60)
<b>Long actional passives (/10)</b>		
English	50	20 (40-60)
Afrikaans	50	30 (30-60)
isiXhosa	60	40 (40-80)
<b>Short actional passives (/10)</b>		
English	50	20 (40-60)
Afrikaans	70	30 (50-80)
isiXhosa	70	20 (50-70)
<b>Reversible passives: total (/15)</b>		
English	46.7	20 (26.7-46.7)
Afrikaans	40	20 (33.3-53.3)
isiXhosa	46.7	26.7 (33.3-60)
<b>Reversible passives: actional (/9)</b>		
English	33.3	33.3 (22.2-55.6)

	<b>Median</b>	<b>IQR</b>
Afrikaans	44.4	33.3 (22.2-55.6)
isiXhosa	44.4	22.2 (44.4-66.7)
<b>Reversible passives: perceptual (/3)</b>		
English	33.3	66.7 (0-66.7)
Afrikaans	66.7	66.7 (0-66.7)
isiXhosa	66.7	66.7 (33.3-60)
<b>Reversible passives: psychological (/3)</b>		
English	66.7	66.7 (0-66.7)
Afrikaans	33.3	33.3 (33.3-66.7)
isiXhosa	33.3	33.3 (33.3-66.7)
<b>Production sections</b>		
<b>Total score (/25)</b>		
English	0	2 (0-2)
Afrikaans	0	0 (0) <sup>82</sup>
isiXhosa	48	34 (24-58)
<b>Actional passives (/10)</b>		
English	0	0 (0)
Afrikaans	0	0 (0)
isiXhosa	70	40 (35-75)
<b>Reversible passives: total (/15)</b>		
English	0	3.3 (0-3.3)
Afrikaans	0	0 (0)
isiXhosa	26.7	40 (13.3-53.3)
<b>Reversible passives: actional (/5)</b>		
English	0	0 (0)
Afrikaans	0	0 (0)
isiXhosa	20	50 (10-60)
<b>Reversible passives: perceptual (/5)</b>		
English	0	0 (0)
Afrikaans	0	0 (0)

<sup>82</sup> Note that a single number in brackets indicates that all middle scores were at this number (here, at “0”).

	<b>Median</b>	<b>IQR</b>
isiXhosa	20	40 (20-60)
<b>Reversible passives: psychological (/5)</b>		
English	0	0 (0)
Afrikaans	0	0 (0)
isiXhosa	40	60 (0-60)
<b>Daar-passives (/5)</b>		
Afrikaans	0	0 (0)
<b>Ku-passives (/5)</b>		
isiXhosa	0	20 (0-20)
<b>Nr of passives produced</b>		
English	0	1 (0-1)
Afrikaans	0	0 (0)
isiXhosa	12	9 (6-15)
<b>Percentage long passives produced</b>		
English	0	0 (0)
Afrikaans	0	0 (0)
isiXhosa	40	66.7 (0-66.7)
<b>Percentage short passives produced</b>		
English	0	0 (0)
Afrikaans	0	0 (0)
isiXhosa	41.7	75.5 (8.7-84.2)

**Table 6.7: Trilinguals' performance on the REALt (as percentages)**

Note that, as was the case among the monolinguals, the trilinguals generally fare better on comprehension-related measures than on production-related measures, across all three languages. Also note that, in the case of each language, the median score for performance on the comprehension section as a whole is close to 50%, the IQRs also being limited to no lower than 7% and no higher than 10% above 50%. Recall that the comprehension section presents the child with a choice between three pictures – one picture being the target, one the opposer and the other the distractor. As such, a score of 33% for comprehension may be said

to represent chance level.<sup>83</sup> In order to ensure that the trilinguals' scores for comprehension in each language, despite being relatively low, are still significantly higher than chance level, a one sample t-test was run on these data. Results confirmed that this was indeed the case for the English ( $t(10) = 4.72, p < 0.01$ ), Afrikaans ( $t(10) = 7.02, p < 0.01$ ) and isiXhosa ( $t(10) = 8.39, p < 0.01$ ) data.

With regards to differences between the acquisition of short versus long passives, note that in the case of the trilinguals' Afrikaans and isiXhosa data, the median score for the comprehension of short passives is higher than the score for the comprehension of long passives (these two scores being the same in the case of English). Additionally, in the only language in which the median score for any production measure is above 0%, i.e. isiXhosa, the trilinguals produced slightly more short passives than long passives. As with the monolinguals' data, these findings provide further support for previous literature indicating the earlier acquisition of short passives, compared to long passives.

### 6.3.2.2 Comparisons across languages

Recall that one of the primary research questions that this study aims to answer is whether there is a correlation between input and lexical and grammatical proficiency in the case of young developing trilinguals, with the first sub-question asking whether, if there is such a correlation, it exists in the case of all three languages (cf. Chapter 1, Section 1.2). An across-language comparison of the trilinguals' REALt scores will therefore help ascertain the answer to the aforementioned sub-question, as far as grammatical proficiency is concerned.

As was the case in the monolingual data, the trilinguals' production scores suffered from floor effects in the case of both English and Afrikaans, all median scores on the production

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<sup>83</sup> Some may argue that the distractors are too obviously the incorrect choice, essentially leaving children with a choice between only two pictures, i.e. between the target and the opposer. This would mean that chance level is actually 50%, and not 33%. If this were true, the trilinguals' comprehension scores are likely a result of chance only, meaning that these scores should not be used to deduce anything about their true knowledge of passives. In the case of the present study, however, this argument is flawed: in all three language versions of the REALt, on each and every production item, at least one but almost consistently more than one of the 11 trilinguals chose the distractor. This indicates that the distractors did prove a viable option for at least some of the participants. As such, chance level for comprehension is not 50%, but truly 33%.

(sub-)sections being 0% in the case of these languages. As such, only the overall REALt scores, total comprehension scores, and scores for the comprehension of long and short actional passives were statistically compared. As the across-language comparison of these data involved three data sets and because the data were mostly not normally distributed, the Kruskal-Wallis (non-parametric) ANOVA Test was again used to test for significant differences. As before, the production data were compared descriptively, using raw median scores.

The ANOVA tests revealed a significant difference between the trilinguals' total scores for the passives section of the three different language versions of the REALt ( $H(2) = 19.9$ ;  $p < 0.01$ ). Bonferroni-adjusted post-hoc tests indicate that this is a result of the trilinguals faring significantly worse in English and in Afrikaans than in isiXhosa ( $p < 0.01$  in both cases). As in the comparison of the three monolingual groups' REALt scores, these significant differences between the total scores for passives cannot be due to differences in terms of comprehension, as no significant differences were found between the trilinguals' comprehension scores on the three different language versions of the REALt. This is true in terms of their total scores for comprehension ( $H(2) = 3.91$ ;  $p = 0.14$ ), their scores for the comprehension of long actional passives ( $H(2) = 0.82$ ;  $p = 0.66$ ) and their scores for the comprehension of short actional passives ( $H(2) = 3.81$ ;  $p = 0.15$ ). The differences in the trilinguals' total REALt scores thus have to be related to differences in their production scores. Indeed, a comparison of the raw median percentage scores for the production (sub-) sections reveals the trilinguals' scores for isiXhosa to be at least 20% higher than their scores for English and Afrikaans in the case of each one of the measures for which a percentage score was awarded.

The differences between the trilinguals' raw production scores and the statistically significant difference in their total scores for the passives section of the REALt may be explained in reference to their language exposure. Recall that isiXhosa, the language in which the passive clearly seems to be acquired earlier among these trilinguals, is also the language to which they have had the most exposure over time (in terms of both CLoE and TLoE) and the language in which the quality of the exposure they receive is the highest. On grounds of an across-language comparison of the trilinguals' REALt scores, it thus seems as if, as was the



case for lexical proficiency, there is a positive relationship between exposure (in terms of both quantity and quality) and grammatical proficiency (in as far as this may be measured by knowledge of passives).

Section 6.3.2.3 below presents the results of a statistical analysis of the relationship between the trilinguals' REALt scores and their exposure patterns, indicating that only quality of exposure and not quantity of exposure is significantly correlated with the isiXhosa scores. Note, however, that these statistical tests cannot take into account the assumed higher frequency of passive constructions in isiXhosa child-directed speech, which would heighten the degree to which the trilinguals' specific quantities of isiXhosa exposure are supportive of the acquisition of the isiXhosa passive. Perhaps if this factor could be accounted for statistically, quantity of exposure would show a significant correlation with REALt scores in the case of isiXhosa.

### **6.3.2.3 Correlational analyses with exposure measures**

Recall the following two sub-questions to the primary research question asking whether there is a correlation between input and proficiency: if there is such a correlation, (i) does it occur in both lexical proficiency (affirmed in Section 6.2.2.3) and grammatical proficiency; (ii) does it apply in the case of all three of the developing trilinguals' languages; and (iii) do different measures/conceptualisations of input yield similar results? To investigate these sub-questions, statistical analyses were performed to test whether, in the case of each of the trilinguals' three languages, their overall test scores and their total comprehension scores on the REALt (reported above in Table 6.7) correlate with their exposure data (as these relate to the specific language of testing). The latter data take the form of the percentage values for each of the four UBiLEC exposure variables (cf. Section 6.1). The overall production scores for isiXhosa were also statistically analysed to test for a correlation between input and proficiency. However, the English and Afrikaans production data (suffering from floor effects) were not deemed fit for statistical analysis and therefore only compared descriptively, using raw median scores. The Spearman Rank-Order Correlation Test was used for the statistical comparisons, the results of which are reported in Table 6.8 below.

Variables	CAoE	CLoE	TLoE	Quality
Test total: English	0.15	0.23	0.05	-0.36
Test total: Afrikaans	0.51	-0.04	0.16	0.15
Test total: isiXhosa	0.18	0.21		0.65*
Comprehension total: English	0.13	0.19	-0.02	-0.34
Comprehension total: Afrikaans	0.43	-0.16	0.06	0.07
Comprehension total: isiXhosa	-0.35	-0.25		0.04
Production total: isiXhosa	0.47	0.37		0.58

**Table 6.8: R-values for correlations between the trilingual group's exposure variables and REALt scores**  
(\*p < 0.05)

Only one of the test score variables was found to correlate significantly with an exposure measure: the trilingual group's total scores on the isiXhosa version of the REALt correlate strongly with the average quality of the isiXhosa input that this group was receiving at the time of testing ( $t(N-2) = 2.55$ ,  $p = 0.03$ ;  $r = 0.65$ ). This is interesting, seeing as isiXhosa is the one language in which there were no significant correlations between exposure measures and LITMUS-CLT scores.

The significance of the above correlation is clearly driven by the correlation between average quality of current isiXhosa exposure and the scores on the production subsection of the isiXhosa REALt, which approaches significance at  $p = 0.059$  ( $t(N-2) = 2.16$ ,  $r = 0.58$ ), and much less so by the correlation between quality of exposure and the scores on the comprehension subsection ( $t(N-2) = 0.12$ ,  $p = 0.9$ ,  $r = 0.04$ ). Recall that, in the case of the LITMUS-CLT scores, current quality of exposure also correlated significantly with only one test variable in the case of a single language, i.e. the production scores on the English version of the test. Thus, in the case of both English and isiXhosa, quality of exposure correlates with production, its effect on comprehension perhaps being more limited. Furthermore, current quality of exposure seems to affect both lexical proficiency and grammatical proficiency (in as far as this may be deduced from the participants' knowledge of passive constructions) – lexical proficiency in the case of English and grammatical proficiency in the case of isiXhosa.

Consider the fact that in the case of the REALt, due to the floor effects in the English and Afrikaans production data, only the total scores and comprehension scores for these two languages were tested for correlations with exposure measures. In the case of the LITMUS-CLT, however, the production scores for all three languages were also included in the correlational tests. Three of the seven significant correlations between LITMUS-CLT scores and exposure measures (found across two languages) related to production. Even when regarding only the four remaining significant correlations, the number of correlations between LITMUS-CLT scores and exposure measures may be said to be much higher than the single correlation in the REALt data. Additionally, the r-values of three of the four correlations between input and LITMUS-CLT scores are higher than the r-value of the correlation with the single set of REALt test scores (i.e. 0.73, 0.77 and 0.81 versus 0.65), indicating, on average, a stronger relationship between input and test scores in the case of the LITMUS-CLTs. This is an important, unexpected finding as it may indicate that, for four-year-old trilinguals, the input they receive in a given language does not have as strong an influence on their grammatical proficiency in that language, as on their lexical proficiency.

### **6.3.3 Comparison between monolinguals and trilinguals**

Recall that one of the research questions that this dissertation aims to address is whether trilinguals exhibit developmental delay when compared to monolinguals and if so, whether this delay occurs (i) both in terms of lexical and grammatical development, and (ii) in the case of all three languages, or only in the language(s) that are weaker in terms of quantity of input. These questions have already been addressed as far as they relate to lexical development (cf. Section 6.2.3). In order to test whether the same results are found in the case of grammatical development, the following section reports on a comparison between the trilingual and monolingual groups' performance on the passives section of the three different language versions of the REALt.

#### **6.3.3.1 Comparison of percentage scores**

As in the comparison of the three monolingual groups' REALt scores, and in the across-language comparison of the trilinguals' REALt scores, the participants' percentage scores on the following test variables were statistically compared: overall scores, total comprehension

scores, and scores for the comprehension of long and short actional passives, respectively. As with the LITMUS-CLT data, the Mann Whitney U Test was employed to test for significant differences between the monolingual and trilingual groups. Overall production scores, the number of passives produced and the percentage of these passives that constitute long versus short passives were again compared in a descriptive fashion only, using raw median scores. Results relating to the production of passives should be interpreted alongside the data on the different answer types found among the trilingual and monolingual groups (cf. Section 6.3.3.2 below).

Tests revealed no significant differences between the trilingual and relevant monolingual group's scores on either the passives section of the REALt as a whole or on any of the regarded subsections, in any of the three languages (all U-values  $< 55$  and all p-values  $> 0.1697$ ). Similarly, when considering raw median scores, the trilingual group does not seem to differ much from each of the relevant monolingual groups in terms of their overall accuracy in production, not in the case of English (0% versus 2%), isiXhosa (48% versus 51%), or Afrikaans (0% in both cases). The raw median scores for the number of passives produced by the monolingual groups are only somewhat higher than those of the trilinguals in the case of English (i.e. 0.5% versus 0%) and isiXhosa (14% versus 12%). Furthermore, in the case of the percentage long passives produced, the monolinguals have a somewhat higher median score than the trilinguals, both in the case of English (12.5 % versus 0%) and isiXhosa (55% versus 40%). In the case of the percentage short passives produced, there is no difference between the two groups in the case of English (both medians being 0%) and only a very small difference in the case of isiXhosa (45% versus 41.7%).

The low median scores for both the trilingual and monolingual groups across languages, especially in the case of production, indicate the high degree of difficulty that passive constructions pose to the four-year-old participants in this study (cf. Tables 6.6 and 6.7 above). Importantly, however, despite receiving less exposure to all three their languages, the trilingual group is managing to keep pace with the monolingual groups, this having being shown statistically for comprehension and seeming similar for production, when raw median scores are considered. In answer to the research question of interest to this section, the trilinguals do not seem to be experiencing developmental delay in their acquisition of the

passive, this being true for all three their languages, despite differing amounts of exposure to each.

Recall that in the case of the LITMUS-CLT, the trilinguals scored significantly lower than the monolinguals in the case of English and Afrikaans. It thus seems plausible that, at least as far as comprehension is concerned, the participants are transferring grammatical knowledge of passive constructions in isiXhosa (obtained through greater exposure to this language over time, perhaps coupled with the higher frequency of passives in Southern Bantu languages) to their knowledge of English and Afrikaans. If so, this would constitute a case of cross-linguistic grammatical bootstrapping, confirming that the (assumed) relatively high frequency of passive constructions in the input that a developing trilingual receives in one of her three languages (here, isiXhosa) can enhance its acquisition in her other two languages (here, Afrikaans and English).<sup>84</sup> Considering the low median scores on the English and Afrikaans production sections, both the trilinguals and monolinguals scoring 0% on almost all subsections, it is evident that in the case of these two languages, the average four-year-old from a low SES context cannot yet produce passives, even if she is a monolingual speaker of the specific language. The bootstrapping effect mentioned above thus seems to be limited (at least at this stage in the trilinguals' language development) to the comprehension of passives.

### **6.3.3.2 Comparison of answer types found in the production of passives**

This section offers a comparison of the types of answers that the trilingual versus monolingual participants provided in the section of the REALt that tests the production of passive constructions. These data could not be statistically analysed for possible significant differences between the trilingual and monolingual groups due to the small sample size ( $n = 11$  in the case of trilinguals;  $n = 10$  in the case of monolinguals), paired with a large number

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<sup>84</sup> Recall from Chapter 4, Section 4.4 that this type of implicit learning effect caused by the naturally or experimentally increased frequency of passive constructions in the input has already been reported to occur within a single language (rather than cross-linguistically). Specifically, increasing the frequency of passives in the input that English monolingual participants received led to their earlier comprehension of passives (cf. Bencini & Valian, 2008; Brooks & Tomasello, 1999; Huttenlocher et al., 2002, 2004; Savage et al., 2003) and to their earlier production of passives (cf. de Villiers, 1984; Vasilyeva et al., 2006; Whitehurst, Ironsmith, & Goldfein, 1974).

of different answer types ( $n = 8$ ; cf. Chapter 5, Section 5.4.4.2 for a detailed description of the different answer types). Hence, what follows below is a descriptive comparison of the percentages of the total number of answers (produced by the relevant groups in the production section as a whole, and on its subsections) that classify as answer types 2(a), 2(b), 1(a), 1(b), 0(a), 0(b), 0(c) and 0(d), respectively. In each language group, the participants' answer types on the following sections/subsections were compared:

- all production sections taken together (excluding the *daar*-passives section in the Afrikaans version of the test and the *ku*-passives section in the isiXhosa version; /25)
- production of actional passives with/without an agent (/10)
- production of reversible passives (/15)
- in the case of the Afrikaans version of the test: production of *daar*-passives (/5); in the case of the isiXhosa version of the test: production of *ku*-passives (/5)

Although the different production subsections listed above were not considered relevant for other comparisons in the present study (given this study's specific focus), these subsections are reported on here because of the possible value of this finer detail for future studies on the acquisition of specific types of passives by multilinguals. The relevant data are presented in the table below.

