Diteng tsa ditlhopha tsa maina a Bantu: Ntlhathakanelo e le mo Setswaneng

'The Semantics of Bantu Noun Classes: A Focus on Setswana'

A thesis submitted in fulfilment of the
requirements for the degree of

Master of Arts

at

Rhodes University

by

Oboitshepo Tladi

January 2020

Supervisor: Professor Silvester Ron Simango

Abstract

The present study investigated the semantic classification of the Setswana noun class system. This enquiry falls under the broad area of the noun classification system in Bantu languages, psycholinguistics and lexicogrpahy. Specifically it explores the basis of noun classification in Setswana making indications that Setswana noun classification is based on a partial semantic classification. Data for the study was drawn from the Setswana Oxford Dictionary. Sixty Setswana nouns, from class 1, 3, 5, and 7, were selected and analysed and then grouped into semantic categories (i.e., PERSON, DEROGATION, TRANSPORATION and so forth). The study adopted Kgukutli's (1994) semantic classification in performing the dictionary analysis. The rest of the data was drawn from the intuitions of thirty-nine contemporary speakers of Setswana, with the aid of a linguistic test which was fashioned according to Selvik's (2001) psycholinguistic test. The language test required participants to match the predetermined Setswana definitions with hypothetical Setswana nouns with selected class prefixes attached to them. The results from the empirical study showed that speakers were associating prefixes to certain semantic values, suggesting that each noun class had specific semantic content that was unique to that class. The semantic categories created through the dictionary analysis were then compared to those given by the thirty-nine Setswana speakers, to analyse whether there were any similaritires in the semantic classification of the noun classes. The findings of the dictionary analysis and linguistic test revealed that there were certain semantic characteristics that each class was associated with that seemed to be unique to the class. However, there were various semantic overlaps in the semantic categories associated with the different noun classes, which brings into question whether a semantic classification is viable in the classing of nouns. The study suggests that prior classification of Setswana nouns are not precise enough and that additional semantic categories are needed to offer a more precise classification of nouns in this language.

CONTENTS

Acknowledgements

Many thanks goes to my parents, Seaitsiwe Seth and Jelle Annah Tladi for their unwavering support. Thank you mom and dad for giving me life and continuing to speak life over me. Thank you to Tshiamo and Ntsiki Tladi. This thesis is dedicated to Onalenna and Zibentle Tladi, my angels, you can do anything you put your mind to. In no particular order; thank you to my sisters, Bonolo Makgale, Diana Musoni, Ditebogo Khanyisile Dwaba, Nkosazana Hlalethwa, Nombasa Maqoko, Ruvimbo Mbira, Simphiwe Nkasela and Zipho Gum for simply being the epitome of love and sisterhood. I also want to thank my supervisor, Silvester Ron Simango, for his guidance and for seeing the potential in me. Last but not least, thank you to my Lord and Saviour, Jesus Christ; 'without You Lord, I do not know where I would be. This is all for Your glory, Yours alone!'

Abbreviations

AGR - Agreement

APP – Applicative

Aspect – Aspect

C - Complementiser

CL – Class (features include Number, Gender and Person)

CP – Complementiser Phrase

DEM – Demonstrative

F – Female

FOC – Focus

FV- Final Vowel

I - Inflection

IP – Inflectional Phrase

M – Male

N – Noun

NP – Noun Phrase

OM – Object Marker

PAST/PST – Past Tense

PL - Plural

PredP – Predicate Phrase

PRES – Present Tense

REL – Relative Clause

SG – Singular

SM – Subject Marker

Spec – Specifier

t - trace

TNS - Tense

TOP – Topic

CHAPTER 1
Introduction

1. Area of investigation

Many languages in the world have systems by which they place nouns into different categories which determine the kind of agreement those nouns share with their modifiers. This phenomenon is commonly referred to as grammatical gender (Trask 2003; Meinhof 1899; Guthrie 1971; Givón 1970). In languages that mark grammatical gender, every noun is assigned to a specific class. Grammatical gender differs from biological gender; in that it is not based on a feminine/masculine distinction although some parallels can be made between the two. However some languages like French, Spanish, and German distinguish between 'feminine', 'masculine', and 'neuter' nouns. In French a noun's gender is not always predictable from its form. However, there are some broad patterns that appear, like nouns ending in *-e* tend to be feminine, while the rest of the nouns are masculine. For example, a *chanteur* (singer) is masculine, while *cantatric**e*** (opera singer) or *chanteuse* (pop singer) are feminine. In some cases, when two nouns are identical in form, gender is marked through the neighbouring words, in this case, through determiners. Hence *un catholique* (Catholic man) is masculine and *une catholique* (Catholic woman) is feminine (Comrie 1999). Other languages, as will be shown below, have more complex and subtle grammatical gender systems that go beyond the feminine-masculine distinction in noun classification (Comrie 1999; Fasold & Connor-Linton 2006). Bantu languages are a good example of languages with complex grammatical gender systems.

The Bantu noun class system is more complex and has no relation to feminine-masculine distinction (Canonici 1991; Carsten 1993; Comrie 1999; Fasold & Connor-Linton 2006; Demuth 1988 & 2000); instead nouns are grouped into a variety of classes, which are identified by noun class numbers. Some of these classes make a singular/plural distinction in a pairwise fashion. Interestingly, other classes do not make a singular-plural distinction (Meinhof 1899; Guthrie 1971; Givón 1970). It is worth pointing out that even within classes that make this distinction one finds irregularities in the system, for instance, some nouns are morphologically plural in their assignment (such as *metsi* 'water' in Setswana class 4) but do not have a corresponding singular counterpart (e.g. from class 3 **motsi*). Similarly other nouns have singular forms without a corresponding plural form. For example, *Setswana*

‘Setswana language and culture’ is in class 7, and does not have a plural counterpart in class 8 **Ditswana*.

As hinted above, a language with a grammatical gender system requires the noun to agree with the verb and other modifiers in noun class. The Setswana data in (1) and (2) illustrate how nouns may agree with verbs and adjectives:

1. *Ba*-na *ba*-rata *di*-jo
   CL2-child CL2SM-love CL10-food
   ‘Children love food’

2. *Mo*-sadi o *mo*-pila
   CL1-woman CL1SM-beautiful
   ‘The beautiful woman’

In (1) the subject noun *ba-na* ‘children’, which belongs to class 2 is in agreement with the verb *ba-rata* ‘love’. While in (2) the noun *mo-sadi* ‘woman’ and the adjective *mo-pila* ‘beautiful’ both receive the class 1 prefix in order to demonstrate their agreement.

The structure of the Bantu noun typically consists of a prefix and a stem, as shown above in (1) and (2). It should be noted that the same stem can take on certain other prefixes. For example, in (1) the stem *-ana* (child) can be prefixed with *mo-ana* (ngwana) ‘child’, or *ba-ana* (*bana*) ‘children’. In (2) the stem *-sadi* (woman) can be prefixed with *mo-sadi* ‘woman’ from class 1, *ba-sadi* ‘women’ class 2, *se-sadi* ‘womanly’ from class 7, and *bo-sadi* ‘womanhood’ from class 14. This shows that beyond the singular/plural distinction, the same stem can accommodate prefixes from different noun classes. It has been argued (see Carstens 1993) that the stem attached to the prefix constitutes the meaning of the noun. However, the fact that the meaning of the word changes according to the kind of prefix attached to the stem, suggests that there is more to the prefix than just distinguishing number. It suggests that noun class prefixes carry meaning. In other words, it seems as though noun class prefixes encode some semantic values which speakers may consciously or subconsciously be aware of. The study suggests that prefixes do in fact carry meaning beyond an abstract form. It is hoped that this study will contribute to the body of knowledge related to Setswana noun class prefixes and address this knowledge gap in regard to their semantic content.

The study investigates the semantic basis for noun classification in the Bantu noun system by paying specific attention to Setswana. It hypothesises that instead of noun classes having grammatical gender- which in essence is meaning at an abstract level, they in fact carry some concrete semantic meaning. This is done, in part, by testing the intuitions of Setswana native speakers in regards to the semantic associations they attach to selected noun classes.

1.1 Background on Setswana

Setswana is a Bantu language spoken in Botswana, South Africa, Zimbabwe, and Namibia, and is both the official language of and is spoken most widely in Botswana, by 80% of its population. In South Africa the majority of Setswana speakers are found in Gauteng, Northern Cape, and North West provinces. In the North West particularly, the language is spoken according to the different existing Setswana tribes: Bakgatla, Bakwena, Barolong, Batlhaping, Bafokeng, Bahurutshe, to name a few (Janson & Tsonope 1991). Guthrie (1967) locates Setswana in Zone S.30, known as the Sotho-Tswana branch of Bantu.

The language was first described by a German traveller known as Lichenstein (1930). After encountering the language in Bostwana, he termed it 'Beetjuana' and believed that it was a dialect of the Xhosa language. The first significant work on the language was by Moffat (1826). Later Casalis (1841-1882) published the first grammar of Setswana, which distinguished it as a separate language from Southern Sotho languages. Along the years literature on Setswana has ranged from Setswana grammar (see Crisp 1905; Cole 1955; Sandilands 1953; Mokone 2000), noun classification (Ntsime & Kruger 1991; Rakgokong 1986; Setshedi 1980), syntax of the Setswana noun phrase (Letsholo & Matlhaku 2014) and semantic classification (see Kgukutli 1994; Selvik 2001).

1.1.1 Setswana Noun Class System

The Setswana noun class system consists of 16 active classes: these are class 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18. The classes that make singular-plural distinctions are classes 1/2, 3/4, 5/6, 7/8, and 9/10. Class 15, which consists of the gerund class, and classes 16, 17, 18, which consist of locatives, have no singular-plural distinction (Welmers 1973; Demuth 1988). The locative classes typically convey spatial relations associated with the relevant nouns: Class 16 /*fa*-/ meaning 'on', 17 /*ko*-/ meaning 'at', and 18 /*mo*-/ meaning

'here'. It is worth pointing out that in terms of structure the locatives typically take on nouns which already have noun prefixes, which means that nouns in a locative class have two noun prefixes as seen in (3) below:

3. *Ko* *mo*-rago
   CL17 CL3-back
   'At the back'

There are various views concerning the basis for noun classification in Setswana and Bantu languages more broadly. One school of thought states that noun classes are only morphological categories (see Hoffman 1963), this means that nouns belonging to the same class merely represent a set of nouns sharing the same agreement features. In other words, it is the agreement features which form the basis for grouping nouns in the same class. The other school of thought claims that noun classes carry partial semantic correlates (Welmers 1973), which means that nouns belonging to the same class represent a set of nouns sharing a core semantic feature or similar semantic features that are metaphorically connected to the core. The present study takes a closer look at both claims, in attempts to add to the ongoing debate around this topic. This enquiry falls under the broad area of noun classification system in Bantu languages, psycholinguistics and lexicogrpahy.

1.2 Background issues

The debate on whether nouns are classified solely on the basis of their grammatical form (i.e morphological features) or on semantic content has a long history. Leakey (1959) states that the noun class system of Bantu languages is ranked along an evaluative dimension, suggesting that there is some form of semantic hierarchy on which noun classification is made. The highest class, being class 1 is associated with nouns that denote entities that are ranked higher in the hierarchy and lower numbers are associated with nouns that denote lower ranked entities. On the basis of Kikuyu, a language spoken in East Africa, Leakey (1959) describes this ranking as a system of categories of spirit or being. The highest category of spirit, being class 1/2, the *person* class. The next in degree of spiritual importance are nouns in class 3/4, characterized as large trees and plants, epidemic diseases regarded as being spirit-borne, animals and reptiles which would normally be in a lower class but have

been ‘promoted’. The remaining classes are therefore given semantic definitions, by the means of class shifting (promoting and demoting).

This notion of class shifting makes it somewhat possible to ‘explain’ the apparent variability of semantic assignment. Leakey (1959) proposes that an investigator unfamiliar with the language may not be able to conclude just by some feature, be it shape, biological taxonomy, or size that the noun is found in an exalted class. So, although nouns are also assigned to classes according to their quality of being, this assignment may be largely founded on an evaluation which is semantically and even culturally based. For example, the word *eye* in Kikuyu is elevated to class 5/6, a class known for its association with *objects* or *beings with supernatural significance*. This is because in the Kikuyu culture, *eye* is associated with its magical potential such as the power of the ‘evil eye’. Interestingly, in related languages (e.g., Setswana, isiXhosa, Chichewa) ‘eye’ is also assigned to class 5/6, however no similar claims have been made about this association in these languages. Questions can thus be raised as to whether there is a cultural basis for assigning nouns into different classes for other languages including Sestwana.

Burton & Kirk (1976), also question the relation between real world phenomena and syntactic categories. They suggest that if real world phenomena do actually correspond consistently with the categories, it should be concluded that the noun class does in fact carry semantic value. The meaning of the class would then be defined by the observation patterns of the spreading of words across these categories. This is what Kgukutli (1994) attempts in her investigation. She states that each noun class consists of nouns that share certain semantic features. Although semantic overlaps between different classes are found, there are certain semantic characteristics found in each class, and due to the stem, may not be found in any other. These characteristics constitute the ‘core meaning’ of the class. Each class’s core meaning is hidden and masked by a bulk of non-typical nouns. She argues that a mere listing of all the nouns that appear in a class will not uncover its core meaning; what is needed is comparing and contrasting the different classes. The hypothesis is that the core meaning of a class is made clear in those cases where the same noun stem is used in different classes. For example the noun stem /-*nna*/ can be found in /*mo*-/ class 1 *mo-nna ‘man’* and */ba-/ class 2 ba-nna* ‘men’, and class 7 *se-nna* ‘manly’. On the basis of this, the core meaning of class 1/2 is ‘person’, and for class 7 it is ‘typical behaviour’.

1.3 Problem Statement

There is no dispute that nouns belonging to the same class share the same agreement features and can be thought of as members of the same morphological class. At the same time there are indications that beyond sharing common morphological properties, nouns of a given class share certain semantic features. More so, it seems that speakers of a given language tend to associate real life phenomena to specifc class prefixes. Therefore, if this is the case each prefix carries meaning above an abstract level, as well as holds specific semantic characteristics unique to that class.

1.4 Objectives and Research Questions

Goal of the study

- To describe the extent of which prefixes have semantic content
- To analyse the semantic distribution of noun prefixes
- To categorise further sub-fields of meanings associated with various classes (class 1, 3, 5, and 7).
- To investigate whether prefixes are associated with the proposed semantic content for each class, and if this points to a noun class system that is semantically organised.

Research Questions

1. To what extent do the prefixes of class 1, 3, 5, and 7 have semantic content?
2. Are classes 1, 3, 5, and 7 organised/classified around certain core meanings?

In order to answer these questions, Kgukutli (1994) and Selvik's (2001) – both elaborated on in the next chapter – were used as guidelines for the present investigation to find out if Setswana nouns are grouped in terms of semantic classes and if current speakers understand noun classes in terms of their semantic content. Both Kgukutli (1994) Selvik (2001) made attempts on analysing Setswana noun classes and showed some strong correlation between semantic relations and noun classes. The present study relied on two sets of data: a 'text analysis' of nouns from the Setswana Online Oxford Dictionary, which were augmented with

a field study where two tests were administered to native speakers of Setswana. Details will be provided in the Methodology chapter. It was hypothesised that the meaning(s) most associated with certain classes were in fact the core meanings linked to those classes.

1.5 Justification of the study

It was necessary to find out whether a semantic classification really lies at the heart of the assignment of nouns into classes by investigating whether prefixes carry concrete meaning instead of abstract meaning. The study therefore investigates whether prefixes associated with the proposed semantic content for each class point to a noun class system that is semantically organised.

1.6 Overall structure of dissertation

The rest of the thesis is organised as follows: Chapter 2 provides a survey of studies on grammatical gender in Bantu and languages outside of Africa. It briefly considers the unpredictable semantic criteria of gender in various European languages. The chapter also takes a look at the noun class system of Bantu languages, with a special focus on the Setswana noun class system and its semantic content. It goes on to discuss the features of gender and number within the Bantu noun, the workings of gender and agreement, and several experimental studies regarding the semantic associations linked to the Bantu noun class system, with some focus on Setswana. Chapter 3 describes the methodology used in the investigation. Chapter 4 describes the results of the study which show that although overlaps exist between classes and their semantic associations, each class seems to carry certain semantic content that is unique to that class. The results also show that nouns sharing the same prefix – i.e. nouns of the same class – seem to share a range of meanings that are more closely related than they do with nouns with different prefixes. Lastly, Chapter 5 concludes the study.

CHAPTER 2
Literature Review

2. Introduction

This chapter reviews literature on grammatical gender – a subject matter that has attracted the attention of linguists for a long time going to the 1950s and beyond (see, for example, Istvan 1958) – so as to contextualise the study of Setswana noun classes. Many languages in the world, such as Russian, Spanish, German, Dutch, etc., display grammatical gender in which nouns are grouped into specific classes. Bantu languages are thus no exception in this connection. Discussions on grammatical gender are abound in the literature and this chapter presents an overview of studies on this subject matter broadly, as well as more specific studies on Bantu systems of grammatical gender which are commonly known as Bantu noun classes. The chapter starts by reviewing studies on grammatical gender in languages of the world from outside Africa, as well as briefly looking at grammatical gender in Bantu (section 2.1). Section 2.2 deals with a general discussion of the morphosyntactic basis of grammatical gender in Bantu languages. It looks at the Bantu noun and reviews its features of gender and number, as well as looks at its agreement system. Section 2.3 reviews studies of the semantic basis of grammatical gender in Bantu languages. Section 2.4 provides a survey of the basis of grammatical gender in Setswana. This section also looks at the semantic properties of Setswana noun classes. Section 2.5 deals with the morphosyntactic and semantic basis of grammatical gender in Bantu by taking a look at previous works based on the noun class system. Section 2.6 is a summary of the chapter.

2.1 Overview on grammatical gender in non-Bantu languages

The term ‘gender’ originates from the Latin word ‘genus’ and French word ‘genre’, meaning ‘type’, or ‘sort’ (Istvan 1958; Comrie 1999; Fasold & Connor-Linton 2006). Grammatical gender is an inherent and essential component of the noun, which is reflected through a system of agreement or concord on other parts of speech that are in relation to the noun, such as noun complements and other modifiers (Demuth 1988). Jackendoff (1983) and Kihm (2014) state that grammatical gender, is what allows the noun to be classified according to the ontological properties of their real world referents. Romance languages such as French and

Spanish distinguish between ‘feminine’, and ‘masculine’ nouns, while languages like German and Russian include ‘neuter’ in addition to ‘feminine’ and ‘masculine’ in their noun classification (see Zubin and Kopcke 1981, Konishi 1993, Comrie 1999, Vigliocco, Vinson, Paganelli & Dworzynski 2005, Corbett 2006, Fasold & Connor-Linton 2006 and related works). When a language possesses grammatical gender, one finds that nouns agree with their modifiers with respect to specific features. Consider the examples in (4) and (5) taken from Russian:

4. *Nov-yj* *korabl’* (Corbett 2006)

   New-M.SG ship(M)[SG]
   ‘A new ship’

5. *Nov-aja lodk-a*

   New-F.SG boat(F)-SG
   ‘A new boat’

In (4) the noun *korabl*’ ‘ship’ is masculine, whereas in (5) the noun *lodk-a* ‘boat’ is feminine. Note that the adjective *nov* ‘new’ occurs with a masculine suffix *-vi* when the adjective modifies the masculine noun *korabl’* ‘ship’, but with the feminine suffix *-aja* when the adjective modifies the feminine noun *lodk*-a ‘boat’. This ensures that the noun and the adjective agree in terms of gender. It could be suggested that part of a noun’s categorisation is based on semantic criteria, which is offered by the gender of the noun. It is likely that ‘ship’ obtains its masculine categorisation from its large size, while ‘boat’ receives a feminine categorisation due to it being smaller in size, hence masculine = big, while feminine + small.

