

**THE MORPHO-PHONOLOGICAL PROPERTIES OF ANAPHORIC  
CONSTRUCTIONS IN NORTHERN SOTHO**

by

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## DECLARATION

I, Kgwadi Dimakatso Charity, declare that this research report titled: THE MORPHO-PHONOLOGICAL PROPERTIES OF ANAPHORIC CONSTRUCTIONS IN NORTHERN SOTHO, is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

.....

D.C. Kgwadi (Ms.)

.....

Date

Student Number: XXXXXXXXXX

## **DEDICATION**

Tšhegofatšo, we meet to pass my dear but all is well.

## ACKNOWLEDGEMENTS

My first gratitude goes to the undefeated me. I am proud of you, Sesi Dimakatso Charity Kgwadi, against all odds, *o fentše mosadi*. To my better half, Nape Motana, thank you for your support and encouragement.

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## **ABSTRACT**

The aim of this study was to examine the morpho-phonological properties of the anaphoric constructions in Northern Sotho using Binding Theory. This study adopted the qualitative research method, where participant observation was used to collect data. The study employed Textual Analysis to analyse the data.

The study identified reflexive and reciprocal data that constitute anaphors in Northern Sotho. The study's findings indicate that there are two types of anaphors, namely: reciprocals and reflexives. In Northern Sotho, anaphors are in the form of verbs. The basic structure of the reciprocal is the root verb, the reciprocal suffix (-an) plus the terminative vowel (-a). The study found that reciprocals do not change or influence the phonology of the verb. Yet another finding is that reflexives change the phonology of the verb. When the reflexive prefix *-i* is attached to the root verb, it sometimes changes the assimilation process.

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## CHAPTER 1

### INTRODUCTION AND BACKGROUND

#### 1. INTRODUCTION

The main issue of this research is the examination of morpho-phonological properties of the anaphoric constructions in Northern Sotho using Binding Theory which was developed by Noam Chomsky. Firstly, this study observes the patterns of anaphors, which is followed by a discussion of the Binding Theory. The Binding Theory essentially predicts that the pronoun and anaphors must complement each other in the sentence (Cook & Newson, 2007). However, prior to a thorough discussion, it is imperative to distinguish between the concepts, morphology, phonology and anaphor, respectively. Fromkin, Rodman and Hyams (2011) define morphology as the study of the internal structure of words, and of the rules that govern them to form new words. Hickey (2013) posits that morphology arises basically when words amalgamate with each other. In terms of this view, a word becomes semantically transformed by changing its structure and as a result, it forms a new word class. It is claimed that the amount of movement of the lexical items in structure building that takes place depends on how rich or weak the morphology of a language is (Waweru, 2011). Furthermore, there are two types of morphology, namely: inflectional and derivational morphology. Derivational morphology is concerned with the types of word formation, it involves the addition of affixes to bases or combining two bases together (Hickey, 2013). Fromkin et al. (2011) are of the view that when an affix is added to a base, a new word with a new meaning is derived. Consider the table below (1).

(1)

Verb	Affix	Noun
Betray	-al	Betrayal

Katamba (1989:1) explains phonology as “the branch of linguistics which investigates the ways in which sounds are used in different ways to form words and utterances in languages”. In addition, Szczegieliak (2018) states that phonology indicates which

sounds are in a language, and how they do and can combine into words. Therefore, phonology deals with speech sounds forming words in different languages. The phonological restrictions that make up a word may influence certain rules of speech sounds which apply to the word (Madondo, 2001). Thus, the rules of phonology may restrict rules of certain speech sounds whilst favouring others.

In English grammar, *anaphora* is the use of a pronoun or other linguistic units to refer *back* to another word or phrase. The word that gets its meaning from a preceding word or phrase is called an *anaphor* (Lebeaux, 2009). The preceding word or phrase is referred to as the antecedent, *referent*, or *head* (Krahmer & Piwek, 2000). This study looks at two types of anaphors: reciprocals and reflexives. Nedjalkov (2007) explains the term reciprocal as expression patterns that code a mutual situation. Reciprocals may be regarded as two-place predicates (Lebeaux, 2009), because there are two noun phrases that are preceded by the reciprocal. For example:

(2) Wondrous and Houston appreciate each other.

From the above example (2), the two noun phrases 'Wondrous and Houston' are preceded by the reciprocal 'each other'. The mutual relation is 'to appreciate' which exists between 'Wondrous and Houston'. On the other hand, holds that the reflexive shows that the action in the sentence has its effect on the person or thing that does the action. Anaphors are evident across human languages (du Plessis, 2016). Consequently, it may be assumed that they are also features of Northern Sotho, which is also known as Sepedi or Sesotho sa Leboa. Northern Sotho consists of 30 dialects, most of which are spoken in the North-Eastern area of South Africa and the Southern part of Botswana (Faab, 2010). However, Northern Sotho is mostly spoken in Limpopo, Mpumalanga and Gauteng Provinces of South Africa.

## **2. RESEARCH PROBLEM**

Northern Sotho language relies on morpheme combination for the morphological and phonological processes. Anaphors are part of these processes. Not much research was done on anaphors in South African languages, especially on Sotho languages in terms of morphology and phonology. It is important to examine these changes with a view to determining the morphological and phonological structures of anaphors.

### **3. PURPOSE OF THE STUDY**

#### **3.1 THE AIM OF THE STUDY**

The aim of the study is to describe morpho-phonological properties of the anaphoric constructions in Northern Sotho.

#### **3.2 OBJECTIVES**

- To identify different types of anaphoric constructions in Northern Sotho.
- To analyse the phonology of anaphors in Northern Sotho.
- To examine the morphology of anaphors in Northern Sotho.
- To determine the relevance of Binding Theory in the analysis of anaphors in Northern Sotho.

### **4. RESEARCH METHODOLOGY**

This study adopted the qualitative research method, which is used to analyse the nature of reflexives and reciprocals in Northern Sotho and the way reflexives and reciprocals behave through phonological and morphological processes. Leedy and Ormond (2001:101) assert that qualitative research characterised by asking questions about the complex nature of the phenomena, often with the purpose of describing and understanding the phenomena from participants' point of view.

#### **4.1 RESEARCH DESIGN**

According to Kumar (2011:95), "a research design is a plan, structure and strategy of investigation so conceived as to obtain" relevant information required. This study employed the descriptive research design, where the researcher described the anaphoric expressions in Northern Sotho. Descriptive research can be explained as a systematic description of facts of a particular subject (Helen & Dulock, 1993). Moreover, van Wyk (2009) highlights that the main aim of descriptive research is to answer the questions that are foregrounded.

#### **4.2 POPULATION AND SAMPLING**

Polit and Hunglar (1999) claim that population is the complete fix of individuals having some common characteristics as defined by the sampling criteria established for the

study. The population of this study is language texts in Northern Sotho. In qualitative research, sampling is the selection of specific data sources from which data are collected to address the research objectives (Gentles, Charles, Ploeg, & McKibbon, 2015). Purposive sampling has assisted the researcher to select nominal and verbal structures pinpointing reflexivity and reciprocity in Northern Sotho. The texts purposefully sampled are rich in vocabulary which served as the best resource for analysing anaphors. The researcher purposely selected all types of reflexives and reciprocals in Northern Sotho.

#### **4. 3 DATA COLLECTION**

This study used participant observation to collect data. Kawulich (2005) posits that the aim of participant observation as a method is to develop a holistic understanding of the phenomena under study that is as objective and accurate as possible. According to Kawulich (2005), participant observation is the process that ensures that the researcher learns about the activities under study in a natural setting through observation and participation in those activities. The researcher observed reflexive and reciprocal data that constitute anaphors in Northern Sotho.

#### **4. 4 DATA ANALYSIS**

Data analysis is the range of processes and procedures where the researcher moves from the qualitative data that have been collected into some form of explanation, understanding or interpretation of the activities being investigated (Sunday, 2018). Once the data were collected, the researcher organised them in a more efficient and meaningful way (Kubayi, 2013). The researcher categorised reflexives and reciprocals in Northern Sotho, indicating how they influence the morphology and phonology of the language. The study used Textual Analysis to analyse the data. According to Mackee (2001:3), Textual Analysis is a “way of gathering and analysing information in academic research”. After the data were collected through participant observation, they were interpreted and analysed through Textual Analysis by categorising them in terms of their phonological and morphological changes. The data were analysed on the basis of how they change their behaviour and structure in terms of the processes of morphology and phonology.

## **4.5 QUALITY CRITERIA**

Creswell (1998) regards the trustworthiness of qualitative research as being conventional on the premise of four strategies, namely: credibility, transferability, dependability and conformability.

### **4.5.1 Credibility**

The credibility of this study is based on the techniques highlighted by Guba and Lincoln (1989), as quoted by Bitsch (2005). The techniques that the researcher observed to ensure credibility are prolonged engagement and persistence observation. The researcher acknowledged all the sources that were used in this study to ensure credibility.

### **4.5.2 Transferability**

Transferability indicates that the theoretical knowledge obtained from research can be applied to other similar situations (Liamputtong, 2009 in Kubayi, 2013). The study was compared and linked to others that are similar to it.

### **4.5.3 Conformability**

Conformability ensures that the findings and the interpretation can be confirmed by another study (Marshall and Rossman, 2006). The researcher should not provide information from his or her own personal perspective, instead, the researcher should link the findings with the data that was gathered (Creswell, 1998). The researcher followed the necessary steps of conducting research in order to attain reliable results.

### **4.5.4 Dependability**

The researcher confirmed dependability by applying objectivity rather than subjectivity through presenting the findings as they are (Kubayi, 2013). The researcher was not biased, but ensured that necessary measures were taken by analysing anaphors thoroughly.

## **5. SIGNIFICANCE OF THE STUDY**

This study will contribute to the field of linguistics and more precisely, to the Northern Sotho studies because it explores and analyses the reflexive and reciprocal verbal extensions of Northern Sotho. Language practitioners, teachers, students and scholars in linguistics will benefit from this study as they will learn more about how words relate to one another in sentences.