Answer types	Percentage of total number of answers					
	English		Afrikaans		isiXhosa	
	Tri	Mono	Tri	Mono	Tri	Mono
<b>All production sections taken together</b>						
2(a)	0.4	14	0.7	6.8	42.5	47.2
2(b)	0	2	0	0.8	0	0
1(a)	0.4	4	0	1.2	1.5	1.6
1(b)	0.4	2	0.4	0.4	0	0
0(a)	8	17.6	5.5	17.2	4.7	3.6
0(b)	10.9	9.6	7.6	18.8	2.9	6
0(c)	18.5	30	5.8	21.6	13.1	26
0(d)	61.5	20.8	80	33.2	35.3	15.6
<b>Actional passives with/without an agent</b>						
2(a)	0	17.0	0.9	13	53.6	60
2(b)	0	0	0	0	0	0
1(a)	0	7	0	2	2.7	0
1(b)	0	1	0	1	0	0
0(a)	11.8	29	5.5	28	6.4	7
0(b)	8.2	3	6.4	11	0.9	3
0(c)	12.7	25	4.5	21	12.7	21
0(d)	67.3	18	82.7	24	23.6	9
<b>Reversible passives</b>						
2(a)	0.6	12	0.6	2.7	35.2	38.7
2(b)	0	3.3	0	1.3	0	0
1(a)	0.6	2	0	0.7	0.6	2.7
1(b)	0.6	2.7	0.6	0	0	0
0(a)	5.5	10	5.5	10	3.6	1.3
0(b)	12.7	14	8.5	24	4.2	8
0(c)	22.4	33.3	6.7	22	13.3	29.3
0(d)	57.6	22.7	78.2	39.3	43.0	20
<b>Daar-/ku-passives</b>						
2(a)			1.8	16	9.1	34
2(b)			0	0	0	0
1(a)			0	10	0	0
1(b)			0	0	0	0
0(a)			14.5	26	1.8	6
0(b)			0	0	3.6	0
0(c)			5.5	2	16.4	0
0(d)			78.2	46	69.1	60

**Table 6.9: Percentage-wise distribution of answer types in the passives production section of the REALt**

In light of the above data, it may be useful to reinterpret the raw median scores for production originally reported in Tables 6.6 and 6.7, from which it is evident that, overall, the trilingual and monolingual groups did not differ much in terms of their accuracy scores for production. From Table 6.9 above, it becomes clear that a lack of large differences between the trilingual and any one of the monolingual groups' accuracy scores does not necessarily imply that the two relevant groups achieved similar results by producing the same type of answer – on the contrary, quite often the two groups achieved similar scores by producing completely different types of answers. Such differences mostly do not show up in the groups' scores, as many different types of answers are equally weighted on grounds of the degree to which they vary from the target response, such as options 0(a)-(d) that are all awarded a mark of zero. The following paragraphs highlight some of the trends in the different groups' answer types in each of the production subsections and in the production section as a whole. Overall trends are discussed in the final paragraph of this section.

### *Actional passives*

In the subsection on actional passives, by far the most common answer type among trilinguals on both the English and Afrikaans tests is 0(d), i.e. a partial utterance (e.g. a single word), no utterance at all, an utterance in a language other than the language of testing, or an utterance consisting of one or more active sentences that do not fit any of the other response options. In the case of the isiXhosa test, however, the trilinguals mostly opted for the answer type on the very opposite end of the scoring ladder, i.e. option 2(a). This means that they either produced passive sentences that were exactly on-target or they produced accurate passive sentences using verbs other than the ones provided in the stimuli, but that were still suited to the depicted scenarios. This difference is evident in the trilinguals' English and Afrikaans median scores being 0%, and the isiXhosa median score being 70%.

At 28% and 29%, respectively, the majority of the answers produced by both the English and Afrikaans monolingual groups was of the type 0(a), usually exact repetitions or close approximations of the active stimulus sentences. This may indicate that the participants did not understand what exactly was expected of them when asked to rephrase the active stimulus sentence without changing the meaning, yet were eager to participate and therefore mimicked



(to some degree) the administrator's words. The high frequency of answer type 0(a) is reflected in the median score for both monolingual groups, i.e. 0%.

In the case of isiXhosa, the predominance of answer type 2(a) in the trilinguals' production of passives closely resembles the pattern found among the monolinguals, with 54% and 60% of the respective groups' answers being of this nature. These two groups also produced a reasonably similar variety and distribution of answer types in this subsection. Interestingly, however, the trilinguals' median score of 70% is higher than the monolinguals' score of 55%.

A striking difference between the trilinguals and monolinguals that may be seen across languages in their production of actional passives, even in the case of isiXhosa, lies in the frequency of answer type 0(d): the trilinguals produced 3.7 times as many of this type of answer as the monolinguals did on the English test, 3.5 times as many as the monolinguals on the Afrikaans test, and 2.7 times as many as the monolinguals on the isiXhosa test. The greater frequency of this answer type in the trilinguals' production did not, however, cause a difference in the trilingual versus monolingual groups' scores on this section in the case of English and Afrikaans, both groups' median scores on this section being 0% for these languages. No negative effect is furthermore evident in the case of isiXhosa, the trilinguals even having a median score of 15% higher than the monolinguals on this section.

### ***Reversible passives***

In the subsection on reversible passives, 0(d) was again by far the most common answer type among trilinguals, this time across all three languages. In the case of isiXhosa, specifically, the majority of the trilinguals' answers in this subsection were of the type 0(d), followed quite closely by type 2(a), with the trilinguals and monolinguals again producing close to the same number of answers of this latter type at 35% and 39%, respectively. The English monolinguals predominantly produced answers of the type 0(c)<sup>85</sup> and the Afrikaans

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<sup>85</sup> Recall from Chapter 5, Section 5.4.4.2 that this type of answer involves a non-passive sentence using a verb other than the one provided in the stimulus, with the original THEME argument serving as the AGENT argument, e.g. *John did fall* instead of *John was knocked over by the car*; *The tea is getting cold* instead of *The tea is being poured*; or *Pam is sad* instead of *Pam is upset (by Thandi)*. This type of response typically involves

monolinguals mostly 0(d), with the isiXhosa monolinguals again mostly producing answers of the type 2(a).

As in the subsection on actional passives, across all three languages, the trilinguals produced many more answers of the type 0(d) than the monolinguals (specifically, 2.5 times more in the case of English, twice as many in the case of Afrikaans and 2.2 times as many in the case of isiXhosa). Again, this difference did not lead to any differences between the trilingual and monolingual groups' scores on this section in the case of English and Afrikaans (all medians being 0%), with the trilinguals even managing to score 16% higher than the monolinguals in the case of isiXhosa.

### ***Daar-passives and ku-passives***

In the Afrikaans subsection on *daar*-passives and the isiXhosa subsection on *ku*-passives, both the trilinguals and the monolinguals predominantly produced answers of the type 0(d). Still, the trilinguals produced more such answers than the monolinguals did: in the case of Afrikaans, the trilinguals produced 1.7 times as many, and in the case of isiXhosa, 1.2 times as many. Unlike the pattern in the subsections on isiXhosa actional and reversible passives, the trilinguals and monolinguals differ greatly in the percentage of their answers in the *ku*-passives subsection that qualify as type 2(a): here, the monolinguals produced 3.8 times more answers of this type than the trilinguals (this being reflected in their median score of 20%, versus the trilinguals' 0%).

### ***All production sections taken together***

Many of the trends noted above in the individual reports on the production subsections are strong enough to hold up when the sum of all the production subsections is regarded (cf. the first section in Table 6.9 above).

Let us first consider the trends that relate to the various groups' predominant answer type choice. In all three production subsections, the trilinguals mostly produced answers of the type 0(d) – the predominance of this answer type is again evident in the case of the overall

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an explanation of the state that the original THEME argument is in, or a description of how that argument came to be in the situation depicted in the picture.

production data for English (61%) and Afrikaans (80%). The majority of the Afrikaans monolinguals' answers were also of this nature, although it constitutes a much smaller portion of their total responses at 33%. The majority of the answers produced by the English monolinguals were of the type 0(c) at 30%. Recall that in the case of isiXhosa, the trilinguals predominantly produced answers of the type 2(a) in the actional passives section and that this was their second most popular answer type in the reversible passives section. When considering these two sections together in the trilinguals' overall production data, answer type 2(a) predominates at 43%. This is quite similar to the pattern among the monolinguals, who produced answers of this type in 47% of all cases. The predominance of answer type 2(a) in both groups' isiXhosa production data, and of answer types 0(d) and 0(c) in both groups' English and Afrikaans production data is reflected in the median scores of 48-51% in the case of isiXhosa and 0-2% in the case of English and Afrikaans.

From both the data for production subsections and the data for performance on the production section as a whole, it is clear that the trilinguals' performance more closely approximates that of the monolinguals in the case of isiXhosa than in the case of English and Afrikaans. The predominant choice of answer type 2(a) among both groups in the case of isiXhosa implies two phenomena that were also confirmed by the groups' test scores reported in Sections 6.3.1.1 and 6.3.2.1 above: (i) the trilinguals fare better in their production of isiXhosa passives than in their production of English and Afrikaans passives, in which case they mostly produced answers of the type 0(d); and (ii) the isiXhosa monolinguals fare better than their English and Afrikaans counterparts in the production of passives, as the latter two groups mostly produced answers of the types 0(a), 0(c) and 0(d). The similarity between the trilinguals' and monolinguals' isiXhosa production data may possibly be explained by the fact that, as mentioned earlier, the trilinguals have had more exposure to isiXhosa over time (an average CLoE of 58.2% of their lifetimes) than to English and Afrikaans, and by the (assumed) higher frequency of passives in isiXhosa, compared to the other two languages.

### ***Overall trends***

A number of overall trends that were not already noted above may be highlighted. Firstly, in the case of both English and Afrikaans, the monolinguals show greater variety in their selection and distribution of different answer types than do the trilinguals, who mostly opted for answer types 0(a)-(d), with answer type 0(d) being the most common by far. To a certain extent, this is a reflection of the English and Afrikaans monolinguals' higher general

proficiency levels (as indicated by the LITMUS-CLT scores, following Unsworth, 2013a:91, and Scheele et al., 2010, in their interpretation of vocabulary scores as a general measure of child language proficiency), which enables them to produce more answers that are worth either one or two marks, opposed to the zero-mark-answers that many of the trilinguals are limited to due to lower general proficiency levels. (Note, however, that those trilinguals with higher LITMUS-CLT scores generally produced fewer answers of the type 0(d) than did those with lower LITMUS-CLT scores, this being the case in all three languages.) Still, even in their production of answers of the types 0(a)-(d), the monolinguals mostly show more variance in their error types than the trilinguals. For example, in the English and Afrikaans tests, the monolinguals produced two to three times more answers of the type 0(a), i.e. approximations of the stimulus sentence, than the trilinguals. As mentioned above, this may be because, even though they were perhaps not yet able to produce appropriate passive sentences in response to certain test items, they were eager to participate and therefore simply mimicked the administrator's words. In the case of the majority of the trilinguals, however, lower proficiency levels may have prevented any participation that demands even the mimicking (as opposed to independent formulation) of a full sentence.

Furthermore, in the case of both Afrikaans and isiXhosa, the monolinguals produced twice as many answers of the type 0(b), i.e. an active sentence using the verb provided in the stimulus or a very similar, context-appropriate verb, with the original THEME argument serving as the AGENT argument (typically, an exact repetition or close approximation of the stimulus sentence, with a simple role reversal between AGENT and THEME). This may be a result of the monolinguals realising that they were asked to "say the sentence in another way", but not realising that they were supposed to keep the meaning the same (in which case a passive construction would be needed). When prompted to start with the expression that served as the THEME in the stimulus sentence, it is perhaps then understandable that a child may choose to formulate an active sentence with this same expression functioning as the AGENT, as it is this type of argument that typically occupies the sentence-initial position in an active sentence. Most likely, however, the participants were simply producing the only construction they were able to, given their syntactic ability at the specific point in their development, and the two arguments they were limited to in the stimulus sentence.

Lastly, across all languages, the monolinguals produced many more answers of the type 0(c) than the trilinguals. Recall that this type of answer typically involves an explanation of the

state that the original THEME argument is in, or a description of how that argument came to be in the situation depicted in the picture. The fact that the monolinguals produced the most such answers could indicate that their higher proficiency levels in the language of testing provided them with the confidence to talk about what is happening in the picture in broad terms, even if they could not yet do so using passive sentences.

Turning to the trilinguals, this group produced two to three times as many answers of the type 0(d) as the monolinguals did (specifically, 2.9 times as many in English, 2.4 times as many in Afrikaans and 2.2 times as many in isiXhosa). In the case of English and Afrikaans, this difference, as well as the overall smaller variety of answer types produced by the trilinguals might be a result of this group's lower proficiency levels preventing them from understanding the instruction, from having the confidence to attempt formulating an entire sentence (of whatever sort), or from being able to formulate passive sentences specifically – this would then cause them to keep quiet, produce an incomplete utterance, or answer in another language in which they are more proficient, rather than attempt to produce either a passive sentence or some type of active sentence.

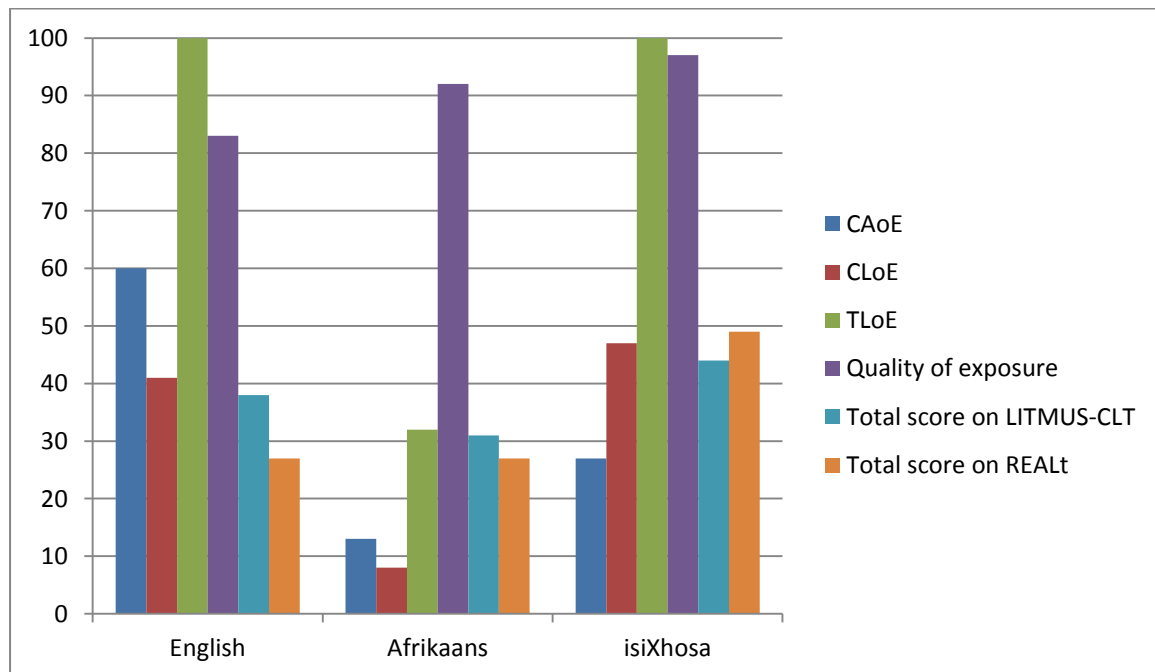
Two final remarks regarding trends in the production data remain. Firstly, the dearth of answers of the type 2(b) indicate that, contrary to what may be expected, changing the class of the verb to one that is, according to the literature (cf. Chapter 4, Section 4.4), typically acquired earlier than the type in the stimulus, was not a common strategy among participants. Secondly, in the case of isiXhosa, when the participants produced an accurate answer, they mostly produced perfectly on-target answers, as is evident from the fact that the majority of the answers are either of the type 2(a) or 0(a)-(d).

#### **6.4. Comparison between each trilingual participant's three languages, in terms of test scores and exposure**

The aim of this section is to offer a somewhat qualitative, in-depth description of each of the 11 individual trilinguals' exposure patterns and test scores, in order to illustrate the origin of the significant correlations reported in Sections 6.2.2.3 and 6.3.2.3. This section will furthermore highlight any trends that are visible when considering the 11 different data sets as a group, but that are not strong enough to result in a significant correlation and therefore were not discussed in the two relevant previous sections. In the case of each participant, a

short description of her exposure patterns (based on the information gathered via the LBQ) is provided. Preceding this, a column chart offers a visual comparison of the child's exposure patterns and total test scores for each of her three languages. The 11 trilingual participants have been given code names, ranging from T1 to T11. Note that all variables are measured as a percentage score, i.e. CAoE is the percentage of the child's overall linguistic exposure at the time of testing; CLoE and TLoE are percentages of the child's lifetime; quality of exposure is a point between 0 and 100 with 100 being native speaker quality; and the test scores, of course, are the raw scores recalculated as percentage marks.