In Spanish, nouns ending in *-o* are categorised as masculine (*amigo* ‘male friend’), whereas nouns ending in *-a* are categorised as feminine (*amiga* ‘female friend’). This categorisation seems to be based on phonological grounds. It appears some nouns (ending in *-o*) ‘sound’ masculine, while others (ending in *-a*) ‘sound’ feminine, even though this in itself is entirely arbitrary. However, this assignment is not always as this clear cut. Corbett (2006) observes that in the same language there are words which do not end in /*-o*/ (*el balcón* ‘balcony’ and *el coche* ‘car’) which are categorised as masculine. Additionally there are other nouns like *el clima* ‘the climate’ which end in /*-a*/ and yet is categorised as masculine, and *la mano* ‘the

hand' which ends in /-*o*/ and yet is categorised as feminine, as is evident from the choice of determiners – *el* for masculine nouns and *lo* for feminine nouns.

Other researchers have suggested that there is no clear semantic basis for classifying nouns into specific gender classes. For example, Mel'ćuk (1958), and Tucker, Lambert & Rigault (1977), found that in French the compound nouns carried derivational features of both the morphological and phonological kind, to the point where nouns derived from verbs were labelled as masculine, regardless of the final vowel found at the end of the last noun within the noun structure.

Ervin (1962), and Carroll & Casagrande (1958) investigated how native speakers classify nouns according to their genders. The assumption was that speakers have internalised a system that allows them to allocate nouns to gender. This system either relies on the meaning of the noun or its form, or on both. It has also been suggested that gender classification, in some instances is partially dependent on the contextual features of the noun's referent (Chebanne 2016). In cases like this, the assignment of a gender class within the system is said to be unclear. However, Corbett (2006) states that, there are languages, like Kannada, a southern Indian language, which are termed as semantically clear. This is because in the language, noun classification is primarily based on biological gender distinctions: nouns denoting females are categorised as feminine, while those denoting males are categorised as masculine. The rest of the nouns found within the lexicon, including those referring to animals and infants, are therefore categorised as neuter.

Comrie (1999) as well as Schwichtenberg & Schiller (2004) point out that there are some languages where assignment of nouns to gender categories on the basis of semantics clearly does not work, and that nouns are usually assigned to different gender classes. It is rather rare to find a language that bases its whole classification system on the basis of formal rules alone. Typically languages either base their noun classification on semantic rules alone, or on both semantic and formal rules. Languages within the Bantu language family, as we will see below, exhibit a more elaborate system of grammatical gender. Instead of using the terms 'masculine', 'feminine' or 'neuter', Bantu languages identify gender classes in terms of numbered noun classes.

2.1.1 Grammatical gender in Bantu languages

The Bantu noun class system finds its uniqueness in the fact that it does not involve any feminine-masculine distinctions, but instead the nouns are grouped into a variety of classes, which are identified by noun class numbers (Vansina 1995; Nurse & Philippson 2006). Noun classes (primarily numbers 1-10) are paired into singular and plural classes, with the odd numbers representing the singular classes, while the even numbers represent plurality (Kihm 2014). It should be noted that class 12 and 13 also make a number distinction, with the even number designating singular form and the odd number designating the plural form. This pairwise fashion is not regular, resulting in various exceptions.

Much of the nomenclature surrounding Bantu nouns is linked to the categorisation of nouns and the prefixes that mark them. Guthrie (1948) equates the Bantu noun class system to the Bantu nominal system itself, since a noun class refers to a particular category of nouns (see also Corbett 2006; Corbett & Fedden 2018). The very complexity of the noun class system is further illustrated below in the way the system commands agreement (Demuth 1988; Du Plessis & Visser 1992; Aissen 1990; Simango 2012). It does this by way of the prefix related to the noun, attaching to other parts of speech found within the sentence as the following examples from Setswana illustrate:

6. *Mama o-tshameka le ngwana*

   CL1a-mother SM1a-play with CL1-child
   'Mother plays with the child'

7. *Bo-mama ba-tshameka le ngwana*

   CL2a-mother SM2-play with CL1-child
   'The mothers are playing with the child'

In (6) and (7) above, the sentences are identical except for the number feature attached to the subject noun and verb phrase. In (6) the verb *tshameka* 'play' receives a class 1a agreement marker *o-*, which agrees with the class the subject noun *mama* 'mother' is found in. In (8) below we see a similar pattern. In (8) the number specification is changed using the class 2a prefix on the subject noun, known as concordial agreement. The subject noun *setlhare* 'tree' shares its agreement with the adjective *segolo* 'big':

8. *Se-tlhare se se-golo*

CL7-tree DEM CL7-big
'The big tree'

Example (8) shows that agreement is not limited to subject-verb agreement: it also holds within the noun phrase itself. Examples (9) and (10) show that agreement also extends to object-verb agreement.

9. *Ba-na ba-rata di-jo*

CL2-child SM2-love CL8-food
'Children love food'

10. *Ba-na ba-di-rata (di-jo)*

CL2-child SM2-OM8-love (CL8-food)
'Children love it'

In (9) the verb agrees with the subject noun, whereas in (10) the verb agrees with both the subject and object nouns. The presence of the object agreement morpheme in (10) makes the overt expression of the object noun optional – just as the presence of the subject agreement morpheme in (10) makes the overt expression of the subject noun optional (which would result in the sentence *ba-di-rata* 'they love it').

The examples[1] above only offer a glimpse of the workings of the noun class system. They illustrate the function and significance of the noun class prefix, and how it controls different forms of agreement marking, be it with the subject, modifier, or object (Demuth 1988; Du Plessis & Visser 1992; Aissen 1990; Haspelmath 1992). Some studies have investigated the inventory of Bantu noun classes, showing that various classes have become unproductive in some languages (see Creider (1975) and Demuth (1988)). Bantu languages differ in terms of how many classes each language holds. The parent language (Proto-Bantu) seems to have had roughly 23 noun classes.

[1] It should be noted that all examples within the study, unless otherwise stated, are from Setswana.

Class:	Prefix:
1	*mo-*
1a	*Ø*
2	*va-*
2a	*vɔ-*
3	*mo-*
4	*me-*
5	*le-*
6	*ma-*
7	*ke-*
8	*vi-/di-*
9	*n-*
10	*di-n-*
11	*lo-*
12	*ka-*
13	*to-*
14	*vo-*
15	*ko-*
16	*pa-*
17	*ko-*
18	*mo-*
19	*pi-*
20	*ɣo-*
21	*ɣi-*
22	*ɣa-*
23	*ɣe-*

Table 2.1. Proto-Bantu Noun Class System (Demuth 1988:272)

Some of the Proto-Bantu (PB) classes have become unproductive or have completely disappeared in certain languages. For example, whilst ciNsenga has retained class 12/13 to express the diminutive (Simango 2012), languages like Setswana and isiZulu no longer have these classes, and instead express the diminutive with the suffixes /-*ana*/ and /-*nyana*/ on nouns in their respective classes without having a separate class. This is shown in (11) below (Canonici 1991):

11. : *indoda – i-ndod-ana* (small man); class 9 (Zulu)
: *monna – mo-nna-nyana* (small man); class 1 (Setswana)

Within the Sotho/Tswana cluster, the locative classes (16, 17, 18) seem to have disappeared from Sesotho but have been retained in Setswana. These locatives carry no number feature and tend to attach to other nouns with prefixes. In short, no contemporary Bantu language possesses all of the 23 classes in its nominal inventory, most languages possess approximately 16 noun classes. For example, Sesotho has 17 classes, and has lost class 11 to 13 (see Demuth 2000). isiXhosa (see Taraldsen 2010) and Siswati have retained 15 classes, and lost class 12/13, and ciNsenga has 18 classes, and has lost class 11 (see Simango 2012).

Meinhof (1899), Guthrie (1971) and Givón (1970) argue that current Bantu languages, are modern representations of the ancestral tongue and that all Bantu languages originated from PB. Goslin (1980) proposes that although it is believed that PB once existed, it cannot be said to be a real language, since the only knowledge that has been obtained about PB, stems from observing the morphophonological system of current Bantu languages. The assumptions and claims made about PB are due to the existence of certain features in its daughter languages. Regardless, just like its daughter languages, PB is assumed to be agglutinating, have a concordial agreement system, and have all its nouns assigned to noun classes (Demuth 2000) that are attached to specific classes. Over the years, research has been done investigating the link between the Bantu noun prefix and the stems they attach to.

2.2 General morpho-syntactic basis of grammatical gender in Bantu languages

A Bantu noun consists of a prefix and a stem. It has been proposed by Kihm (2014) that noun class entails the fusion of number and gender features. In other words, the content of the grammatical category of NOUN (N) is made up of the merging of class and the gender of the class (Kihm 2014; Carstens 1993). The formation of nouns is captured in Figure 2.1 below:

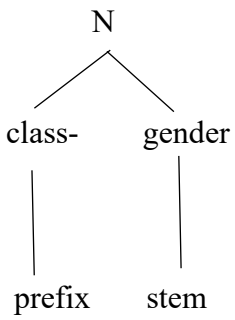

Figure 2.1. Formation of Noun: Merging of Class and Gender

Kihm (2014) proposes that this fusion is what establishes the uniqueness of nounness. The prefix attached to the stem is also known as the noun classifier, since it relates the noun to its corresponding class (Demuth 2000; Simango 2012; Matthews 1997). Note that when other elements agree with the noun, it is the features on the noun prefix which show up on these elements. This is shown in (12):

12. *Ba-sadi ba-ba-ntle*

CL2-woman SM2-CL2-beautiful

'The beautiful women'

In (12) above, the head noun *ba-sadi* 'women' carries a class 2 prefix, that agrees with the agreement/subject marker *ba-*, found on the adjective *ba-ntle*.

Letsholo & Matlhaku (2014) take a closer look at the agreement patterns within the noun phrase. They propose that the noun phrase: *ngwaná yó-ó-setete* 'the child who is a brat', which is a relative clause, can be represented by the tree in the figure below:

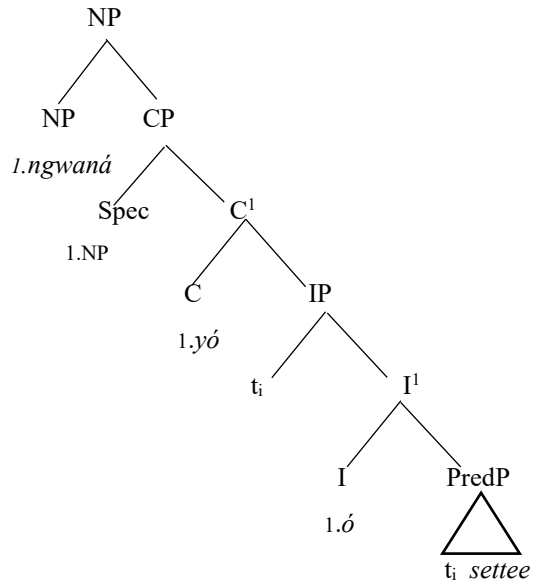

Figure 2.2. The derivation of ngwaná yó-ó-setete (Letsholo & Matlhaku 2014:39)

The structure in Figure 2.2 shows how the NP ngwaná yó-ó-setete is derived. The morpheme yó heads the CP, making it a complementiser. Letsholo & Matlhaku (2014) assume that an empty operator NP (indicated by ti) is merged in the Predicate Phrase (PredP) (or VP). The head noun ngwaná is merged in the specifier of the highest NP in the diagram, ti moves from the base position, to Spec of IP to receive nominative case and then to Spec CP, to check the WH feature of C (the head of CP). Furthermore, the morpheme yó, is a class 1 agreement marker, and acts as a demonstrative, while the morpheme o- is a class 1 subject marker, both the subject marker and demonstrative agree with the head noun ngwaná from class 1. In a similar vein, Rugemalira (2007) explores agreement patterns in noun phrases by examining data from Swahili, Mashami and Nyambo. The data shows that all dependents of the noun in the phrase share agreement features with the noun class of the head noun.

Another topic that has attracted the attention of linguists is the phenomenon of verb agreement, specifically subject and object agreement. An influential study is Bresnan & Mchombo's (1987) analysis of subject and object marking in Chichewa. Bresnan and

Mchombo proposed that the subject marker (SM) functioned as a grammatical agreement marker and as a topic anaphoric pronoun, whilst the object marker (OM) functioned primarily as a pronominal argument.

Since then the debate among Bantu scholars has been on the status of the SM – whether it is an agreement marker or an anaphoric pronoun. In a more recent work Morimoto (2013) has proposed that subject markers within Bantu languages, in fact represent both subject and topic agreement. It is suggested that evidence for these two types of agreement, is seen in languages like Kinyarwanda. Drawing on Kimenyi's (1980) work, Morimoto observes that the language exhibits a construction known as the subject-object reversal. Morimoto (2013) explains that in the traditional SVO sentence seen in (13a), the agreement marker a- agrees with class 1 of the subject umuhuûngu 'the boy'. In the reversal sentence in (13b), the agreement marker ki- agrees with the lower argument igitabo 'the book' from class 7. As shown in the translation of (13b) the fronted lower argument is a topic, while umuhuûngu receives a focus interpretation:

13. a. *Umuhuûngu a-ra-som-a igitabo.* (Morimoto 2013:163)

CL1.boy SM1-PRES-read-ASPECT CL7.book

'The boy is reading the book.'

b. *Igitabo ki-som-a umuhuûngu.*

CL7.book OM7-read-ASPECT CL1.boy

'The boy (FOC) is reading the book (TOP)'

Morimoto (2013) adds that the agreement pattern seen in (13b) is a unique property of the construction. Although research has gone into the structural components of Bantu noun classes, linguists have also sought out to investigate how the morphosyntactic nature of the noun class system influences its agreement. The nect section takes a closer look into this topic.

2.2.1 Morpho-syntactic basis of grammatical gender in Bantu

According to Guthrie (1948) there are five types of gender features that are found in Bantu languages. The first being two-class genders, where there is a direct distinction between singular and plural (e.g. *si-seme* 'old mat' versus *bi-seme* 'old mats' in Lozi). The second is one-class genders where uncountables (*li-butu* 'dust' in Ngombe) and countables (*i-sabi limo* 'one fish' and *i-sabi libili* 'two fish' in Bemba) are found. It should be noted that uncountables are found within regular noun classes, which also hold other nouns that do not necessarily share the same feature of non-count.

The third is known as the multi-class gender, which happens to be linked to a series of more than two classes. These are either count nouns (*lu-kaya lu-mosi* 'one leaf', *tu-kaya tu-tatu* 'three leaves', *ma-kaya ma-wonso* 'all the leaves' in Kongo) or nouns that express ideas other than number (*m-zee* 'old person', *wa-zee* 'old people', *u-zee* 'old age') (Guthrie 1948). The fourth gender belongs to classless words, which are quite rare in Bantu. These are words which do not take part in the agreement system and yet are grammatically similar to words that do. The fifth gender is categorised for loanwords.

Research on gender in Bantu languages has developed through the years. In a study done by Claudi (1997), it was proposed that gender began as a means to render an abstract idea more concrete. For example, a noun meaning 'woman' was automatically categorised as feminine, or a noun meaning 'dog' being classed as animate. However, with time, the head of the noun (i.e., prefix) went from referring to a generic category to eventually being re-analysed as a derivational affix, and then a gender marker. Claudi hypothesises that this could have been done through a process known as the 'derivational channel'. In other words, the change occurred through a derivational process.

Another school of thought proposed that the gender feature is found in the stem of the noun and not in the prefix (Carstens 1991,1993). This means that stems that are normally represented without any class features, still hold gender features. Carstens (1991) and Corbett & Fedden (2018) propose that if stems carry and control gender information across the grammatical structure, then the gender of the stem is in essence what controls the agreement system, regardless of whether it holds a prefix or not[2].

[2] Recall earlier point of noun classes in Setswana (class 1a and class 9) having no overt noun class prefix. At times some nouns in class 5 do not show the /*le*-/ prefix (*lelapa* or *lapa* 'home') (Kgukutli 1994).

If stems are the gender-bearers of the noun, it is implied that noun prefixes are responsible for indicating whether the noun is making a singular or plural distinction. Secondly, Carstens (1991) and Corbett & Fedden (2018) state that although stems are represented without any class features, they always seem to attach to the prefixes related with the particular gender that they fall under, suggesting that each stem may in fact be specified for a certain agreement class. They propose that the process of selecting prefixes, lies in the gender information already held by the stem. This means that the gender feature within the stem is what selects the type of singular-plural distinction it attaches to, which leads us to the feature of number.

Carstens (1991) proposes the existence of five genders, which are further divided according to number classes (which make the singular-plural distinction[3]). These five gender values are responsible for the process of prefixation on stems, as well as assigning number features to each class. For example, stems that carry the properties of gender A, assign singular gender A values to class 1, and plural gender A values to class 2. This is illustrated below in Table 2.2:

Table 2.2 Stem groups for classes 1-10 (Carstens 1991)

Gender (stem):	Class:
A	1 / 2
B	3 / 4
C	5/6
D	7/8
E	9/10

Carstens (1993) provides evidence that prefixes are not subcategorised for gender information, by suggesting that it is the gender-bearing stem which selects the relevant class prefix, and then goes on to assign a number distinction to the classes. It is further illustrated below how the selection between prefix and stem takes place, specifically in the case of distinguishing number:

[3] Carstens (1991) proposes the existence of five genders, which may stand as evidence towards Guthrie's (1948) proposal. The assigning of noun classes to gender, and further dividing those classes according to number, suggest the notion of noun classes being a sub-section of gender.

14. se- [_+ ß Gender D] = [*se* + ß Gender D]; denotes singularity

di- [_ + ß Gender D] = [*di* + ß Gender D]; denotes plurality

Carstens (1993) explains that stems (ß) have lexical entries (_), which are gaps that may only be filled by certain prefixes. Since the stems are gender-bearers, they carry certain gender features that may only select a certain class that is 'assigned' to that specific gender group. The process of merging number and gender is shown in Figure 2.3 below:

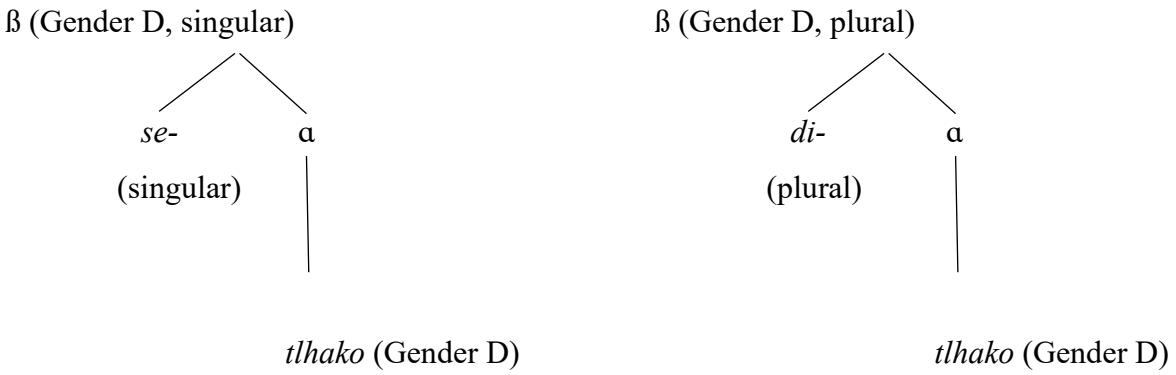

Figure 2.3 Merging of Gender and Class

Mel'čuk (2013) and Corbett & Fedden (2018) state that each numbered class (agreement class) has three properties in common; 1) each class has the same case, gender and number specification, 2) each class occurs in the same agreement domain, and 3) each class has its own lexical item (prefix) as an agreement controller.

The process of prefixation offered by Carstens (1991) does not offer much clarity on, or illustrate how nouns that do not make a number distinction are grouped in specific agreement classes. Her proposal brings into question how stems from multi-gendered classes (that express ideas other than number) manage to select their prefixes. It is also not clear whether she is claiming that prefixes carry no gender features at all, or whether their gender features are what enable the assigning of prefixes to gender values. To gain more insight into the nature of prefixes, linguists have studied the agreement patterns found in Bantu languages.