## **6. ETHICAL CONSIDERATIONS**

Qualitative research consists of researchers and participants, and is established on the basis of collaboration between the two parties (Hammond & Wellington, 2013). During data collection, both parties in qualitative research must adhere to ethical codes. Hammond and Wellington (2013) explain that ethical codes are established by professional associations, with universities and other research organisations which often require their members to adhere to these codes. Therefore, the researcher and the participant must respect and follow the code of ethics that is outlined by the university. The two major ethical principles that a researcher should take care of can be recognised in terms of informed consent, privacy and confidentiality.

The researcher will explain the consent form before distributing the questioner to each participant. They also have the right to know what is going to happen to the information they provide during data gathering (Henning, Van Rensburg & Smit 2004). Hammersley and Traianou (2012:83) state that “gaining consent can be a practical necessity if access to relevant data is to be achieved”. However, this aspect is not applicable to this study as it is a desktop research.

The researcher obtained permission to conduct the study from the research committee at the University of Limpopo. The researcher needed to get research clearance from the research department because this research employed textual analysis. According to the University of Limpopo Postgraduate Manual (2016), ethical clearance is granted by Turfloop Research and Ethics Committee (TREC). The researcher requested for permission to conduct the study in principle, since the study does not involve research participants.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 INTRODUCTION

This chapter focuses on previous studies related or partially related to the morpho-phonological properties of anaphoric constructions in Northern Sotho. The review discusses the notion of morpho-phonology with respect to anaphors. Firstly, anaphors in African languages are discussed, followed by a discussion of anaphors in European languages and Asian anaphors, respectively. Moreover, the significance of Binding Theory is also discussed, followed by the conclusion of the chapter.

#### 2.2 ANAPHORS IN AFRICAN LANGUAGES

This section highlights the types and forms of anaphors in some African languages, namely; Northern Sotho, Sesotho, Setswana, Xitsonga, Changane, Tshivenda, isiZulu, Shona and Lubukusu.

##### 2.2.1 Anaphors in Northern Sotho

Anderson and Kotzé (2006) investigate verbal extension sequencing in Northern Sotho. Verbal extension sequencing refers to the order of attachment on the verb. Nokaneng (1995) is of the view that the reciprocal sequence does not change. Consider the following example:

(1) Verb root	reciprocal anaphor	terminative vowel.	
<i>-tseb-</i>	<i>-an-</i>	<i>-a</i>	<i>tsebana</i>
(to know each other).			

Nokaneng (1995) adds that the reciprocal anaphor should be inserted between the verb root and the terminative vowel. From the above example, the reciprocal anaphor *-an-* is inserted between verb root *-tseb-* (know) and terminative vowel *-a*, which indicates the tense *-a*, which in this instance, indicates the present tense. Mojapelo (2007) discusses the definiteness in reference to Noun Phrase (NP) in Northern Sotho. Definiteness, according to Mojapelo (2007), is viewed as a morpho-syntactic category. Mojapelo (2007) avers that pronouns and determiners are frequently used anaphors in Northern Sotho. In example (2) below, it is assumed that the referent *mo* (him/her) and the absolute pronoun *yona* (it) are co-referenced. This means that they have been

mentioned before and can be uniquely be identifiable referents. *Mo* and *yona* refer to something within the sentence.

(2) *Le seke la mo fa yona.*

(Do not give it to him/her).

Mphasha (2006) considers reflexive verbs and reciprocal verbs along with their morphological structures, and argues that the reciprocal affix *-an-* appears mostly in transitive verbs. Transitive verbs are said to have two place predicates, and require an NP compliment (Fromkin et al., 2007). Basically, the affix *-an-* plays a reciprocal role in syntactic structure. The examples provided by Mphasha (2006) are:

(3) *Dihlotlolo tše di a tseb-an-a.*

(These prostitutes know each other).

(4) *Mošemane yola le ngwanenyana yo] ba a dum-an-a.*

(That boy and this girl admire each other).

The affix *-an-* in (3) and (4) has been affixed to the verb stems *tseba* and *duma*, respectively. In (3) and (4), both the verb stems *tseba* and *duma* have the semantic role of patient. The semantic role of patient refers to an (animate) entity undergoing action (Bárány, 2017). In other words, it indicates the meaning of a mutual relationship between two NPs. This role has now been taken over by the affix *-an-* with the meaning of the reciprocal. Of particular importance is that, Mphasha (2006) maintains that it is necessary to mention that a condition on the subjects of reciprocal verbs is to have the feature [plural]. Any sentence that may have a singular subject would be not grammatical, i.e.:

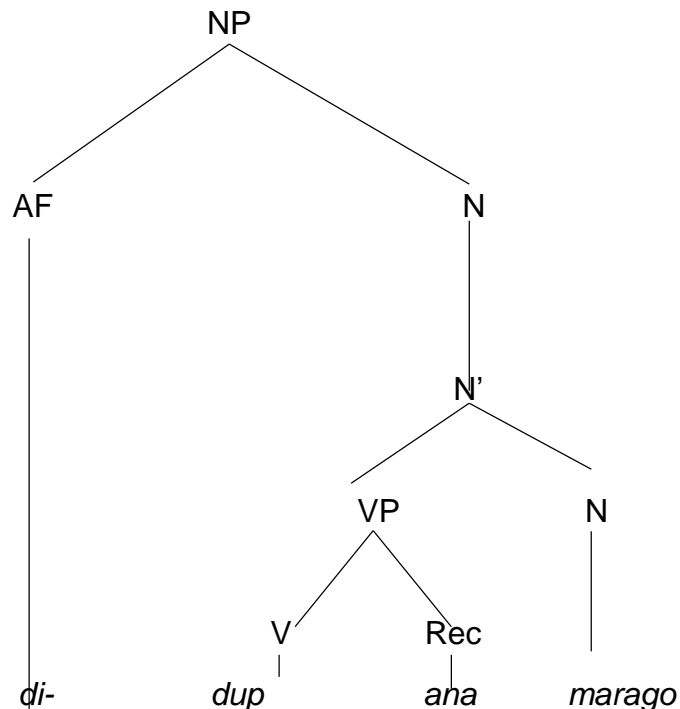
(5) \**Motho yo o a hlapišana.*

(The person is bathing himself/ herself).

The example (5) indicates that the subject *motho* in singular. The sentence then becomes ungrammatical because the reciprocal verb requires a subject to be in the plural form. Thus, reciprocity must have two or more people to do the action. Moreover, Mphasha (2006) discusses the morphological structure of the reciprocal. Consider the following example:



(6) *Didupana-marago*.  
 (Bosom friends).



In the structure (6) above, the reciprocal verb is *-dup-an-* which is derived from the verb root *-dup-*. The structure illustrates that the internal argument *-an-* is bound by the external argument *-dup-*. Mphasha (2006) is of the view that in syntax, the reflexive morpheme *-i-* in Northern Sotho refers to any construction where the subject and the object of a sentence refer to the same entity. Maepa (2001) adds that the reflexive morpheme does not have a different form for each and every person and class, hence, there is only one reflexive morpheme. Faab (2010) also adds that in Northern Sotho, reflexivity is determined in the verb stem. Mphasha (2006) agrees with Faab (2010) by indicating that in Northern Sotho, the reflexive morpheme *-i-* appears as a prefix of the verb before the stem, e.g.:

(7) *Mosadi o itshwere*.  
 (The woman controlled herself).

Morphologically, this reflexive reflects the internal argument [*mosadi*] which is bound by the external [*itswara*] argument within the lexical structure of the verb (Mphasha,

2006). Therefore, there is a binding of arguments by the structure of verbs. Similarly, Nokaneng (1995) reveals that the reflexive is inserted before the stem. This reflexive at some point brings phonological process. By phonological process, it is meant “processes whereby one sound changes to become more like some other sound in its environment” (Katamba, 1989:36). Nokaneng (1995), on the other hand, argues that the phonological process that is caused by reflexives is plossivation. Maepa (2001) indicates that the reflexive morpheme *i* - causes nasal strengthening when *-i* is placed before a verb stem to form a reflexive verb. Nasal strengthening implies the intensification of a sound segment, for instance, the changing of a continuant consonant into a non-continuant consonant due to the influence of a nasal segment. Consider the following example:

(8) *Bona* (see)

Rule 1: strengthening:  $\gamma$       p'    [n+iβɔna]

Rule 2: nasal deletion: n

Phonetic representation    [ip'cna] (see oneself).

The reflexive morpheme originally must have incorporated a nasal (*n*), which is deleted after it has caused nasal strengthening (Maepa, 2001).

(9) *Moitaodišaphelo*.

(Autobiographer).

In (9), the reflexive affix *-i-* appears before the verb stem *-taodišo* (narrative). The morphological structure indicates that the verb root *laodiš-* has three arguments, namely; an agent *mo* (he/she), a causative (*iš*) in *taodiša* (narrative) and theme, *taodišophelo* (self-narrative), respectively. The agent argument binds the cause argument and the theme argument is assigned to *-phelo* (direct argument) (Mphasha, 2006).

### 2.2.2 Anaphors in Sesotho

According to Nhlapo (2015), just as in Northern Sotho, the affix *-an-* in Sesotho is the suffix which indicates anaphor. The verb has two arguments; the theme argument is

bound by the agent argument. Carnie (2006) regards agent as a perceiver of the event. The following example is illustrative of this notion:

- (10) *Batho ba a bits-ana.*  
(People are calling each other).

From the above example, the verb *bits-* indicates two arguments, the external which is the agent *bitsa* (call) and the internal argument which is reciprocal *-an-*. Hence, both arguments are carried by the verb (Nhlapo, 2015). Du Plessis (2016), on the other hand, is of the view that the causative goes along with the reciprocal. Consider the example below:

- (11) *Ke yena feela eo re ka **phedisanang** le yena hamonate.*  
(It is him or her only that can cause each other to live with him or her nicely).