### *T1*



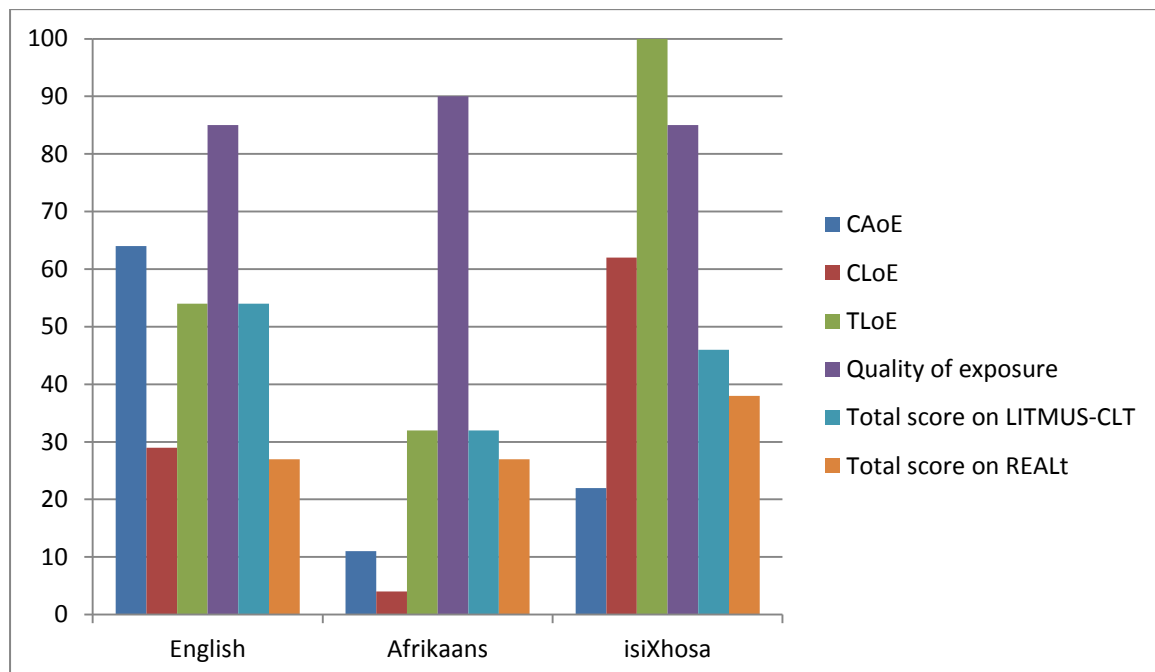
**Figure 6.1: A comparison of participant T1's exposure patterns and test scores across languages**

Participant T1 resides in a home in which he has received reasonably equal exposure to both isiXhosa and English since birth (hence, his TLoE to both languages are equal to 100% of his lifetime). His father is a Congolese immigrant who speaks French and Swahili as L1s, but uses only English with his son and isiXhosa with his wife. T1's mother and her two sisters who also live in the house speak predominantly isiXhosa to one another and to T1, with a bit of English mixed in at times (approximate distribution: 75:25). T1 attends Crèche 1 (cf. Chapter 5, Section 5.3.1), with Afrikaans being the L1 of two thirds of his classmates. In terms of both instruction and playground interaction, however, the dominant language is

English, followed by Afrikaans. This crèche is the first one T1 has ever attended, and provided him with his first significant exposure to Afrikaans, since the age of 2.9 (hence the short TLoE). T1 also receives daily exposure to Afrikaans via the children who live on the property on which his father's barber shop is situated.

The language to which T1 was exposed most at the time of testing is English (due to exposure at both home and at the crèche), followed by isiXhosa (predominantly at home) and then Afrikaans (at crèche and at his father's barber shop). When exposure over time is quantified (i.e. CLoE is calculated), T1 has had the most exposure to isiXhosa, followed shortly by English and then Afrikaans at a much lower percentage. T1's performance on both the isiXhosa tests is better than his performance on the tests in the other two languages, presumably due to the longer CLoE to isiXhosa. His scores on both the English and Afrikaans tests are roughly equal, despite his lower CAoE and CLoE to Afrikaans than to English. This could perhaps be explained by the slightly higher quality of the Afrikaans versus English input (92% vs 83%).

## T2



**Figure 6.2: A comparison of participant T2's exposure patterns and test scores across languages**

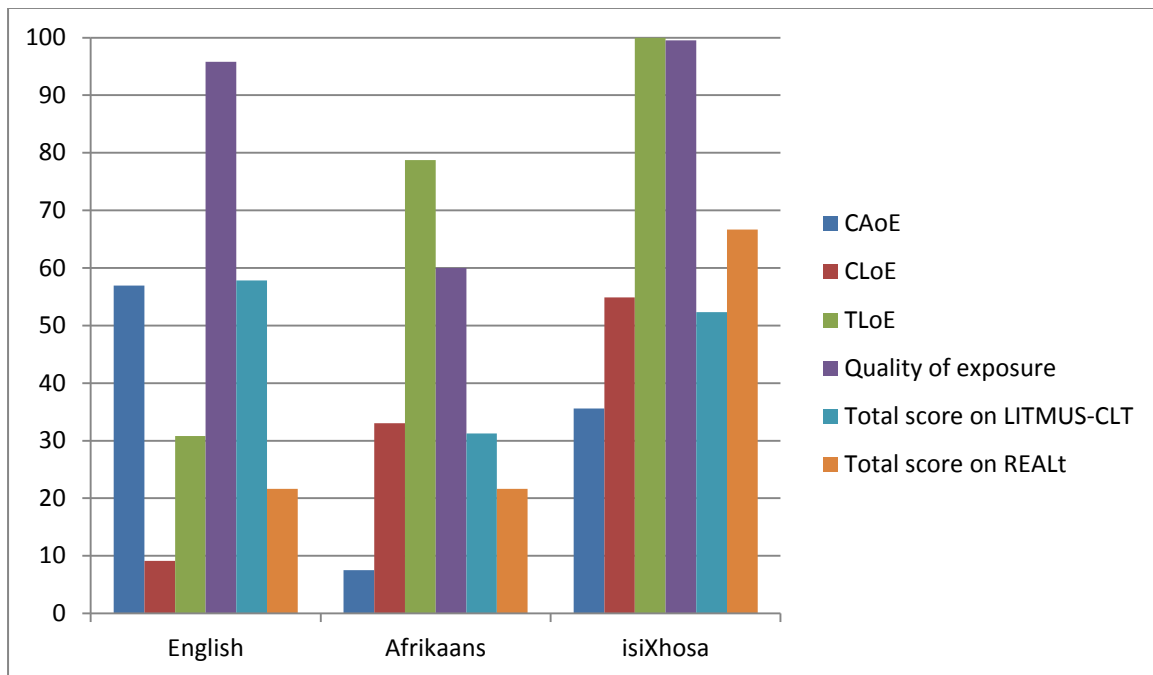
Participant T2 lives in a home in which both isiXhosa and English are used. Her mother is an L1 isiXhosa L2 English speaker and her father an L1 Sepedi L2 isiXhosa/English/Afrikaans speaker. As the mother has no proficiency in Sepedi, the parents speak only isiXhosa to one another. When speaking to their child, however, they mix isiXhosa and English in a 75:25 ratio. T2 received her first significant exposure to English at the age of 2.1 years when she started attending an English-medium crèche. From this point on, her parents started using some English with her in response to her own use of the language at home. At the age of 3.1 years, T2's family moved and she was enrolled in Crèche 1 (also attended by T1 above). This is where she received her first significant exposure to Afrikaans (this also being the only context in which she receives Afrikaans input).<sup>86</sup>

At the time of testing, T2 was receiving the most exposure to English, followed by isiXhosa, then Afrikaans. Over time, however, the largest portion of her input was in the medium of isiXhosa. T2's LITMUS-CLT score is much higher in the case of English than in the case of Afrikaans, but her English and Afrikaans scores on the REALt are roughly equal, even despite the lower Afrikaans CAoE and CLoE. This may perhaps be due to the slightly higher quality of the Afrikaans input. Interestingly, T2's vocabulary score is 8% lower in isiXhosa than in English, but her isiXhosa score on the REALt is 11% higher than her English score. In the case of T2, it thus seems as if CAoE has a stronger effect on vocabulary development than on knowledge of passives constructions, whereas knowledge of passives seems to be related to a longer CLoE.

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<sup>86</sup> During the parental interview, T2's father was very outspoken about the fact that he does not want his daughter to learn to speak or understand Afrikaans (despite his own high proficiency in this language) and that he had been shocked to learn from her teachers that T2 sometimes speaks Afrikaans at school. Reportedly, he was "sad", "hurt" and "angry" about this, and felt "powerless" because the demographics of their residential area prevented him from moving his daughter to a crèche where she would have no exposure to Afrikaans. T2's father did not provide an explicit reason for his strong negative attitude towards Afrikaans, but this type of attitude is common among some of the previously disadvantaged South Africans, and has political roots in the fact that Afrikaans was the language of the oppressor during the apartheid years (Heugh, 2007:199).



**T3**

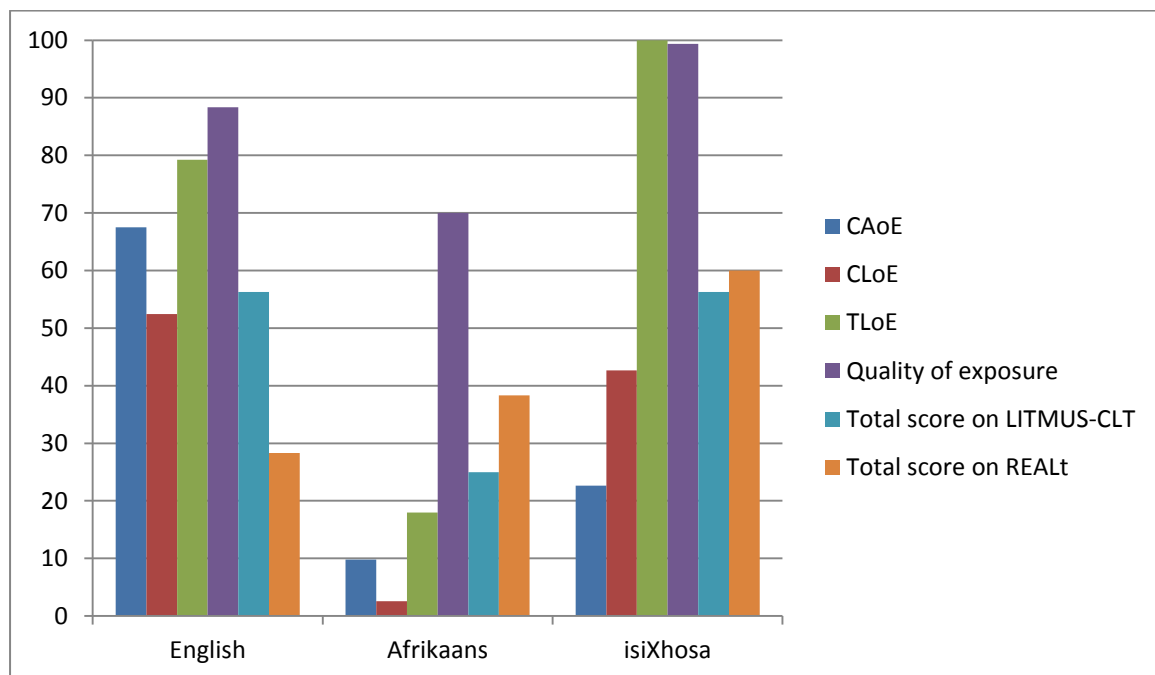
**Figure 6.3: A comparison of participant T3's exposure patterns and test scores across languages**

Participant T3 lives with her parents and 10-year-old brother, who all speak only isiXhosa to one another (her mother is L1 isiXhosa L2 English, her father is L1 isiXhosa L2 English/Afrikaans and her brother is also a developing English-Afrikaans-isiXhosa trilingual). When she was born, her family was living in a rural, Afrikaans-dominant town. She started receiving her first exposure to Afrikaans in the community from the age of one year (hence, T3's TLoE to Afrikaans is quite high). This exposure increased when she started attending her first crèche (an almost exclusively Afrikaans-medium one) at the age of 1.33 years. When she was 3.25 years old, her family moved to a more culturally and linguistically varied area, and she started attending a crèche in which mostly Afrikaans, but also English was used. This crèche provided her with her first significant exposure to English. Her best friend at this time, however, was an L1 Afrikaans speaker and they interacted with one another in this language. It was at the age of 4.25, about 6 months before the time of testing, that T3's family moved again and she started attending Crèche 2, which dramatically increased her exposure to English. Recall that at this crèche, English is the L1 of 75% of the children in T3's class, the MoI is predominantly English, mixed with Afrikaans in a 75:25 ratio, and 70% of the playground interaction is in English. During this period, T3 also became best friends with an L1 English speaker, with whom she interacts in English only.

At the time of testing, T3 was receiving the most exposure to English (given the crèche environment and her new best friend), followed by isiXhosa and, at a much lower percentage, Afrikaans. Over time, however, she has had more exposure to isiXhosa and Afrikaans than to English. As with T2, T3's English and Afrikaans scores on the REALt are roughly equal, but her LITMUS-CLT score is much higher in the case of English than in the case of Afrikaans (and even isiXhosa). Given that she has had a much longer CLoE to Afrikaans and isiXhosa than to English, it must be the higher CAoE to English that is increasing her English vocabulary to the extent that it surpasses that of her other languages. Note that, as was the case with T2, this positive effect seems only to apply to vocabulary and not to the knowledge of passives. The higher quality of the English input when compared to the Afrikaans input may also be encouraging vocabulary development.

Even though T3's vocabulary skills in English surpass even her isiXhosa vocabulary skills (which she has been developing since birth and still supports with much current isiXhosa input), her score on the REALt is three times higher for isiXhosa than for English. This may be because the effect of T3's much longer CLoE to isiXhosa than to English would have been strengthened by the high frequency of passives in isiXhosa adult speech.

#### T4



**Figure 6.4: A comparison of participant T4's exposure patterns and test scores across languages**

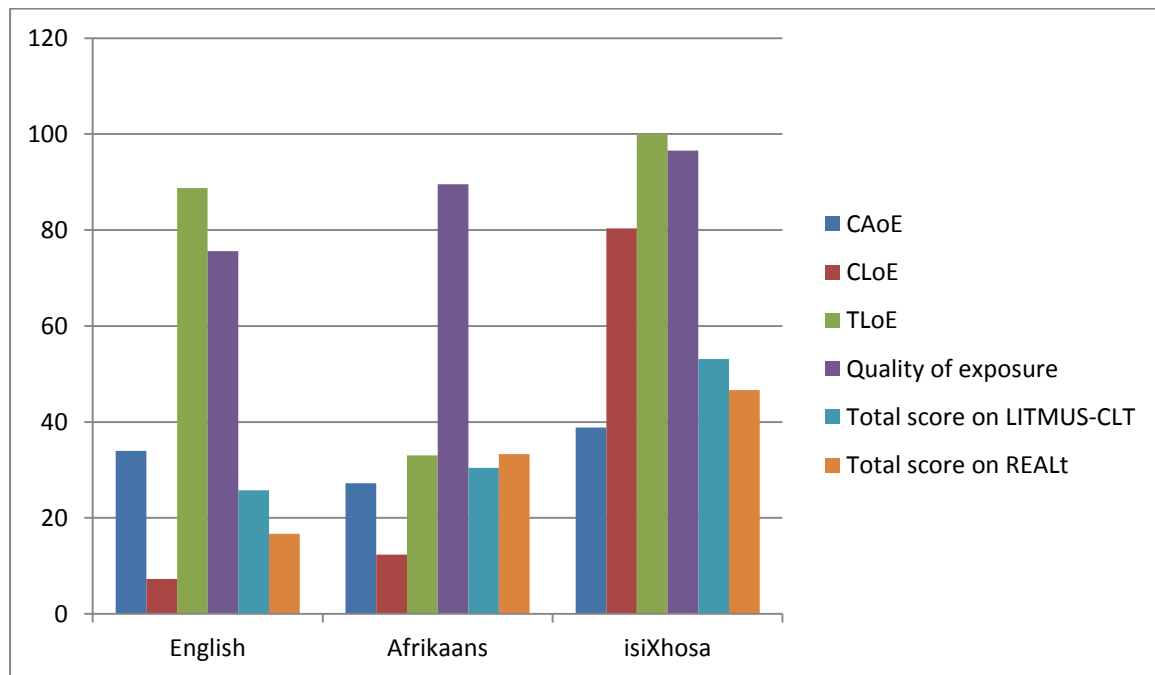
T4 lives with her mother and two aunts who all speak their L1, isiXhosa, to one another. All three adults are L2 speakers of English, isiZulu and Afrikaans. When speaking to T4, the adults use mostly isiXhosa, but will switch to English in reaction to T4's code switching (reportedly, T4 uses isiXhosa especially when she wants something from the adults and English when she is being naughty). The reported language ratio in conversations between the adults and T4 is 60% isiXhosa to 40% English. T4 started attending a strictly English-medium crèche at the age of one year, at which point she received her first significant exposure to this language (hence the long TLoE to English). From the age of 3.9 years, she started attending Crèche 2 (the same crèche attended by T3 above). This is the context in which she first started being exposed to Afrikaans on a daily basis, with approximately 25% of instruction and 20% of playground interaction taking place in this medium. (Before this, she received some exposure to Afrikaans at the community fairs she often went to with her mother on Sundays, where she played with both L1 English and L1 Afrikaans children.) After T4 started attending Crèche 2, her grandfather (a highly proficient L2 Afrikaans and less proficient L2 English speaker) started using Afrikaans in his interaction with her. T4's friends whom she knows outside of the crèche context are all developing isiXhosa-English-Afrikaans trilinguals who come from isiXhosa dominant homes, but they speak mostly English when playing (especially when they play "teacher-teacher").

At the time of testing, T4 had by far the most exposure to English (predominantly at crèche, but also at home), followed by isiXhosa and then Afrikaans. Due to the fact that she started attending an English-medium crèche at such a young age, English exposure also makes up the largest part of the entirety of linguistic input that she has received in her lifetime. Her CAoE and CLoE scores are lowest for Afrikaans, the language to which she most recently started being exposed to on a daily basis and which is largely limited to the crèche context.

T4's scores on the isiXhosa and English versions of the LITMUS-CLT are exactly the same, with her Afrikaans score being less than half this number. Her score on the isiXhosa REALt, however, is more than twice as high as her score on the English version, this despite her having received more exposure to English over time and at the time of testing. Furthermore,

her score on the Afrikaans REALt is 10% higher than her English score, despite her CAoE and CLoE scores for Afrikaans being lower than her English scores. This does not seem to be related to the quality of the input as the isiXhosa quality is higher but the Afrikaans quality lower than the English quality. The root of this phenomenon will be speculated on in the discussion of common trends at the end of this section.