2.2.2 Gender and Agreement

Interest in Bantu agreement patterns extends as far back as the 1960's (see Meeussen 1967) to the present. More recently, several scholars (e.g. Demuth & Harford 1999, Ngonyani 1999, Zeller 2004, Simango 2006, Henderson 2007 and others) have focused on verb agreement in relative clause constructions in Bantu. These studies reveal that the verb shows agreement with both the subject and object in a relativized clause. An example from Shona is shown in (15) below:

15. *Mbatya* ***dza-v****-aka-son-era vakadzi mwenga* (Demuth and Harford 1999)
    CL10.clothes REL10-PL3-PST-sow-APP women bride
    'The clothes which the women sowed for the bride'

In (15) the verb, which is fronted together with the relativized object shows agreement with *mbatya* 'clothes' through the prefix /*dza-*/ as well as the subject noun *vakadzi* 'women' through the prefix /*v-*/. In isiZulu agreement in relative clauses is slightly different. The relative prefix shows no agreement feature. However, the verb still shows subject and object agreement as shown in (16) below:

16. *incwadi* *isitshudeni* *a-isi-yi-funda-yo* (Zeller 2004)
    CL9.letter CL7.student REL-7AGR-9OM-read-RS
    'The letter that the student is reading'

Another area of interest for linguists is the relation between agreement and the semantics of gender classes. Corbett (2006) and Corbett & Fedden (2018) note that gender is what offers the agreement system of Bantu languages its semantic nature. It is proposed that the occurrence of exceptions and mismatches within the agreement system demonstrates the existence of and the need for the semantic criteria within the gender system. Corbett & Fedden (2018) go on to argue that mismatches reflect the *non-canonical* nature of the gender system of Bantu languages.

Canonical agreement is understood as the ideal, or somewhat predictable features and values of gender. Corbett & Fedden (2018) argue that the existence of gender within a language can only be proved through the evidence of agreement. They propose three principles for

canonical agreement (see Corbett 2006a:10-26 for a detailed account of this criteria), summarised below:

1. Information content:	It is more redundant, than it is informative
2: Syntax:	It is syntactically simple
3: Morphological Realisation:	The closer the expression of agreement is to official inflectional morphology, the more canonical the agreement is

Corbett & Fedden (2018) explain that the criteria for canonical agreement involves four properties; the controller, target, domain and feature. The controller (the noun prefix), must be present and have an overt expression of features. It is also consistent in its agreement forms regardless of the part of speech. The target (the stem), has bound expression of agreement, has obligatory marking, it doubles the marking of the noun, its marking is irregular, productive, alliterative, and has a single controller (part of speech is irrelevant). The third criterion is the domain, the environment within the particular phrase, e.g. NP or VP and so forth. The domain is where gender agreement is seen within the NP and its multiple complements. The last property is that of feature, where the lexical items do not have a choice on the kind of values that are attached to them.

When considering the canonicity criteria, stated above, Corbett & Fedden (2018) and Di Garbo & Agbetsoamedo (2016) claim that Bantu languages do not easily fit within this criteria, as already mentioned. They claim that the mismatches and exceptions found within Bantu agreement are what offer it its *non-canonical* nature. More instances of this *non-canonical* nature is seen in the way various stems have access to more than one feature within the gender system. It is also seen in the occurrence of stems sharing the same prefix (Guthrie 1948), or in the case of agreement mismatches. The topic of agreement mismatches is discussed in the next section.

2.2.2.1 Compound Subject NPs

Another area that has attracted the interest of Bantu linguists in recent years is the study of agreement between the verb and conjoined subject NPs (see for example Schadeberg 1992; Krifka 1995; Corbett & Mtenje 1987, Marten 2000, Simango 2012, Mitchley 2015). Marten (2000) proposed three main types of agreement resolution processes; morphological, anaphoric, and syntactic agreement. Morphological agreement is an example of the agreement that takes place between conjoined subject NPs, when two nouns of the same class trigger the corresponding plural agreement class on the verb. This type of agreement is illustrated in the Swahili example below:

17. Mw-alimu na mw-anafunzi w-ake wa-li-kuja (Marten 2000)
CL1-teacher and CL1-student CL1-his SM2-past-come
'The teacher and his student came'

In (17) both nouns *mwalimu* 'teacher' and *mwanafunzi* 'student' are from class 1, therefore all modifiers within the noun phrase also receive class 1 agreement. The verb phrase *walikuja* 'they came' triggers the plural correspondent of class 1, therefore referring to both nouns. Corbett (2006) notes that if both nouns within the coordinate structure denote human beings, then the modifiers within the sentence would receive class 2 agreement, as seen above in (17). This is the process that takes place within constructions that bear conjoined subject noun phrases from the same class. However, there are instances where the conjoined NP's are not from the same class, in cases like this class 1/2 agreement is till triggered if the NP's both denote humans, this is seen below in (18) and (19):

18. Omu-kazi es-sajja ne olu-ana ba-alabwa (Givón 1970)
SG.CL1-woman SG-fat.CL5-man and SG-thin.CL10-child CL2-were-seen
'The woman, the fat man and the thin child were seen'

19. *A xi-kelema ni buchara vo-vulavula* (Mitchley 2015:65)
def CL7-scoundrel and CL9-butcher CL2.SM.pres-talk
'The scoundrel and the butcher are talking'

In the Luganda example above in (17), the conjoined nouns, *es-sajja* 'fat man' and *olu-ana* 'thin child', have different class features, and yet the modifier *baalabwa* 'were seen' receives class 2 agreement. The same is illustrated in the Xitsonga example in (18), where class 2 /*vo-*/ is triggered even though the compound nouns, referring to humans are not from class 1/2 [4]. The examples above illustrate that human referents, in a conjoined subject NP, trigger class 1/2 agreement.

The other agreement processes mentioned by Marten (2000); anaphoric and syntactic agreement, come into play when the conjoined NPs in a sentence, do not denote human beings, and are both from different noun classes. In this case, class 1/2 agreement cannot be triggered and therefore gender resolution is required.

2.2.2.2 Gender Resolution with Conjoined NPs

A substantial amount of research has gone into the field of gender resolution of languages across the world (Farkas 1990, Lumsden 1992; Corbett 1991; Wechsler and Zlati' 2003; Sadler 2006). Conjoined subject noun phrases have also been investigated in other languages besides Bantu such as French (Wechsler 2008), Spanish (Couto, *et al* 2016), and Slovene (Wechsler & Zlati' 2000). Although there has not been extensive work done specifically on gender resolution in Bantu languages (Dalrymple & Kaplan 2000), the languages that have been investigated range from ciNsenga (Simango 2012), Xitsonga (Mitchley 2015), and Swahili (Marten 2000) to mention a few.

Marten (2000), mentions that anaphoric agreement, takes place when agreement is resolved with the default agreement class (class 8 or 10). This takes place when the conjoined nouns do not denote humans (Krifka 1995; Marten 2000). Simango (2012) mentions that in this case class 8 or 10 is triggered in order to resolve agreement, regardless of the original classes of the conjoined nouns (see Schadeberg (1992)). This is seen below in the ciNsenga example:

20. Mbale na ka-temo v-a-sow-a (Simango 2012:178)

CL9-plate and CL12-axe CL8.SM-past-miss-fv

[4] Other cases of morphological agreement are mentioned by Marten (2000).

'The plate and the axe are missing'

Example (20) above shows that non-human referents trigger class 8 agreement, regardless of the conjoined nouns intrinsic classes. Agreement with conjoined nouns is typically taken from the plural noun class; class 2 for humans, as mentioned above, and class 8 or 10 for non-humans (Corbett 2006; Corbett & Mtenje 1987; De Vos & Mitchley 2012; Mitchley 2015; Marten 2000; Schadeberg 1992). Therefore, in order to resolve agreement within Bantu, it is important to be aware of whether the noun phrases are referring to humans or non-humans. In other words gender resolution is largely motivated by semantic considerations.

Schadeberg (1992) and Moosally (1998), mention that there are instances where gender resolution is solely dependent on the nouns relation to the verb, and not necessarily on any semantic motivations. In this case, the verb may only agree with one noun within the construction. For example, if the predicate precedes the conjoined construction, agreement takes place with the first noun in the structure, but if the predicate follows the conjoined construction, then agreement takes place with the last noun within the structure. In other words, the verb only agrees with the closest conjunct. This form of agreement is known as syntactic agreement, and is suggested to only take place with multi-gendered classes[5]. For example, in the Swahili sentence below in (21), the verb phrase *tunaotumia* 'we spend', agrees with the second noun *wakati* 'time', which is the closest noun to the verb phrase:

21. Fedha na wa-kati tu-na-o-tumia (Schadeberg 1992:22)

CL9/10-money and CL11-time we-TNS-CL11-spend

'Money and time which we spend'

Despite there being various ways to resolve agreement with conjoined nouns, there are also ways that have been suggested, to avoid agreement altogether (Ashton 1944; Schadeberg 1992; Krafika 1995; Marten 2000). Corbett (2006) mentions that this is where the comitative 'with' stands in place of the conjunction 'and' (Meeussen 1967; Asangama 1983). This

[5] Guthrie (1948) claims that multi-gendered classes hold nouns that happen to be linked to either count nouns or nouns that express ideas other than number. An example of a count noun in Setswana: *ntlu* 'house', from class 9, which holds plural counterparts in class 6: *mantlu* '(many) houses', or class 10: *dintlu* 'houses'. An example of a noun that denotes ideas other than number may be found in class 14 *bosadi* 'womanhood'.

process resolves agreement between human and non-human noun phrases, allowing each noun to receive its intrinsic class prefix, as seen below in the Luganda example:

22. *Omu-sajja y-agwa ne em-bwa-ye* (Corbett 2006)

SG.CL1-man CL1-fell with SG.CL9-dog-his

'The man fell down with his dog'

The topic of gender resolution has received a lot of attraction throughout the years. Many studies are still in progress, such as the ESSB (Experimental Syntax from Slavic to Bantu), a collaborative study involving scholars from University College of London, University of Kwazulu-Natal, University of the Free State, and Rhodes University (Simango, personal communication). The study seeks to understand the intricacies of agreement mismatches in the gender system and how these are resolved in syntax. Studies have shown that mismatches suggest a form of semantic influence within the agreement system, which has accompanied various experimental research done on the semantic contents of Bantu classes.

2.3 Semantic basis of grammatical gender in Bantu languages

This section reviews some studies that have specifically explored the semantic content of Bantu noun classes. The section reviews works that have looked at acquisition data to determine if acquisition of the noun class system is based on the semantic content of the nouns or if it is based purely on morpho-phonological information. It also reviews other studies which examine how nouns in Setswana and other Bantu languages are understood by native speakers in terms of their meaning.

2.3.1 Evidence from Acquisition Studies

Several studies on acquisition of Bantu nouns found that at an early stage, children omit noun class prefixes resulting in various unprefixed stems (Zeisler & Demuth 1995; Tsonope 1987; Suzman 1980; Kunene 1979; Connelly 1984; Demuth 1988; Demuth 1992). Demuth (1988)

found that there were very few cases of generalisation where children seemed to acquire the noun class system through a process of three stages. In the first stage children used stems without prefixes. In the second stage, they used 'shadow' vowels and nasal prefixes, and lastly in the third stage they used full morpho-phonologically appropriate noun class prefixes (see also Tsonope 1987, Idiata 1998). These stages are not entirely independent of one another, resulting in several overlaps through the child's language development. Table 2.3 below captures the various stages of acquisition observable among Sesotho children:

Table 2.3. Acquisition of Sesotho Noun Class Prefix (Demuth, Faraclas & Marchese 1986: Demuth 1988:310)

Age:	Stage:
25-26 months	Ø, -V, CV
28 months	Alternations between Ø, -V, N, C-, CV, but mostly NV with nasal classes (1, 3, 4, 6)
30 months	Full appropriate prefix in the majority of cases (classes 5, 7, 8, 10 occasionally omitted with adjunct)
36 months	All prefixes used in appropriate form
46 months	Selective Ø prefix with classes 5, 7, 8, 10 when used with adjunct

To account for the lack of prefixation in the early stages of child speech Demuth (1988, 1992) and others (e.g. Brown 1973; Peters & Menn 1993) suggest that this is due to caregivers refraining from using complete standard words when addressing the child. For instance, in speech the word *le-tsatsi* 'day' becomes *tsatsi*, *se-tulo* 'chair' becomes *tulo*, *di-ntho* 'sores' becomes *ntho* and *se-eta* 'shoe' becomes *eta*)[6].

The results for Sesotho acquisition, seem to hold true across other Bantu languages. Idiata (1998) observes that in Isangu, a language spoken in Gabon, noun classes are absent in child speech between the ages 0-2, but are fully present in CV form by the age of three, and that by the age of four children correctly use and pair the noun classes. However, unlike in the

[6] Such a generalisation assumes that caregivers actually teach language – very different from the poverty stimulus debate.

Sesotho children, Isangu children tended to treat all animate nouns as belonging to class 1/2, thus illustrating that there was some form of semantic organisation that took place in their understanding of noun classes. Similar observations have been recorded in Siswati children, who tended to make overgeneralisations between the ages of four and six. Kunene (1979) observed that children used class 2, class 4 and class 2a prefixes interchangeably. Altogether, it seemed as though the children were grouping stems according to their paradigms, showing some form of semantic reorganisation.

Demuth (1992 & 2000) noted that some form of semantic awareness was detected by the Sesotho children. Between the ages of four and five, the children became aware of the 'human' and 'inanimacy' features held within certain classes and soon after that the features of 'abstract', and 'attributes'. This awareness shows that unlike French speaking children, who learn nouns in isolation and then later link the nouns to their gender classes (Clark 1985), Sesotho children learn their nouns and their gender features in conjunction, even though these features tend to only appear in their speech at a later stage. In comparing Hebrew and Sesotho speaking children, Levy (1983) found that they both were using phonological, rather than semantic cues to inform them of gender and number agreement. However, Sesotho children appeared to use other grammatical agreement cues, and when those cues were not obvious they began to look for semantic cues in order to facilitate the learning of the agreement system.

2.3.2 Previous Research on Semantic Basis of Bantu Noun Classes

As was alluded to in the previous chapter, a number of researchers have investigated the semantics associated with Bantu noun classes. Researchers utilise various data capturing methods to ensure the validity of their study. These range from sifting through written texts such as dictionaries and various corpora (Givón 1971; Creider 1975; Kgukutli 1994) to conducting field work which involves testing the intuitions of native speakers (Selvik 2001; Burton & Kirk 1976; Richardson 1967).

Kgukulti (1994) sought to establish the core semantic meaning of each class by contrasting and comparing the contents of the classes. She focused, among other things, on those nouns where the same noun stem appeared with different noun class prefixes and examined their

core meanings. Kgukutli investigated approximately two hundred fifty nouns. Although semantic overlaps were found within her semantic classification, there were particular semantic characteristics found in each class that were not found in any other. These features were thought to be the unique characteristics that those classes held, which distinguished them from every other class. Table 2.4 below summarises her core meanings for class 1, 3, 5 and 7:

Table 2.4 Kgukutli's (1994) Treatment of Class 1, 3, 5, 7:

Class 1	**Class 3**	**Class 5**	**Class 7**
Unqualified or unmarked persons	Tree names, deverbatives denoting manner or style of an action, miscellaneous nouns	Personal nouns which denote connotation, one of a pair of the body, deverbatives denoting result of action, miscellaneous nouns	Personal nouns indicating disability, personal deverbatives indicating skill or expertise, languages and customs, habit or manner, nouns denoting instruments, miscellaneous nouns

As seen in the above table, Kgukutli's approach enabled her study to show how each class was not restricted to one core meaning. However, the categories used in her classification proved to be problematic. Although the aim of that study was to semantically categorise each class, the categories of *miscellaneous* and *deverbative* nouns, spread across class 3, 5 and 7 do not offer much detail into the types of nouns found within those categories. Furthermore, these categories are not helpful in that *miscellaneous* is not a specific semantic domain and *deverbatives* as a category has little to do with the semantics of noun classes apart from revealing the etymology of the nouns in question. In other words, the category of *deverbatives* only tells us how particular nouns are derived, and not the semantic domain under which the noun falls. As noted, both *miscellaneous* and *deverbatives* do not allow one to distinguish, on semantic grounds, why these nouns are in different classes. In light of this criticism of Kgukutli's categories, it is necessary to do a further analysis of Setswana nouns by re-looking at nouns Kgukutli (1994) examined and augmenting that study with additional data in attempts to refine her categories.

Palmer & Woodman (2000) investigated the semantic classification of class 3 nouns in Shona. They devised a semantic network of possible conceptual links out of 941 class 3 nouns, all from the *Standard Shona Dictionary* (1984). They based each conceptual link on their own knowledge and introspection of Shona. A fault with their method stemmed from how they devised the semantic networks. Their study suggests that each conceptual domain was determined by what the researchers believed was intuitively obvious. This is problematic since it meant that the study's conclusions were founded on their own conceptual reality of the language and culture of Shona. Similar to Palmer & Woodman (2000), Selvik (2001) designed a language test, based on the semantic networks of class 3, 5, and 7, in order to test what would be the prototypes of the three classes. She sought to investigate whether the semantic links made by participants would correspond with the prototype meanings of each class: class 3 'tree', class 5 'fruit', class 7 'instrument'.

She designed two sets of test items, both based on the principle of linking possible Setswana words with predetermined meanings. Seventy-eight Setswana native speakers participated in the test. The aim was to test to what extent speakers would associate predetermined semantic prototypes between noun class prefixes (attached to made up stems), and selected class definitions. An example of her first test item is seen in (2.3.1) below, where participants were required to match the possible Setswana word with one of the four meanings provided. In her second test item, seen in (2.3.2), a definition was provided which had to be matched with the most suitable pseudo Setswana word (the meaning of the possible word may only be determined based on the class prefix it bears). Fifty test items were used in her study, two of which are exemplified below:

Serutsa	'a small, round ball'
	'a tree that grows in Europe'
	'a tool that is used for making soap'
	'a person'

2.3.1 Selvik's (2001) First Set Test Design

'a tool that is used for making soap'	*Lebôrôlêta*
	Sebôrôlêta
	Mobôrôlêta (*babôrôlêta*)
	Mobôrôlêta (*mebôrôlêta*)

2.3.2 Selvik's (2001) Second Set Test Design

Selvik (2001) presented participants with English definitions which they were supposed to match with the possible Setswana words. It was not made clear whether all participants were competent in English. Furthermore, it seemed like she did not consider whether offering participants English definitions would restrict them to consider Setswana possible nouns through English lenses. Although the studies design has some flaws, it allows for one to observe the link between the noun class prefix and the prototype meaning suggested.

There are various opposing views concerning the basis for noun classification in Bantu and other languages. Scholars claim that noun classes carry partial semantic correlates and that nouns which belong to the same class do so because they share certain semantic features (Leakey 1959; Welmers 1973; Creider 1975; Selvik 2001). The debate based on noun classification is founded upon the need to find out the specific nature of the system and exactly how it functions.

Investigations concerned with the semantic reality of syntactic categories have differed in regard to the language and phenomena being investigated[7]. Carroll & Casagrande (1958) investigated the use of language classifications in behaviour in German, while Ervin (1962), studied the kind of gender connotations speakers related to selected Italian nouns. Hale (1973) investigated nouns in Navaho, and Mathiot (1962) studied noun classes in Papago. Leakey (1959) proposed that in Bantu languages, the class system was ranked along an evaluative dimension, suggesting that there is some form of semantic hierarchy on which noun classification is made. On the basis of Kikuyu, Leakey states that class 1, associated with nouns denoting entities like humans, was ranked superior in the system, while other

[7] The debate on noun classification has existed across a variety of languages, including Yagua (Payne 2986), Amazonian languages (Derbyshire & Payne 1990), Athapaskan, Eyak, Tlingit, Haida (Kraus 1968), Wolof (Mc Laughlin 1997), Australian (Worseley 1954), Uzbek (Beckwith 1998) and many more.

numbers, associated with nouns that denote somewhat lower entities, were ranked as inferior (Guthrie 1967; Givón 1971; Creider 1975).