Example (11) indicates the reciprocal and causative on one word. Causative *-is-* is inserted after the verb root *-phedi-* (live) in *phed-is-anang*. The reciprocal suffix *an-* in *phed-is-anang* is inserted after the causative. Sekere (2004) points out that in Sesotho, the reflexive is formed by prefixing *i-* to verb stems as in:

- (12) *bona > ipona.*  
(see) > (to see oneself).

Chaphole (1988) in the study that investigates the syntactic and semantic behavior of Auxiliaries in Sesotho, claims that auxiliaries do not take verbal prefixes in Sesotho. Hence, the reciprocal *-i-* cannot be inserted to auxiliaries. The following examples support this view.

The reflexive prefix *i-*

- (13) (a) *i- + ba > \*iba.*  
(b) *i- + ka > \*ika.*  
(c) *i- + rata > ithata* (to love himself/to love herself).

The reflexive prefix *i-* can only be attached to the verb 13(c) and not auxiliaries 13(a) and 13(b). In the examples 13(a) and 13(b), the reflexive prefix *i-* is attached to the auxiliaries which make them ungrammatical. Sekere (2004) adds that in Sesotho, the

reflexive morpheme causes plossivisation. This prefix results in the plossivisation of the initial sound. Verbs do not retain their initial voiced consonant in words such as:

- (14) (a) *bona* > \**ibona*> *ipona*.  
(b) *beha* > \**ibeha*> *ipeha*.  
(c) *dumela* > \**idumela*> *itumela*.

According to Demuth (1992), the Sesotho reflexive *i-* occurs adjacently to the verb stem and it is also disallowed from co-occurring with an object marker, as shown in (7).

- (15) *Thabo o di iphehetse*.  
(Thabo cooked it for himself).

The example below indicates that *i-* which is reflexive is inserted to the verb and cannot be inserted to the object. According to Demuth (1992), even though there has been no comprehensive study of the restrictions on Sesotho reflexives, they appear to be locally bound and must be co-referent with the subject of that clause, as in (16).

- (16) *Johni ó náhana hore Thaboj óá ithátaj*.  
(Johni thinks that Thaboj likes himselfj).

From the above example, John is locally bound and is co-referent with the subject 'himself'.

### 2.2.3 Anaphors in Setswana

According to Berg (2018), Setswana is a language spoken in Southern Africa. It is one of the official languages of the Republic of South Africa (RSA), where approximately 11,1 % (4 067 248) of the population are first language Setswana speakers (Statistics South Africa, 2018). Pretorius (2015) used a qualitative method to research on Setswana verbal morphology. The paper discusses the frequency of use and the sequencing of Setswana verbal suffixes. Pretorius (2015) indicates that:

The use of a particular verbal extension such as reciprocal is thus dependent on its semantic compatibility with the entire preceding verbal stem. The use of the reciprocal suffix *-an-* in Setswana is a good example.

- (17) *Kwala* (write), as in  
(18) *Re a kwalana* (we write each other).

When this suffix is considered in relation to the verbal stem, *kwalana* (17), then the reciprocal meaning is compatible. In Setswana, avers Berg (2018), when a word is suffixed to the verb root, it is known as extension. Thus, the word changes morphologically. For instance:

- (19) *Rata > rat-ana*.  
(love > love each other).

The suffix *-an-* is inserted to the verb root *-rat-*, which results in the extension of the verb. The verb root *-an-* indicates the reciprocity of the verb, *rata*. Moreover, Berg (2018) indicates that in Sesotho, the reciprocal extension *-an-*, is suffixed to a verb to express the meaning of ‘each other’ or ‘one another’ and suggests at least two participants should be available. It therefore commonly occurs with a plural subject (Berg, 2018). The participants are represented by a plural noun (as SUBJ) such as ***bana*** (children) in (20)

- (20) *Bana ba a ratana*.  
(Children love each other).

Creissels (1996) is of the view that in Setswana, the structure of a sentence is manifested in noun prefixes, head-dependent agreement in the noun phrase such as ***bana***, and obligatory agreement of free pronouns such as, *ba* in ‘*Bana **ba** a ratana*’.

#### 2.2.4 Anaphors in Xitsonga

Du Plessis (2016) claims that there are ten derivational affixes in Xitsonga of which only the reflexive is a prefix of a verb. According to du Plessis (2016), the reflexive appears as a prefix of a verb in most languages, Xitsonga included. The reflexive in Xitsonga always has only one form. For instance, it does not participate in any type of agreement (du Plessis, 2016). Moreover, Mabaso (2009) holds a similar view in stating that in Xitsonga, the reflexive is morphologically represented by the morpheme *ti-*. Consider the following example:

- (21) *Wanuna wa a ti-xisa*.  
(The man deceives himself).

The reflexive therefore, derives its properties from the subject and object of the sentence, both of which relate to the same entity (du Plessis, 2016). Syntactically, the prefix *ti-* of the verb, influences the object and the subject to be of the same entity. Furthermore, the usage of the reflexive *ti-* on the verb is dependent on the semantic features of the verb. In Xitsonga, certain verbs such as the intransitive verbs, cannot appear with the reflexive Mabaso (2009). For example:

- (22) . \**Wanuna wa tietlela*.  
(The man sleeps himself).

The verb stem *etlela* is an intransitive verb. Intransitive verbs are verbs that cannot take an NP complement (Fromkin, Rodman & Hyams, 2007). Hence, it becomes ungrammatical for the reflexive *ti-* to be attached to the intransitive verb, *etlela*. Lee and Hlungwani (2015) indicate that in Xitsonga, the reciprocal suffix *-an-* must be attached to the lexical verb. Consider the following example:

- (23) *Hi hatla hi xewetana*.  
(We quickly greet each other).

The verb stem *xewetana* has the reciprocal suffix *-an-* and has a lexicalised meaning: 'simultaneously'. Therefore, this *-an-* indicates the reciprocity of a sentence on the verb stem *xeweta*. Du Plessis (2016) adds that the applicative *-el-* is sometimes found alongside the reciprocal suffix *-an-*. Take a look at the example below:

- (24) *Vanai- vai-lang-el-an-a malekere*.  
(The children choose sweets for one another).

The internal argument such as *malekere* above is assigned by the verb *-lang-*(choose). The internal argument from the applicative [-el-] is not lexically present but is bound by the external argument *vana* (children) through the reciprocal suffix *-an-* (du Plessis, 2016).

### 2.2.5 Anaphors in Changana

Langa (2007) describes and analyses the system of verbal extensions in Changana in Mozambique. Langa (2007) explains the reciprocal verb as the verb whose action is done simultaneously on one to another. The reciprocal verbs in Changana are attached to the verb in the form of a suffix. Consider the following:

(25) *Mamani axeweta xitombhana.*

(The mother greets the girl).

(26) *Mamani ni xitombhana vaxewetana.*

(The mother and the girls greet each other).

The verb stem *vaxeweta* (25) appears in the present tense with no reciprocal verbal extension attached to it. In this example, only the mother does the act of greeting. In (26), the verbal extension of reciprocal extension ‘-ana’ has been suffixed to the verb root *vaxewat-*, which denotes that the act of greeting is done reciprocally, thus, they both greet each other. The reciprocal is therefore, indicated by *-ana* in the word *vaxewetana*.

### 2.2.6 Anaphors in Tshivenda

Musetha (2000) indicates that in Tshivenda, all the verbs of grooming and bodily care accepted the reflexive prefix *ɔi-* making those verbs to be reflexive. In the second place, the reflexive verbs below may also appear with an NP after the verb. The noun phrases above are all instances of body parts.

(27) *Dihwaya maṅo.*

(To brush one’s [own] teeth).

(28) *U a diluka.*

(To braid him/herself)

Musetha (2000) is of the view that the verbs of grooming and bodily care can be found with either (herself or himself) or with the appropriate body part as direct objects. Musetha (2000) further claims that these nouns that follow the *ɔi-* verbs are not theme or patient (object) arguments. On the other hand, Siaga (2004) investigates the mass nouns in Tshivenda. The specific mass nouns in each nominal class is investigated to see whether they have certain morphological and syntactic features which are different from count nouns. Siaga (2004) claims that in Tshivenda, the reciprocal is indicated by the suffix *-an-*. Consider the following reciprocal verb with **-an-** to support the claim:

(29) *Makukwe a a vangana.*

(The debris become mixed up).

Siaga (2004) concludes that the nouns that appear as the subjects of reciprocal verbs such as *vanganana* in (29) accept all the morphological and syntactic features and should be regarded as mass nouns.

### 2.2.7 Anaphors in isiZulu

Madondo (2001) claims that unlike other South African languages, in isiZulu, reciprocal verbal extension is made through the infix *-an-*. When this is inserted, it is attached to a verb stem. Vowel elision occurs with the aim to separating two vowels which are in close proximity or juxtaposed. Vowel elision mostly occurs to the final vowel of the first item or the initial vowel of the second item (Madondo, 2001).

(30) *Inja nekati kuyalumana.*

(The dog and the cat bites each other).

*Kuyaluma +ana = kuyalumaana*. Thus, vowel elision took place where  $a+a = a$ . In this case, it occurred in the final case of the items. The infix *-an-* is inserted between *kuyalum- an-a*.

### 2.2.8 Anaphors in Shona

According to Ahn (2015), Binding-Theories have generally been focused on accounting for as wide a range of empirical phenomena as possible. Ahn (2015) focuses on Local Subject-Oriented Reflexivity (LSOR). In LSOR, the reflexive anaphor must be bound by the most local subject. However, focusing on this empirical domain, it becomes clear that it is a mistake to try to apply the same licensing conditions to all types of reflexive anaphors. Ahn (2015) considers the following example, from Shona, which engages the *zvi* morpheme as an LSOR marker:

(31) *Mufaro a ka zvi-bikira mbudzi.*

(Mufaroi cooked the goatj for himselfi/j).