### T5



**Figure 6.5: A comparison of participant T5's exposure patterns and test scores across languages**

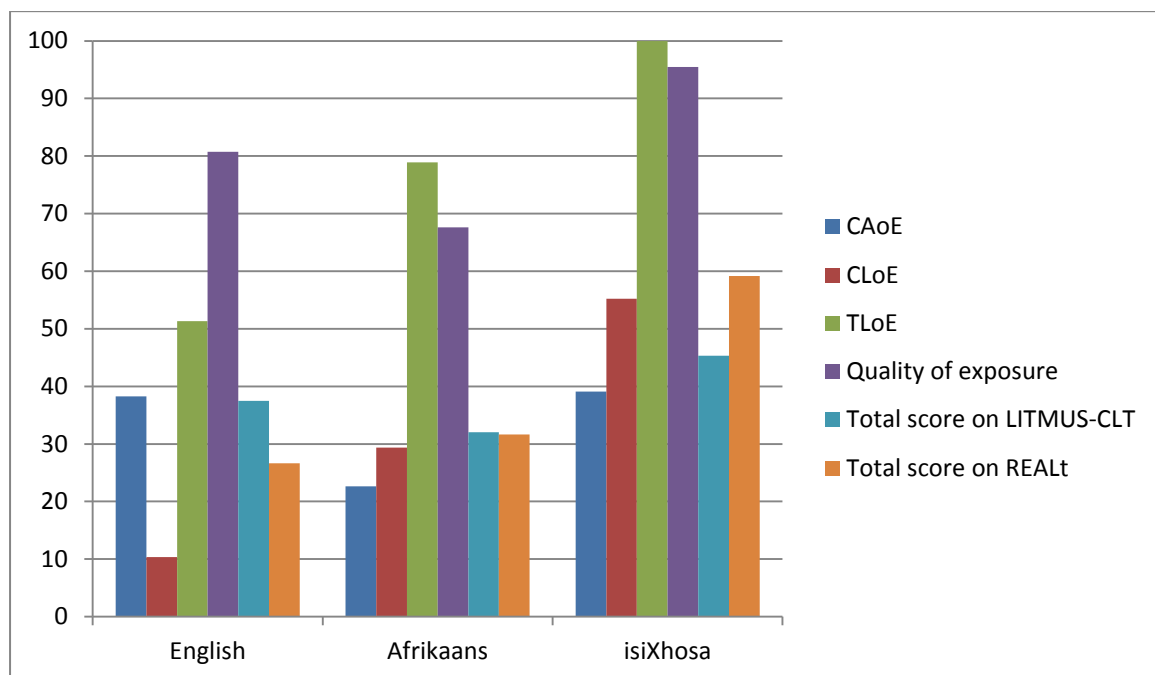
Participant T5's mother is an L1 isiXhosa L2 English speaker, and her father an L1 isiZulu speaker with isiXhosa, English and Afrikaans as L2s. Her parents speak only isiXhosa to one another, but her father is rarely at home, except on Sundays. T5 and her mother speak predominantly isiXhosa to one another, with some degree of English words being used (ratio = 90:10). T5's father speaks predominantly isiXhosa to her, with about 25% Afrikaans mixed in between. T5 reportedly responds in whatever language she is addressed in. She has an older brother with whom she speaks predominantly isiXhosa, mixed with some English, but he does not live with them and therefore she hardly ever sees him.

T5's mother looked after her until the age of six months (speaking only isiXhosa), at which point she started attending a predominantly isiXhosa crèche in the township where they still resided at the time of testing (hence her long TLoE to both isiXhosa and English). At this crèche, isiXhosa was used as the primary MoI at roughly 75%, with English making up the remaining 25% of instruction. This context provided her with her first significant exposure to English and was also the reason her mother started using some English during their interaction at home. At the age of 2.9 years, T5 was moved to Crèche 3, which is situated further away, serving mostly the farm worker population of that area, made up of coloured monolingual Afrikaans workers and black L1 isiXhosa workers. As such, roughly half of the children in T5's class are L1 Afrikaans speakers, and the other half L1 isiXhosa speakers. For instruction, Afrikaans is used almost exclusively, with the L1 Afrikaans teachers only resorting to their L2, English, when attempting to communicate with those L1 isiXhosa children whose Afrikaans proficiency is very limited. This crèche provided T5 with her first significant exposure to Afrikaans and it was after she started going there that her father started using Afrikaans with her. Since she started attending a crèche, however, her mother has feared that her increased exposure to Afrikaans and English in this context might cause her to "lose her isiXhosa", so disabling her from communicating with her elders when they visit their family in rural Eastern Cape, a province in which isiXhosa is the dominant language.

At the time of testing, T5 was receiving a reasonably equal amount of exposure to all three her languages (between 27% and 39%). Over time, however, a very small percentage of her input assumed the form of either English (7%) or Afrikaans (12%). This could explain the similarity of her scores on the English and Afrikaans versions of the LITMUS-CLT (26% vs 30%) and the much higher score on the isiXhosa version (53%). CLoE could also explain her higher score on the Afrikaans version of the REALt (33%) than on the English version (17%), although this difference in score is much more severe than the difference between her CLoE to Afrikaans and English. Here, the effect of the longer CLoE to Afrikaans might be strengthened by the higher quality of the Afrikaans compared to English input, as well as the fact that 77% of her English at the time of testing was received by watching cartoons. Lastly, CLoE is also the most logical explanation for her score on the isiXhosa REALt (47%) being so much higher than her score on the other two language versions.

Note that although T5 has a longer TLoE to English than to Afrikaans, her Afrikaans scores are higher in the case of both tests. This most probably relates to the fact that the amount of input she received in English during this longer period of exposure (starting with her attendance of the isiXhosa-dominant crèche), still amounts to less than her Afrikaans input (starting with her attendance of an Afrikaans-dominant crèche). Also, it might indicate that her very young age at first exposure to English input (i.e. six months) rendered a part of her English input less valuable than her Afrikaans input, which she only started receiving later on.

## T6



**Figure 6.6: A comparison of participant T6's exposure patterns and test scores across languages**

Participant T6 lives with her mother, 19-year-old sister and grandparents. Her mother and sister are L1 isiXhosa L2 English speakers and her grandparents L1 isiXhosa L2 Afrikaans speakers. Her mother speaks predominantly isiXhosa to her, mixed with a little bit of English (ratio = 80:20), whilst she and her sister communicate in isiXhosa exclusively (except when her sister occasionally reads to her in English). Her grandparents have always spoken isiXhosa to her, mixed with some Afrikaans (ratio = 75:25) since she started acquiring the

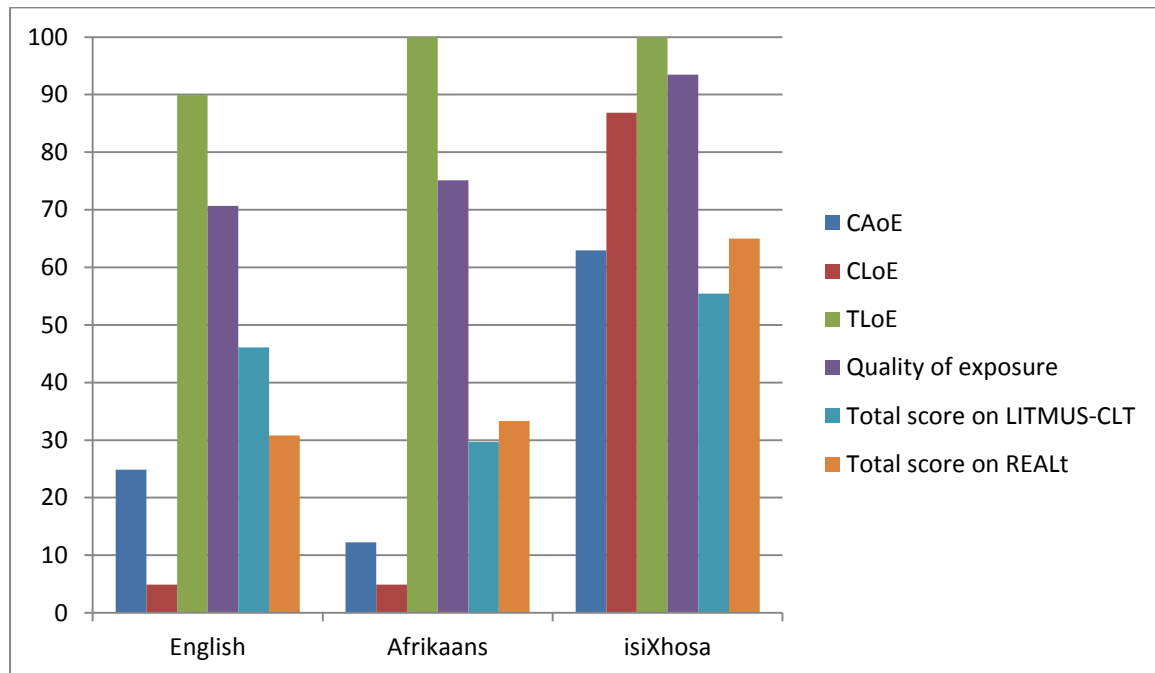
latter language at crèche. T6's neighbours' children with whom she plays on a daily basis, as well as her one best friend, are monolingual Afrikaans speakers, thus all interaction between them is in Afrikaans. Her other best friend is a monolingual isiXhosa speaker, and interaction between them thus takes place in this language.

T6's grandmother initially took care of her (speaking only isiXhosa to her at this stage) until the age of nine months. At that point, she started attending a crèche in the isiXhosa-dominant township where they live, with all linguistic interaction at this crèche taking place in isiXhosa. Around the age of one year, however, she started receiving her first exposure to Afrikaans by playing with the neighbouring Afrikaans children (hence the long TLoE to Afrikaans). Around the age of two years, she was moved to a different crèche, this one being situated in a predominantly coloured Afrikaans community. Interaction and instruction at this crèche took place in predominantly Afrikaans, with approximately 25% of instruction being in the medium of English. It is here that T6 was first exposed to a significant amount of English. A couple of months before the time of testing, however, her English exposure increased dramatically when she was moved to Crèche 4 where 100% of the instruction in her class is in English. More than half of the children in her class are L1 isiXhosa speakers and the rest are L1 speakers of other African languages or English. As many of the other classes contain L1 Afrikaans children being educated in Afrikaans, playground interaction is divided relatively equally between isiXhosa, English and Afrikaans. As young as she was at the time of testing, T6 had already formed a strong opinion about what isiXhosa monolingualism on the one hand, and English proficiency on the other indicate: when the L1 isiXhosa L2 English administrator of the tests pretended not to be able to understand English (so as to prevent the child from codemixing), T6 asked: "Why can't you speak English? Are you stupid?"

At the time of testing, T6 was receiving an almost equal amount of exposure to English (at crèche) and isiXhosa (at home), but much less exposure to Afrikaans. Her higher scores on both tests in the case of isiXhosa most probably relate to the fact that, over time, isiXhosa made up the largest percentage of her linguistic input. Although her CAoE to English (38%) is greater than her CAoE to Afrikaans (23%), she has had almost three times more exposure to Afrikaans than to English over time (via the neighbouring children and the Afrikaans-dominant crèche she attended before moving to Crèche 4). Her LITMUS-CLT for English is

higher than her Afrikaans score, but the inverse is true in the case of her REALt scores. As with participants T2 and T3, it thus seems as if CAoE has a stronger effect on vocabulary development than on knowledge of passive constructions, whereas knowledge of passives seems to be related to a longer CLoE.

### T7



**Figure 6.7: A comparison of participant T7's exposure patterns and test scores across languages**

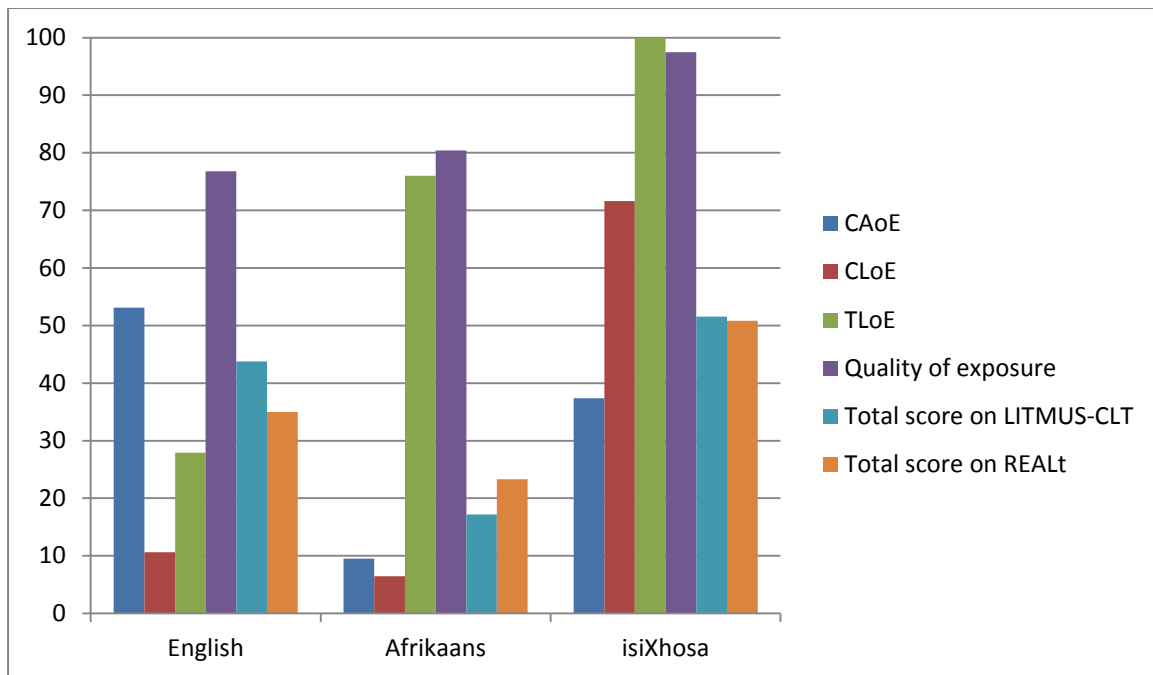
Participant T7 lives with his mother, aunt and grandmother in an isiXhosa-dominant township. All three adults in the home are isiXhosa-English-Afrikaans trilinguals with varying levels of proficiency in these languages. T7's grandmother and aunt's L1 is isiXhosa, with English being their stronger L2. Although they have receptive skills in Afrikaans and a relatively sized Afrikaans vocabulary, they are not comfortable speaking this language. T7's mother underwent all her primary schooling and also all her secondary schooling (which she was completing at the time of testing), in a neighbouring Afrikaans-dominant area. As a result, she considers Afrikaans to be her L1. She describes isiXhosa as her "home language", but claims that she would not be able to undergo schooling in this language as she only knows "informal, slang" isiXhosa.



For the first few months of his life, T7's paternal aunt looked after him, speaking only isiXhosa. Other members of that household spoke Afrikaans to one another, so T7 would have had indirect exposure to Afrikaans from birth (hence the TLoE of 100% in the case of both isiXhosa and Afrikaans). At the age of 4.5 months, he started attending Crèche 5, an isiXhosa-dominant crèche where English and Afrikaans are used only in limited quantities in the form of rhymes and songs.

All three adults in T7's home speak isiXhosa to one another and to him, with a limited amount of codemixing with English taking place. His mother sometimes also codemixes with Afrikaans when addressing him. T7 regularly accompanies her to her school and church functions where all her friends are L1 Afrikaans L2 English speakers. At these events, T7 will speak English and Afrikaans to his mother's friends and to other children, but will resort to isiXhosa whenever he struggles. It was around the age of one year that T7 started being exposed to these contexts and that his mother started using limited amounts of Afrikaans and English with him at home.

As by far the majority of T7's exposure over time, and at the time of testing, was in the form of isiXhosa and because the quality of his isiXhosa input is higher than that of his input in the other two languages, it is not surprising that he scored highest in this language on both tests. Although T7 has a very long TLoE to both English and Afrikaans, very little of the input he received over time was in the medium of these languages (only 5% each). At the time of testing, 25% of his exposure was to English and 12% to Afrikaans. This could explain his higher LITMUS-CLT score in English (46% versus 30%). As with T2, T3 and T6, T7's REALt score is higher for Afrikaans than for English, despite having a lower CAoE to Afrikaans.

**T8**

**Figure 6.8: A comparison of participant T8's exposure patterns and test scores across languages**

Participant T8 lives alone with her parents (her two half-brothers live elsewhere and they do not have any contact). Her mother is an L1 isiXhosa L2 English speaker and her father an L1 isiXhosa L2 English/Afrikaans speaker. Whilst her parents speak only isiXhosa to one another, they mostly alternate between isiXhosa and English (ratio = 75:25) when addressing T8. Her father also uses a limited amount of Afrikaans in his interaction with her. T8's slightly older cousin (an L1 isiXhosa L2 English speaker) is her best friend and they use roughly equal amounts of isiXhosa and English when interacting with one another.

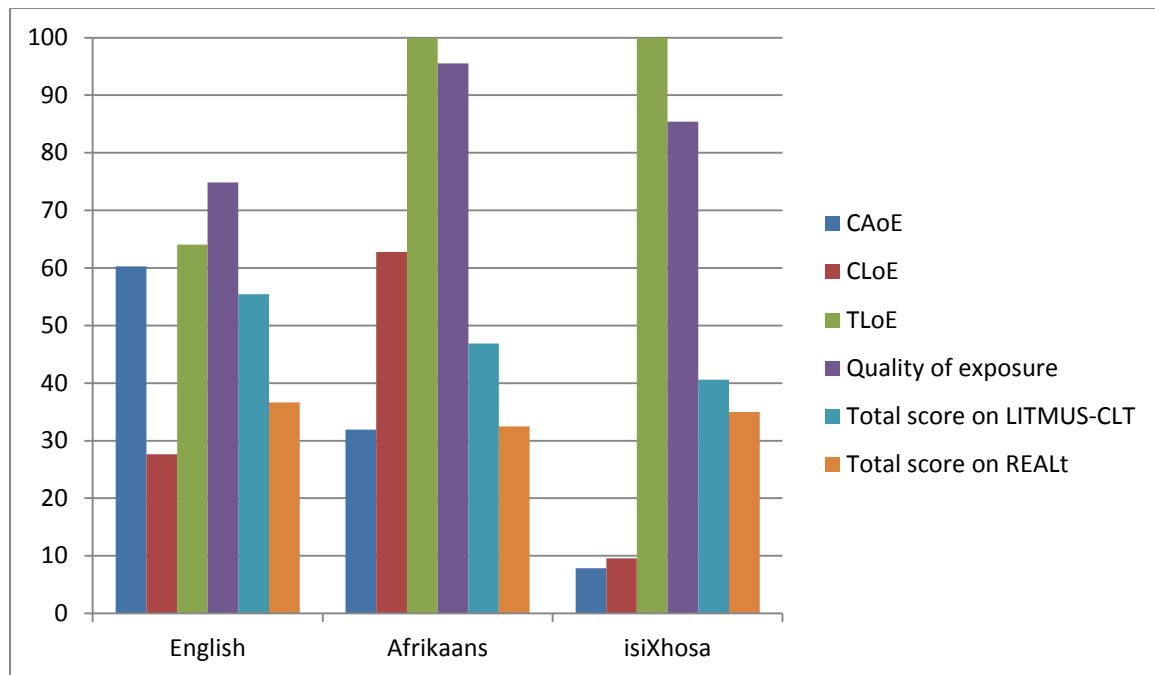
T8's mother was her primary caregiver for the first few years of her life. At this point, her mother used only isiXhosa to communicate with her. After turning one, T8 and her parents lived with T8's grandparents in an Afrikaans dominant area for a few months. Her grandparents are proficient L2 Afrikaans speakers who sometimes use this language when interacting with one another. As such, T8 started receiving indirect exposure to Afrikaans around that time (hence the long TLoE to this language). T8 first started attending a crèche (Crèche 6) at the age of three years. Recall from Chapter 5, Section 5.3.1 that at this crèche, English and Afrikaans are used for instruction in a 60:40 ratio and that English is the

predominant language used for communication between the children.<sup>87</sup> It was only after T8 started attending this crèche that her parents deliberately started incorporating Afrikaans and English into their interaction with her, in order to support the development of these languages.