Within this system entities can be promoted or demoted through a process known as noun shifting (promoting and demoting). That is, an entity can be referred to by a noun in a higher class –e.g. *mopedi* 'a Pedi person' (class 1) or *lepedi* (class 5); where the use of the noun in class 5 suggests that the speaker thinks of a referent as a 'thing' and less than a person. Leakey (1959) suggested that this semantic assignment in most cases was dependent on the cultural context of the language in question. Although nouns are assigned to classes according to their 'quality of being', this assignment is largely founded on an evaluation which is semantically and culturally based (Burton & Kirk 1976; Chebanne 2016). Leakey (1959) gives an example of a word which means *eye* in Kikuyu from class 5/6. He states that it could be assumed that it should be in a class mostly associated with body parts, yet it is found in a class known for its association with objects and beings with supernatural significance (see Bennet 1970).

Leakey's (1959) account is one of the first attempts at giving an integrated account of the noun class system of a Bantu language. Other linguists such as Poulos & Louwrens (1994), Bennet (1970) and Bickerton (2007) have suggested that class shifting is reliant on various features and the cultural associations of words. Burton & Kirk (1976) proposed that even if it may not be easy to link strict semantic rules for noun class membership, it is still possible that noun classes affect the associations speakers make on the semantic similarities of nouns.

Chebanne (2016) also looks at class shifting in Setswana, where nouns that morphologically do not fit into the regular human class, are used to refer to humans. These nouns are known as amplexives. Amplexives are classed by association to the other nouns within the system and are used to refer to humans in various social contexts (Van de Velde 2013; Mangulu 2014; Chimhundu et al 2002). For example non-Setswana people are referred to by nouns that come from class 5 /*le*-/ instead of class 1 which is a form of demotion. This is shown in (23):

23. *le-Thosa* 'Xhosa person' (Kgukutli 1994)

    le-Juta 'Jewish person'
    le-Zulu 'Zulu person'

Chebanne (2016) suggests that class assignments such as these must be understood solely in terms of various criteria, which can only be revealed through a thorough knowledge of both the language and the cultural belief system of the native speakers (Leakey 1959; Burton & Kirk 1976).

Some linguists have attempted to reveal the semantic significance of each noun class category by testing speakers on the semantic content of each class. Burton & Kirk (1976) asked Kikuyu participants to complete triadic tests to determine whether the speakers made semantic links between nouns and noun class 5, 9 and 11 membership. Their study set out to analyse the results of the hierarchical clustering of the triad responses. This required a measurement of similarity among the words. If a pair of words occurred in more than one triad, Burton & Kirk took the average of similarities for the triads in which the pair occurred. Their results indicated that the cognitive organisation of verbal stimuli showed that even though the noun class was not a large feature in the overall hierarchical organisation of the concepts, it clearly appears as a feature within small contrast sets.

Kgukulti (1994) reports on a semantic classification she conducted. The analysis attempted to establish the semantic features which appeared to uniquely stand out for each class. The experiment was premised on the fact that although semantic overlaps between different classes do occur, thorough research, would uncover certain semantic characteristics found in each class that may not be found in any other. These features, which are also known as 'core meaning' were understood as characteristics that distinguished each class from every other class.

Kgukutli (1994) suggested that the core meaning of a class was made clearer when the same noun stem was used in different classes. For example, the noun stem /-*nna*/ can be found in class 1 *mo-nna* 'man', class 2 *ba-nna* 'men', class 7 *se-nna* 'manly', class 9 *nna* 'crowd of men', and class 14 *bo-nna* 'manhood'. Her classification of core meanings of Setswana noun classes are captured in Table 2.5:

Table 2.5 Core Meaning of Setswana Classes (Kgukutli 1994:58-60):

Class	**Prefix**	**Core meaning:**
1	*mo-*	Unqualified or unmarked persons
1a	*Ø*	Proper names, animals, kinship terms
2	*ba-*	Unqualified or unmarked persons
2a	*bo-*	Proper names, animals, kinship terms
3	*mo-*	Tree names, nouns denoting manner or style of an action, miscellaneous nouns
4	*me-*	Nouns denoting manner or style of an action, miscellaneous nouns
5	*le-*	Personal nouns which denote connotation, one of a pair, nouns denoting result of an action, miscellaneous
6	*ma-*	Mass nouns, type nouns, pair, nouns denoting abstract and concrete results, locality and concrete objects
7	*se-*	Personal nouns indicating disability, personal nouns indicating skill or expertise, languages and customs, habit or manner, nouns denoting instruments, miscellaneous nouns
8	*di-*	Personal nouns indicating disability, personal nouns indicating skill or expertise, habit or manner, nouns denoting instruments, miscellaneous nouns
9	*N/ Ø-*	Animals, personal nouns indicating status or rank, nouns indicating result of an action, miscellaneous nouns
10	*di-*	Animals, personal nouns indicating status or rank, nouns indicating result of an action, miscellaneous nouns
11	*(lo)-*	Nouns signifying big or unusual things, nouns denoting abstracts and results of an action
14	*bo-*	Abstract condition, persons indicating status of being
15	*go-*	Class of infinitives
16	*(fa)*	Locative class, indicating place or locality
17	*(ko)*	Locative class, indicating place or locality
18	*(mo)*	Locative class, indicating place or locality

By comparing and contrasting the nouns within each class, Kgukutli (1994) was able to come up with a unique noun class classification. Although her study does not show that each class had only one core meaning, its shows that each class has unique characteristic features that other classes lack. However, her use of the term 'miscellaneous nouns' is problematic since this category is found in class 3/4, class 5/6, class 7/8 and class 9/10, meaning that there is no way of telling why the nouns in question are in different classes.

Richardson (1967) suggested that some classes were reassigned to others for reasons having to do with language and cultural evolutions. He further suggested that this possible reorganisation was a process that took place subconsciously within the minds of native speakers, which later resulted in 'new' nouns being incorporated into the system. Therefore, 'new' nouns in the system would call for a (subconscious) semantic reanalysis. Richardson (1967) was interested in the class allocation of foreign nouns in Bantu. He conducted a study among Bemba speakers and asked them to assign classes to English nouns that were not currently identified as loanwords. He concluded that some nouns were appropriately accommodated in the class he expected them to go (i.e., abstract items in class 14a), while others seemed to be scattered across class 6 and 9. He also noted that some participants seemed to be influenced by an urbanised form of the language, known as Town Bemba, exhibiting less rigid agreement patterns and a general uncertainty regarding the 'correct' class. This study is significant in that it shows that the noun class marker is not entirely an arbitrary grammatical device but instead holds some semantic reality in the minds of speakers.

Selvik (2001) takes a different view from Richardson (1967) and introduces the concept of 'schematic network' (taken from Langacker 1987) to the study of meanings of noun classes. The notion of 'schematic network' suggests that the contents of a class are analysed as nodes within a network,that are linked to one another via various sorts of categorising relationships. The network challenges the idea that each class must have one core meaning in order for it to be semantically organised, by suggesting that items within a class are all somewhat related to one another through the use of metaphorical extensions.

Selvik (2001) sought to show the cognitive salience of these core meanings by testing Setswana speakers to see whether they would establish semantic links between selected class meanings and class prefixes. In the study participants were required to complete a

psycholinguistic test which asked them to match possible words to the most suitable class with a pre-determined meaning. Fifty test-items were constructed all based on the process of matching a possible word with a class prefix by means of a pre-determined meaning. In the first task a nonsense stem with a prefix was given and had to be matched with one of four possible meanings. The assumption was that the meaning chosen would correlate with the class schema connected to the specific class prefix. The second task offered definitions or meanings that needed to be matched with one of four possible made-up words that could only be distinguished based on the prefix attached. The assumption was that if a particular meaning was chosen for a specific word (bearing a specific class), then that indicated that there was some semantic associations between the given definition and the noun class prefix attached. This would prove that the selected class does in fact carry a semantic prototype.

Selvik (2001) chose one proto-type meaning for each class she was investigating: 'tree' for class 3 /*mo*-/, 'fruit' for class 5 /*le*-/, and 'instrument' for class 7 /*se*-/. The results showed that the combinations that participants chose most frequently were those associations provided by Selvik. In other words, native speakers seemed to consistently correlate certain noun class prefixes with certain types of meanings that were initially proto-type meanings proposed for the classes. This suggests that native speakers were in fact employing some form of active semantics.

In a review of Richardsons (1967) and Selvik's (2001) studies, Dingemanse (2006) is convinced that Selvik's (2001) results are more reliable, since Selvik's study avoided the interference that results from trying to incorporate a foreign language, such as English, into a Bantu language system. Although Dingemanse praises Selvik's work, it is worth stating that Selvik's study too had potential flaws. Although Selvik's results showed some strong correlations to semantic classification, the investigation was based on tasks that required participants to associate Setswana possible words with English definitions, which potentially would have interfered with the semantic correlations between class and definition. √

In another study, Palmer & Woodman (2000) focused on the relation between cultural practices and the meanings associated with class 3 nouns. The investigation consisted of a thorough semantic analysis of class 3 nouns and much emphasis was placed on the role of cultural scenarios that speakers use in the process of class allocation. According to Palmer & Woodman, noun class 3 is rather complex and dense in nature, the nouns have many

ceremonial and mythical associations together with qualities of objects and physical shapes. Many of the nouns found in this class are related to ritualist scenarios by way of extensions, metaphorical and metonymical links, and schematisations.

Palmer & Woodman's study involved creating a network of possible conceptual links out of a large collection of Shona class 3 nouns. A total of 941 nouns were randomly selected from the *Standard Shona Dictionary* by Hannan (1984). The study found that nouns denoting trees, shrubs, and herbs were the most dominant in this class. Most of Palmer & Woodman's study discussed the semantic diversity found in class 3 and found that the class has more than one conceptual link to its nouns, and that the several conceptual links found in this class arose from the enhanced role that culture plays in noun classification. The role culture plays in class allocation is rather significant. Palmer & Woodman's findings on the cultural dimension of the noun class system suggest that speakers' understanding of what constitutes a noun class is influenced by culture. A shortcoming of this study, however, is that some of Palmer & Woodman's conclusions seem to be based on introspection and their own assumptions about Shona culture.

2.4 Survey of the basis of grammatical gender in Setswana

2.4.1 Setswana Noun Class System

Setswana (S.31a) originated from the Sotho language group from the south-eastern zone of Bantu languages (Letsholo 2002, 2013, 2018; Miti 2006). Setswana has 16 noun classes (Letsholo & Matlhaku 2014). As is the case with other Bantu languages, some classes make singular-plural distinction, whereas others do not (see Guthrie 1948; Setshedi 1980; Snyman & Shole 1990; Rakgokong 1986). As previously noted, some nouns are only found in singular classes and have no corresponding plural counterpart. By the same token, other nouns are only found in the plural class without a corresponding singular. This is a clear indication that there is some degree of arbitrariness in the way Setswana nouns are grouped into noun classes.

This shows that although the even numbered class represents the plural form of the corresponding odd numbered class, there are exceptions found in the language. For example, some nouns in class 9 get their plural in class 6 instead of class 10 as would be expected (Crisp 1905). Class 11, 14, 15, 16, 17, and 18 do not make any singular-plural distinctions. Lastly, as already mentioned, some prefixes do not express the feature of number, and instead are considered to be neutral. The table below illustrates how the noun class system of Setswana is organised (see Crisp 1905; Demuth 1988; Tsonope 1987; Canonici 1991; Kgukutli 1995; Letsholo & Matlhaku 2014; Sandilands 1953), and illustrates the subject and object markers that agree with each class (Letsholo & Matlhaku 2014; Lestholo 2013; Letsholo-Tafila 2018; Demuth 1988; Zeilser & Demuth 1995):

Table 2.6 Setswana Noun Class System

Class	**Prefix:**	**Subject Agreement**	**Object Agreement**	**Example noun**
1	*Mo-*	*o-*	*m-*	*Mosetsana* 'girl'
1a	*Ø*	*o-*	*m-*	*Malume* 'uncle'
2	*Ba-*	*ba-*	*ba-*	*Basetsana* 'girls'
2a	*Bo-*	*ba-*	*ba-*	*Bomalume* 'uncles'
3	*Mo-*	*o-*	*o-*	*Mosese* 'dress'
4	*Me-*	*e-*	*e-*	*Mesese* 'dresses'
5	*Le-*	*le-*	*le-*	*Legapu* 'watermelon'
6	*Ma-*	*a-*	*a-*	*Magapu* 'watermelons'
7	*Se-*	*se-*	*se-*	*Selepe* 'axe'
8	*Di-*	*di-*	*di-*	*Dilepe* 'axes'
9	*Ø*	*e-*	*e-*	*Ntsa* 'dog'
10	*Di-*	*di-*	*di-*	*Dintsa* 'dogs'
11	*Lo-*	*lo-*	*lo-*	*Lobelo* 'speed'
14	*Bo-*	*bo-*	*bo-*	*Bofufu* 'blindness'
15	*Go-*	*go-*		*Go ja* 'to eat'
16	*Fa-*	*go-*		*Fa pele* 'in front of'
17	*Ko-*	*go-*	*go-*	*Kodimo* 'on top of'
18	*Mo-*	*go-*	*go-*	*Motlhang* 'in the event that'

2.4.2 Semantic Properties of Setswana Noun Classes

Scholars have sought to describe Bantu noun classes in terms of semantic domains. That is, a noun class represents a particular semantic domain in that nouns belonging to that class share semantic properties. Canonici (1991) states that class 1/2 *mo-*/*ba-* and class 1a/2a *Ø*/*bo-* generally hold human beings, however not all humans are found within this class. Class 1a carries no prefix and is said to hold proper nouns, kinship terms and animals. Class 2a is used to show respect when referring to kin, as well as to indicate that the referent has company, for example, *boSarah* (Sarah and company). Although these classes are typically known to be associated with human beings, Meinhof & van Warmelo (1932) & Ntsime & Krüger (1991) mention that they also carry ethnic names like *moTswana* 'Setswana person', and various nouns such as *mong* 'owner', and *moagi* 'builder'.

Kgukutli (1994) carried out an extensive study of Setswana in which she focused on the semantics associated with the different noun classes in the language. Her study reveals that class 3/4 *mo-*/*me-* generally refers to non-personal nouns such as some body parts (*molomo* 'mouth'), objects (*mosese* 'skirt'), and trees (*motlhware* 'olive tree'). Although this class pair is known to hold non-personal nouns and plants, it also carries tools (*molamu* 'stick'), and even natural phenomena (*melelo* 'fire').

Class 5/6 *le-*/*ma-* nouns generally refer to professions or positions in society (*lelata* 'maid servant'), as well as people with undesirable associations (*legodu* 'thief'). The class also holds one part of a body pair (*leoto* 'leg'), wild animals (*lenong* 'vulture'), fruits (*legapu* 'watermelon'), natural phenomena (*lefifi* 'darkness'), collective nouns (*letsomane* 'herd of sheep'), and tribal names indicating exclusion from the Setswana people, (*leJuta* 'Jew'). In a related work, Rakgokong (1986) points out that nouns within this class may also distinguish uncommon things such as lelora 'type of soil used for making flour'.

Kgukutli (1994) observes that class 6 tends to consist of the plural counterpart of nouns from other classes besides those in class 5. In addition, class 6 consists of some nouns that do not necessarily denote plurality (*mafura* 'fat/oil', *maatla* 'strength', *mariga* 'winter', *maabane* 'yesterday'), making it a rather exceptional class, that denotes a sense of collective plurality. Class 6 is known to hold the semantic features of the classes that find their plural counterparts in class 6. This means that is consists of various nouns, some of which find their singular

counterpart in class 5, and others that find their singular form in class 3, class 9, and even class 14. The table below illustrates class 6's multi-plural nature:

Table 2.7 Class 6 forming the plural of class 3, 5, 9, and 14

Singular Counterpart:		Class 6:
Class 3 /*mo-*/	*mo-rula* 'morula tree'	*ma-rula* 'many morula trees'
Class 5 /*le-*/	*le-godu* 'thief'	*ma-godu* 'many thieves'
Class 9 *Ø*	*nlto* 'house'	*ma-ntlo* 'many houses'
Class 14 /*bo-*/	*bo-dulô* 'dwelling place'	*ma-dulô* 'many dwelling places'

Nouns in class 7/8 *se-*/*di-* denote disabilities (*sefufu* 'blind person'), and languages and culture (*sePedi* 'Pedi language, custom'). Nouns within this class also denote exceptionality within a person (*seriti* 'dignity'), phenomena (*sefifi* 'misfortune, mishap'), manner of acting (*senna* 'manliness'), as well as persons with a particular skill or occupation (*seagi* 'expert builder', *seoki* 'expert nurse'). Kgukutli (1994) claims that the class also holds nouns denoting equipment and tools such as *setulo* 'chair', and *senotlolo* 'key'.

Class 9/10 *Ø*/*di-* nouns refer to various entities, such as animals (*nku* 'sheep'), professions (*nese* 'nurse' and *ngaka* 'doctor'), concrete objects (*pitsa* 'pot'), and positions of authority or rank in society (*kgosi* 'chief'). Kgukutli (1994) and Canonici (1991) claim that nouns in class 9 are different to those of class 1, since they indicate rank and status, instead of denoting people in an unqualified sense. On the other hand, class 9's nouns also indicate collectives such as *nna* 'crowd of men', or *nyana* 'crowd of children'. Class 9 also carries loanwords (*bese* 'bus') that signify concrete objects, and even fruit names (*thula* 'morula').

Kgukutli (1994) notes that class 10 can also stand as the plural counterpart of class 5. In this instance class 10 nouns carry a meaning of individual plurality (*dintlo* 'houses') and differ from class 6 plurality which carries meanings of multitudes, (*mantlo* 'many houses'). Nouns in class 11 /*lo-*/ are associated with nouns denoting entities that are unusual or large in size like, *lonaka* 'horn with muti' (also known as traditional African medicine), abstract results

lorato ‘love’, and collections and processes like *lotseno* ‘income’ and *loago* ‘community’. Kgukutli (1994) states that these semantic domains may also be found in class 5.

Kgukutli (1994) observes that nouns in class 14 /*bo*-/ are associated with abstract entities (a similar observation is made by Richardson (1967) for Bemba). Although a handful of concrete objects are found within this class, it is mostly associated with collective and abstract nouns. This class seems to take many of the stems that are found within other classes and yet when attached to class 14, these stems denote a sense of being or condition, for example, *motho* ‘person’ vs *botho* ‘humanity’. There are nouns in this class that do not share any features with other classes, such as *bosula* ‘bitterness’ and *boroko* ‘sleep/tiredness’, which seem to not have been placed under any semantic category.

Nouns in class 15 *go*-, are essentially gerunds in terms of their semantics and have the form similar to that of infinitive verbs such as *go-ja* ‘to eat’, *go-tsamaya* ‘to walk’, *go-bua* ‘to talk’. Hence, class 15 is formed of gerunds which go on to stand as nouns. Class 16 /*fa*-/, 17 /*ko*-/, 18 /*mo*-/, consist of locatives (Welmers 1973; Demuth 1988; Buell 2007), which typically convey spatial relations associated with the relevant nouns that they are attached to. Canonici (1991) explains that class 16 /*fa*-/ indicates a state in close proximity to something, class 17 /*ko*-/ indicates motion towards something fairly distant, and lastly, class 18 /*mo*-/ indicates motion into, out of, around a situation, or around something without referring to its distance. Locative classes do not express any number feature.