From the example, the *zvi* which is the LSOR marker shows that the applicative object must be bound by the (local) subject, *Mufaro* and that it cannot be bound by the direct object, *mbudzi*. In addition, Mhute (2015) claims that in Shona, it is noteworthy that the English reflexive suffixal morpheme, ‘-self’ translates into the prefixal morpheme *-zvi-*. For example, one can consider the following underlying examples whose acceptable reflexive forms are analysed:



- (32) (a) **Reflexive transformation** *Mai vazvitengera shinda.*  
(Mother buys herself wool).
- (b) **Deep structure** *Mai vatengera Mai shinda.*  
(Mother buys mother wool).
- (33) (a) **Reflexive transformation** *Gonzo razvitemera mwezha.*  
(Rat cut path by itself)
- (b) **Deep structure** *Gonzo ratemera gonzo mwezha.*  
(Rat cut for rat the path).

From above examples, all the reflexive transformations have the reflexive formative *zvi-* “self” replacing the objects of the sentences (Mhute, 2015).

### 2.2.9 Anaphora in Lubukusu

According to Baker, Safir and Sikuku (2013), in Lubukusu, the direct object anaphoric argument anaphors can co-occur with anaphoric markers on the verb as ‘combination anaphors’. Even though an object marker and an overt object are normally in complementary distribution. Baker et al. (2013) focus on the complex anaphora phenomena which involve situations where two elements that can occur independently to support anaphora can also support anaphoric readings when they occur together. The typical cases are illustrated by (Baker et al., 2013). The reflexive suffix in Lubukusu, according to Barker et al. (2013), is *-eene*.

- (34) (a) *Yohána éyonaka ómweene.*  
(John destroyed himself).
- b) *Bob ne Billi báábonana bábeene **khu** beene.*  
(Bob and Bill saw each other).

Baker et al. (2013) argue that the reciprocal marker that is an extension, and *AGR-eene khu* are the reciprocal phrase. It consists of two *AGR-eene* forms separated by the multipurpose preposition *khu* in (34b), which has the morphological effect of suppressing the pre-prefix on any noun that follows it.

## 2.3 ANAPHORS IN EUROPEAN LANGUAGES

This section focuses on anaphors in some of the European languages, i.e., English, Russian, French and Spanish, just to name but a few.

### 2.3.1 Anaphors in English

Pollard and Sag (1992) are of the view that anaphors are generalised by Chomsky's (1981, 1986) Binding Theory of Principle A that attempts to account for the binding properties of the anaphors. Principle A states that an anaphor must be c-commanded and co-indexed by an antecedent (Carnie, 2006). Furthermore, Pollard and Sag (1992) argue that every anaphor in English must have a co-indexed and c-commanding antecedent Noun Phrase (NP) within the same sentence. Consider the following example:

(35) John hates **himself**.

From the example, it can be observed that the antecedent for a reflexive can be the subject of the sentence, but not an NP inside the subject. Antecedent is a Noun Phrase (NP) that gives its meaning to a pronoun or anaphor (Pollard & Sag, 1992). The antecedent for an anaphor can be the subject of the sentence, but not an NP inside the subject. Thus, 'himself', in this sentence refers to something in the sentence, which is 'John'. Therefore, 'himself' is commanded by 'John'. Carnie (2006) calls it Syntactic Restrictions on anaphors. The reflexive 'himself' must be bound by the subject NP. Reflexives cannot refer independently; they receive their interpretative constraints as reflexives (Pollard & Sag 1992). Nevertheless, reciprocals are inherently plural, hence, they need a plural antecedent for their interpretation (Haegeman, 1994). For instance:

(36) The students attacked each other.

(37) \*The student attacked each other.

The singular NP, the 'student' (37) cannot act as the relevant binder for the reciprocal. Therefore, this result in the sentence is ungrammatical. However, 'students' (36) is in the plural form to achieve reciprocity. In the example, the reciprocal 'each other' is bound by the subject NP and the sentence is thus grammatical. Mphasha (2006) argues that English has a sublexical anaphor, for instance, the noun 'self'. Anaphors predict exactly the pattern of description shown by self-compounds. 'Self' is observed as a morpheme that forms right-headed compounds with either nouns or adjectives (Mphasha, 2006).

### 2.3.2 Anaphors in Russian

Toldova, Azerkovich and Roytberg (2016) are of the view that although Russian poses additional challenges for anaphora resolution, it does, however, have rich morphology and free word order. Toldova et al. (2016) in the study “Error Analysis for Anaphora Resolution in Russian: New Challenging Issues for Anaphora Resolution Task in a Morphologically Rich Language”, found that; Russian reflexives (*sebjja*, *svoj*) allow long distance binding, when they occur in an infinite clause or within an NP, since PRO and the NP specifier are transparent for binding. Therefore, this results in the state of the art systems dealing with Russian finding the correct antecedent and the participants even ignoring reflexive pronouns in embedded infinitive clauses. For example, in (38)

(38) *[Ona]i vyezhhala redko i [?]i umela [PRO]i zastavit' vysoko tsenit' [svo]i poseschenija.*

([She]i came out rarely and [?]i knew, how to [PRO]i make others appreciate [her]i visits).

For example, in (38) the system did not find *svoj* in the infinitive clause, even though it has a unique antecedent in the same entity. In addition, Nedoluzhko (2016) asserts that the Russian language has a possessive reflexive *svoju* (his). Consider the following example in Russian:

(39) *Banker Lamberto Albuccani zastrelil svoju zhenu..., a potom [ØPRO] zastrelilsya sam.*

(The banker Lamberto Ambuccani shot his wife and then shot himself)

Example (39), has the proper name within a full NP (banker Lamberto Albuccani), a possessive reflexive *svoju* ‘his’, a zero pronoun as an agent of a finite verb *Zastrelilsya* (Nedoluzhko, 2016).

### 2.3.3 Anaphors in French

Labelle (2008) studies the Reflexive and Reciprocal *se*. In the study, Labelle (2008) expresses explicitly that the reflexive clitic *se* does not operate in the lexicon in French reflexive and reciprocal constructions (excluding middles and anti-causatives). Pica and Synder (1997) add that the reflexive clitic *se* is also related to the pronominal and

agreement systems. Moreover, Labelle (2008) is of the view that the approaches to reflexives, in which the reflexive clitic creates a one-place reflexive verb and or absorbs a case feature on the verb, is both semantically inadequate and syntactically too local. The reflexive clitic appears with verbs and predicates that are independently semantically reflexive. French reflexive or reciprocal constructions are semantically transitive.

- (40) Reflexive: *Luc se lave*.  
(Luc is washing himself).
- (41) Reciprocal: *Luc et Pierre se regardent*.  
(Luc and Pierre look at each other).

Labelle (2008) indicates that in the above examples (40) and (41), in the constructions of types, the subject is presumed and interpreted as expressing two thematic roles, often but not exclusively those of Agent and Patient/Theme of the verb. Pica and Synder (1997) hold the view that the French clitic *se* can be used in reflexive. Consider the following examples:

:

- (42) a. *Jean se lave*.  
(John washes himself).
- b. \* *La table se lave*.  
(The table washes itself).

Moreover, the examples in (43) illustrate when the reflexive clitic must have an agentive antecedent. According to Flambard (2017), agentive antecedent is an action carried out by a volitional animate agent.

- (43) a. *Jean se frappe*. (agentive)  
(John hits himself).
- b. ?? *Jean s'apprécie*. (non-agentive)  
(John likes himself).

### 2.3.4 Anaphors in Spanish

Carreiras and Gernsbacher (1992) examine the mechanisms involved in the assignment of an antecedent to an anaphoric element in Spanish. According to

Carreiras and Gernsbacher (ibid), pronouns must match their antecedents at least with respect to number and gender. Sensitivity to such constraints has been shown in several experiments. However, Carreiras and Gernsbacher (ibid) show that people have no difficulty comprehending a plural pronoun with an antecedent that is grammatically singular but conceptually plural. Additionally, in Spanish, all nouns are either masculine or feminine, even those that denote inanimate objects. For example:

(44) *E! libro.*  
(The book).

(45) *La mesa.*  
(The table).

From the above examples, example (44) indicates masculinity and (45) on the other hand, shows femininity (Carreiras & Gernsbacher, 1992). Egusquiza et al. (2014) posit that the effect of word frequency is a reliable phenomenon in many domains of language processing, it remains unclear whether frequency affects pronominal anaphoric resolution or not, and if yes, how. Egusquiza et al., (2014) evaluates this issue by means of two self-paced reading experiments. Native speakers of Spanish read sentences containing the anaphoric noun or pronoun at the subject syntactic position (Experiment 1) or at the object syntactic position (Experiment 2) while the antecedent of the anaphor is either a high-frequency or a low frequency word. It was concluded that nominal anaphors were read faster when referring to high-frequency than to low-frequency antecedents, and faster when referring to subjects than to objects, respectively. Clearly, pronoun reading times were unaffected by the frequency and by the syntactic position of the antecedent (Egusquiza et al., 2014).

## **2.4 ANAPHORS IN ASIAN LANGUAGES**

Mandarin is analysed as one of the Asian languages. The anaphors in Mandarin are explained below.

### **2.4.1 Anaphors in Mandarin**

Dillon, Wing-YeeChow and MingXiang (2016) studied the relationship between anaphor features and antecedent retrieval, comparing Mandarin *Ziji* and *Ta-Ziji*, where they investigated antecedent retrieval processes in sentence comprehension. This

was done by contrasting the real-time processing behaviour of two different reflexive anaphors in Mandarin Chinese. It was suggested that the anaphor's "morphological" structure somehow determines binding properties.

According to Dillon et al. (2016), *Ziji* requires an animate antecedent, and receives an interpretation analogous to English reflexive forms. *Ziji* does not bear any overt morphological features and so, may take antecedents regardless of their gender, number, or person features (Dillon et al., 2016). Given the possibility of long-distance binding, it is interesting to note that many experimental studies have shown that 'comprehenders' show a locality bias when processing *ziji*, preferring or more easily processing antecedents in their local clause over antecedents found in more distant clauses. For example:

(46) a. *Xiaolii rang Xiaozhangj buyao weizhuang ziji?i/j.*

(Xiaoli asked Xiaozhang not to disguise himself).

b. *Xiaolii rang Xiaozhangj buyao qianlian ziji/?j.*

(Xiaolia asked Xiaozhang not to embroil him).