T8's higher scores for isiXhosa in the case of both tests are not surprising, given her longer TLoE and much longer CLoE to this language. Although her Afrikaans exposure started quite early, the quantity of this exposure over time only equates to 6% of her lifetime. In the case of English, her exposure started much later, but quickly amounted to more cumulative exposure (11%) than to Afrikaans. Given the language exposure pattern at crèche, and her parents' use of English in the home since she started attending there, it is not surprising that this is the language to which she was exposed most at the time of testing. As the quality of the English and Afrikaans input T8 was receiving at this point is roughly equal, her much higher scores for English than for Afrikaans are best explained by CAoE (and to a more limited extent, CLoE).

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<sup>87</sup> The fact that, in this crèche (as in a number of the other crèches in this study), English is the lingua franca among children of various L1s is a result of (i) the majority of the children being coloured L1 English or English-Afrikaans bilingual speakers; and (ii) English being the most common L2 among the children from immigrant families who speak an African language other than Afrikaans as L1. The dominance of English (and, to a certain extent, Afrikaans) as Mol is, in turn, a result of the teachers' personal linguistic repertoires as well as a predominant desire among the parents to have their children educated in English.

**T9**

**Figure 6.9: A comparison of participant T9's exposure patterns and test scores across languages**

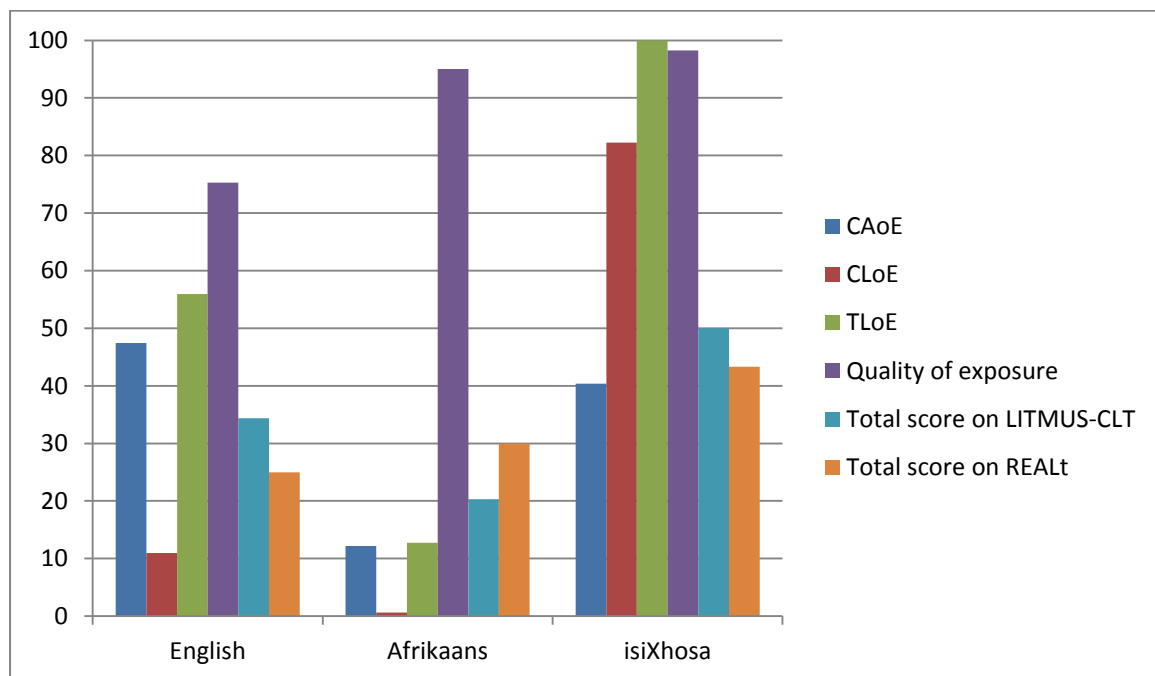
Participant T9 shares a home with her mother, grandparents and aunt. Another aunt, an uncle and her young cousin live on the same property in a backyard dwelling. Her mother, grandmother and aunts are all L1 Afrikaans L2 English/isiXhosa speakers, her grandfather an L1 isiXhosa L2 Afrikaans/English speaker and her uncle an L1 Afrikaans L2 English speaker. All the adults speak only Afrikaans to one another. Her grandfather very seldom uses his L1 (isiXhosa) with his family members, but T9 did receive exposure to this language from birth in the community where they live (hence the 100% TLoE to this language). Also, her cousin (with whom she spends all her time at home) attends an isiXhosa-medium crèche and the two of them reportedly use Afrikaans and isiXhosa in roughly equal quantities when playing.

Until the age of 1.5 years, T9's grandmother looked after her, speaking only Afrikaans to her. At that point, she started attending Crèche 6 (the same crèche as T8 above), where English is the dominant language in terms of instruction and playground interaction. A couple of months after she started attending this crèche, T9 spontaneously started using some English in her interaction with the adults at home and they, in an attempt at developing her

proficiency in this language, started responding in English when she did so. At the time of testing, the language use ratio between Afrikaans and isiXhosa at home (between T9 and the adults) was 75:25.

Despite her longer CLoE to Afrikaans and the quality of her input in this language being higher, T9 fared better on both her English tests than on her Afrikaans tests. The only likely explanation for her higher English scores is the much higher CAoE to English than to Afrikaans (60% versus 32%) that she had at the time of testing. Although both her CLoE and CAoE to isiXhosa are much lower than to English and Afrikaans, her isiXhosa vocabulary score is only 6% lower than her Afrikaans score, and her isiXhosa REALt score even 2% higher than her Afrikaans one. In the case of the REALt, the higher frequency of passives in isiXhosa could also be minimalising the effect of a smaller amount of input in this language, compared to English and Afrikaans.

### ***T10***



**Figure 6.10: A comparison of participant T10's exposure patterns and test scores across languages**

Participant T10 lives with only his mother, who is an L1 isiXhosa L2 English/Afrikaans speaker (her Afrikaans productive ability reportedly being very limited). T10 and his mother, as well as other family members who do not live with them, all speak only isiXhosa to one another. There are three additional homes in their backyard which T10's mother rents to two men and a mother and child. The tenants all speak only isiXhosa to one another and to T10.

T10's mother looked after him for the first two years of his life, speaking only isiXhosa to him. At the age of 2 years, T10 first started attending a crèche attended by almost exclusively L1 isiXhosa children. The MoI at this crèche was isiXhosa, mixed with some English in a ratio of approximately 75:25. This crèche provided T10 with his first significant exposure to English. Later, just before his fourth birthday, T10 and his mother moved to the area in which they were staying at the time of testing, and he started attending Crèche 6 (the same crèche attended by participants T8 and T9 above). Recall that at this crèche, English is the dominant language in terms of instruction (mixed with Afrikaans in a 60:40 ratio) and in terms of playground interaction. It was only at this point in his life that T10 started receiving significant exposure to Afrikaans (hence the low TLoE to this language). T10 only attended this crèche for a few months before being moved to Crèche 7 one month before the time of testing. Here, two thirds of the children in his class are L1 isiXhosa speakers, and the rest L1 Afrikaans speakers. English and Afrikaans are used as MoIs in a 65:35 ratio and as such, his exposure to these languages remained relatively stable.

At the time of testing, T10's CLoE to English and Afrikaans did not yet equate to a very large portion of his lifetime (11% and 1%, respectively), but English did constitute 47% of the input he was receiving at that point. The quality of the input that he was receiving in his three languages at the time of testing is relatively high in all cases (his English input being of the lowest quality at 75%). Given the fact that T10 has had the most exposure to isiXhosa in terms of TLoE and CLoE, and was still receiving a high amount of exposure to this language at the time of testing, it is not surprising that his isiXhosa test scores are higher than his English and Afrikaans scores. Whilst his longer CLoE and CAoE to English than to Afrikaans explains his higher English vocabulary score (34% versus 20%), it is less clear why he fared better on the Afrikaans version of the REALt (30% versus 25%). T10 watches a mixture of educational programming and programming that does not support language

acquisition in very young children, with a larger portion of his English than Afrikaans exposure (28% versus 13%) being received via this medium.

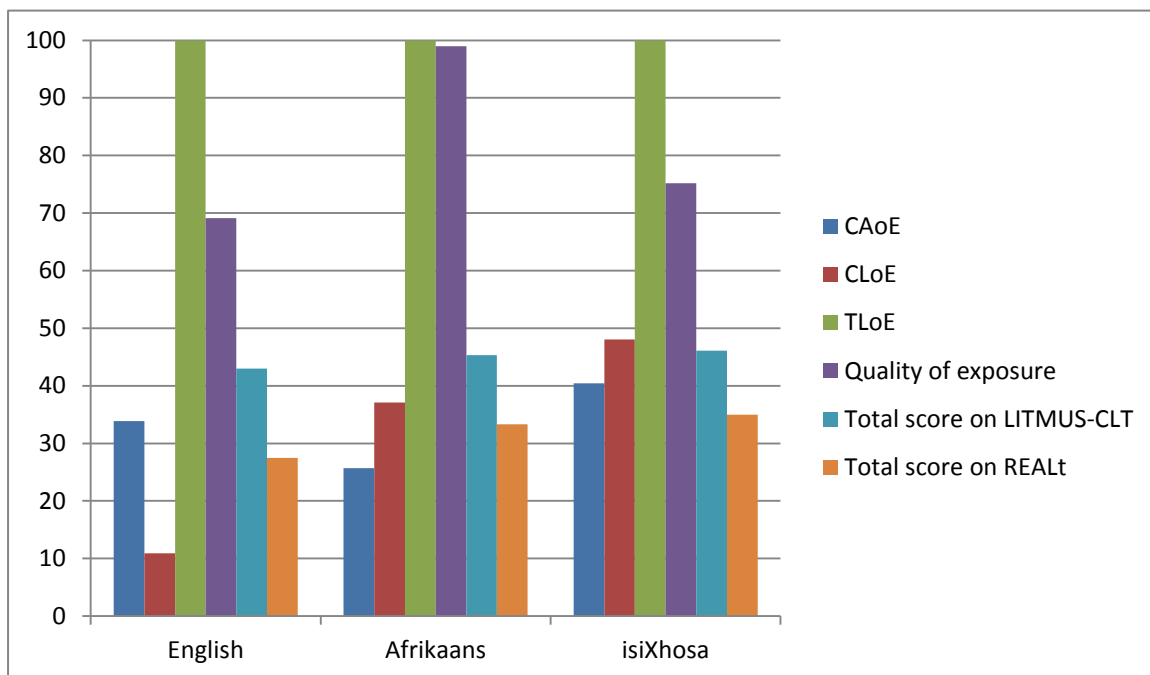
### ***T11***

Participant T11 (cf. Figure 6.11 below) lives with his mother and father, who are both trilingual speakers of the three languages of interest to this study. They both describe Afrikaans as their L1, isiXhosa as their L2 (on grounds of having grown up in an isiXhosa-dominant community) and English as their L3 (on grounds of having learnt this language at school). T11's parents speak only Afrikaans to one another and prefer to speak Afrikaans to T11, but will switch to English and isiXhosa when he asks them to do so (often, he will ask them to translate an oral story into both these languages for him). T11 and his parents live next door to participant T10 (see above), with whom T11 is best friends. The two boys spend most of their time at home playing outside along with other boys in the neighbourhood, speaking predominantly isiXhosa mixed with a limited amount of English.

For the first four months of his life, T11's mother looked after him, speaking only Afrikaans. At this point already, they were living in a multicultural, multilingual community in which T11 received exposure to isiXhosa and English (hence, his TLoE to all three languages equates to 100% of his lifetime). Between the ages of four months and two and a half years, T11 attended two different Afrikaans-medium crèches where the majority of the children were L1 Afrikaans speakers. During this period, he was also spending a lot of time playing in isiXhosa with the neighbourhood children. At the age of two and a half years, T11 was moved to Crèche 8, where 60% of his classmates are L1 speakers of isiXhosa and the rest are L1 speakers of Afrikaans. For the purposes of instruction, roughly equal quantities of isiXhosa and English are used. On the playground, the children communicate in isiXhosa for roughly 75% of the time, and in mostly English the rest of the time. From the point at which T11 started attending this crèche, his exposure to especially English increased dramatically.

Despite coming from an Afrikaans-dominant home, the greatest part of T11's exposure over time and at the time of testing constituted exposure to isiXhosa, due to his interaction with

isiXhosa-speaking friends in the neighbourhood and at crèche and the use of isiXhosa as one of the two MoIs at Crèche 8. As a result of his parents and other adults and children in the community being L2 speakers of isiXhosa, the general quality of his isiXhosa input is, however, lower than that of his Afrikaans and English input. As such, his (marginally) higher scores on the isiXhosa tests than on the Afrikaans tests must relate to quantity of exposure (i.e. CLoE and CAoE) and not to quality of exposure. The fact that T11 spends the entire day at Crèche 8 also explains why his CAoE to English is higher than his CAoE to Afrikaans. However, English lags behind the other two languages in terms of CLoE and quality of exposure, and a third of his English exposure comes from animated movies and cartoons whilst all of his exposure to the other two languages is received in real-life contexts. This means that it must be T11's high CAoE to English that resulted in his English test scores coming relatively close to his Afrikaans and isiXhosa scores.



**Figure 6.11: A comparison of participant T11's exposure patterns and test scores across languages**

### *Common trends among participants*

From the discussion of the 11 different trilinguals' test and input data, a number of trends become clear, some of them having already been hinted at above. Firstly, 7 of the 11



trilinguals (i.e. 64%) fared equally well or better on the Afrikaans version of the REALt than on the English version, despite having received less exposure to Afrikaans than to English at the time of testing. More specifically, the LITMUS-CLT-SAE score was higher than the LITMUS-CLT-AF one, whilst the score on the Afrikaans version of the REALt was roughly equal to or higher than the score on the English version in the case of (i) T1, T2, T4 and T10 who all received more exposure to English in terms of CAoE and CLoE; (ii) T3 and T6 who received more exposure to English in terms of CAoE, but more exposure to Afrikaans in terms of CLoE; and (iii) T7 who received more exposure to English in terms of CAoE, but equal exposure to English and Afrikaans in terms of CLoE. Thus, across all seven these participants, CAoE to English was higher than CAoE to Afrikaans, which most likely explains the higher English vocabulary scores. Surprisingly, however, these same participants fared just as well or better on the Afrikaans version of the REALt than on the English version, despite this overall lower CAoE to Afrikaans, and even shorter CLoE in four of the seven cases.

Seeing as (i) there were no significant differences between the Afrikaans and English monolinguals' scores on the REALt in the present study; and (ii) the English monolinguals in Southwood and Van Dulm's (2012) study generally outperformed the Afrikaans monolinguals on the REALt, it does not seem as if the above phenomenon may be due to something inherent in the grammar of Afrikaans making the Afrikaans passive easier to acquire than the English passive. Perhaps then it relates to the quality of the exposure in terms of its nativelikeness. In 8 of the 11 cases (i.e. T1, T2, T5, T7, T8, T9, T10 and T11), the quality of the Afrikaans exposure was higher than that of the English exposure. Perhaps high volumes of lower quality input can still strongly support lexical acquisition but not, at least to the same extent, grammatical acquisition, whilst smaller volumes of more nativelike input may support both.<sup>88</sup>

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<sup>88</sup> Sharon Unsworth (personal communication, September 23, 2014) noted that it may be worthwhile to attempt disentangling the effect of quality of input from that of quantity of input by employing partial correlations. Due to time and space constraints, such an analysis is not included here, but will be considered as part of future analyses.

A second similar trend that emerges from a comparison of the 11 column charts above is that the participants' scores on the REALt are often much higher in the case of isiXhosa than in the case of English, despite there being little or no difference between their isiXhosa and English vocabulary scores. This was the case for just over half of the participants, i.e. T1, T2, T3, T4, T6 and T7. In five of these six cases, the participant had a longer CLoE to isiXhosa than to English; in four of the cases the participant had a higher CAoE to English and in one case the participant had only 1% less CAoE to English than to isiXhosa. As already ventured in the discussion of certain participants above, exposure over time (CLoE) and exposure at the time of testing (CAoE) thus seem to have different effects on lexical and grammatical acquisition. On the one hand, CLoE appears to be related more strongly than CAoE to the acquisition of the passive, the effect of this type of exposure most likely being strengthened by the higher frequency of passives in isiXhosa and the higher quality of the isiXhosa compared to English input that these six participants were receiving. On the other hand, CAoE appears to be more strongly related to the acquisition of vocabulary than CLoE (recall that this was also the most likely reason for seven of the participants' English vocabulary score being higher than their Afrikaans one).

A third and final trend worth noting is the fact that, in half of all the Afrikaans and isiXhosa tests, participants scored equally well or better on the REALt than on the LITMUS-CLT. In the case of the English tests, there was not one such an occurrence. In the case of the isiXhosa tests, participants T1, T3, T4, T6 and T7 scored higher on the REALt than on the LITMUS-CLT, and participant T8 scored only 1% lower on the REALt than on the LITMUS-CLT. This same pattern is to be found among the isiXhosa monolinguals, where five participants scored higher on the REALt and one scored exactly the same on the two tests. In the case of the Afrikaans tests, participants T4, T5, T7, T8 and T10 fared better on the REALt than on the LITMUS-CLT, and participant T6 fared equally well on both. Among the Afrikaans monolinguals, however, not one participant scored higher on the REALt than on the LITMUS-CLT. This may suggest that the trilinguals' knowledge of isiXhosa passives is aiding the development of their knowledge of the Afrikaans passive through a process of cross-linguistic grammatical bootstrapping – a phenomenon already argued in Section 6.3.3.1 above to occur in the case of the comprehension of both Afrikaans and English passives.