It is evident that there are no neat semantic categories for distinguishing the different noun classes in Setswana. Dingemanse (2006) argues that when considering the features of the system, it is impossible to assume that the noun class system is entirely arbitrary. Interestingly, he goes on to mention that if we consider language to be a structured system of arbitrary form-meaning pairings, then it should not really matter whether the system is semantically motivated or not. The only thing that should matter is that it does its job alongside the other grammatical devices and features needed to mark the language (see also Richardson 1967 and Contini-Morava 1996 for similar views).

2.5 Semantic basis of grammatical gender in Bantu

Studies have suggested that the semantic features of Proto-Bantu (PB) have been maintained in the various Bantu languages today. As seen above this has led to linguists investigating the semantic productivity of current Bantu noun class systems and offering semantic classifications for the languages in question (see Adams 1973; Bleek 1869; Guthrie 1971; Richardson 1967; Demuth & Faraclas 1986; Creider 1975; Welmers 1973; Demuth 1988; Kgukutli 1994). Meinhof (1899), Guthrie (1971) and Givón (1970)) have investigated the semantic classification of PB. They argue that current Bantu languages, are in fact modern representations of the ancestral tongue, and therefore some semantic remnants of the PB system should be found in current Bantu. Table 2.8 below illustrates the semantic content proposed for each PB noun class:

Table 2.8 Proto-Bantu Noun Class Meanings (Demuth 2000:275)

Noun class:	**Meanings:**
1/2	Humans, other animates
1a/2a	Kinship terms, proper names
3/4	Trees, plants, non-paired body parts, other inanimates
5/6	Fruits, paired body parts, natural phenomena
6	Liquid masses
7/8	Manner
9/10	Animals, inanimates
11	Long thin objects, abstract nouns
12/13	Diminutives
14	Abstract nouns, mass nouns
15	Infinitive
16, 17, 18	Locatives (near, remote, inside)
19	Diminutives
20/22	Augmentative (diminutive)
21	Augmentative pejorative

PB is said to be the only (hypothetical) Bantu language to have had all 23 classes within its system. Scholars have attempted to show the semantic links between modern Bantu and PB by reinforcing four basic assumptions made by Givón (1971). The first assumption was that PB has a system of noun classification which was at first not hierarchically organised and lacked the human category, resulting in a classification system similar to the one shown below in Table 2.9:

Table 2.9 Givon's (1971:37) Semantic Classification of PB

Class:	**Semantic Content:**
3/4	Plants (and trees)
5/6	Fruits
7/8	Inanimates
9/10	Animals (which presumably held humans)
11/10	Elongated (large in size) objects
12/13	Small objects
14	Masses
15/6	Liquids
15	Infinitive nominalisation

The second hypothesis is that the development of a human class arrived much later in the history of Bantu, which leads to the third hypothesis claiming that there was a promoting of some class 9/10 nouns in order to create a human class. Lastly, it is the promotion of class 9/10 items that resulted in the breakdown of the system of semantic classification, found in the first hypothesis, and therefore led to a hierarchical human centred system.

The current investigation, to some extent, rejects the last assumption made by Givón (that the system gained its human centeredness, through the (late) creation of a human class). If this is the case, then it means that the system would have begun as a completely arbitrary system, which gained semantic motivation through time. This proposal is hard to accept when one considers why a possible classification system consisting of a language spoken by people, would initially not be human-centred. In fact it is more reasonable to assume that the human class must have been the initial class, which all the other nouns received their categorisation in relation to in order to make a distinction between humans and other objects, creatures and so forth.

It is understandable why broad assumptions such as these occur, simply due to the hypothetical nature of the PB language (Canonici 1991; Creider 1975). Earlier linguists such

as Whitely (1961) and Guthrie (1967) have attempted treatments similar to Givón (1971), however it seems like even though evidence shows that some classes seem more semantically inclined than others, there is still some hesitance towards characterising each class in terms of its intrinsic semantic content.

2.6 Summary

This chapter has provided a survey of literature based on grammatical gender and how it relates to the Bantu noun. The chapter has attempted to reveal the nature of the Bantu noun class system, highlighting its grammatical and semantic features, as well as its exceptions. It discusses how the Bantu noun is made up of a gendered stem and an assigned prefix that is known to allocate number to the noun. The chapter has discussed the agreement patterns of Bantu and revealed the semantic influence that the gender system poses on Bantu agreement. The chapter has also discussed the various semantic content associated to each Setswana noun class and looked at different experimental methods researchers used to uncover the semantic features of each class in the system. In doing so, the review has revealed some flaws found in earlier experimental attempts to investigate speakers' intuitions of the system. With this in mind, the current study seeks to make a further investigation of the semantics of noun classification by taking another look at Setswana, through experiments.

CHAPTER 3
Methodology

3. Introduction

This chapter provides a description of what constituted data for the current research, the sources of the data and how it was collected and analysed. This study draws insights from similar work conducted by Kgukutli (1994) and Selvik (2001) which sought to investigate the semantic content of noun classes in Setswana. Data for the current study was drawn from two main sources: (i) online Setswana Oxford Dictionary, where sixty nouns including those analysed in Kgukutli (1994) were examined and grouped into (broad) semantic domains;

3.1 The Present Study

The present study used a combination of Kgukulti (1994) and Selvik's (2001) approaches to gain a better understanding of what Setswana noun classes really mean. The study re-looked at the nouns analysed by Kgukutli (1994) and added a further sixty nouns that were not included in Kgukutli's study. The study followed Kgukutli's classification of class 1, 3, 5 and 7 to see if some of those categories could be expanded and/or refined. These selected classes were chosen due to their distinct singular-plural markings. The current study sought to uncover the semantic associations linked to class 1, 3, 5, and 7. These prefixes were selected for reasons listed below:

A. All of them carried a distinct singular-plural marking for each class.
B. Class 3, 5, and 7 have received a lot of traction within the literature (see Selvik 2001).
C. Class 1 and 3 are phonologically similar.
D. Class 5 usually holds various semantic associations ranging from personal nouns associated with negative connotations, to body parts.
E. Class 7 generally known as a semantically packed class (associated to personal nouns, language and customs, and habits, to name just a few).
F. Lastly, class 5 and 7 are both associated with nouns expressing connotation.

Sixty nouns (fifteen nouns from each selected class) that were not mentioned in Kgukutli's (1994) study were randomly selected from the Setswana Online Oxford Dictionary. These nouns were analysed for their prominent semantic domains. This was done by listing the nouns and semantically coding them. The most prominent semantic categories were added to offer possible insight to the kind of nouns found in Kgukutli's category of *miscellaneous* and *deverbative* nouns. Sixty nouns were listed and grouped according to their perceived semantic features. There is also a need to note that the dictionary data used in the study is based on Setswana spoken in Bostwana, although the study was conducted in South Africa.

In addition, a limited field study designed to replicate Selvik's (2001) study was conducted. A language test which required participants to match made up nouns with predetermined Setswana definitions was designed. This study differs from Selvik's in that instead of English definitions, Setswana definitions were used this time. The field study was designed to provide additional data to augment the findings from the dictionary analysis (see Appendix C for full language test).

Participants in the field study were a mixed group of twenty-three females and sixteen males, all between the age of twenty-one and eighty-five. This specific age was chosen to ensure that all participants were adults who would be able to sign their own consent forms. Participants were native speakers of Setswana, who were literate (all up tp the level of university) in both English and Setswana. Participants were purposefully selected for being first language speakers of Setswana and were known to the researcher, who is also a first language speaker of Setswana. Participation in the study was voluntary and it was made clear to them, when requesting for their participation, that they were not obligated to take part in the study, and that they had a choice of opting out at any stage of the investigation. Participants were guaranteed anonymity and the confidentiality of their results. A consent form was created and sent electronically or given manuall to each participant, to sign and return. The forms were obtained either electronically through emailor manually by hardcopy.

The initial goal was to get fifty participants for the study but only thirty nine expressed willingness to participate. Once speakers agreed to take part, they were sent an email which included the consent form and an instruction page with the language test, or they were given hard copies of these documents. The instructions informed them of the language test. Importantly participants were told that there were no right or wrong answers to the test.

As noted above, the field study sought to replicate Selvik's (2001) study in the design of the research instrument. In addition the study adopted Kgukutli's (1994) semantic classification of the core meanings of class 1, 3, 5 and 7. These core meanings informed the formulation of definitions used in the questionnaire to test participants. The questionnaire consisted of two parts: Part One required participants to choose the most suitable definition for the ancient Setswana word provided. It offered participants a made up stem, attached to one of the selected noun class prefixes, and five (singular) Setswana definitions to choose from. It consisted of eight test items. Part Two asked participants to choose the most suitable ancient word for the definition provided. It offered participants one plural Setswana definition and four made up nouns to choose from. The stem of each noun was attached to the plural counterparts of class 1, 3, 5, and 7. Part Two consisted of fifteen items. Participants had two weeks to respond. The definitions are listed below in Table 3:

Table 3. Definitions used in questionnaires administered to participants

	English translation:	**Singular Definition:**	**Plural Definition:**
1	A being that is alive	*Setshedi se se tshelang*	*Ditshedi tse di tshelang*
2	A type of tree	*Mofuta wa setlhare*	*Mefuta e le mmalwa ya ditlhare*
3	A body part	*Karolo ya mmele*	*Dikarolo tsa mmele*
4	A person in an unfavourable position	*Motho yo o leng mo maemong a a sa itumediseng*	*Batho ba ba leng mo maemong a a sa itumediseng*
5	One pair of a body part	*Para e le nngwe ya karolo ya mmele*	*Dipara di le pedi tsa dikarolo tsa mmele*
6	Manner or habit of performing an action	*Mokgwa kgotsa tlwaelo wa go dira sengwe*	*Mekgwa kgotsa ditlwaelo tsa go dira sengwe*
7	A person with an abnormality or disability	*Motho yo o nang le kgweetlho mo mmeleng*	*Batho ba ba nang le dikgweetlho mo mmeleng*
8	Concrete result of an action	*Ditlamorago tse di utlwisisegang*	*Ditlamorago tse di utlwisisegang*
9	Abstract result of an action	*Ditlamorago tse di sa utlwisisegang*	*Ditlamorago tse di sa utlwisisegang*
10	Person with undesirable behaviour	*Motho yo o nang le maitsholo a a sa itumidiseng*	*Batho ba ba nang le maitsholo a a sa itumediseng*
11	Tool/instrument	*Sediriswa*	*Didiriswa*
12	A person with extraordinary skill/an expert	*Motho yo o nang le bokgoni jwa maemo a a kwa godimo*	*Batho ba ba nang le bokgoni jwa maemo a a kwa godimo*
13	A shared characteristic like a language	*Mokgwa/tlwaelo kgotsa leleme le le tshwanang*	*Mekgwa/tlwaelo kgotsa maleme a a tshwanang*
14	A non-Setswana person	*Motho yo e seng Motswana*	*Batho ba e seng Batswana*
15	A kind of wild animal	*Phologolo ya mofuta mongwe*	*Mofuta wa diphologolo tsa naga*

As hinted above, participants were made to believe that the hypothetical Setswana words were real words from an ancient text. These stems were consistent with the phonological rules and restrictions of Setswana. When creating each possible stem, it was crucial to identify which of them would most likely be associated with certain definitions. For example, depending on the class, and the vowel found at the end of the stem, the possible noun may be associated with a particular noun. For example, usually nouns from class 1 and 7 that end in /-*i*/ or nouns from class 3 ending in /-*o*/ are categorised as deverbatives (a noun that is derived from a verb). To combat this test items that consisted of class 1, 3, and 7 nouns ending in

these particular vowels, included a particular definition (e.g., *mokgwa kgotsa tlwaelo wa go dira sengwe* 'manner or habit of performing an action') to observe whether participants were influenced by the final vowel of the stem[8]. Below is a list of the made up stems for Part One (Table 3.1) and Part Two (Table 3.2):

Table 3.1 Made up stems for Part One

Item	Made Up Stems:
A	*-pitamo*
B	*-satlora*
C	*-bagi*
D	*-ape*
E	*-bolo*
F	*-balo*
G	*-ali*
H	*-tsebela*

Table 3.2 Made up stems for Part Two

Item	Made up stems:
1	*-pali*
2	*-pamo*
3	*-polobo*
4	*-phata*
5	*-ale*
6	*-game*
7	*-baki*
8	*-tuja*
9	*-jelofa*
10	*-bathe*
11	*-kule*
12	*-sepola*
13	*-ragala*
14	*-katame*
15	*-fagi*

[8] Psycholinguistically known as wug constructions.

Below is a sample of a test item from Part One (3.2.1) and Part Two (3.2.2). For the complete Questionnaire, consult Appendix C.

Tshwaya bokao jwa lefoko jo bo maleba go gaisa /Tick the most suitable definition/association for the word

H. setsebela	1. *Motho yo o leng mo maemong a a sa itumediseng*	
	2. *Mokgwa/tlwaelo kgotsa leleme le le tshwanang*	
	3. *Para e le nngwe ya karolo ya mmele*	
	4. *Mokgwa kgotsa tlwaelo wa go dira sengwe*	
	5. *Ditlamorago tse di sa utlwisisegeng*	

3.2.1 Sample Item for Part One

Tshwaya lefoko le le maleba go gaisa le le neetsweng go fa tlhaloso /Tick the most suitable word for the definition/association provided

18. Batho ba e seng Batswana	*Bagame*	
	Megame	
	Magame	
	Digame	

3.2.2 Sample Item for Part Two

3.2 Data Collection

Nouns for the analysis were randomly selected from the Setswana Online Oxford Dictionary. Although it proved to be useful, some errors were picked up in the classing of nouns that required the researcher to intuitively class nouns. Thirty nine participants returned the questionnaire tests. The response rate of the test was between one to seven days. These questionnaires were stored in a secure concealed folder in an office. This was to ensure that the information (i.e., names and any other personal information) given by the participants remained confidential. The study was limited in regard to the data collection since it was impossible to verify whether the person who was intended to respond was actually the one who responded.

In regards to the dictionary analysis the study coded the sixty nouns according to their semantic domains using a combination of Kgukutli's (1994) classification, as well as Selvik's (2001) prototypes. Some nouns did not fit under the domains given by the previously mentioned linguists and required the researcher to intuitively categorise them. Data analysis also consisted of counting the responses made by participants within the language test, and establishing which of those responses were chosen the most. The documenting of choices was electronically recorded using the Microsoft Excel program. The definitions that were most chosen by the participants were categorised as the associations participants believed were most linked to the specific noun classes. Three themes were identified from the findings.

The investigation also set out to compare the semantic features of the dictionary analysis and Kgukutli's (1994) classification, with the choices of the language test. This was done to analyse whether the semantic features linked to the real words (from the revised classification) would in any fashion replicate the semantic features linked to the made up words (from the language test). If there were any correlations between the semantic features, the study would be able to conclude the core meanings for the selected classes, and show that noun classes are organised around semantic meaning.

3.3 Data Analysis

Sixty nouns from the dictionary analysis were analysed and grouped into specific semantic categories. The created categories were PERSON, ENTITY, TRANSPORTATION, FRUIT, PLANT, PERIPHERY, BODY, ANIMAL, STATE, COMMUNICATION, ABSTRACT RESULT, ABSTRACT CONCEPT, DRESS, NATURE, DEROGATION, EXALTATION, CULTURE, SKILL, TOOL/INSTRUMENT (definition for each domain is provided in the next chapter). The semantic domains were then consolidated, analysed and presented in the form of graphs. Kgukutli's (1994) classification was then revised and compared to the most prominent semantic categories that the current study uncovered.In regard to the language test, the participants responses were documented and consolidated and then represented as graphs. The results from the language test were then compared with those of the dictionary analysis to formulate a revised semantic classification for class 1, 3, 5 and 7.

3.4 Summary

This chapter focused on the process of accomplishing the goals and objectives of the study. It starts off by analysising the research done by Kgukutli (1994) and Selvik (2001). The chapter also explains the specific frameworks and processes it adopted from Kgukutli (1994) and Selvik (2001). The chapter briefly discusses the reason behind selecting class 1, 3, 5, and 7 as the main focus of the study. It discusses the methodology of the study, including how participants were selected, how the investigation was formulated and conducted, as well as how data was collected and analysed.

The limitations that were faced were the amount of participants that the study was able to test. The limited number may create a scewed representation of the definitions and semantic associated with each class. Another limitation was the amount of nouns analysed in the dictionary analysis. Future research may consider increasing the number of participants tested and nouns analysed. Broadening the scope of this study will aid in observing whether the semantic content proposed for the selected classes will repeat themselves are expand. Other challenges were found in the formulating of the language test, and deciding how many times each selected class was to be tested.

CHAPTER 4

Data Presentation and Discussion of Results

4. Introduction

This chapter presents the major findings of the study. It describes the semantic content that was evident in both the prefixes and the stems, as well as how semantics play a role in the classification of Setswana nouns into different noun classes. The chapter also shows that the semantic categories proposed by Kgukutli (1994) provide some useful insights into how noun classes are grouped into some identifiable semantic domains. The study also found that additional categories are needed in order to refine the categories proposed by Kgukutli. The rest of the chapter is organised as follows: Section 4.1 presents the findings from the dictionary analysis, and sections 4.2 and 4.3 present the findings from the language test. Section 4.4 presents the summary of the results.

4.1 The Semantic Categories of the Different Noun Classes

4.1.1 Class 1

For noun class 1 Kgukutli (1994) suggested one semantic category - *unqualified/unmarked persons* which consisted of nouns like *mosadi* 'woman', *mosetsana* 'girl' and *moagi* 'builder'. When the fifteen extra nouns from the study were taken into consideration the study found that this category did not cover all the nouns in the sample. It was deemed necessary to add another category - ENTITY - to this class. The category ENTITY refers to nouns that denote living things that are analogous to humans (i.e., spirits and so forth). This category consists of nouns like *modimo* 'God'. This noun was placed in this category despite it not referring to humans since the notion of 'God' is one that transcends personhood and goes beyond humanness. The term *modimo* posed a challenge in terms of classification. The Setswana Online Oxford Dictionary placed the noun in class 3, instead of class 1. This is possibly due to scholars only considering the fact that the noun does not denote humans. The present study however, departs from this view and places the term in class 1, due to

morphological reasons, such as the plural counterpart of *modimo* being *badimo*, a class 2 noun, which proves that the term is part of class 1/2. .

The semantic category that was adopted from Kgukutli's classification was *PERSON*. The additional data shows that although the majority of class 1 nouns do denote *humans*, there are nouns in the class that merely refer to *human-like beings* and not necessarily humans. Therefore making the definitive element *human*. The fact that many class 1 nouns in the study refer to humans is captured in the figure shown below.