From the above examples, it is observed that a larger positivity at *ziji* is when the semantics of the verb create a bias toward a long- distance reading of the reflexive, as in(46b), compared to when the meaning of the verb biased 'comprehenders' toward a local reading of the reflexive, as in(46a).

## 2.5 ROLE OF THEORY IN THE STUDY

The theory that was used in the study is Binding Theory, which essentially determines the interpretation and dissemination of pronouns and anaphors (Chomsky, 1981). In other words, the theory predicts that the pronoun and anaphors must complement each other in the sentence (Cook & Newson, 2007). According to Chomsky (1981), the prediction is that the pronoun must be free and anaphors are bound. Thus, an anaphor must be c-commanded and co-indexed by an antecedent. Additionally, Chomsky (1981) is of the view that anaphors are dependent nominal elements, which must have an internal antecedent in a sentence. In terms of Binding Theory, "α c-commands β of every node dominating α dominates β" (Cook & Newson, 2007). In

addition, anaphors can only be used when the position that A-binds is local (Black, 1998). Anaphors, unlike pronouns, must have an antecedent within the sentence. Anaphors are dependent nominal elements, which must have a sentence-internal antecedent (Cook & Newson, 2007).

In English, there are two kinds of anaphoric elements, namely: reflexives and reciprocals such as 'himself', 'herself', 'themselves', 'myself', 'ourselves' and 'yourself', and reciprocals such as 'each other'. Reflexives agree in person, number and gender with their antecedents. Reflexives cannot refer independently; they have to agree with the antecedent. The choice of the reflexive is determined by the grammatical features of its binder in the subject. Lack of agreement leads to ungrammaticality (Black, 1998).

Egusquiza et.al (2014) hold the view that Binding Theory has syntactic distribution among three classes of expressions, which are labelled as "anaphors", "pronominals", and "R-expressions" ("referential expressions"). Reflexive pronouns such as 'himself' and 'myself' are called "anaphors", while ordinary personal pronouns such as 'he', 'him' are called "pronominals" and are distinguished from anaphors. The term "anaphor" thus has a much narrower meaning in Chomsky's syntax than the way it has been used above (Egusquiza et al., 2014).

## **2.6 CONCLUSION**

In conclusion, the significance of previous researches gave the foundation to this research. This chapter discussed various languages and gave relevant examples related to the morpho-phonological properties of anaphors. The next chapter further indicates the methods that this research adopted.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

Normally, a research is conducted in order to discover and explore knowledge that persons have on a significant matter and gather it in order to interpret it in a more meaningful way. So, different methods are used in order to obtain the information that is relevant to the study. This chapter sketches out the methodology used in conducting this research. It outlines the most important components of the research methodology, which are; methodology, research design, population and sampling, data collection, data analysis, and quality criteria. Data collection and analysis are crucial components of this study.

#### **3.2 RESEARCH APPROACH**

Research approaches are the “plans and the procedures for research that span steps from broad assumptions to detailed methods of data collection, analysis, and interpretation” (Creswell, 1998: 32). Kubayi (2013) points out three known types of research approaches, namely; qualitative, quantitative, and mixed method research designs. This study adopted the qualitative research method. Hancock, Robinson and Bazley (2007) argue that the qualitative method is concerned with developing explanations on social phenomena. It aims to help people understand the social world in which they live. This means that qualitative research is suitable for this study as it focuses on the nature of anaphors. Hammond and Wellington (2013:83) maintain that a qualitative research method is meant for “exploring, explaining, uncovering phenomena and for generating new theoretical insights” on anaphors in Northern Sotho. The qualitative method is further used to analyse the nature of reflexives and reciprocals in Northern Sotho.

#### **3.3 RESEARCH DESIGN**

According to Charles and Mertler (2002), the research design discusses the general, detailed plan that reveals how a researcher plans to obtain, analyse, and interpret data. This study employed the descriptive research design. Studies focusing on



particular predictions, “with narration of facts and characteristics concerning individual, group or situation are all examples of descriptive research studies” (Makamu, 2017: 94). Descriptive research design is suitable for this study because it describes the nature of reflexives and reciprocals in Northern Sotho. Moreover, van Wyk (2009) indicates that the main aim of descriptive research is to answer the questions that are provided. The researcher described selected anaphors in Northern Sotho and how anaphors influence the morphology and phonology as stimulated by the aim of this research. Kumar (2011) explains descriptive research as a research method that describes the characteristics of the population or phenomenon that is being studied. This methodology focuses more on the ‘what’ of the research subject rather than the ‘why’ of the research subject. The researcher used Chomsky’s Binding Theory to describe what anaphors are in Northern Sotho and the influence of morphology and phonology on anaphors. According to Headlam and Macdonald (2008), the purpose of a descriptive research is to examine a phenomenon that is occurring at a specific place(s) and time.

### **3.3.1 Sampling and population**

Polit and Hunglar (1999) assert that population is the complete fix of individuals having some common characteristics as defined by the sampling criteria established for the study. The population of this study is language texts in Northern Sotho. The researcher sampled relevant Northern Sotho texts that contain anaphors. In qualitative research, sampling is the selection of specific sources from which data are collected to address the research objectives (Gentles, Charles, Ploeg & McKibbon, 2015). The study used purposive sampling. The purposive sampling technique, also called judgment sampling, is the deliberate choice of a participant due to the qualities the participant possesses (Sulaiman & Rukayya, 2016). In the case of this study, purposive sampling assisted the researcher to select nominal and verbal structures pinpointing reflexivity and reciprocity in Northern Sotho. The texts purposefully sampled are rich in vocabulary which served as the best resource for analysing anaphors.

### **3.3.2 Data collection**

This study used participant observation to collect data. According to Kawulich (2005), participant observation is the process that ensures the researcher learns about the

activities under study in a natural setting through observing and participating in those activities. Spradley (2016) regards 'observation' as exceptional in understanding patterns of behaviour and interaction. Kawulich (2005) believes that the aim of participant observation as a method, is to develop a holistic understanding of the phenomena under study that is as objective and accurate as possible. In the case of this study, the researcher's participation was evinced by gathering texts that constitute anaphors in Northern Sotho and observed how morphological and phonological processes bring about anaphors in Northern Sotho.

### **3.3.3 Data analysis**

Data analysis is the range of processes and procedures where one moves from the qualitative data that have been collected into some form of explanation, understanding or interpretation of the activities being investigated (Sunday, 2018). Once the data have been collected, the researcher needs to organise them in a more efficient and meaningful way (Kubayi, 2013). The researcher used Textual Analysis to analyse the data. According to Mackee (2003:3), Textual Analysis is a "way of gathering and analysing information in academic research". After the data have been collected through participant observation, they were interpreted and analysed in terms of how they change their behaviour and structure following the processes of morphology and phonology. The morpho-phonological changes in generated sentences were explained step-by-step. The derived structures were analysed using the Binding Theory.

## **3.4 QUALITY CRITERIA**

Creswell (1998) asserts that the trustworthiness of qualitative research can be conventional by using four strategies, namely: credibility, transferability, dependability and conformability.

### **3.4.1 Credibility**

The credibility of this study is based on the techniques highlighted by Guba and Lincoln (1989), as quoted by Bitsch (2005). The techniques that the researcher observed to ensure credibility are prolonged engagement and persistence observation,

respectively. To ensure the credibility of the study, the researcher acknowledged all the sources that were used in this study.

### **3.4.2 Transferability**

Transferability indicates that the theoretical knowledge obtained from research can be applied to other similar situations (Liamputtong, 2009 in Kubayi, 2013). The researcher compared and linked the study to previous studies that are similar to ensure transferability.

### **3.4.3 Conformability**

Conformability ensures that the findings and their interpretation can be confirmed by another study (Marshall & Rossman, 2006). The researcher should not provide information from his or her own personal perspective, but should instead link the findings with the data that was gathered (Creswell, 1998). To ensure conformability, the researcher followed the necessary steps of conducting research in order to attain reliable results.

### **3.4.4 Dependability**

The researcher confirmed dependability by applying objectivity rather than subjectivity by presenting the findings as they are (Kubayi, 2013). The researcher was not biased, but ensured that necessary measures were taken by analysing anaphors thoroughly.

## **3.5 CONCLUSION**

This chapter described the research methodology of the study. It focused on the research design and the research approach that were adopted in this study. The sampling and population of the study were also discussed. The data collection process and data analysis were presented. Observation and participation were highlighted as the methods employed of data collection in this study. Under data analysis, Textual Analysis was deemed suitable for this type of study. Quality criteria was also described and discussed in detail to show the importance of credibility, transferability, dependability and confirmability.

## CHAPTER 4

### PRESENTATION AND INTERPRETATION OF FINDINGS

#### 4.1 INTRODUCTION

This chapter presents and interprets the findings on the nature of the morpho-phonology of reflexives and reciprocals in Northern Sotho. The researcher analysed the data collected using participant observation in order to respond to the aim and objectives of the study. Firstly, morphological properties of anaphors are discussed. Secondly, the chapter discusses the properties of anaphors and lastly, the chapter concludes.

#### 4.2 MORPHOLOGICAL PROPERTIES OF ANAPHORS

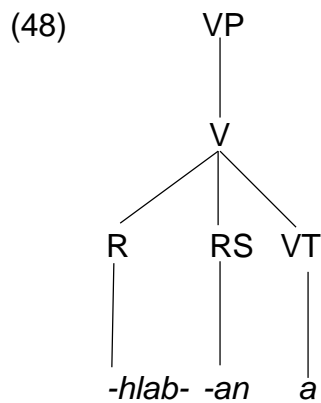
Öz (2014:83) defines morphology as “the study of the internal structure of words and the rules governing the formation of words in a language”. Schmid (2015) adds that morphology analyses words in terms of morphemes, which is the section of words that are holders of meanings. Morpheme, according to Lieber (2009), is the minimal unit of meaning or grammatical function that is used in forming a words. As previously indicated, anaphors in Northern Sotho are verbal. Thus, they are derived from verbs. The morphology for verbs in most Bantu languages are categorised into two, namely: prefixes and suffixes (Givon, 2010). This section will only look at how different anaphors influence the morphology of Northern Sotho. To achieve this, the morphology of reciprocals will be discussed, followed by reflexives.