This chapter presented and discussed the results of (i) the quantification of the trilingual group's language exposure data; (ii) the LITMUS-CLT vocabulary test; (iii) the REALt passive construction test; (iv) a comparison of test scores between and within the monolingual and trilingual groups; and (v) tests of significant correlation between test scores and input patterns in the trilingual group. The following chapter concludes the dissertation by summarising these results, relating them to the specific research questions that drove the present study.

## CHAPTER 7: CONCLUSION

The study reported on in this dissertation involved an investigation into the acquisition of both vocabulary and passive constructions by four-year-old children simultaneously acquiring South African English, Afrikaans and isiXhosa in low SES areas in the Western Cape province of South Africa. In light of the review of the literature provided in Chapters 1 to 4, the description of the context and nature of the empirical study in Chapter 5, and the results reported in Chapter 6, this chapter attempts to answer the specific research questions set out in the introduction to this dissertation. It also reflects on the strengths and limitations of the study and makes suggestions for future research.

### 7.1 Answers to research questions

Recall that, within the context of the specific English-Afrikaans-isiXhosa language combination and the grammatical interest in passives, this study investigated three primary research questions. Each of these questions will be addressed in turn in the following paragraphs, starting with the first primary question:

#### 7.1.1 Do trilinguals exhibit developmental delay when compared to monolinguals?

In light of the statistical comparison of the trilingual and monolingual groups' test scores in each of the three languages and assuming that a significant difference indicates developmental delay, the simple answer to this question is "yes, but only in certain regards". The answers to the two sub-questions (that were to be asked if the answer to the primary question was indeed "yes") provide a more detailed picture of the type of delay, and of which languages are affected.

Recall that sub-question (a) asked whether the developmental delay occurs both in terms of lexical and grammatical development. The answer is that the delay only occurs in the case of lexical development (in as far as lexical proficiency can be assessed by a vocabulary test), and not in the case of grammatical development (in as far as knowledge of passives may be taken as an indication of grammatical proficiency). Importantly, this lexical delay among trilinguals is seen to occur in the case of both production and comprehension, across both nouns and verbs. As far as the absence of a delay in grammatical development is concerned,

note that this conclusion is based on comprehension data only, as both the monolinguals' and trilinguals' English and Afrikaans REALt production data suffered from floor effects. However, an analysis of the production data for all three languages revealed qualitative differences between the monolinguals' and trilinguals' responses to items targeting the production of passives, specifically in the cases of English and Afrikaans. Recall that these qualitative differences most likely relate to the overall higher levels of proficiency that the monolingual English and Afrikaans groups have in these languages, compared to the trilinguals. These higher levels of proficiency in turn are most likely explained by the monolinguals' much higher degree of exposure to these languages (the trilinguals' two weakest languages in terms of exposure).

The fact that the trilinguals in the present study do not show developmental delay with regard to passives in any one of their three languages (at least in terms of comprehension) is an important, unexpected finding in light of the literature on bilingualism showing grammatical developmental delay to commonly occur in the case of the language of less exposure (cf., for example, Blom, 2010, and Paradis et al., 2010, both discussed in Chapter 3). The possible reasons for this phenomenon are discussed in Sections 7.1.2 and 7.1.3.

Sub-question (b) enquired as to whether the developmental delay among trilinguals manifests itself in all three languages, or only in the language(s) that are weaker in terms of quantity of input. The answer here is that the developmental delay is only found in the case of the two languages to which the trilingual group, on average, received less exposure, i.e. English and Afrikaans. Note that "exposure" is here conceptualised as the cumulative amount of input in a specific language that a child has received since birth, up to and including the time of testing (i.e. CLoE). When the average amount of input that the trilingual group was receiving at the time of testing (i.e. CAoE) is considered, the reason why there are significant differences between the trilinguals' and monolinguals' scores in the case of the English test, but not in the case of the isiXhosa test, is less clear – the trilinguals had a higher average CAoE to English than to isiXhosa (and Afrikaans). Afrikaans, however, provides a simpler picture of the relationship between input and lexical development in being the language to which the trilinguals received the least exposure both in terms of CLoE and CAoE, and also the one in which the trilinguals exhibit the largest developmental delay.

Recall that in their study of phonological development in a young simultaneous trilingual learner of Spanish, Mandarin and Taiwanese, Yang and Hua (2010) found no developmental delay in the case of any of the child's three languages, despite his exposure to one of his languages being limited to only 20% at the time of testing. This finding in the case of a single trilingual participant does not, however, align with the findings of a multitude of bilingualism studies where participants' lexical development lagged behind that of monolinguals in the case of their language of less exposure (cf., for example, Thordardottir & Brandeker, 2010; 2013; MacLeod et al., 2012; and Thordardottir, 2011, all discussed in Chapter 3).

In the present study, the fact that developmental delay occurred only in the trilinguals' English and Afrikaans and not in their isiXhosa vocabulary is a significant finding as it shows that, as previously found for bilingual development, necessarily reduced exposure does not hinder lexical development in the input dominant language (in terms of exposure over time), here isiXhosa. This is the case even despite input in this language constituting, in this study, only 58.2% of the trilinguals' overall language exposure over time (as opposed to the approximately 100% exposure of the monolinguals). Thus, even though the trilinguals lagged behind in terms of their lexical proficiency in the two languages of less input, they still matched monolinguals in their input dominant language. Acquiring three languages more or less simultaneously at this young age thus affords the child a monolingual-like vocabulary in one language *plus* a certain amount of vocabulary in an additional two languages, a benefit that monolinguals are not privy to.

### **7.1.2 Is there a correlation between input and lexical and grammatical proficiency in the case of young developing trilinguals?**

As with the first primary research question, the answer to this question is affirmative (there is a significant positive correlation between input and lexical proficiency, as well as between input and grammatical proficiency), but needs to be qualified by referring to the answers to the sub-questions. Recall that sub-question (a) asked whether or not the correlation (if one indeed exists) occurs in the case of all three languages. The answer is that, in the case of each of the three languages, there was at least one significant correlation between an input variable and LITMUS-CLT or REALt test scores. More specifically, five strong to very strong significant correlations were found in the Afrikaans data, two strong significant correlations in the English data, and one strong significant correlation in the isiXhosa data (across both

the LITMUS-CLT and REALt test data). Four of the five significant correlations between an input measure and a set of Afrikaans test scores have an  $r$ -value of equal to or, mostly, greater than that of the strongest significant correlations in the other two languages (i.e.  $r = 0.68$ ,  $0.73$ ,  $0.77$  and  $0.81$  in the Afrikaans data, versus  $r = 0.68$  in the English and  $r = 0.65$  in the isiXhosa data), indicating a stronger correlation. Afrikaans is also the only language in which a single set of test scores (i.e. overall comprehension scores on the LITMUS-CLT-AF) correlated significantly with more than one input measure (i.e. with CAoE, CLoE and TLoE). Bearing in mind that Afrikaans is the language to which the trilinguals received the least exposure on average (both in terms of CLoE and CAoE) and that isiXhosa is the language to which they were exposed most over time, it seems as if the effect of variances in input quantity is strongest in the language of least exposure and weakest in the language of most exposure (at least in terms of CLoE).

This finding suggesting narrower interaction between input and proficiency at lower levels of input does not align with that of MacLeod et al. (2012) in their study of lexical acquisition among nine French-German simultaneous bilinguals (cf. Chapter 3 for a discussion of this study). In contrast to the phenomenon in the present study, MacLeod et al. (2012) found a significant correlation between input quantity and proficiency in the case of the language of most exposure and not in the language of least exposure. However, the present study's finding does echo findings in Thordardottir's work on bilinguals. Thordardottir (in press) consolidates data from Thordardottir (2011, 2012, 2013) and Brandeker and Thordardottir (2013) on lexical and grammatical development (the latter in terms of mean length of utterance and diversity and accuracy of grammatical morphology usage) as well as language processing in young bilinguals. She reports that increased input in each language leads to higher scores in that language, but only up to a certain point after which there is very little improvement in scores, despite increased input.

Sub-question (b) enquired as to whether the correlation between input and proficiency manifests itself in the case of both lexical and grammatical proficiency. To this question, the answer is "yes", but it should be noted that input seems to be more strongly correlated to lexical proficiency than to grammatical proficiency. This is evident from the fact that (discounting both tests' production data on grounds of the floor effects in the English and Afrikaans REALt data) there were four correlations between input variables and test scores in the trilinguals' LITMUS-CLT data, and only one in the case of their REALt data, three of the

four correlations with LITMUS-CLT scores being stronger than the single correlation with REALt test scores. As mentioned in Chapter 6, this is a significant, unexpected finding as it may indicate that, at least in the case of four-year-old developing trilinguals, input does not have nearly as strong an influence on grammatical proficiency as on lexical proficiency.

Note that the above finding is unexpected in light of a number of recent studies on simultaneous bilinguals (investigating measures of grammatical proficiency such as mean length of utterance, sentence complexity and the production of specific grammatical structures), which all show a clear effect of input on grammatical proficiency (cf., for example, Blom, 2010; Hoff et al., 2012; Nicoladis & Marchak, 2011; Paradis et al., 2011; Paradis, Tremblay, & Crago, in press; Unsworth, in press). As Thordardottir (in press:7) points out, however, “domains of language might be differentially dependent on amount of input, this being related to the extent to which they require item-by-item learning versus the extraction of a rule, as well as the strength of regularity of the rule”. As such, it could be that lexical development, which depends on learning separate items individually, is influenced more strongly by variance in input quantity than is grammatical development, which involves extracting and reapplying a specific (set of) rule(s).

The next sub-question asked whether different measures/conceptualisations of input quantity yield similar results in a correlational analysis with test scores. Recall that input quantity was measured/conceptualised in the following three ways in this study: (i) as the amount of input in a given language received at the time of testing (i.e. CAoE); (ii) as the length of the period over which the child has received exposure to this language (i.e. TLoE); and (iii) as the cumulative amount of input in this language that the child has received since birth (i.e. CLoE). All three these measures of input quantity correlated significantly with at least one set of LITMUS-CLT test scores, but the degree to which these measures correlate with test scores and the languages which they affect, differ. Specifically, CAoE correlated with the trilinguals’ LITMUS-CLT-SAE production scores and with their LITMUS-CLT-AF comprehension scores; CLoE correlated with their total, comprehension and production scores on the LITMUS-CLT-AF; and TLoE correlated with their comprehension scores on the latter test. None of the three input quantity measures showed any correlation with scores on the LITMUS-XHO.



The fact that none of the measures of input quantity in the present study correlated significantly with REALt scores (as measure of grammatical proficiency) is interesting in light of Unsworth's (2013a) finding that both CAoE and CLoE were significant predictors of accuracy with the marking of grammatical gender on Dutch determiners in her study of 136 simultaneous bilingual English-Dutch children (ranging in age from three to 17 years). These contrasting results may be a result of differences in group size (Unsworth's sample group being much larger), the specific aspect of grammar under investigation, or perhaps even the bilingual versus trilingual language acquisition process.

As argued earlier, the fact that CLoE correlated with test scores in three cases and TLoE only in one case, where this correlation between TLoE and test scores was weaker than the one between CLoE and the same test scores, indicates that TLoE should perhaps not be used to deduce information regarding *quantity* of exposure to a given language over time. Rather, it was argued, TLoE should be used only as an indication of the length of the period over which a child's exposure to the given language is distributed. Furthermore, the data in this study indicate that CLoE may have a more significant effect on lexical proficiency levels than both CAoE and TLoE have: in the one set of test scores that correlates with all three these variables (i.e. the Afrikaans comprehension scores), the strength of the correlation was highest in the case of CLoE. This argument is supported by the earlier observation that lexical developmental delay is evident only in the case of the trilinguals' English and Afrikaans, i.e. the languages for which they have lower average CLoE values than for isiXhosa (in which there was no lexical delay).

Finally, sub-question (d) asked whether the correlation between input and proficiency exists in the case of both input quantity and quality (the latter being conceptualised as the "nativeness" of the input). As is evident from the answers to the preceding sub-questions, some significant correlations were found between, on the one hand, certain sets of test scores and, on the other hand, certain measures of input quantity (all three measures, i.e. CAoE, CLoE and TLoE, correlating with at least one set of test scores). The quality of the input that the trilinguals were receiving at the time of testing was also shown to correlate significantly with test scores, specifically in the case of their LITMUS-CLT-SAE production scores and their total scores on the isiXhosa version of the REALt. Recall, however, that the significance of the latter of the two correlations is clearly driven by the correlation between average quality of exposure and the scores on the production subsection of the REALt, which

approaches significance, and perhaps less so by the scores for comprehension. As such, quality of exposure may be said to correlate with production (and, perhaps to a more limited extent, with comprehension), in the case of both English and isiXhosa. Additionally, quality of exposure seems to affect both lexical proficiency and grammatical proficiency – lexical proficiency in the case of English and grammatical proficiency in the case of isiXhosa – albeit to a seemingly limited extent. Note, however, that on grounds of r-values, which indicate the strength of a correlation, and also on grounds of the numbers of significant correlations, input quantity seems to have a stronger effect on lexical proficiency levels than input quality (as operationalised in the present study) has.

### **7.1.3 Can cross-linguistic bootstrapping occur in the case of developing trilinguals?**

The third and final primary research question addressed in this dissertation enquires as to whether young developing trilinguals can utilise their knowledge of the passive in one language to support the acquisition of the passive in their other languages through a process of cross-linguistic bootstrapping. This was indeed found to be the case. Recall from Section 7.1.1 above that whereas the trilinguals exhibited developmental delay in their English and Afrikaans vocabulary in terms of both comprehension and production, they did not exhibit developmental delay in their English and Afrikaans REALt data (i.e. in terms of those REALt scores that did not suffer from floor effects, namely total test scores and comprehension scores). Thus, although the scores on the REALt are relatively low across the board, the trilingual group is managing to keep pace with the monolingual groups in terms of grammatical proficiency (despite their lower lexical proficiency in and their lesser amount of exposure to all three languages).

The fact that the trilinguals lag behind the monolinguals in terms of English and Afrikaans vocabulary, but not in terms of their knowledge of passives in these languages indicates that, at least as far as comprehension is concerned, they are likely transferring their more advanced knowledge of passive constructions in isiXhosa to their knowledge of passives in English and Afrikaans. Aligning with this theory of bootstrapping is the following phenomenon in the trilinguals' and monolinguals' Afrikaans data, assuming that one may descriptively compare the results of a vocabulary and a grammar measure: five trilingual participants fared better on the REALt than on the LITMUS-CLT-AF and one trilingual participant scored equally well

on both, whilst not a single one of the monolingual Afrikaans participants fared better on the REALt than on the LITMUS-CLT-AF.

The direction of transfer from isiXhosa to English and Afrikaans is assumed on grounds of (i) the same pattern just mentioned to occur in the trilinguals' Afrikaans data also occurring in both the trilingual and monolingual isiXhosa data, i.e. half of both the trilingual group and the isiXhosa monolingual group scored either equally well or, mostly, higher on the REALt than on the LITMUS-CLT-XHO; (ii) the isiXhosa monolinguals' raw median scores for production on the REALt being consistently higher than the English and Afrikaans monolinguals' scores, suggesting that at least the ability to produce passives is acquired earlier in isiXhosa; (iii) on average, the largest part of the input that the trilinguals as a group received in their lifetime being in the form of isiXhosa, i.e. their average CLoE is the longest in the case of this language; (iv) the effect of greater exposure to this language over time likely being strengthened by the higher frequency of passives in Southern Bantu languages; and (v) only the trilinguals' isiXhosa vocabulary being on par with that of the isiXhosa monolinguals, indicating that this is most probably their stronger language in terms of overall proficiency (following Unsworth, 2013a:91, in using standardised vocabulary tests as a general measure of language proficiency; cf. also Scheele et al., 2010).

Recall that, in explanation of grammatical developmental delay occurring only in the language of less exposure in their sample of 23 four-year-old French-English bilinguals, Paradis et al. (2010:20) suggest that bilinguals may be able to compensate for reduced input through “sharing” at the cognitive-linguistic interface between their two languages, a process that would constitute cross-linguistic bootstrapping. In the present study, the likelihood of such a process of “sharing” seems even greater, as the trilinguals are managing to keep up with monolinguals in all three their languages, and not only in their language of most exposure (as in the study by Paradis et al.).

On grounds of the answer to the above research question, it seems evident that the simultaneous acquisition of three languages (as opposed to monolingual acquisition) may hold certain positive effects for the development of one or more of the three individual languages. On a cautionary note, however, what seems like cross-linguistic bootstrapping in

the present study could perhaps be a reflection of alternative underlying factors. For example, it may be that grammatical development is not as strongly related to input quantity as lexical development is (as the results of the correlational tests in the present study suggest). If so, the trilinguals' reduced amounts of exposure compared to monolinguals may not affect their grammatical development to the same extent that it affects their lexical development, which enables them to keep pace with monolinguals in terms of grammatical development in all three their languages, but not in terms of lexical development in the case of their languages of least exposure. This argument is, however, reliant on the likely faulty assumption that the differential effect of input on lexical versus grammatical development is large enough to cause *significant* delay in lexical development, without causing any delay in grammatical development. Consequently, I maintain the conclusion that the results of the present study do indeed provide evidence of cross-linguistic bootstrapping.

## 7.2 Strengths and limitations of the study

This dissertation addressed current pivotal questions within the field of BFLA as well as limitations of and suggestions in previous research on bi-/trilingualism. Recall from Chapter 1 that the novelty of the study is fourfold in that it involved investigating the added effect of a third language in the simultaneous acquisition process; incorporated a Germanic-Bantu combination of language families; used a larger number of participants than that used in previous trilingualism studies; and considered both production and comprehension data. To my knowledge, the study is the first to investigate the trilingual acquisition of English, Afrikaans and isiXhosa and also the first to consider, within an African context, the acquisition of a grammatical construction during childhood trilingualism.

The findings of the study are significant in terms of the practical, theoretical and empirical implications that they hold. Firstly, in showing four-year-old trilinguals capable of matching monolinguals in terms of their knowledge of the (comprehension of the) passive in all three their languages, and in terms of vocabulary in the language they were exposed to most over time, this study makes a strong case for the developmental value of exposing children to multiple languages from a very young age. In South Africa, the development of “home language” literacy skills commences in Grade 1, along with the primarily oral introduction of learners’ “first additional language”, this being English in most cases (Department of Basic

Education, 2012:11). Given the fact that English is used as the language of learning and teaching from Grade 4 onwards in the case of the majority of South African learners, the educational focus shifts to the development of literacy skills in the “first additional language” as early as Grade 2 (Department of Basic Education, 2012:11-12,17). Early exposure, i.e. before school-going age, to at least the first additional language may thus help lighten the burden of developing literacy skills in a language that children are still busy acquiring orally, at a time when they are also still in the process of developing literacy skills in their home language. This early exposure would be especially valuable in the case of children from under-resourced low SES areas where already low literacy rates are often exacerbated by the lack of a reading culture (Mbude-Shale, Wababa & Plüddemann, 2004:154).