Note that the figure below, as well as others similar to it represent the number of nouns assigned to semantic categories during the dictionary analysis:

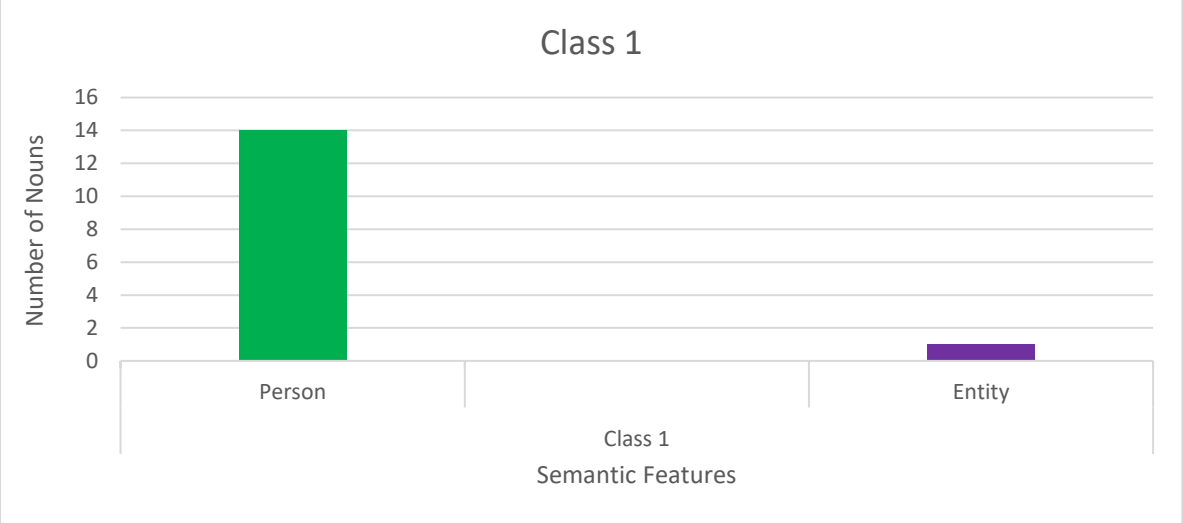

Figure 4.1. Semantic Features of Class 1

As can be seen, 14 out of the 15 nouns (93.3%) in this class denote PERSON, or *unmarked personal nouns* according to Kgukutli (1994). These included nouns such as *motho* 'person', *mogolo* 'elder' and *moagisani* 'neighbour'. Other nouns which fell under this category describe *people in their specific positions or realities,* for example, *mogaisane* 'contestant', *mofenyi* 'winner', and *mokapelo* 'lover'. The single noun which did not fit into this category and was classified as belonging to the category ENTITY was *modimo* 'God'[9] as indicated above

[9] The study is unsure if all supernatural beings fall into this category

4.1.2 Class 3

For this class, Kgukutli (1994) suggested three semantic categories – *tree names* (e.g. *motlhware* 'olive tree'), *deverbatives denoting manner or style of an action* (e.g. *moroko* 'stitch/sow'), and *miscellaneous nouns* (e.g. *molamu* 'stick' and *molelo* 'fire'). When the fifteen extra nouns from the study were taken into consideration, the study found that Kgukutli's categories failed to cover all the nouns in the sample. This resulted in the *deverbative* and *miscellaneous* categories being abandoned, since they failed to reveal the semantic features of the domains, and thus it was deemed necessary to introduce new categories. The category of *deverbative*, was replaced with *nouns denoting manners of performing an action* and the category of *miscellaneous* was replaced with *non-typical nouns* which included ten new categories: PERIPHERY which consisted of nouns that referred to boundaries (e.g. *modiga* 'end' and *mosakô* 'large enclosure'), DRESS which denoted clothes (e.g. *momenô* 'hem'), STATE which refers to nouns describing an emotional or situational state (e.g., *mokaikai* 'confusion', or *moferefere* 'chaos'), TRANSPORTATION referring to nouns denoting modes of transportations such as vehicles and so forth (e.g. *mogobagoba* 'truck'), COMMUNICATION which consisted of nouns referring to ways of communicating and speaking (e.g. *molaetsa* 'message'), and lastly CULTURE which refer to nouns denoting communal tribes, languages and customs (e.g. *morafe* 'tribe').

The most prominent category in the analysis was PERIPHERY (20%)[10]. The second most prominent categories were BODY, STATE and DRESS (13.3%). BODY includes nouns like *mokô* 'bone marrow'. The new categories that corresponded with Kgukutli's classification were those of FRUIT referring to fruit names or trees named after fruit (e.g. *mogabala* 'wild melon'), PLANT referring to plant names or trees named after plants (e.g. *mogaga* 'river lily'), BODY referring to body parts, AND ANIMAL referring to animate non-human things (e.g. *mohu* 'paper wasp'). The findings of class 3 are seen below:

[10] Percentages represent the level of prominence each semantic category held within the dictionary analysis. Results are seen in the tables representing the each class.

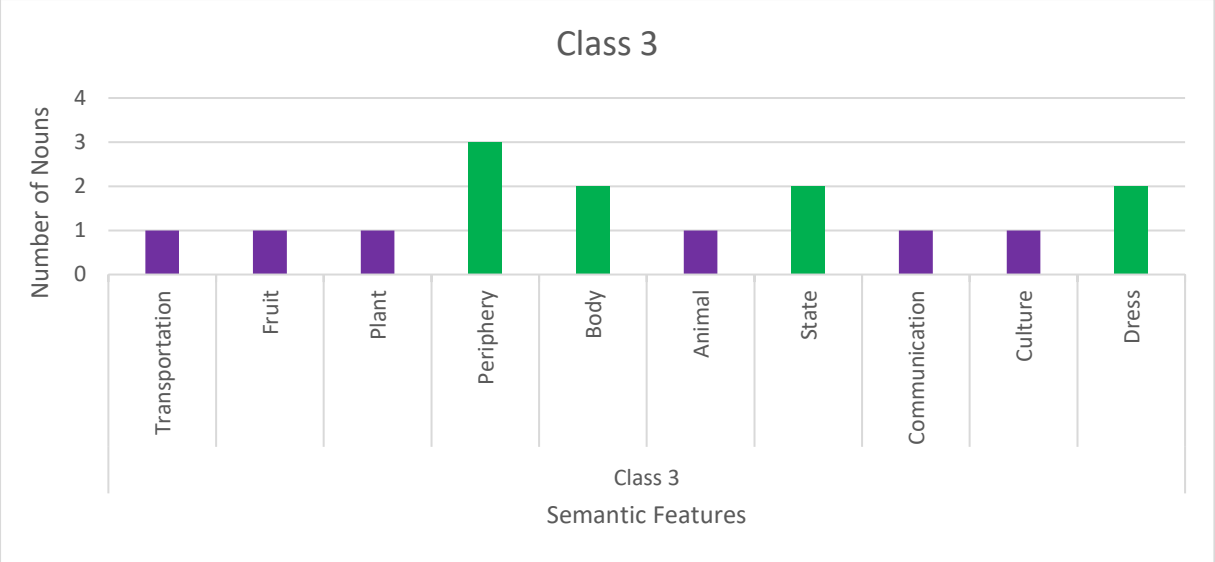

Figure 4.2. Semantic Features of Class 3

Kgukutli suggested three categories for class 3, two of which the study proposed are vague (i.e., *deverbative* and *miscellaneous*). Ten semantic categories were suggested by the study, which revealed two things: 1) the new categories were needed and justified the decision the study took to refine Kgukutli's categories and 2) the new categories show how class 3 represents a variety of semantic domains, which are many more than what Kgukutli originally suggested.

Categories that were not as prominent in the analysis were COMMUNICATION and CULTURE. In class 3 the domain CULTURE refers to tribes and communities. It should be noted that these observations are based on a limited set of data, so they are only suggestive of a particular pattern. The study claims that class 3 is organised around the core meanings of *tree names* (named after the fruits and plants they bear), nouns denoting a *manner of performing an action* and *non-typical nouns* that denote *periphery, dress, body parts and (emotional or situational) states.*

The investigation revealed that some nouns like *moikakai* 'confusion' were categorised as class 1 nouns, instead of class 3 in the Setswana Online Oxford Dictionary. This is unusual since *mokaikai* refers to a state of being, and not a human being. The inconclusive nature of some nouns being in class 1 or 3 may be what linguists such as Creider (1975), and Givón (1970) allude to by stating that the human class was at first non-existent, suggesting that there was an earlier class that held the contents of both class 1 and 3. The present study disregards

the earlier classification found in dictionaries which placed the noun *mokaikai*[11] in class 1 and instead places it in class 3, due to it referring to a state of being[12].

4.1.3 Class 5

Kgukutli (1994) suggested four categories for class 5 - *personal nouns which denote connotation* (e.g. *legodu* 'thief'), *one of a pair of the body* (e.g. *leoto* 'leg'), *deverbatives denoting results of an action* (e.g. *lekwalo* 'letter'), and *miscellaneous nouns* (e.g. *lefifi* 'darkness'). The study retained the category of *personal nouns which denote connotation*, however, when the fifteen extra nouns from the study were taken into consideration, the study found that Kgukutli's categories failed to cover all the nouns in the sample. This resulted in new categories being formed, and the *deverbative* and *miscellaneous* categories being abandoned. The category of *deverbative*, was replaced with *non-typical nouns denoting results of an action*. The *miscellaneous category* is replaced with *non-typical nouns* which included nine new categories - ABSTRACT RESULTS referring to abstract results of an action (e.g. *leanô* 'plan'), ABSTRACT CONCEPTS referring to abstract or intangible ideas (e.g. *leamanyi* 'relative pronoun'), PERIPHERY (e.g. *leôbô* 'fence'), DEROGATION referring to personal nouns used to express negative feeling about a person, especially towards their behaviour or position (e.g. *lejabatho* 'man-eater'), NATURE referring to things found in nature, caused by nature and cultivated by nature (e.g. snow, frost, drugs, which includes nouns like *lewatlê* 'sea') , BODY (e.g. *lewa* 'skeleton'), EXALTATION referring to personal nouns used to express positive feelings about a person, especially towards their behaviour or position (e.g. *legagola* 'hero'), ANIMAL (e.g. *lekaka* 'termite'), and STATE (e.g. *lehuha* 'jealousy' and *leraaraa* 'disorder'). The findings of class 5 are shown below:

[11] The categorisation of *mokaikai* in the online dictionary may be due to it infering to 'one who is confused', therefore qualifying the word as a class 1 noun. It is noted that this confusion may be due to dialect/vocabulary differences between Setswana from South Africa and Botswana.
[12] This uncertainty with the prefix /*mo*-/ in regards to class 1 and 3 is in the homophonous nature of the prefix. It is also possible that the classification of these words in the Setswana Online Oxford Dictionary were infact typos. Therefore not all Setswana dictionaries should be held to this classification.

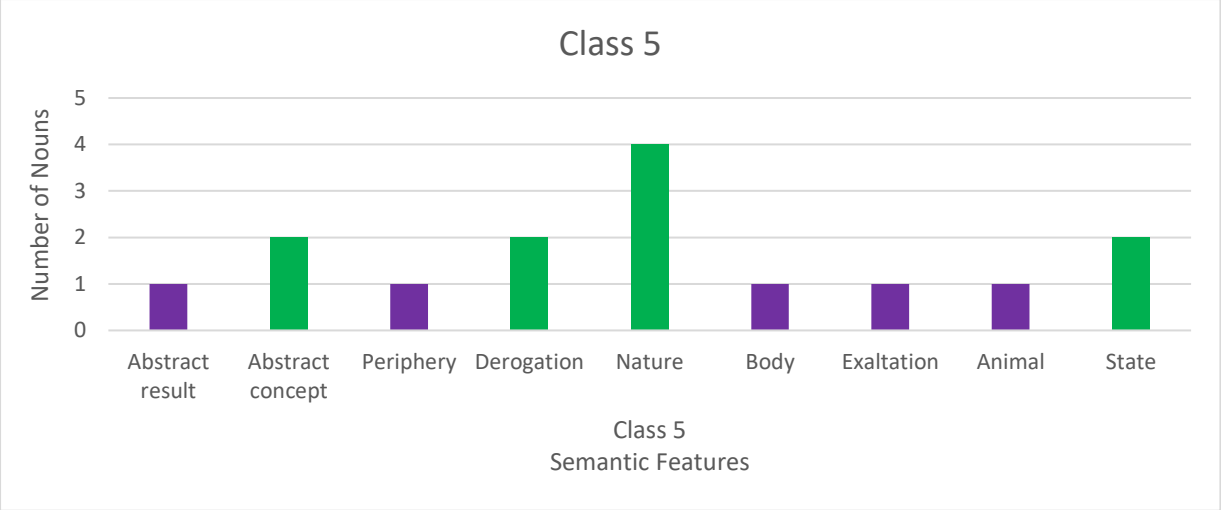

Figure 4.3. Semantic Features of Class 5

Kgukutli suggested four categories for class 5, two of which the study proposed are vague (i.e., *deverbative* and *miscellaneous*). The current study suggests nine new semantic categories which reveal two things: 1) to some extent, the findings of the analysis correspond with Kgukutli's, in that the semantic features found in the categories DEROGATION and EXALTATION were similar to those found in her semantic category of *personal nouns denoting connotation*. 2) The difference was that Kgukutli's category did not carry nouns expressing positive connotation in class 5, while the study found nouns denoting exaltation and honour (e.g. *legagola* 'hero'). The most prominent semantic features for class 5's *non-typical nouns* were NATURE (26.7%). The second most prominent features were DEROGATION, STATE and ABSTRACT CONCEPT (13.3%).

Interestingly, the analysis indicated that class 3 and 5 shared the semantic features of PERIPHERY, BODY, STATE and ANIMAL (6.7%), but class 5 seemed to carry several nouns that appeared across a wider range of semantic features, with very few strong semantic links to one another. Class 3's PERIPHERY category referred to boundaries that led to a specific destination (e.g. *modikolosa* 'detour'), while class 5's category held nouns which refer to 'enclosures'. In the category of BODY, both class 3 and 5 referred to parts of the body found under the skin (e.g. *mokô* 'bone marrow' and *lewa* 'skeleton'). In the category of STATE, both classes refer to situational and emotional conditions of confusion, such as chaos and disorder. When it comes to the category of ANIMAL, class 3 and 5 referred to insects. The investigation revealed that class 5 was organised around the core meanings of *personal nouns denoting connotation towards one's behaviour or position in society* (mostly *derogation* but

sometimes *exaltation*), *body parts*, *nouns denoting manner of performing an action*, and *non-typical nouns referring to state*, *abstract concepts* and *nature.*

4.1.4 Class 7

Kgukutli (1994) suggested that class 7 had six semantic categories - *personal nouns indicating disability* (e.g. *sefufu* 'blind person'*), personal deverbatives indicating skill or expertise* (e.g. *seagi* 'expert builder')*, languages and customs* (e.g. *sePedi* 'Pedi language')*, habit or manner* (e.g. *seriti* 'dignity')*, deverbatives denoting instruments* (e.g. *senotlolo* 'key'), and *miscellaneous nouns* (e.g., *sefifi* 'misfortune'). In the present study her *deverbative* nouns were reclassified into the category of SKILL which refer to personal nouns denoting people with extraordinary ability (e.g. *setalatala* 'debater') and TOOLS/INSTRUMENTS referring to objects used as instruments (e.g. *sefadi* 'scourer' and *sekale* 'scale'). Kgukutli's *languages and customs* category was reclassified to CULTURE (e.g. *sefane* 'surname'). Her *disability and adulterer category* was reclassified to DEROGATION to include nouns like *seaka* 'adulterer'.

The *miscellaneous nouns* were further reclassified into *non-typical nouns*. When the fifteen extra nouns from the study were taken into consideration, the study found that these categories did not cover all the nouns in the sample. The new categories that were added to further categorise the *non-typical nouns* were NATURE which include *sediba* 'well' (a shaft sunk into the earth to obtain water, oil, or gas), *setagi* 'drug (specifically referring to drugs which are cultivated from a plant' and *segagane* 'frost', BODY which consist of nouns like *sehuba* 'chest', ANIMAL which includes nouns like *semane* 'swarm of bees', CONCRETE RESULT referring to concrete and tangible results of an action (e.g. *seabê* 'contribution'). The findings are illustrated below:

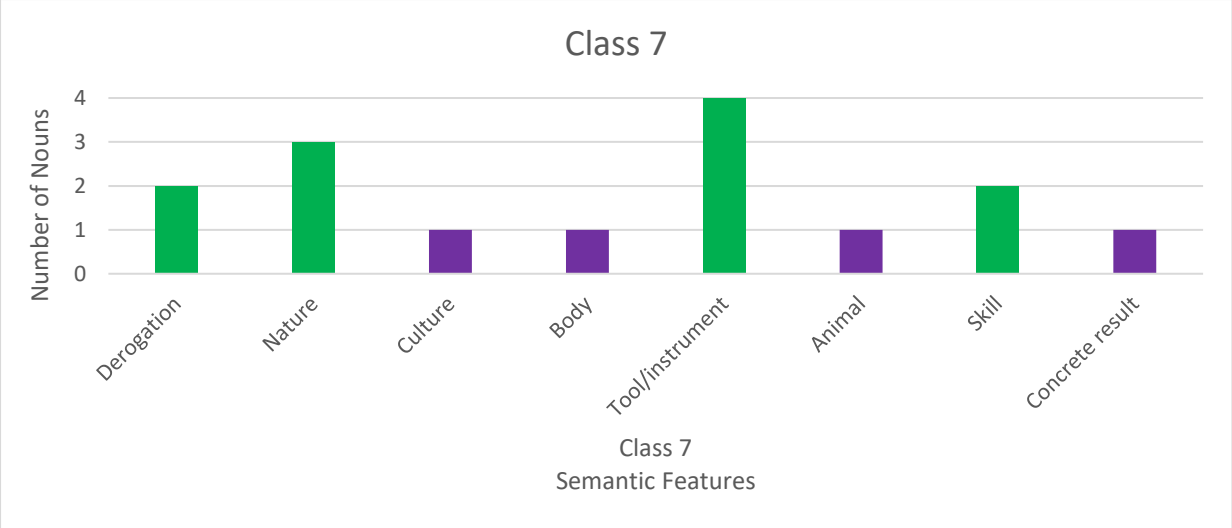

Figure 4.4. Semantic Features of Class 7

Kgukutli suggested six categories for class 7, two of which the study proposed are vague (i.e., *deverbative* and *miscellaneous*). The current study suggested eight new semantic categories which revealed two things: 1) The analysis confirmed some of Kgukutli's features for class 7. It confirmed that the class was largely associated with TOOLS/INSTRUMENTS, DEROGATION and SKILL. 2) The feature of DEROGATION carried no reference to *disability* (as suggested by Kgukutli's study), but rather in relation to one's stance or behaviour in society, for example *sejaro* 'loner'.

The results found that the most prominent semantic feature found in class 7 was TOOLS/INSTRUMENTS (26.7%), second to that was NATURE (20%), and third was the category of SKILL (13.3%). The investigation suggests that the most prominent category of the *non-typical nouns* was the semantic feature of NATURE. Class 3, 5 and 7 share the feature of NATURE. Class 3's feature specifically deals with FRUITS and PLANTS, while class 5 deals with elements within nature such as the sky and sea, and class 7 focuses on things that are brought about or cultivated from nature, like drugs. The study suggests that class 7, is organised around the core meanings of *personal nouns indicating skill*, *tools, personal nouns indicating connotation (*referring to *disability, derogation, or frowned upon behaviour in society)* and *non-typical nouns* (some referring to *nature*).

A point that Kgukutli's classification did not reveal was how to make distinctions between the various overlaps between classes. As already mentioned here class 3, 5, and 7 share the semantic features of NATURE, BODY, and ANIMAL. The feature of ANIMAL occurred equally across all three classes, while the feature of BODY was most prominent in class 3. Class 3, 5

and 7 referred to *body parts* found under the skin *(*e.g., *sefuba* 'chest'). When it came to the category of ANIMAL, however, Kgukutli suggested that class 3 carried general animals, class 5 carried mostly wild animals and class 7 held insects. The findings in the current study suggest that class 3, 5 and 7 refers specifically to insects and bugs. The new semantic domains for class 1, 3, 5 and 7, are summarised below in Table 4.

Table 4. Codes For class 1, 3, 5 and 7's Semantic Features

Codes:	**Class:**
PERSON	1
ENTITY	1
TRANSPORTATION	3
FRUIT	3, 5
PLANT	3
PERIPHERY	3, 5
BODY	3, 5, 7
ANIMAL	3, 5, 7
STATE	3, 5
COMMUNICATION	3
ABSTRACT RESULT	5
CONCRETE RESULT	5, 7
ABSTRACT CONCEPT	5
DRESS	3
NATURE	(3), 5, 7
DEROGATION	5, 7
EXALTATION	5
CULTURE	3, 7
SKILL	7
TOOL/INSTRUMENT	7

The findings of this study reveal that each class consists of more than one semantic feature as seen above in Table 4. The findings also suggest that each class is organised around more than one core meanings, and carried certain semantic characteristics which are unique to that

particular class. At this stage it would be useful to compare Kgukutli's (1994) semantic classification (shown in Table 4.1) with the present classification (shown in Table 4.2).