##### 4.2.1 Morphology of reciprocal

Morphologically, the reciprocal is made up of a verb root, reciprocal suffix and a verbal terminative. This is the fundamental order for reciprocals in Northern Sotho as in the examples (47) and (48).

(47) *Hlab-an-a*

(Stab each other)



The tree diagram in (48) shows the structure of a reciprocal. The selected verb stem is *hlabana* (stab each other). The structure is the reciprocal anaphor which comes from the verb phrase. The verb phrase constitutes the verb. The verb then breaks into three parts, namely; the verb root (*-hlab-*), reciprocal suffix (*-an*) and the verbal terminative (*-a*). This implies that reciprocals in Northern Sotho are derived from the verbs. Hence, this results in the reciprocal being an anaphor, as indicated by the structure. The verbal suffix (*-an*) introduced the new meaning to the sentence. Thus, the morpheme of the word changes. The morpheme is the smallest unit of meanings (Schmid, 2015). In addition, these morphemes, of which seven affixes, have some influence on the syntactic structure of sentences while six suffixes merely add to the meaning of the verb (du Plessis, 2016), as illustrated in the example below:

(49) *Robalana*.

(Sleep with each other.)

(*-robal-*) + (*-an-*) + (*-a*)

(Root) + (reciprocal anaphor) + (verbal terminative)

The example above (49) shows that the word contains multiple morphemes. The first morpheme is the verb root *robal* which means 'to sleep', the second one is the reciprocal suffix *-an-* which means 'each other' and lastly, the terminative vowel *-a* which denotes the present tense. Thus, the reciprocal *robalana* is inflected from the verb stem *robala* (sleep). The reciprocal gives it a new meaning. Hence, it indicates that the action of sleeping is now reciprocated as indicated by the verbal suffix (*-an-*). Therefore, it can be said that the verbal suffix extends the meaning of the word. In

some instances, however, the reciprocal suffix occurs among other verbal affixes on the verb. The verb root carry a basic meaning from the derived word. It does not change under any morphological inflections. On the other hand, verb stem is the part of word that is in existence with other morphological inflections (Lehmann, 2008 ; Faaß and Bosch, 2019; Bosch and Pretorius, 2017). Du Plessis (2016) asserts that the combination of such affixes on the verbal root retains their fixed category and structures. This means that the affixes do not change their order when they are attached to the verb root. Thus, the affixes follow a certain pattern, as in the following examples:

(50) *Ratanang!* (Love each other!)

(51) *Gatanang!* (Step on each other.)

The structure of the above sentences (50) and (51) are as follows: (Root) + (reciprocal) + (verbal terminative) + (imperative mood). Whenever these affixes are attached to a verbal root, they maintain this order. The examples above (50) and (51) are the transformation of a simple transitive verb stem *rata* (love) and *gata* (step). Consequently, the order indicates that the reciprocal suffix (-*an-*) will always come before the imperative (-*a*) and imperative mood (-*ng*), and not vice versa.

#### 4.2.2 Morphology of reflexives

Similar to the reciprocal, the reflexive is an anaphor. It is also a type of an affix; in which it is the prefix. However, reflexive does not have a suffix, but a prefix as in example (52). The reflexive in Northern Sotho can be seen with the prefix *i-* attached to the verb root. This is the reflexive prefix that is used to indicate the reflexive anaphor in Northern Sotho. Consider the following examples:

(52) *Beth-a.*

(Beat.)

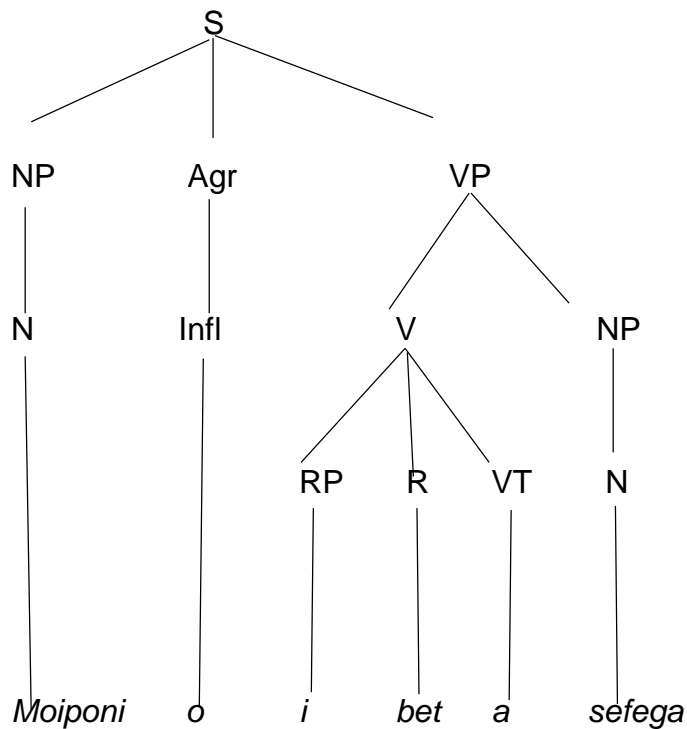
(53) *i-peth-a.*

(Beat each other.)

In the example (52), the verb indicates two syllables of the verb stem *betha*. These are the root -*bet-* and the verbal terminative -*a*. The example in (53) indicates three references which are the reflexive (indicated by *i-*), the verb root -*bet-* and the verbal

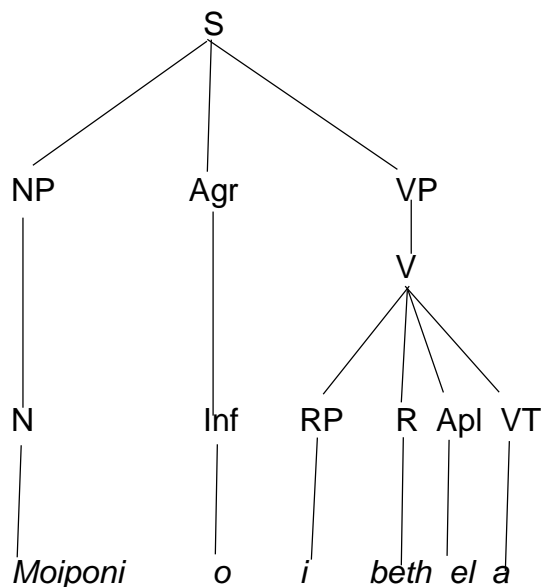
terminative, -a. The reflexive prefix indicates internal arguments. Mwesigwa (2005) indicates that internal argument is when the NP is realised within the VP. The tree diagram below illustrates this:

(54) *Moiponi o ipetha sefega*  
 (Moiponi is beating her chest)



The tree diagram in (7) indicates the internal argument which is found within the verb phrase. The VP phrase of the sentence is *iphetha sefega* (beat himself or herself on the chest). Within this VP, there is a NP *sefega* (chest). The NP, which is *sefega*, is in the form of a noun. The VP is made up of a V (Verb) and NP (Noun Phrase). The V constitutes the reflexive prefix (-i), the verb root of the verb stem *betha*, which is *-bet-*, and the verbal terminative (-a). Moreover, the reflexives go along with other affixes such as (-el-). In the example (55), the sentence adds the applicative affix *-el-* beside the reflexive prefix. This applicative affix does not introduce the new argument to the VP; it indicates the changed meaning of the sentence.

(55) *Moiponi o ipethela sefega.*  
 (Moiponi is beating herself on the chest.)



The structure below shows four affixes attached to the VP, including the verbal root. The first attachment is the verb prefix (i-), the verbal root (-*beth*-), the verbal suffix (-*el*-), and lastly, the terminative vowel (-*a*). Sometimes, when a verb is attached, the reflexive prefix in the sentence shift its meaning. In sentence (56), the meaning is 'Malose likes the night'. The sentence is an example of a simple transitive verb sentence. The verb in the sentence is *rata* (like/love). Consider the following example:

- (56) *Malose o [rata bošego].*  
 (Malose likes the night.)

The above sentence (56) shows the verb stem *rata* (likes/loves). Once the reflexive prefix *i-* is attached to the verb, the sentence indicates that the subject is acting upon the object. Consequently, it can be said that the subject is acting on itself. Thus, the subject and the object are to be bounded by the verb. The subject of the above sentence is 'Malose'. This shows that Malose likes himself. Nevertheless, when the



above sentence's verb in (56) is attached to the reflexive prefix, it changes its meaning as in (57):

(57) [*Malose o i-thata*] *bošego.*]

(Malose likes himself or herself during the night.)

Before the prefix *i-* was attached to the verb, the meaning of the sentence (56) was not the same as the one with the reflexive in (57). Sentence (57) which contains the reflexive indicates that Malose loves himself during the night. On the other hand, the sentence in (57) indicates that Malose loves the night. Therefore, this shows that the prefix *i-* shifts the meaning of the sentence.

### 4.3 PHONOLOGICAL PROPERTIES OF ANAPHORS

Phonology is the knowledge that enables speakers to produce meaningful utterances (Öz, 2014). Katamba (1989) adds that phonology shows how sounds are used differently to form words. This section looks at how different anaphors influence the phonology of Northern Sotho. Firstly, the phonology of the reciprocal anaphor is discussed, followed by the reflexive anaphor.

#### 4.3.1 Phonology of reciprocals

In reciprocals, the reciprocal suffix (-an-) does not affect the assimilation process. The assimilation process does not get affected by the reciprocity of the verb attached with the suffix. The following examples support this claim:

(58) *Mmatswale le ngwetši ba homotšana lešela.*

(Mother in law and the daughter in law are consoling each other.)