Theoretically, the findings of the study reported on in this dissertation indicate that the trilingual language acquisition process is robust in nature and can, at least in the case of the input dominant language (in terms of CLoE), yield results that are comparable with normative monolingual results, despite drastically reduced input. The validity of this claim is supported by the fact that, in terms of language development, the odds are truly stacked against the trilinguals in this study, these children being subject to the double disadvantage that reduced input and a low SES background pose to this process.

The research findings reported in this dissertation furthermore lend support to previous studies that have shown input to correlate positively with proficiency levels, and provide additional information characterising this relationship. Perhaps most importantly, it showed that this relationship is not limited to bilingual language acquisition, but also occurs in the acquisition of three languages. It furthermore indicated that (i) input quantity has a stronger effect on lexical proficiency levels than input quality (in terms of “nativeness”) has; (ii) input quantity has a stronger effect on lexical than on grammatical development; (iii) CLoE seems to correlate more closely with lexical proficiency levels than CAoE and TLoE do; and (iv) TLoE should perhaps not be used to deduce information about *quantity* of exposure over time, but rather as an indication of the length of the period of exposure only.

Another strength of the present study is that it makes a theoretical contribution to our understanding of the interaction between BFL learners’ language systems by providing evidence of cross-linguistic bootstrapping in the form of transfer of the knowledge of passives from the trilinguals’ input dominant language to their other two languages. On a

practical level, it again indicates that exposing a child to multiple languages from a young age does not necessarily lead to developmental delay, but may, on the contrary, support the earlier development of certain features in the child's languages. Given the multilingual context in which the majority of South African children are immersed since birth, this finding provides hope for their early linguistic development, showing how multilingualism may be an advantage rather than a hindrance to this process.

Finally, it is believed that this dissertation may be of empirical value to other researchers who find themselves drawn to addressing the need for more research in low SES, multilingual contexts (especially those in Africa). In its candid description of many of the challenges surrounding research in these contexts and also of the researcher's attempts at overcoming them, this dissertation possibly offers such researchers points to reflect on in the design of their studies. In doing so, they may overcome some of the limitations of the present study, as discussed below.

The measures of the trilinguals' language exposure in this study are based on their parents' reports, which were obtained during personal interviews guided by a language background questionnaire. As such, the information on grounds of which the measures were quantified is necessarily subject to some degree of error due to the possibility of parents' answers being biased because of social desirability tendencies, and due to their human inability to provide an exact description of the language exposure patterns in the home (especially the patterns over time) and of the "nativeness" of the input received from various sources. The degree of difficulty that such estimations posed to parents was necessarily increased by the fact that the trilingual children in this study are undergoing language acquisition in contexts where there is often no clear delineation between languages, not in terms of interlocutors, time or place.

A second limitation of the present study is that the choice of relatively young children as participants and of the passive (a typically late-acquired construction) as grammatical focus resulted in very little analysable production data in the case of the REALt. Intuitively, one may want to argue that this limitation could have been prevented by using older participants, but such a choice would have disabled a clear test for cross-linguistic bootstrapping. Recall from Chapter 5, Section 5.2.1.2 the argument that the age of four years best allows for testing the possibility of this type of CLI occurring in the acquisition of passive constructions by,

specifically, English-Afrikaans-isiXhosa developing trilinguals, on grounds of the respective ages at which passive constructions are typically acquired by monolingual speakers of these (or closely related) languages.

Finally, although the number of trilingual participants in this study is considered to be one of its strengths (on comparison with the sample sizes in previous trilingualism studies), this number is still relatively small when taking into account the size of many bilingualism studies. How representative the sample group in this study is of the larger English-Afrikaans-isiXhosa developing trilingual population and the extent to which the results of the study may be generalised are thus debatable.

### **7.3 Suggestions for future research**

In order to overcome the problems surrounding the use of parental self-report as basis for calculating linguistic input, future studies may consider using an all-day voice recorder to narrowly monitor each participant's language use, as well as the language use in their environment (cf., for example, Oller, 2010, for an illustration of how this may be done). Note that the nature of this type of data capturing and analysis will likely demand large-scale financial and temporal resources as well as research assistants if the aim is to investigate a large number of participants. Nevertheless, comparing the present study's results regarding the correlation between input and proficiency with the results of another study which uses a similar sample group but different methodology in capturing input data may yield important empirical and theoretical implications.

Additionally, an investigation into whether, among English-Afrikaans-isiXhosa developing trilinguals, cross-linguistic bootstrapping occurs in the case of any grammatical constructions other than the passive, and whether the direction of transfer remains constant will go far in determining the extent to which the findings of the present study may be generalised. An investigation with an exclusive, in-depth focus on factors determining the quality of the input that trilinguals in low SES contexts receive will furthermore be valuable in and of itself, but

also possibly explain the low degree of correlation between input quality and proficiency in this study.

As hopefully became clear throughout this dissertation (especially the section describing the data collection process), the contexts in which children are exposed to different languages in South Africa, especially in low SES areas, might be more complex than the relatively clearly delineated contexts often referred to in BFLA studies conducted abroad, especially in Europe. In South Africa, a BFL learner's exposure to her different languages not only varies in terms of time, place and interlocutors, but is often further complicated by the same interlocutor's use of different languages in a specific context. It thus becomes more difficult for reporting parents and teachers as well as researchers to consider the different languages separately in terms of environments and interlocutors, and quantity and quality of input. This increased complexity calls for a more nuanced conceptualisation of 'BFLA', 'early bi-/trilingual language acquisition', 'child second/third language acquisition', 'exposure dominance' and other related concepts.

In conclusion, it is hoped that in highlighting the practical realities and theoretical implications of conducting empirical research in the type of context described above, this dissertation may guide future studies conducted in similar settings. It is also my wish that the study reported on here has served to set the scene for much further research into multilingual language acquisition within the South African (and, more broadly, African) context. Only on grounds of sufficient research may we ultimately cultivate full public understanding, specifically among parents and teachers, that childhood multilingualism does not necessarily pose a developmental hindrance, but instead offers children a valuable sociolinguistic skill – a skill that increases a child's communicative and cultural resources and, in doing so, breaks down barriers.



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## APPENDIX 1

### INTERVIEW SCHEDULE: LANGUAGE BACKGROUND QUESTIONNAIRE FOR PROSPECTIVE TRILINGUAL CHILD PARTICIPANTS

**(Interviewer:** This questionnaire should be administered in the form of an oral interview with the parent(s) of prospective trilingual child participants. All interaction should be audio recorded. Write down in full only the personal details of the informant and child. The heading preceding each set of questions should not be read aloud to the informant.)

Date of interview: ..... Name of interviewer: .....

Name of prospective child participant: .....

**To the informant: All information that you provide during this interview will remain confidential. Should you find any question inappropriate or too personal to answer, you are under no obligation to do so.**

#### PERSONAL DETAILS OF INFORMANT

- Surname:  
.....
- First name:  
.....
- Relationship to child:  
.....
- Street address at which child lives:  
.....
- Telephone/cell phone number:  
.....

#### PERSONAL DETAILS OF CHILD

- Surname:  
.....

- First name:  
.....
- Is your child a boy or a girl?       Boy     Girl
- When was your child born (exact date)?  
.....
- What daycare/crèche/school does your child attend?  
.....
- What is the monthly school fee at this daycare / crèche? .....
- Who is your child's teacher?  
.....
- Where was your child born?  
City: .....      Country: .....
- Does your child have one or more brothers and/or sisters? (Please specify.)  
.....
- When was he/she/they born (exact date(s))?  
.....

## SES LEVEL

I'd like to know a bit more about your life story...

- Can you start by telling me where you grew up?
- Up until what grade did you go to school? (**Interviewer:** Try to get the last grade that was completed.)
- What did you do after school? (**Interviewer:** Try to find out whether the parent immediately started working or if they studied something after school and if so, where they did so and what level of qualification they obtained, e.g. certificate, diploma, or degree.)
- Do you work somewhere at the moment?
- If you are working, what do you do?

About your child's father/mother/primary caregiver... (**Interviewer:** I need information on all three parties if the primary caregiver is not a parent.)

- Is he/she working at the moment?
- Does he/she stay with you?
- Where did he/she grow up?
- Up until what grade did he/she go to school? (**Interviewer:** Try to get the last grade that was completed.)
- What did he/she do after school? (**Interviewer:** Try to find out whether they immediately started working or if they studied something after school and if so, where they did so and what level of qualification they obtained, e.g. certificate, diploma, or degree.)

## **DEVELOPMENTAL HISTORY OF CHILD**

(**Interviewer:** In this section, please try to get the child's age in years and months, e.g. one year and one month.)

- Can you perhaps remember how old your child was when he/she first started walking?
- What was your child's first word?
- Can you perhaps remember how old your child was when he/she spoke his/her first word?
- Can you perhaps remember how old your child was when he/she first started putting words together to make short sentences (e.g. *more water*; *more milk*; etc.)?
- Have you ever been concerned about your child's language in the past?
- What do you think about his/her language now? Do you think his/her language is normal or are you concerned about it? (**Interviewer:** If the parent is concerned, ask why. If they tell you, ask for examples, e.g. if the parent says "he doesn't pronounce his words correctly", ask him/her if it is because the child stutters, omits affixes, or says the words in the wrong order.)
- Has your child ever had problems with his/her ears? E.g.:
  - Ear ache?
  - Ear infection for which the clinic/doctor prescribed medicine?
  - Ear operations, e.g. to put grommets in the ears?
  - Other? (If yes, please specify.)

- Did these problems affect the child's hearing? In other words, did the child struggle to hear while he/she had the above problems with his/her ears?

## LANGUAGE EXPOSURE

I would like to get a good idea of the languages that people use with your child and the languages that he/she uses in his/her daily life. I am going to start with some general questions about the people in your child's life:

- Do you live in the same household as your child?
- How many adults live in the child's household?
- What language(s) does each of these adults, including you, speak?
- What would you say is each of these persons' first language?
- What language(s) do the adults use to talk to each other?
- What language(s) do the different adults use to speak to your child?
- What language(s) does your child use to speak to the different adults?
- What language(s) does each of your child's siblings speak?
- What language(s) do the siblings use to speak to each other?
- What language(s) do your child's best friends speak with him/her?

**(Interviewer:** In the case of the above questions about language use in the home, if the informant says more than one language is used, elicit more detail by: (i) asking if they have whole conversations in both/all three languages, or perhaps only use some words from one/two of the languages; and (ii) asking for a ratio of language use where, in the case of two languages being used in the home, 50:50 would indicate that equal amounts of conversation take place in both languages, 75:25 that conversations are mostly in one language and seldom in the other, and 90:10 that only single words or phrases from the one language are used. In the case of homes in which three languages are used, adapt the percentages as you think fit. Repeat these questions for every interactional context, i.e. for interaction between adults, adults to child, child to adults and between child and sibling(s).)

Now, I have some questions about the daycares/crèches/schools (if any) that your child has attended in the past or is currently attending:

- What was the first daycare/crèche/school (if any) that your child ever attended?



- When did your child start attending this daycare/crèche/school? (**Interviewer:** Try to get the year and month.)
- What language(s) was/were used in the class that your child attended?
- What language(s) did your child's classmates speak?
- Before going to this daycare/crèche/school, who looked after your child?
- What language(s) did this person speak to your child?
- What language(s) did your child use when speaking to this person?
- Is your child still attending the same daycare/crèche/school that they originally went to, or do they attend a different one now?
- If your child is now attending a different daycare/crèche/school, when did he/she move there? (**Interviewer:** Try to get the year and month.)
- What language(s) is/are used in the class that your child is in now?
- What language(s) do your child's classmates speak now?

I'd now like to ask you some general questions about the different languages that your child is exposed to:

- What languages does your child hear on a regular basis (i.e. daily)?
- In the case of each of these languages, how old was your child when he/she first heard it being spoken by others? (**Interviewer:** Try to get the year and months.)
- Who spoke/speaks these languages?
- Have the adults in your child's household always been using the same language(s) to speak to your child, from birth up until now, or did they switch from one language to another? (**Interviewer:** If they changed their strategy, ask them how old the child was when this happened.)
- And what about your child's mother/father/caregiver? Have they always been using the same language(s) to speak to the child from birth up until now, or did they switch from one language to another?
- If you own a television, what language(s) is/are used in the programs that your child is allowed to watch?
- What type of programs does your child mostly watch? I.e. are they mainly cartoons, educational children's programs or the same programs as the ones the adults watch?

- If you own a radio, what language(s) might your child hear on the channel that you most listen to?
- If you or someone else reads stories to your child, what language(s) are these story books written in?
- Do you often engage in story-telling with your child? If so, in what language and how often?
- What language do you think your child understands best?
- What language do you think your child speaks best?

I am now going to ask you to give me a description of what a typical weekday in the life of your child looks like (i.e. any day from Monday to Friday)... (**Interviewer:** for all activities, try to get an estimated amount of time, e.g. dinner takes one hour, after which the child spends two hours in front of the TV every night. Also ask for an indication of the distribution of the languages used during each activity, e.g. 50:50.)

- What time does your child wake up in the morning?
- What does your child do next?
- At this time, whom does he/she interact with? (Parents(s)/caregiver/sibling(s)?)
- What language does this person/these persons speak to the child during this activity?
- What language does the child use when speaking to this person/these persons during this activity?
- At what time does the child go to school?
- Until what time does the child stay there?
- Who looks after your child at school? I.e. are there different teachers or is it only one person?
- What language(s) does this person/these persons use when speaking to him/her?
- What language(s) does your child use to speak to this person/these persons?
- Do you know what language(s) your child uses when talking to his/her friends (a) in the classroom, and (b) on the playground?
- Do you know what language your child's friends use when speaking to him/her (a) in the classroom, and (b) on the playground?
- What time does your child get home again in the afternoon or evening?
- What does he/she do then?

- Who helps your child with this activity/looks after your child at this point?
- What language(s) does this person use when doing this?
- What language(s) does your child use during this activity?
- And then what does your child do? (Repeat the above two questions for each activity named up until bed time.)
- At what time does your child go to bed?
- Are there certain people who come to visit your house quite often during the week or that your child often goes to visit during the week, e.g. a grandparent, aunt/uncle, neighbour, friend, etc.?
- If so, what language(s) does this person use to speak to (a) your child, and (b) other people in your household?
- What language(s) does your child use when speaking to this person?
- What language(s) do the other people in the household use when speaking to this person?

I am now going to ask you to give me a description of what a typical Saturday or Sunday in the life of your child looks like... (**Interviewer:** again ask for an estimated amount of time for each activity, as well as an indication of the distribution of languages during this activity.)

- At about what time does your child wake up in the morning?
- What does your child do next?
- At this time, whom does he/she interact with? (Parents(s)/caregiver/sibling(s)?)
- What language(s) does this person/these persons speak to the child during this activity?
- What language(s) does the child use when speaking to this person/these persons during this activity?
- What does your child do next?
- Who helps your child with this activity/looks after your child at this point?
- What language(s) does this person use when doing this?
- What language(s) does your child then use?
- And then what does your child do? (Repeat the above two questions for each activity named up until bed time.)
- At what time does your child go to bed?

- Are there certain people who come to visit your house quite often over the weekend or whom your child often goes to visit over the weekend, e.g. a grandparent, aunt/uncle, neighbour, friend, etc.?
- If so, what language(s) does this person use to speak to (a) your child, and (b) other people in your household?
- What language(s) does your child use when speaking to this person?
- What language(s) do the other people in the household use when speaking to this person?

## **PROFICIENCY LEVELS**

I'd like to get an idea of how well your child understands and speaks the different languages that he/she is exposed to regularly. If you do not speak/understand one of the languages yourself, you may choose not to answer. (**Interviewer:** If more than one language is spoken in the home and the informant does not feel competent to evaluate one or more of them, please ask whether a fluent speaker of the other language(s) could do this evaluation. If such a person is not available during the interview, ask for their contact number so that you can call them at a time that suits them.)

Let's start with **English**:

- How would you describe your child's ability to understand English? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?
- How would you describe your child's ability to speak English? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?

Now let's do the same for **Afrikaans**:

- How would you describe your child's ability to understand Afrikaans? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?
- How would you describe your child's ability to speak Afrikaans? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?

Now, let's do the same for **isiXhosa**:

- How would you describe your child's ability to understand isiXhosa? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?
- How would you describe your child's ability to speak isiXhosa? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?

If your child knows **any other language(s)**, please rate their skills in this language/these languages in the same manner as you just did for Afrikaans, English and isiXhosa.

Finally, I would like you to give me an idea of how well **you and the other people with whom your child has regular contact** speak and understand the different languages we just rated... (**Interviewer:** Repeat the questions above for the three or more languages, this time focusing on the informant's proficiency in each. Next, ascertain the proficiency levels of each of the other people with whom the child has regular contact, as far as the informant is able to supply this information.)

**THANK YOU FOR YOUR TIME!**

## APPENDIX 2

### INTERVIEW SCHEDULE: CONDENSED LANGUAGE BACKGROUND QUESTIONNAIRE FOR PROSPECTIVE MONOLINGUAL CHILD PARTICIPANTS

(**Interviewer:** This questionnaire should be administered in the form of a telephonic interview with the parent(s) of prospective monolingual child participants. All the informant's responses should be written down in full. The heading preceding each set of questions should not be read aloud to the informant.)

Date of interview: ..... Name of interviewer: .....

Name of prospective child participant: .....

#### PERSONAL DETAILS OF CHILD

- Is your child currently four years old? (**Interviewer:** If “no”, we cannot use this child as a participant – discontinue the interview.) .....
- What is your child's date of birth? (**Interviewer:** Do the math to check that the child is indeed currently four years old.) .....
- How many adults and children live in the household that your child lives in? .....
- Would you say that your child speaks and/or understands any language other than English/Afrikaans/isiXhosa, to the extent that they can follow/conduct a conversation in that language? (**Interviewer:** If “yes”, we cannot use this child as a participant – discontinue the interview. Knowing some words from another language only because of exposure at the crèche/on TV is, however, acceptable.) .....
- Do all persons in the household speak only English/Afrikaans/isiXhosa at home? (**Interviewer:** If “no”, ask if the child is ever exposed to other languages in the home to such an extent that he/she picks up words from that language and uses them spontaneously on a regular basis. If the answer is “yes”, we cannot use this child as a participant – discontinue the interview.)