Table 4.1. Kgukutli's Classification for Class 1, 3, 5, and 7

Class 1	Class 3	Class 5	Class 7
Unqualified or unmarked persons	Tree names, deverbatives denoting manner or style of an action, miscellaneous nouns	Personal nouns which denote connotation, one of a pair of the body, deverbatives denoting results of action, miscellaneous nouns	Personal nouns indicating disability, personal deverbatives indicating skill or expertise, languages and customs, habit or manner, deverbatives denoting instruments, miscellaneous nouns

Table 4.2. Proposed Core Meanings of Class 1, 3, 5, and 7

Class 1	Class 3	Class 5	Class 7
Unqualified or unmarked persons (**entity analogous to humans)**	Tree names, **nouns denoting manner of performing an action**, **non-typical nouns** (**some referring to periphery, body parts, state, and dress**)	Personal nouns which denote connotation (**derogatory or exaltation**), one of a pair of the body, **nouns denoting results of action (abstract and concrete)**, **non-typical nouns (some referring to state, abstract concepts, and nature)**	Personal nouns indicating disability or **societal position**, **personal nouns indicating skill or expertise**, languages and customs, habit or manner (**behaviour**), **nouns denoting instruments, non-typical nouns (some referring to nature)**

Although the table above suggests that noun classification involves some form of partial ordering, the notion of the noun class system being organised around core meanings, remains inconclusive. This is because the analysis investigated dictionary entries, which are static in nature. In other words, they may represent outdated intuitions about what speakers perceive to be the core meanings of classes. To gain insights into how current speakers perceive the

meanings of noun classes it was necessary to carry out a field test, even if it was limited in scope.

4.2 Results from Language Test

This section discusses the results of the first part of the language test. Part One sought to uncover what definitions were mostly associated to the pseudo-stems with noun class prefixes attached.

4.2.1 Part One: Associations of Noun Class to Definition

Three stems were attached to the /*mo*-/ prefix and tested in the first three test items. The pseudo-nouns were *mopitamo* tested in Set A, *mosatlora* tested in Set B, and *mobagi* tested in Set C. The prefix is associated with both class 1 and class 3, therefore the two noun classes were tested simultaneously.

4.2.1.1 The prefix /*mo*-/

Recall that the prefix /*mo-/* is ambiguous in the sense that it can represent either class 1 or class 3 nouns. The results in relation to the prefix /*mo*-/ were interesting in that for the words *mopitamo* and *mobagi* the majority of the respondents associated these words with *humans*, regardless of the usual association linked to the definition. For the word *mosatlora*, the majority of the respondents associated it with a class 3 meaning (*trees*). These facts are illustrated in Figure 4.5, Figure 4.6 and Figure 4.7. The results corresponded with the findings of Table 4.2 above, in that they show that class 1 was generally linked to *humans*, and class 3 to *trees*. The results are shown below. Note that the figure below (as well as other figures similar to it) represents the number of respondents that chose each definition, while red bar shows the most chosen definition.

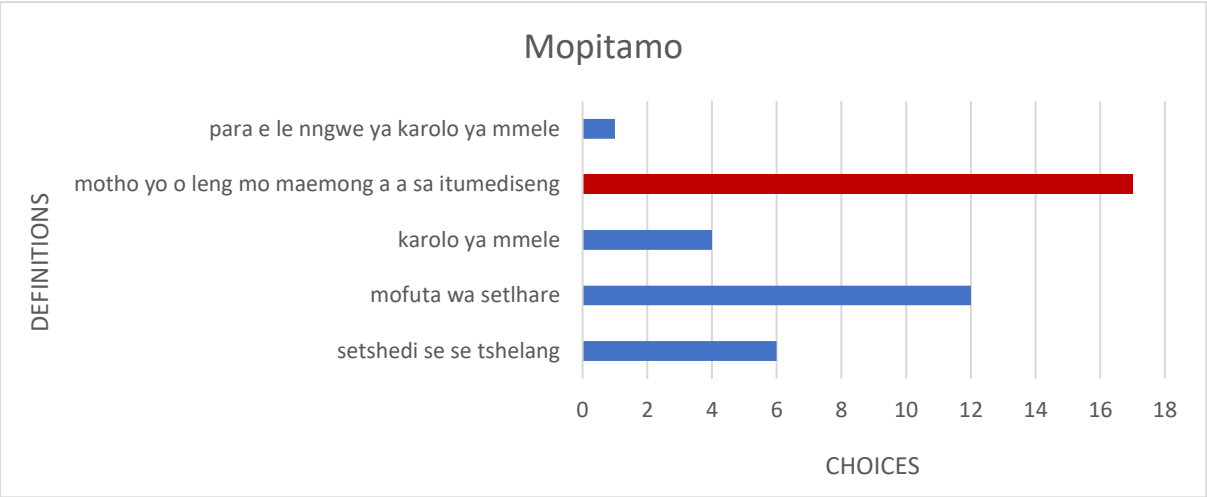

Figure 4.5. Set A

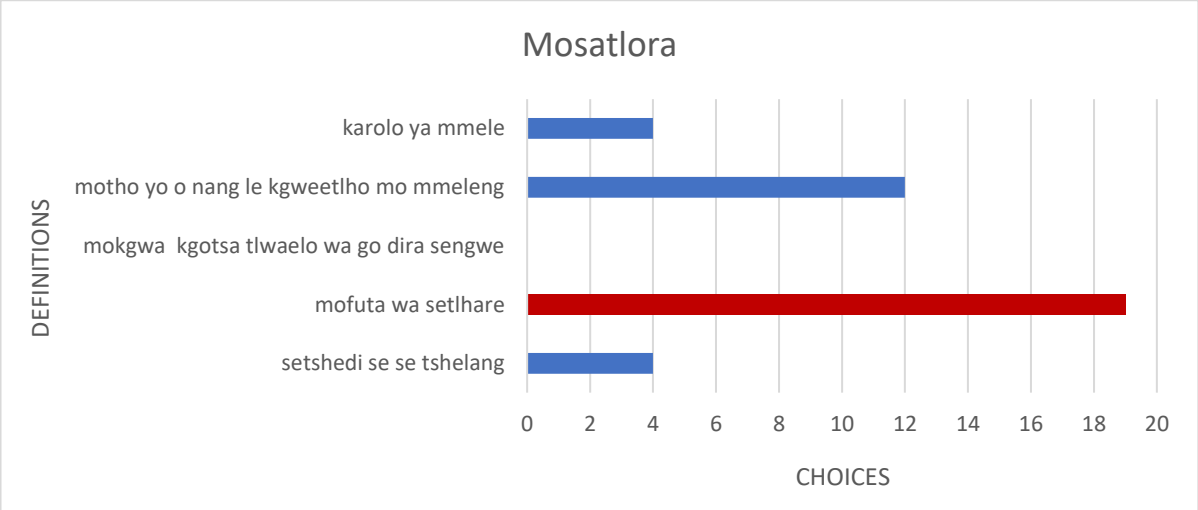

Figure 4.6. Set B

Set B received *mofuta wa setlhare* 'a type of tree' (48.7%) as its most significant association, linking the possible word with class 3. The association could have been chosen due to the made up word being structured similar to already existing terms that refer to trees, such as *motlhware* 'olive tree'. The second most chosen association was *motho yo o nang le kgweetlho mo mmelng* 'a person with an abnormality or disability' (30.8%).

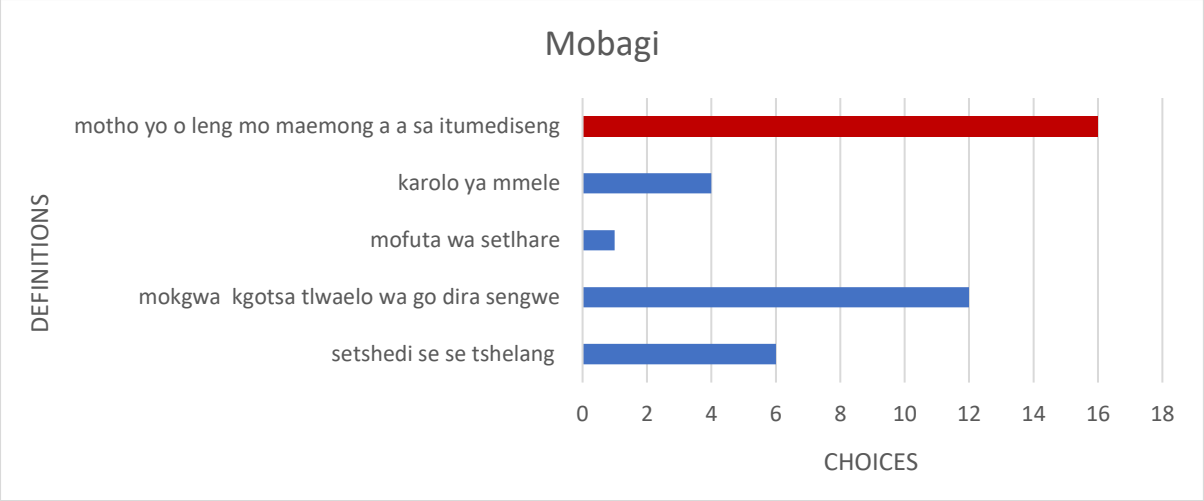

Figure 4.7. Set C

For Set C the second most chosen defintion, was *mokgwa kgotsa tlwaelo wa go dira sengwe* 'manner or habit of performing an action' (30.8%). It is difficult to conclude whether this possible word was being linked to either class 1 or 3. Kgukutli (1994) proposes that nouns in class 1 that usually end with /-*i*/ are deverbatives. The investigation proposes that the possible word was associated to class 1 nouns, due to the least chosen associations being *mofuta wa setlhare* 'type of tree' (2.6%), and *karolo ya mmele* 'a body part' (10.2%), both closely linked to class 3.

In the next section of the test, two stems were attached to the /*le*-/ prefix. The pseudo-nouns were *leape* tested in Set D and *lebolo* tested in Set E. This prefix is associated with class 5.

4.2.1.2 The prefix /*le*-/

The results in relation to the /*le*-/ prefix show that the majority of respondents linked the prefix to meanings that denoted *abstract results*, *animals*, *one part of a body pair*, and *people with unfavourable behaviour*. This is illustrated in Figure 4.8 and 4.9. These findings corresponded with the findings of the dictionary analysis.

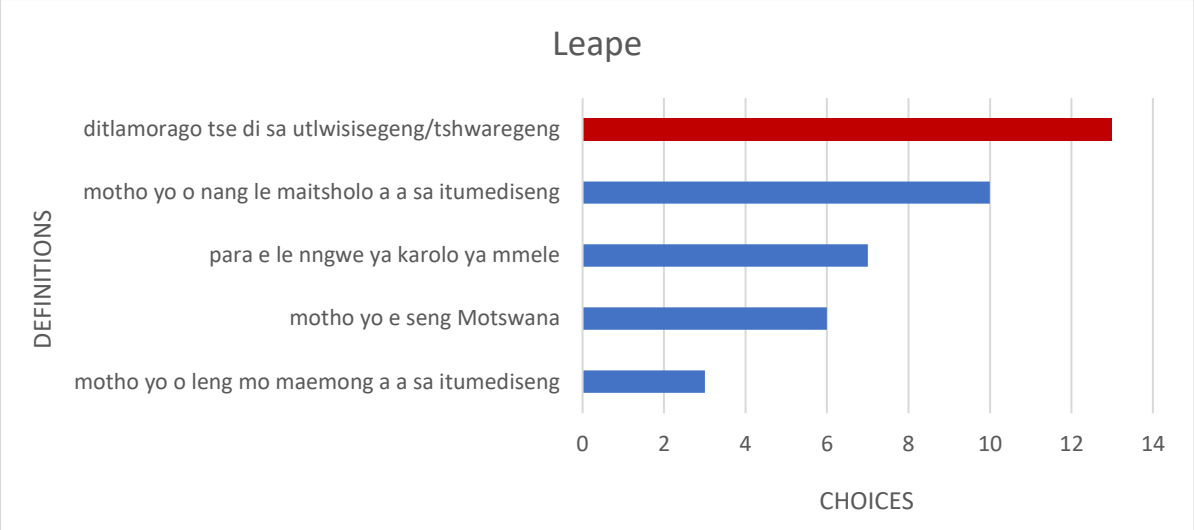

Figure 4.8. Set D

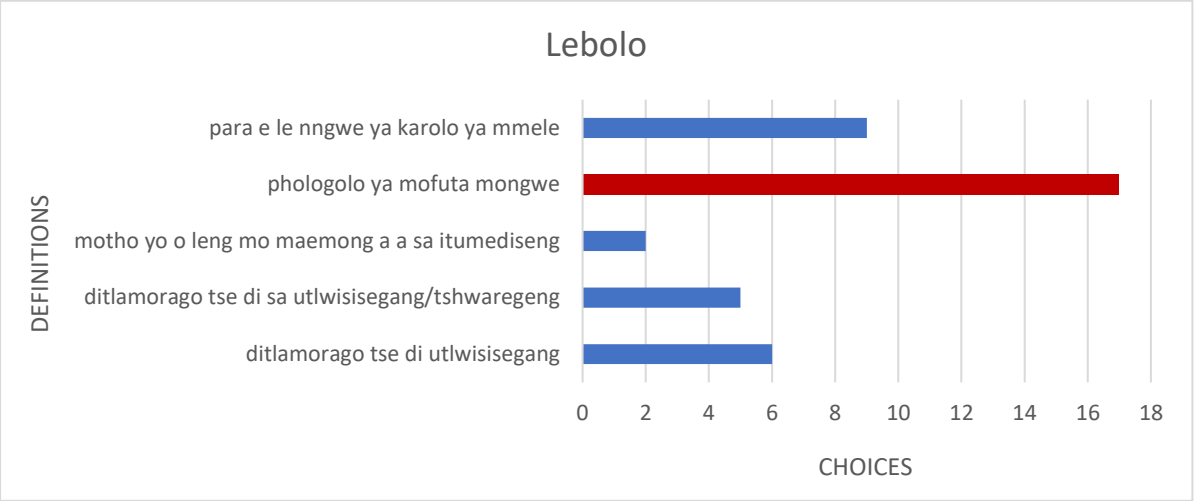

Figure 4.9. Set E

Three stems were attached to the /*se*-/ prefix. Set F tested *sebalo*, Set G tested *seali* and Set H tested *setsebela*. The investigation only discusses the findings of set G and H, due to set F's results being inconclusive.

4.2.1.3 The prefix /*se*-/

The results showed that the majority of respondents associated the /*se*-/ prefix with definitions that were usually linked to not only class 7 but class 5 as well. This was expected since both class 5 and 7 consist of nouns expressing some form of *connotation*, and hold nouns denoting *parts of the body*, and *nature*. These findings also corresponded with the meanings associated in the proposed classification in Table 4.2.

The results showed that the word *seali* was mostly linked to *tools/instruments* (36%), as well as *people with expert skill* (25.6%) (*motho yo o nang le bokgoni jwa maemo a a kwa godimo*) (See Figure 4.11 below). The investigation was unable to conclude whether these associations were made due to the knowledge of the semantic contents of class 7 or because of agreement. The word *setsebela*, shown in Figure 4.10, was mostly associated with the definition *mokgwa kgotsa tlwaelo wa go dira sengwe* 'manner or habit of performing an action' and *ditlamorago tse di sa utlwisisegang* 'abstract results' came in second (28.2%). The results are seen below:

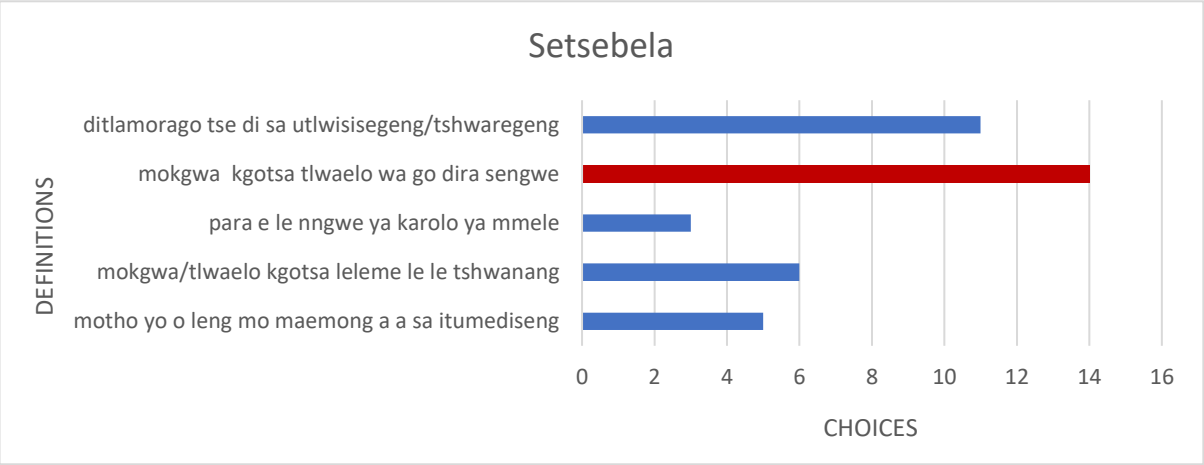

Figure 4.10. Set G

Definitions such as *mokgwa/tlwaelo kgotsa leleme le le tshwanang* 'languages or customs' (15.4%), and *motho yo o leng mo maemong a a sa itumediseng* 'person in an unfavourable position' (12.8%), were slightly prominent in Set G. Although the definition '*a person in an unfavourable position'* is more likely to be linked to class 5, it is not difficult to see how certain nouns expressing *disability* or *connotation* in class 7, were related to *unfavourable positions*, which is usually linked to class 5.

Figure 4.11. Set H

According to results, class 7 /*se*-/ was mostly linked to *nouns denoting the manner of performing an action*, *abstract results*, *personal nouns denoting connotation (referring to people with expert skill or people in unfavourable positions), as well as a slight association to languages and customs.*

4.3 Part Two: Associations of Meaning to Noun Prefix

This section discusses the results of the second part of the language test. Part Two sought to uncover what noun class prefixes (attached to pseudo-stems) were mostly associated to in relation to the provided definitions.

4.3.1 The prefix /*ba*-/

The first four definitions, Set One to Four, were all class 5 and 7 associations and yet due to them denoting *humans*, they were all linked to class 2 /*ba*-/. These findings corresponded with the results of Part One's test items illustrated in Figures 4.5 to 4.7. The results suggest that the prefix /*ba*-/ was linked to definitions associated with *people* based on semantics or linked on the basis of agreement. Set One to Four are illustrated below in Figure 4.12 to 4.15. Note that the figure below represents the number of respondents for each prefic. This number is indicated using percentages.

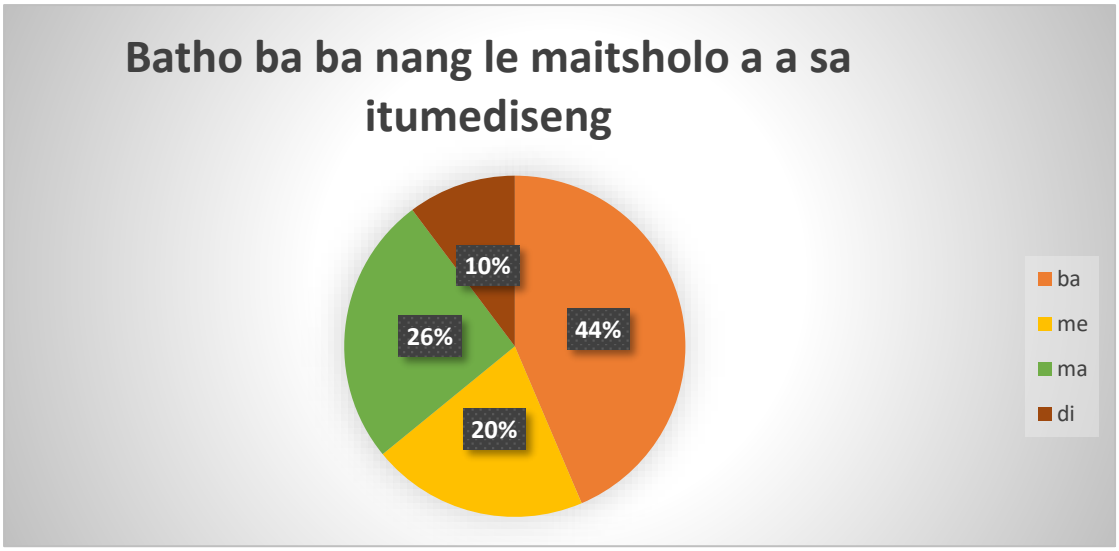

Figure 4.12. Set One

Batho ba ba nang le maitsholo a a sa itumediseng 'people with undesirable behaviours' is a definition usually linked to class 5/6 (26%), however class 2 /*ba*-/ prefix (44%) was chosen as the most appropriate prefix for the definition.