(59) *Banamedi ba a botšišana.*

(The passengers are questioning each other.)

In example (58), the reciprocal is *homotšana* (consoling each other). The root of the verb is *-homotš-*. The assimilation of the root verb did not change in any way when the reciprocal suffix (-an-) was attached. Assimilation is the shifting of a speech sound in order to make it more similar to other neighbouring speech sounds. When the reciprocal speech sound is attached, the speech sound of the reciprocal retains its initial speech sound as in *homotšana* (consoling each other) in (58). The initial speech

sound is [tš']. This speech sound is still retained even after the reciprocal suffix (-an-) is attached.

### 4.3 The phonology of reflexives

Phonologically, when the *i-* which converts a verb to be a reflexive is attached, the speech sound which was not plosive, shifts to being a plossivised speech sound. This assimilation process occurs because of the reciprocal prefix. For example:

- (60) *Hlagola* > *i-tlhagola*.  
(weed) > (weed himself or herself.)  
[hl] > [tlh]

The speech sounds [hl] and [tlh] may be pronounced the same, but they are not the same. [hl] is not a plosive speech sound whereas [tlh] is a plosive speech sound. According to Nokaneng (1995), when *i-* is inserted before *hl*, it causes the speech sound to be plosive, which makes the speech sound to become *tlh*. Hence, *hlagola* shifts to be *itlhagola*. Example (60) indicates the following changes:

- (1) *Ripa* > *ithipa*.  
(Cut) > (cut itself)  
[r] > [th]

The speech sound [r], according to Katamba (1996), is an alveolar, voiced and fricative speech sound. This speech sound then shifts to [th] in *ithipa* which is an alveolus, voiced and plosive when the reflexive prefix *i-* is inserted to the root of the verb. In Northern Sotho, the speech sound that comes after *i-* must be plosive, hence, when the initial speech sound is not plosive, it changes to become plosive. However, the speech sound that is plosive before the attachment of the reflexive plosive remains the same, as evinced in the example below:

- (61) *Malose o a kwata*.  
(Malose is angry.)  
(62) *Molose o a ikwatiša*.  
(Malose is causing himself to be angry.)

*Kwatiša* > *ikwatiša*

(Cause to be angry) > (Cause to be angry at him/herself.)

In example (61), the verb stem is *kwata*. The initial speech sound for the verb is [k] which is velar speech sound and is plosive. Therefore, since the speech sound is plosive, there is no need for the speech sound to shift for the speech sound which is plosive when *i-* is inserted. Hence, the speech sound remains the same. As indicated before, the speech sound that is not plossivised shifts to become a speech sound that is plossivised after the reflexive prefix is inserted. It should be highlighted that the speech sound must be related to the initial speech sound. For instance, in the sentence (63) below, [f] is a labial speech sound that is non-fricative and voiceless. The plosive speech sound should be viewed likewise. The nearby plosive speech sound to [f] is [ph] as in (64), which is labial speech sound that is non-fricative and voiced. The speech sounds are related, the difference between them is that [f] is not plosive whereas [ph] is plosive; [f] is fricative and [ph] is non-fricative.

(63) *John o a foka.*  
(John irritates.)

(64) *John o a iphoka.*  
(John is irritating himself.)

#### 4.4 PROPERTIES OF ANAPHORS

In Northern Sotho, anaphors take the form of verbs. This makes anaphors verbal. There are two types of anaphors in Northern Sotho, namely; reflexives and reciprocals.

##### 4.4.1 Properties of reflexives

Reflexives in Northern Sotho are verbal and take place when the action as expressed by the verb reflects the subject of the sentence. In Northern Sotho, the reflexive is indicated by reflexive prefix *i-* on the verb. Consider the following example:

(65) *Kganya o a kgala.*  
(Kganya is reprimanding.)

In the sentence (65) above, the verb stem *kgala* (reprimand) indicates that the subject 'Kganya' is reprimanding someone. The third person subject, 'Kganya', indicates that

the entity being reprimanded is outside the sentence. In the sentence (65) below, the verb stem *kgala* (*reprimand*) is transformed into the verbal anaphor *ikgala* (reprimand oneself). This is indicated by the reflexive *i-* which is attached to the verb *kgala* to become *ikgala*.

(66) *Kganya o a ikgala.*

(Kganya reprimands himself/herself.)

There are two structures of every sentence of a language: surface and deep structures. The following shows the two structures of the sentence *Kganya o a ikgala* (Kganya reprimands himself/herself).

(67) **Surface structure:** *Kganya o a ikgala.*

(Kganya reprimands himself/herself.)

(68) **Deep structure:** *Kganya o kgala Kganya.*

(Kganya reprimands Kganya.)

From the surface structure in example (67) above, it is clear that the verb stem *kgala* is transformed into the verbal anaphor *ikgala*. It is the prefix *i-* which indicates that the verb is anaphoric or reflexive. It refers to the subject 'Kganya'. The deep structure in example (68) above indicates the underlying structure of the surface structure in (67). The underlying structure is the meaning component of the sentence. It represents the meaning of the sentence. The deep structure states that the subject, 'Kganya', is reprimanding the object, 'Kganya'. This means that the subject is acting upon the object. However, since the two are one and the same entity, one can say that in truth, the subject is acting on itself. In fact, the surface structure in (67) shows that, when one speaks reflexively, the object, 'Kganya', is replaced by the anaphoric verb, *ikgala*. From this, one can conclude that while the antecedent is expressed by the NP (e.g. Kganya) in the subject position, the anaphor is expressed by the verb. The Binding Theory demonstrates that the reciprocal is on the NP at the object position. However, in Northern Sotho, the anaphor is on the verb. This is clearly demonstrated in the surface structure in (67) above. Additionally, there are some instances where attaching the reflexive prefix does not make sense. This means that after inserting the reflexive prefix, the sentence which initially made sense will not make sense. Consider the transitive verb stem '*hlagola*' in the sentence below:

(69) (a) *Monna o hlagola lebala.*

(The man weeds the yard.)

(b) \* *Monna o i-tlhagola lebala.*

(The man weeds himself the ground.)

Sentence (69a) indicates a simple sentence in Northern Sotho which follows an SVO (subject-verb-object). *Monna* is the subject, *hlagola* is the verb and *lebala* is the object, respectively. From the above example, the verb becomes reflexive when the prefix *i-* is inserted to the verb. In sentence (69b), once the reflexive prefix is attached to the verb *tlhagola*, it transforms into *itlhagola* (*weed himself or herself*). However, in Northern Sotho, this becomes nonsensical. This means that the sentence does not have logic because there is no way one can weed himself or herself. The sentence in (69b) is syntactically correct but it is nonsensical.

(70) **Deep structure**                      *Monna o hlagola lebala la monna.*

(A man weeds the man yard.)

(71) **Surface structure**                *Monna o itlhagolela lebala.*

(The man weeds the yard for himself.)

The deep structure in (70) indicates that the man is weeding for himself, which makes sense. The underlying structure of the surface structure in (70) shows that a man (*monna*) is weeding for a man (*monna*). The word *monna* is repeated on the sentence. In (71), the verb *itlhagolela* shows that when one speaks reflexively, *monna* is replaced by the anaphoric verb, *i-tlhagolela* (*weed on behalf of himself or herself*), where the reflexive prefix and the applicative affix *-el-* are then introduced to the verb stem *hlagola* as in *i-tlhago-lel-a*. The applicative extension *-el-*, in this instance, refers to the action carried out on behalf of someone or something (Mwesigwa, 2005). Therefore, the sentence now indicates that the action is done on *monna* by *monna*. It is important to note some action verb stems cannot use the reflexive only; they need other verbal roots such as the causative affix to make sense. The causative affix indicates to cause to do something (Mwesigwa, 2005). Look at the following examples:

(72) (a) *Fentše o a hlapa.*

(Fentše is bathing.)

(73) **Surface structure**

*Fentše o a itlhapiša.*

(Fentse is bathing herself.)

Sentence (72) means 'Fentše' is bathing himself or herself as indicated by *i-* on the verb in *i-tlhapiša* (to bath himself or herself). The verb in example (73) also introduces the affix *-iš-* as in *itlhap-iš-a*. This verb root is known as causative in Northern Sotho. It means Fentše is causing herself or himself to bath. This is better explained when looking at the deep structure of *Fentše o a itlhapiša* (Fentse is bathing herself) below:

(74) **Deep structure**

*Fentše o dira gore Fentše a hlape.*

(Fentše is causing Fentše to bath Fentše.)

The deep structure in (74) reveals that the subject, Fentše, is the cause of Fentše bathing. This means that the verb is causing the subject to act on the object. However, since the two are one and the same entity, one can say that, the subject is acting on itself and causing itself to react. In fact, the surface structure in (73) shows that, when one speaks reflexively and causatively, the object, Fentše, is replaced by the anaphoric verb, *itlhapiša*. From this, one can conclude that while the antecedent is expressed by the NP which is Fentše, which is in the subject position, the anaphor is expressed by the verb. This is clearly demonstrated in surface structure in (73) above.

#### 4.4.2 Properties of Reciprocals

Reciprocals in Northern Sotho are verbal. Reciprocals take place when the action as expressed by the verb indicates the reciprocity on both the participants (du Plessis, 2016). In Northern Sotho, the reciprocal is indicated by reflexive suffix *-an-* on the verb (Nokaneng, 1995). Only action verbs are considered in this section. The following example indicates the action of reciprocal verb:

(75) **Surface structure**

*Sekhwibidu le Lesiba ba tlotšana ka maraga.*

(Sekhwibidu and Lesiba are mudding each other.)

(76) **Deep structure**

*Sekhwibidu o tlotša Lesiba maraga le Lesiba o tlotša Sekhwibidu maraga).*

(Sekhwibidu is mudding Lesiba and Lesiba is mudding Sekhwibedu.)