.....  
• Child's surname: .....

• Child's first name: .....

- Is your child a boy or a girl?                       Boy     Girl
- Where was your child born?  
City: ..... Country: .....
- What daycare / crèche does your child attend? .....
- What is the monthly school fee at this daycare / crèche? .....
- Is the language of instruction only English/Afrikaans/isiXhosa? (**Interviewer:** If some words or songs are taught in another language, but the actual teaching is still only in the relevant language, that is acceptable. Otherwise, the child is most probably bilingual – check this against what the parents think. If the child is bilingual, we cannot use him/her.) .....

#### PERSONAL DETAILS OF INFORMANT

- Surname: .....
- First name: .....
- Relationship to child: .....
- Street address at which child lives: .....
- Telephone / cell phone number: .....

#### SES LEVEL

I'd like to know a bit more about your life story...

- Can you start by telling me where you grew up? .....
- Up until what grade did you go to school? (**Interviewer:** Try to get the last grade that was completed.) .....
- What did you do after school? (**Interviewer:** Try to find out whether they immediately started working or if they studied something after school and if so, where they did so and what level of qualification they obtained, e.g. certificate, diploma, or degree.) .....
- Do you work somewhere at the moment? .....
- If you are working, what do you do? .....

About your child's father/mother (or other primary caregiver such as a grandmother or aunt)

- Is he/she working at the moment? .....
- Does he/she stay with you? .....
- Where did he/she grow up? .....
- Up until what grade did he/she go to school? (**Interviewer:** Try to get the last grade that was completed.) .....
- What did he/she do after school? (**Interviewer:** Try to find out whether they immediately started working or if they studied something after school and if so, where they did so and what level of qualification they obtained, e.g. certificate, diploma, or degree.) .....

## DEVELOPMENTAL HISTORY OF CHILD

(**Interviewer:** In this section, please try to get the child's age in years and months, e.g. one year and one month.)

- Can you remember how old your child was when he/she first started walking? .....
- What was your child's first word? .....
- Can you perhaps remember how old your child was when he/she spoke his/her first word? .....
- Can you perhaps remember how old your child was when he/she first started putting words together to make short sentences (e.g. *more water; more milk; etc.*)? .....
- Have you ever been concerned about your child's language in the past? .....
- What do you think about his/her language now? Do you think it is normal or are you concerned about it? (**Interviewer:** If the parent is concerned, ask why. If they tell you, ask for examples. E.g. if the parent says "he doesn't pronounce his words correctly", ask him/her if it is because the child stutters, omits affixes, or says the words in the wrong order.) .....
- Has your child ever had problems with his/her ears? E.g.:
  - Ear ache? When? .....
  - Ear infection for which the clinic/doctor prescribed medicine? When? .....



- Ear operations, e.g. to put grommets in the ears? When? .....
- Other? (Please specify) When? .....
- Did these problems affect the child's hearing? In other words, did the child struggle to hear while he/she had the above problems with his/her ears? .....

## FINAL QUESTIONS

- If you own a television, what language(s) is/are used in the programs that your child is allowed to watch? .....
- What type of programs does your child mostly watch? I.e. are they mainly cartoons, educational children's programs or the same programs as the ones the adults watch? .....
- How many hours a day does your child spend watching television, both on a weekday and over the weekend? .....
- If you or someone else reads stories to your child, what language(s) are these story books written in? .....
- For how long is your child normally read to and how many times a week? .....
- Does someone often engage in story-telling with your child? .....
- If so, in what language(s) are the stories told, for how long and how often? .....

**Thank you for your time!**

## APPENDIX 3

### PARENTAL CONSENT FORM FOR CHILD PARTICIPATION IN RESEARCH STUDY

#### **Study on the early trilingual acquisition of English, Afrikaans and isiXhosa**

You are receiving this letter because your child might be a suitable candidate for the research project mentioned above. The research is to be conducted by Anneke Potgieter from the Department of General Linguistics at Stellenbosch University. The study is to form the basis of her dissertation that will be submitted in fulfillment of the degree PhD in General Linguistics. As such, the results of the study will be published in the form of a dissertation and possibly, at a later stage, also in the form of articles in scientific journals.

The study requires the following types of participants: (i) children aged four years who are currently being exposed to English, Afrikaans and isiXhosa on a regular basis; and (ii) children aged four years who are currently being exposed to only one of these three languages in their daily lives. As information regarding the participants' language background is needed, the researcher/a research assistant will also need to ask each child's parent/primary caregiver and teacher some questions about the language(s) that the child hears and uses on a daily basis.

If you are willing to speak to the researcher/research assistant and allow your child to participate in the study, please read the information below and complete the attached consent form.

#### **1. Purpose of the study**

As South Africa is a country with 11 official languages, the majority of our children are growing up in communities where more than one language is spoken. In the Western Cape, many children grow up learning Afrikaans, English and isiXhosa from a very young age. As

children generally benefit from being able to understand and use more than one language, it is interesting to see how the process of learning various languages at the same time works. The specific purpose of the study is therefore to investigate the relationship between how proficient a child is in a given language (i.e. how well he/she understands and speaks the language) and how much exposure the child receives to that language (i.e. how often the child hears the language being spoken by others). Of further interest to the study is the manner in which English, Afrikaans and isiXhosa possibly influence one other when a young child learns these three languages at the same time.

In order to address these questions, the trilingual children's language skills will have to be compared to those of children of the same age who understand and speak only one of the three languages.

## 2. Procedures

If your child volunteers to participate in this study, we would first ask you as parent/primary caregiver to do the following things:

1. Sign this consent form for your own participation in the study (see the last page of this document).
2. During an informal conversation with the researcher/a research assistant, answer questions relating to your child's language background. Examples of these questions are: (i) what language(s) do your child's family members and friends speak?; (ii) at what age was your child first exposed to this/these language(s)?; (iii) in the case of trilingual children, how often is your child exposed to the different languages; and (iv) how proficient is he/she in each of them?
3. Sign a form whereby you give permission for your child to participate in the study. This will only be necessary if you are notified that your child was selected as a participant for the study (on grounds of the information provided during the above discussion).

If your child understands and speaks **three languages** and is invited to participate in the study, he/she would be asked to do the three things listed below. These activities will be

spread out over three play sessions with the researcher/research assistant, with a different one of the child's three languages being used in each session.

1. Sign a consent form for participation in this study (by writing their names or drawing an "X" on the form).
2. Complete a vocabulary test. All that is required of the child in this test is to look at a number of child-friendly pictures and name the object or action that is depicted in each picture.
3. Look at another set of child-friendly pictures and do two tasks, one involving picture selection and the other involving sentence completion. Your child's responses to the tasks will be recorded with a digital voice recorder.

If your child understands and speaks **one language** only and is invited to participate in the study, he/she would be asked to do the same three activities listed above during a single play session in which only the language that they understand and speak is used.

Additionally, your child's teacher will be asked to rate your child's skills in each of the languages that he/she knows. This rating will be based on your child's interaction with both the teacher and other children, in the classroom and on the playground.

Both the child participants and their parents/primary caregivers will be debriefed when the research is completed.

### **3. Potential risks and discomfort**

Participation in the study does not hold any risk for the participants and will not cause them any discomfort.

### **4. Potential benefits to subjects and/or society**

The participants will not benefit personally by taking part in the research.

## **5. Confidentiality**

No names of any participants will be mentioned in the dissertation or subsequent other publications. Participants will be given a participant number or pseudonym that will be used in the dissertation for ease of reference, and only the researcher, her assistants and supervisors will be able to identify the participant. It is possible that the data obtained during the interview and play session(s) may be used as examples in lectures or scholarly articles, as well as other research involving Receptive and Expressive Activities for Language Therapy material. Anonymity will, however, be ensured throughout. The data will be stored in a locked cabinet in the researcher's office and electronic data will be stored in a folder on the researcher's password-protected computer.

## **6. Participation and withdrawal**

Participants can choose whether to take part in this study or not. If your child volunteers to take part in this study, he/she may withdraw at any time without consequences of any kind and without providing reasons for withdrawal. Your child may also refuse to answer any questions he/she does not want to answer and still remain in the study.

## **7. Identification of investigators**

If you or your child has any questions or concerns about the research, please feel free to contact Anneke Potgieter (researcher) or Dr Simone Conradie (supervisor).

Anneke Potgieter      [annekep@sun.ac.za](mailto:annekep@sun.ac.za)      021 808 3531

Simone Conradie      [sconra@sun.ac.za](mailto:sconra@sun.ac.za)      021 808 2052

## **8. Rights of research subjects**

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your child's rights as a research subject, contact Maléne Fouché ([mfouche@sun.ac.za](mailto:mfouche@sun.ac.za); 021 808 4622) at the Division for Research Development.

**SIGNATURE OF RESEARCH SUBJECT OR LEGAL REPRESENTATIVE**

The information above was described to me by Anneke Potgieter or by a research assistant in the preferred language (English/Afrikaans/isiXhosa). I am in command of this language, or this form was satisfactorily translated for me. I was given the opportunity to ask questions and these questions were answered to my satisfaction. I hereby consent that my child may voluntarily participate in this study. I have been given a copy of this form.

\_\_\_\_\_  
**Name of parent/guardian**

\_\_\_\_\_  
**Signature of parent/guardian**

\_\_\_\_\_  
**Date**

**SIGNATURE OF INVESTIGATOR**

I declare that I explained the information given in this document to \_\_\_\_\_  
[*name of the participant*] and/or [his/her] representative \_\_\_\_\_ [*name of the representative*]. He/she was encouraged and given ample time to ask me any questions. This conversation was conducted in [*Afrikaans/English/isiXhosa*] and [*no translator was used/this conversation was translated into \_\_\_\_\_ by \_\_\_\_\_*].

\_\_\_\_\_  
**Signature of investigator**

\_\_\_\_\_  
**Date**

## APPENDIX 4

### PARTICIPANT ASSENT FORM FOR MINORS



**TITLE OF THE PROJECT:**

*The role of input in the early trilingual acquisition of English, Afrikaans and isiXhosa*

**RESEARCHER'S NAME:**

Anneke Potgieter

**WHAT IS RESEARCH?**

Research is something we do to find new knowledge about the way things (and people) work. We use research projects or studies to help us find out more about topics, to understand them better and to find possible solutions.

You are kindly invited to help with such research by looking at pictures and making sentences. Are you willing to take part in this research project?

YES

NO

---

Signature of child

---

Date

---

Signature of parent/guardian

---

Date

## **APPENDIX 5**

### **INFORMED CONSENT FORM FOR TEACHERS**

Dear teacher

I would hereby like to provide you with more information regarding the planned research study on early trilingualism which I have briefly discussed with you telephonically. After providing you with some background information on the purpose of the study, I will explain the extent of your involvement as teacher, in the event that you are so kind as to volunteer your participation in this study.

#### **1. The purpose of the study**

As South Africa is a country with 11 official languages, the majority of our children are growing up in communities where more than one language is spoken. In the Western Cape, many children grow up learning English, Afrikaans and isiXhosa from a very young age. As children generally benefit from being able to understand and use more than one language, it is interesting to see how the process of learning various languages at the same time works. The specific purpose of the study is therefore to investigate the relationship between how proficient a child is in a given language (i.e. how well he/she understands and speaks the language) and how much exposure the child receives to that language (i.e. how often the child hears the language being spoken by others). Of further interest to the study is the manner in which English, Afrikaans and isiXhosa possibly influence one other when a young child learns these three languages at the same time.

In order to see whether the above three languages do indeed influence each other when they are learned at the same time, the language skills of these trilingual children will have to be compared to those of children of the same age who understand and speak only one of the three languages.



## **2. The type of participant needed**

The study requires children aged four years who are currently being exposed to English, Afrikaans and isiXhosa on a regular basis and can therefore both speak and understand all three languages (even if only to a limited extent). I am hoping to find such children at your institution.

## **3. How the study works**

### *3.1 Involvement of parents/primary caregivers*

One of the parents or the primary caregiver of each child that you recommend as a possible participant for the study will be asked to have an informal conversation with the researcher/a research assistant. During this conversation, they will be asked to answer questions relating to their child's language background. Examples of these questions are: (i) what languages do the child's family members and friends speak?; (ii) at what age was the child first exposed to these languages?; (iii) how often is the child exposed to the different languages; and (iv) how proficient is he/she in each of them? The conversation will be informal and should not take up more than 30-45 minutes of the parent's/primary caregiver's time.

### *3.2 Involvement of child participants*

Each child that is selected as a participant on grounds of the conversation with the parent/caregiver will be asked to do the three things listed below. These activities will be spread out over three play sessions with the researcher/research assistant, with a different one of the child's three languages being used in each session.

1. Sign a consent form for participation in this study (by writing their names or making an "X" on the relevant form).
2. Complete a vocabulary test. All that is required of the child in this test is to look at a number of child-friendly pictures and name the object or action that is depicted in each picture.
3. Look at another set of child-friendly pictures and do two tasks, one involving picture selection and the other involving sentence completion. The child's responses to the tasks will be recorded with a digital voice recorder.

### 3.3 *Your involvement as teacher*

If you/your institution volunteers to participate in this study, you will be expected to kindly help in the following ways:

1. Sign this consent form for your own participation in the study (see the last page of this document).
2. Identify possible trilingual participants for the study in your classroom.
3. When the parents/primary caregivers of these children fetch the children from school, please give them a note from me. In this note, I will briefly describe what my study is about and why I need their help. If they are willing to help, they can provide their telephone number on the note and return it to you as teacher. Once I have all the numbers, I can contact the different parents/caregivers in order to make an appointment to talk to them about their child's language background.
4. Allow me and my two research assistants to visit your school in order to have three play sessions with each child selected as a participant for the study. Each play session should last about two hours, with breaks in between. For these sessions, I need a reasonably quiet room. Each child will partake in a play session in each of their three languages, with a week in between sessions. This means that my assistants and I will be visiting your school from time to time over the course of two weeks or longer, depending on how many children can be tested in one day. Set appointments will, however, be made and kept to.
5. Assess each of the selected participants' language skills in each of their three languages. This assessment will be made purely on grounds of his/her interaction with both you as teacher and with other children, in the classroom and on the playground. I will provide you with a form with specific, easy questions relating to the child's skills in each language. This should not take more than five minutes of your time per participant. (If you are not proficient in one or more of the child's languages, you do not have to assess the child's skills in this language/these languages.)

### **4. When the study is to take place**

Ideally, I would like to have the play sessions with the child participants in the month of August 2013. This means that I need to make contact with the parents/caregivers of possible participants as soon as possible, in order for me to select the final participants on grounds of the language background information I receive.

**5. How to contact the researcher**

If you have any questions or concerns about the research, please feel free to contact me, Anneke Potgieter, on 021 808 3531 or e-mail me at [annekep@sun.ac.za](mailto:annekep@sun.ac.za).

**6. Consent**

By signing here, you are volunteering to be of help in my study, as set out above.

\_\_\_\_\_

**Name of teacher**

\_\_\_\_\_

**Contact number**

\_\_\_\_\_

**Signature of teacher**

\_\_\_\_\_

**Date**

## APPENDIX 6

### INTERVIEW SCHEDULE: TEACHER REPORT ON LANGUAGE USE AT CRÈCHE

Date of interview: .....

Name of teacher: ..... Name of crèche: .....

Name of child: ..... Name of interviewer: .....

As teachers are the people who can provide the most accurate description of the language use situation at a crèche, I would like you as teacher to give me some general information relating to the languages that the abovementioned child is exposed to in the crèche context:

- What language(s) do you as teacher use to communicate with the class as a whole?
- If you use more than one language, could you describe how often you use each of the languages, using percentage values? E.g. if you use two languages for teaching, a ratio of 50:50 would indicate that you use both languages in equal amounts; 75:25 that you use mostly one language and seldom the other; and 90:10 that you use only single words or phrases from one of the languages.
- What language(s) do you as teacher use to communicate with the specific child in question, and in what ratio?
- What language(s) does the child in question use to communicate with you as teacher, and in what ratio?
- Are the children in your class supposed to use a specific language, or are they free to use any language?
- What language(s) do they use when communicating with one another?
- Could you describe the amount of interaction between them that takes place in each language in terms of percentage values? E.g. in the case of two languages being used for child-to-child interaction, a ratio of 50:50 would indicate that equal amounts of conversation take place in both languages, 75:25 that conversations are mostly in one language and seldom in the other, and 90:10 that only single words or phrases from the one language are used.
- What language(s) does the child in question use to communicate with his/her classmates, and in what ratio?

- What other language(s) is/are used in the crèche, and by whom?

Now, I'd like you to give me an indication of how well **you** understand and speak the three languages of most interest to the study, i.e. English, Afrikaans and isiXhosa:

**English:**

- How would you rate your own understanding of English? Is it “very good”, “good”, “not so good”, “bad” or do you perhaps not feel competent to evaluate this?
- How would you rate your own ability to speak English? Is it “very good”, “good”, “Not so good”, “bad” or do you perhaps not feel competent to evaluate this?

**Afrikaans:**

- How would you rate your own understanding of Afrikaans? Is it “very good”, “good”, “not so good”, “bad” or do you perhaps not feel competent to evaluate this?
- How would you rate your own ability to speak Afrikaans? Is it “very good”, “good”, “not so good”, “bad” or do you perhaps not feel competent to evaluate this?

**isiXhosa:**

- How would you rate your own understanding of isiXhosa? Is it “very good”, “good”, “not so good”, “bad” or do you perhaps not feel competent to evaluate this?
- How would you rate your own ability to speak isiXhosa? Is it “very good”, “good”, “not so good”, “bad” or do you perhaps not feel competent to evaluate this?

Now, let's turn to the child in question. When answering the following questions, please think about the child's interaction with you, but also with his/her classmates, both in the classroom and on the playground.

**English:**

- How would you rate the child's understanding of English? Is it “very good”, “good”, “not so good”, “bad” or do you perhaps not feel competent to evaluate this?
- How would you rate the child's ability to speak English? Is it “very good”, “good”, “not so good”, “bad” or do you perhaps not feel competent to evaluate this?

**Afrikaans:**

- How would you rate the child's understanding of Afrikaans? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?
- How would you rate the child's ability to speak Afrikaans? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?

**isiXhosa:**

- How would you rate the child's understanding of isiXhosa? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?
- How would you rate the child's ability to speak isiXhosa? Is it "very good", "good", "not so good", "bad" or do you perhaps not feel competent to evaluate this?

**Thank you for your time!**