From the surface structure in (75) above, there is the reciprocal *tlotšana* (mudding). The verb stem was *tlotša* (mud). After the reciprocal, the suffix *-an-* transformed the verb stem into the anaphor *tlotšana*. It is the suffix *-an-* which indicates that the verb is anaphoric or reciprocal. It refers to both the participants in the subject, Sekhwibidu and Lesiba. The deep structure or underlying structure in (76) above indicates the meaning of the surface structure in (75). The deep structure shows that the subject(s), Sekhwibidu and Lesiba, are mudding each other (reciprocating). This means that Sekhwibidu and Lesiba share the same action. However, since the two are sharing the same entity, it can be said that, Sekhwibidu and Lesiba are reciprocating the action. In fact, the surface structure in (75) shows that reciprocity is expressed by the anaphoric verb, *hlatswetšana*. From this, one can conclude that while the antecedent is expressed by the NP (for instance Sekhwibidu and Lesiba) in the subject position, the anaphor is expressed by the verb. This is clearly demonstrated in surface structure in (76) above.

It should be highlighted that the subject must be in a plural form for reciprocity to take place, as in (75). The sentence must always indicate more than one participant. This means, it must be shown that two or more participants share the same sentiment. Berg (2018) supports this claim by indicating that in Sesotho, the reciprocal extension *-an-* is suffixed to a verb to express the meaning of ‘each other’ or ‘one another’ and suggests at least two participants should be available. The reason is indicated by du Plessis (2016) who says that the subjects of reciprocal verbs need to be in the plural because the meaning of the reciprocal refers to a mutual relationship. The example below affirms this view:

- |                               |  |
|-------------------------------|--|
| (77) <b>Surface Structure</b> | <i>Ba bethana ka maswika.</i><br>(They beat each other with stones.)   |
| (78) <b>Deep structure</b>    | <i>Ba ba betha ba ka maswika le ba ba betha ba ka maswika.</i><br><br>(They beat these ones with stone and these ones also beat these ones with stones.) |

In sentence (77), the subject is in the form of the pronoun *ba* (they). In Northern Sotho, a pronoun can start a sentence, as observed from the above sentence. The pronoun is in the form of a subject concord. The subject concord, *ba* (they), is in a plural form, indicating more than one participant. The singular form for the subject concord is *o*. The reciprocal of the above sentence is designated by inserting *-an-* to the verb root *-beth-*. According to the Binding Theory, the pronoun and anaphors must complement each other in the sentence (Cook & Newson, 2007). Therefore, the pronoun *ba* (they) complements the anaphor, which is in the verbal form of *bethana* (beat each other). The reciprocal is also applicable on non-human things such as animals. The following example confirms this:

- (79) **Surface structure**                      *Mpša le katse di a lomana.*  
(The dog and the cat are biting each other.)
- (80) **Deep structure**                        *Mpša e loma katse le katse e loma mpša.*  
(The dog is biting the cat and the cat is biting the dog.)

The above sentence illustrates that the verb *lomana* is a reciprocal. Before the reciprocal suffix *-an-* was attached in the above sentence (79), the verb stem was *loma*. This sentence contains two participants in the subject, namely; *mpša* (dog) and *katse* (cat). The reciprocal suffix shows that the action takes place simultaneously. This means that 'the dog' and 'the cat' do not take turns in biting each other. The subject is made up of animate objects or [+animate]. Therefore, it can be concluded that the reciprocal is also applicable to animate entities such as animals. The reciprocals can also be seen in inanimate objects, as illustrated in the example below:

- (81) *Maswika a kgomana.*  
(Stones touch each other.)

The above example (81) shows two inanimate objects on the subject. The subject of the above sentence is *maswika* (stones). The inanimate are non-living objects, i.e. stones. The above sentence makes sense. Therefore, the reciprocal can be applied to both animate and inanimate entities.



## **4.5 CONCLUSION**

In summary, this chapter indicated the occurrences of reciprocal and reflexive verbs in Northern Sotho. All the examples were randomly selected by the researcher. Selected examples were executed in the morphology and phonology of anaphors. This chapter showed that the reciprocal does not change the assimilation of the verbal root whereas the verbal reflexives change the verbal root. Overall, all the anaphors in Northern Sotho are verbal.

## CHAPTER 5

### FINDINGS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

#### 5.1 INTRODUCTION

This chapter presents the findings, conclusions, limitations and recommendations of the study. Firstly, this chapter discusses the findings. Secondly, the chapter looks at the limitations of the study. Thirdly, the conclusions of the study are presented, lastly, the recommendations of the study are provided.

#### 5.2 FINDINGS

The purpose of this study was to analyse the morphological and phonological processes of anaphors in Northern Sotho. These findings of this study are presented in light of the following objectives: to identify different types of anaphoric constructions in Northern Sotho; to analyse the phonology of anaphors in Northern Sotho; to examine the morphology of anaphors in Northern Sotho; and to determine the relevance of Binding Theory in the analysis of anaphors in Northern Sotho.

The first objective was to identify different types of anaphoric constructions in Northern Sotho. The first finding of the study is that anaphors can be identified in Northern Sotho. There are two types of anaphors, namely: reciprocals and reflexives. The study found that anaphors in Northern Sotho can be identified by affixes on the verb. The prefix *-i* indicates the reflexive anaphor and the suffix *-an-* indicates the reciprocal anaphor.

The study found that reflexives in Northern Sotho take a form of verbs. Thus, Northern Sotho has reflexives. These reflexives can be identified by the prefix anaphor *i-* on the verbal root as in *ipona* (see herself or himself). The verb stem was *bona* and when the prefix anaphor *i-* was attached to it, it transformed into *ipona*. The basic reflexive is made up of the anaphoric prefix, the verb root and the terminative vowel. For example, the verb *ipona* is made up of the anaphor prefix *-i*, the verb root is *-bon-* and the terminative vowel *-a*. The study further found that anaphors take the form of reciprocals in Northern Sotho. Similar to reflexives, reciprocals take the form of verbs. This means that Northern Sotho has reciprocals. The reciprocal suffix can be identified by the suffix *-ana* as in *nyobana* (to have sex with each other). The verb stem was *nyoba* (sex), but when the reciprocal suffix *-ana* was attached to the verb root –nyob-

it transformed into *nyobana*. The reciprocal is made up of the verbal root, the anaphoric suffix and the terminative vowel *-a*. The verb *nyobana* is made up of the verbal root *-nyob-*, the anaphor suffix *-an-* and the terminative vowel (*-a*).

The second objective was to analyse the phonology of anaphors in Northern Sotho. The study found that reciprocals do not change or influence the phonology of the verb. For instance, in the verb *roga stem* (insult), when the reciprocal suffix *-an-* is attached to the verb, it becomes *rogana* (insult each other). However, the assimilation process does not get affected. Another finding, however, is that reflexives change the phonology of the verb. When the reflexive prefix *-i* is attached to the root verb, it sometimes changes the assimilation process as in *ithoga* (to insult oneself). Before the verb *ithoga* was transformed into the reflexive, it was *roga* (insult). The speech sound that was not a plosive [r] shifts to the speech sound that is plosive [th]. The initial speech sound and the speech sound that was shifted for have related assimilations. For instance, both speech sounds [r] and [th] are both alveolus speech sounds.

Another finding relates to the morphology of anaphors in Northern Sotho. The study found that the two anaphors are derived from verbs. As previously indicated, anaphors are identified by specific affixes. For the reciprocal, the affix is the suffix *-an-* and for reflexives, the prefix *i*. Lastly, the study aimed to determine the relevance of Binding Theory on anaphors in Northern Sotho. Accordingly, in Northern Sotho the antecedent is expressed by the NP in the subject position and the anaphor is expressed by the verb. Binding Theory demonstrates that the anaphor takes the form of NP in the object position. However, in Northern Sotho the anaphor takes the form of a verb.

### **5.3 CONCLUSIONS**

The study's findings indicate that there are two types of anaphors, namely: reciprocals and reflexives. In Northern Sotho, anaphors are in the form of verbs. Furthermore, the reciprocals in Northern Sotho do not change the speech sound of the verb. On the other hand, some reflexives change the assimilation process on the verb. The basic structure of the reciprocal is the root verb, the reciprocal suffix (*-an-*) plus the terminative vowel (*-a*), i.e. *bonana*, which yields this structure: *bon + an + a*. Moreover, the basic structure of the reflexive is the reflexive prefix (*i-*) + verb root + terminative

vowel, as in *ipona*, where the structure will be as follows: *i + bon + a* Therefore, in terms of anaphors, the verb plays a crucial role in Northern Sotho.

#### **5.4 LIMITATIONS OF THE STUDY**

Firstly, the study focused only on the morphology and phonology of anaphors in Northern Sotho. The study should have also focused on the semantics and syntax. The syntax would have given a fuller picture of how sentences are used with anaphors. On the other hand, semantics would have added the meaning component to the anaphors in greater detail. Secondly, the study discussed Northern Sotho anaphors rather than anaphors as they relate to all Sotho languages such as Setswana and Sesotho. Other Sotho languages would have given the study a comparative latitude with anaphors in the aforementioned languages. Lastly, this study did not focus on all kinds of verbs. Most of the examples provided in this study were action verbs. Other kinds of verbs such as break verbs and state verbs did not receive attention. It would have been interesting to see how other verbs behave when they are transformed into reflexives or reciprocals.

#### **5.5 RECOMMENDATIONS**

This section provides the recommendations of the study. This study found that it is possible to identify anaphors in Northern Sotho. This being said, the study recommends that other Sotho languages should be looked into in order to identify anaphors. Additionally, the study found that there are reflexive anaphors and reciprocal anaphors in one of the Bantu languages i.e., Northern Sotho. Therefore, this study recommends a comparative study on anaphors among other Bantu languages. Among the findings of this study was the structure of reflexives and reciprocals in Northern Sotho. The study found that in Northern Sotho, anaphors end with a terminal vowel. Thus, the study recommends that a detailed research should be conducted focusing on the relationship between anaphors and the terminal vowel. Furthermore, the study found that the prefix reflexive (*i-*) affects the assimilation process on the verb. As a result, the study recommends that a detailed study on assimilation process on anaphors be conducted.

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