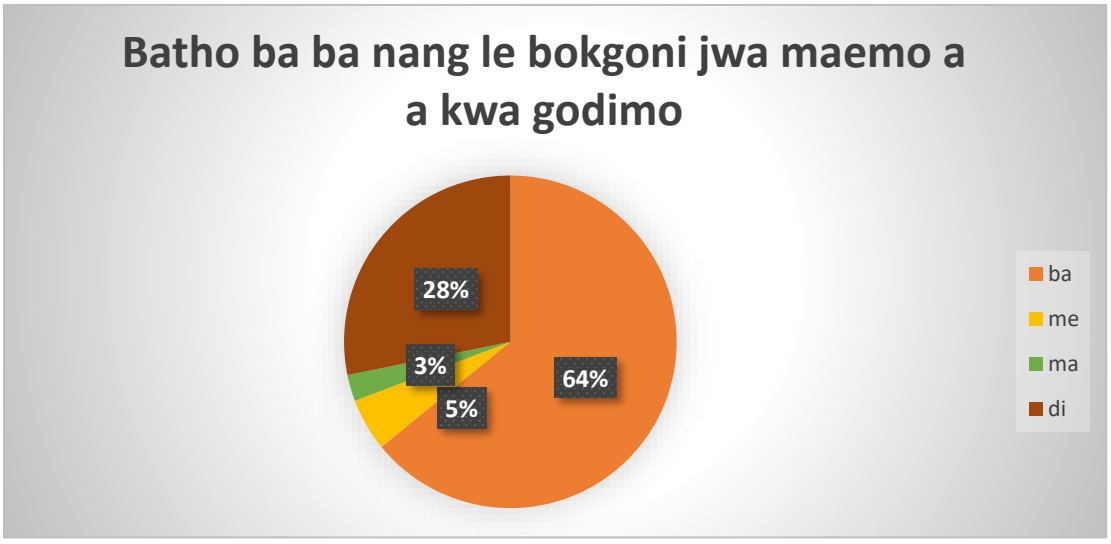

Figure 4.13. Set Two

Batho ba ba nang bokgoni jwa maemo a a kwa godimo 'people with expert skills' is a definition generally linked to class 7/8. Results indicate that class 2 /*ba*-/ (64%) was the most appropriate prefix.

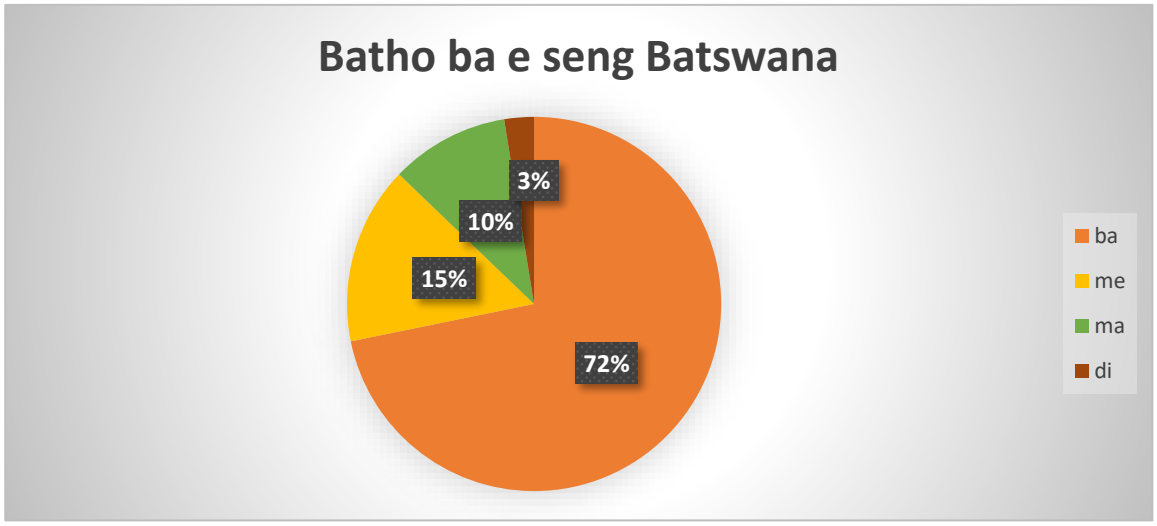

Figure 4.14. Set Three

Batho ba e seng Batswana 'non-Setswana people', the usual association is class 5/6 (10%), yet class 2 /*ba*-/ (72.%) was chosen as the most appropriate.

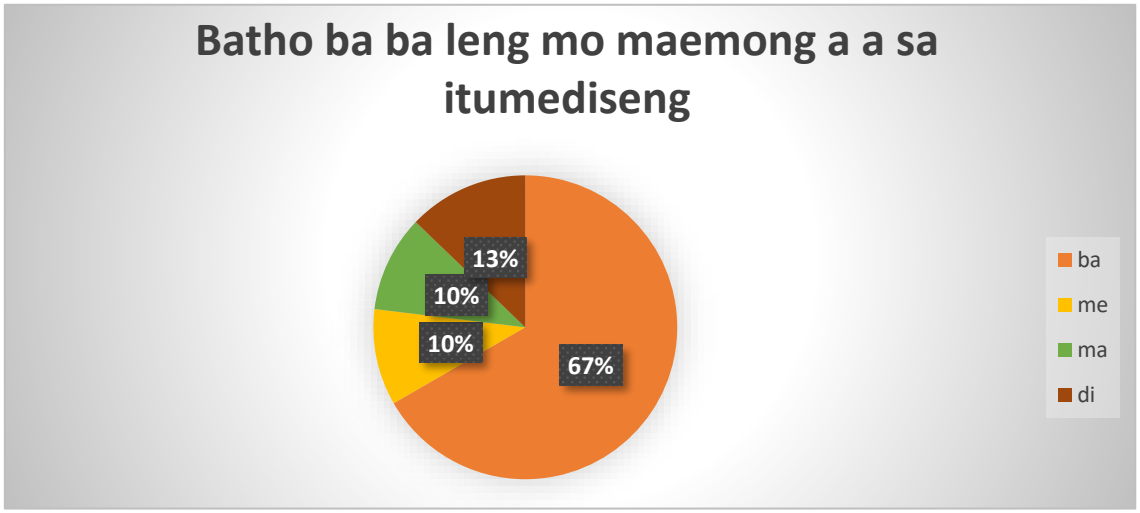

Figure 4.15. Set Four

Batho ba ba leng mo maemong a a sa itumediseng 'people in unfavourable positions' is generally associated with class 5/6 (10%). Results showed that class 2 /*ba*-/ (67%) was the most appropriate prefix.

4.3.2 The prefix /*ba*-/ and /*di*-/

Set Five tested *batho ba ba nang le dikwgetlho mo mmeleng* 'people with disabilities on their bodies' and Set Six tested *ditshedi tse di tshelang* 'beings that are alive'. Results show that these definitions were mostly associated with the prefix /*ba*-/ and /*di*-/. This confirms the strong associations class 2 and 8 share with *humans* and *living things*. Interestingly, the association of class 8 corresponds with the results shown in Table 4.2, where class 7/8 is linked to *personal nouns referring to disabilities*. This suggests that the links are based on the respondents semantic association with class 7/8. This occurrence is illustrated in Figure 4.16 and 4.17 below:

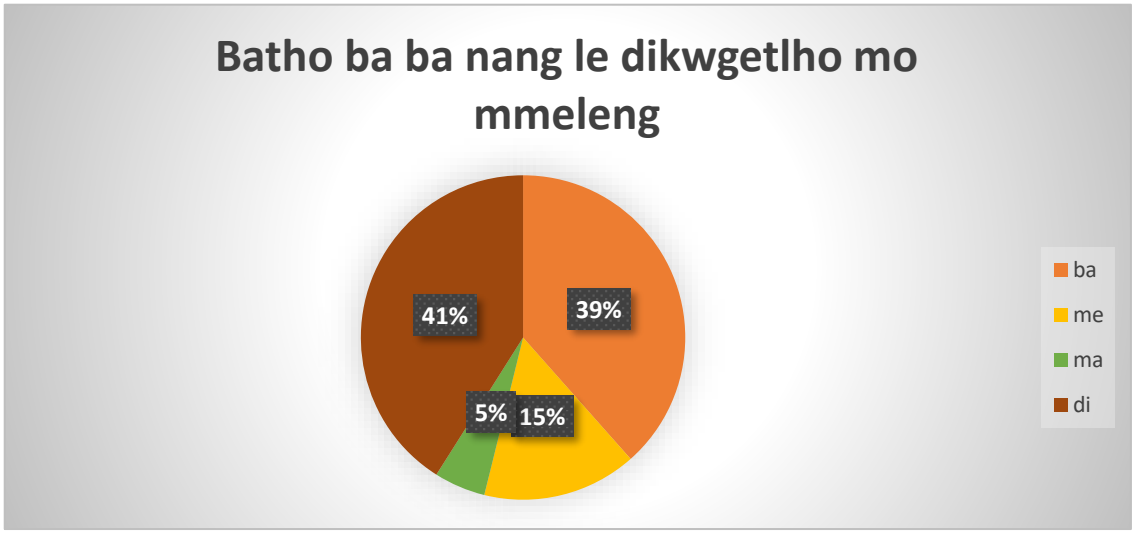

Figure 4.16. Set Five

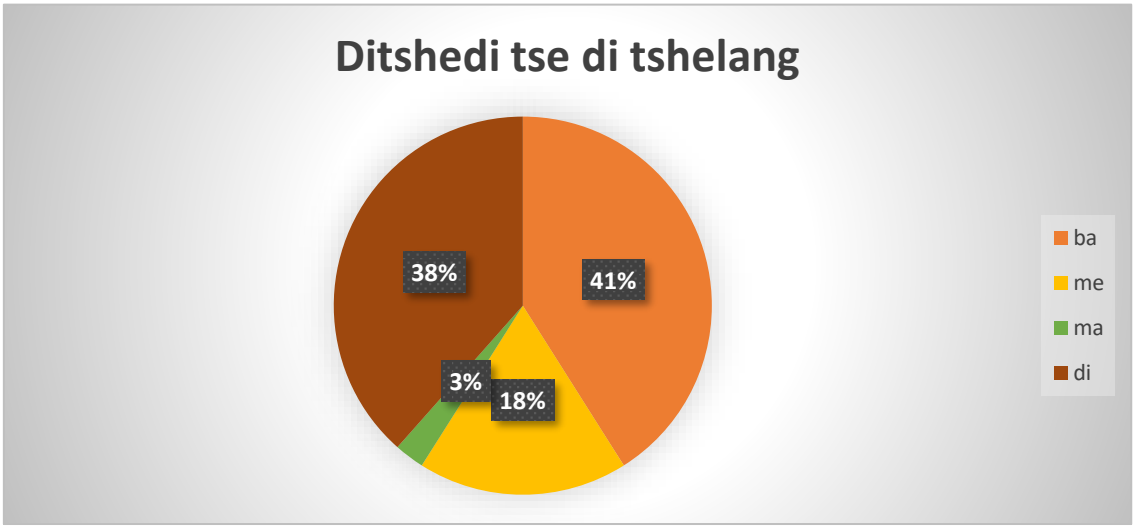

Figure 4.17. Set Six

In the first section of the test, the definition *ditshedi tse di tshelang* 'beings that are alive' was mostly linked to class 3 (see Figure 4.6). However, in the second part of the test, the choice of class 8, confirms the associations made in the dictionary analysis, that class 8 shares links to *people with certain abilities or disabilities* and *humans with certain behaviours* (as Table 4.2 indicates). However, when we consider the ambiguous nature of the definition shown in Figure 4.17, it may account for the range in prefix associations the definition received throughout the language test (see Figure 4.5 to 4.7 and 4.17 for class 1/2 association and Figure 4.5 to 4.7 for class 3/4 association).

4.3.3 The prefix /*me-*/ and /*di-*/

Set Seven to Nine and Set Twelve were mostly associated with the prefix /*me-*/ and /*di-*/. The results are shown in Figures 4.18 to 4.21, and show that the definitions mostly linked to class 4 and class 8 were associated with *trees (mefuta e le mmalwa ya ditlhare*), *manners of performing an action (mekgwa kgotsa ditlwaelo tsa go dira sengwe), languages and customs (mekgwa kgotsa maleme a a tshwanang),* and *concrete results (diltamorago tse di utlwisisegang).* The study suggests that the association made in Set Twelve, shown in Figure 4.21, was made through semantic inferences, or through a process of morphological agreement, as mentioned by Schadeberg (1992) Krifka (1995), and Marten (2000). The results are as follows:

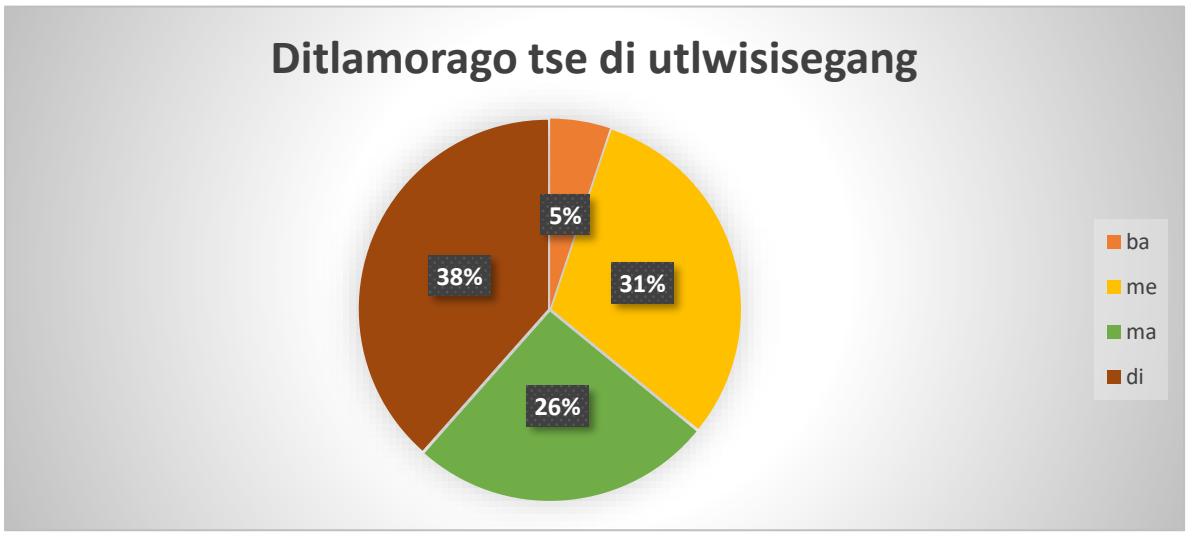

Figure 4.18. Set Seven

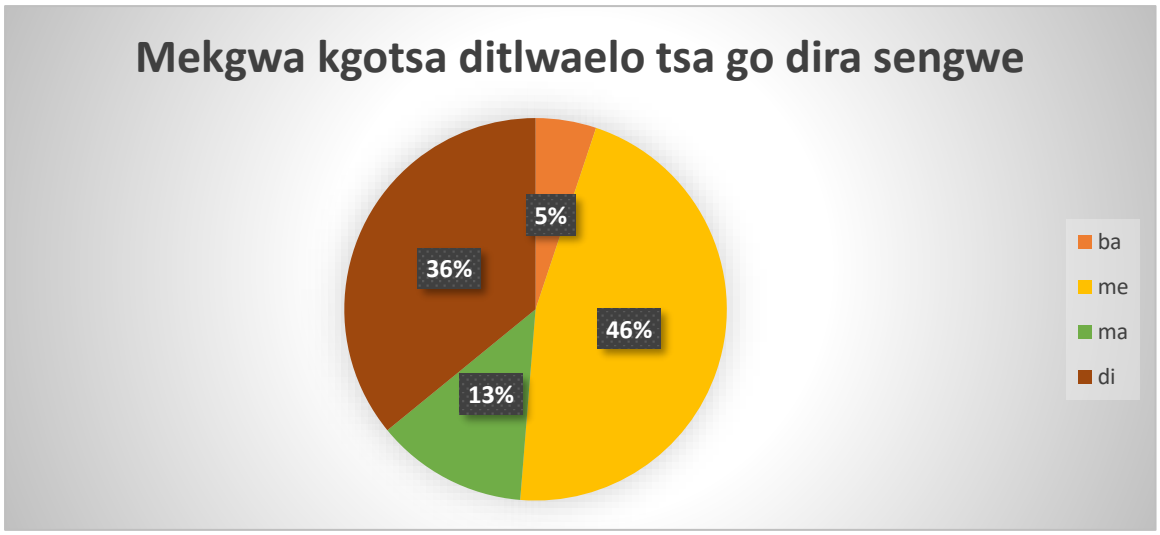

Figure 4.19. Set Eight

It should be noted that in Set Eight class 8 was chosen due to its association with *nature* (see Table 4.2), or chosen due to its sense of distributive plurality. This set illustrated an occurrence similar to that of the first part of the language test, which showed that class 3/4 carried strong associations to *trees*, and class 7/8's had relations to *nature*.

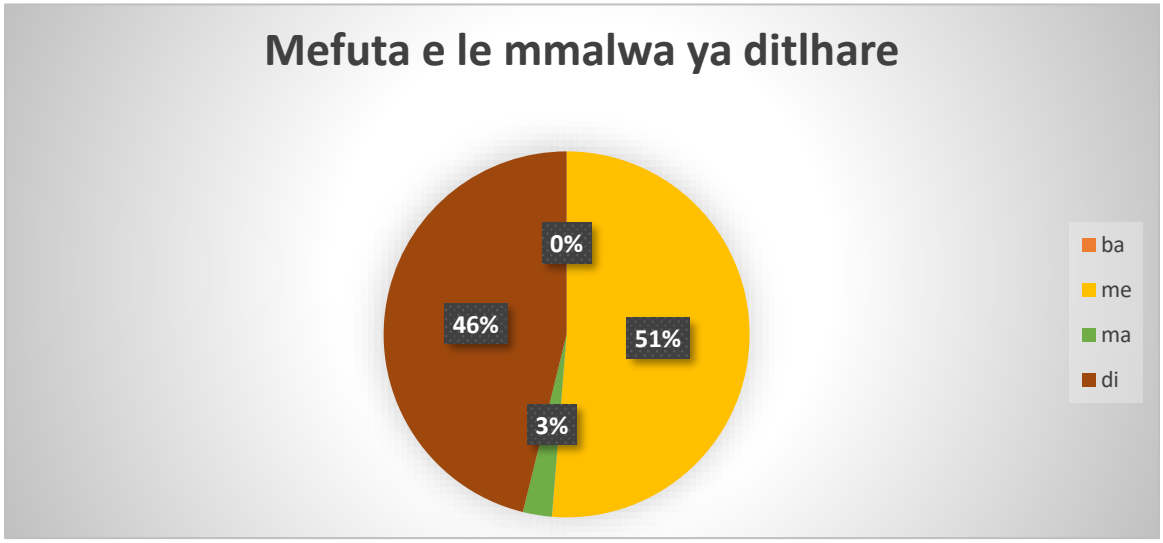

Figure 4.20. Set Nine

It was interesting to observe class 4 being linked to *languages and customs*. The study discusses this occurrence in more detail in section 4.4.

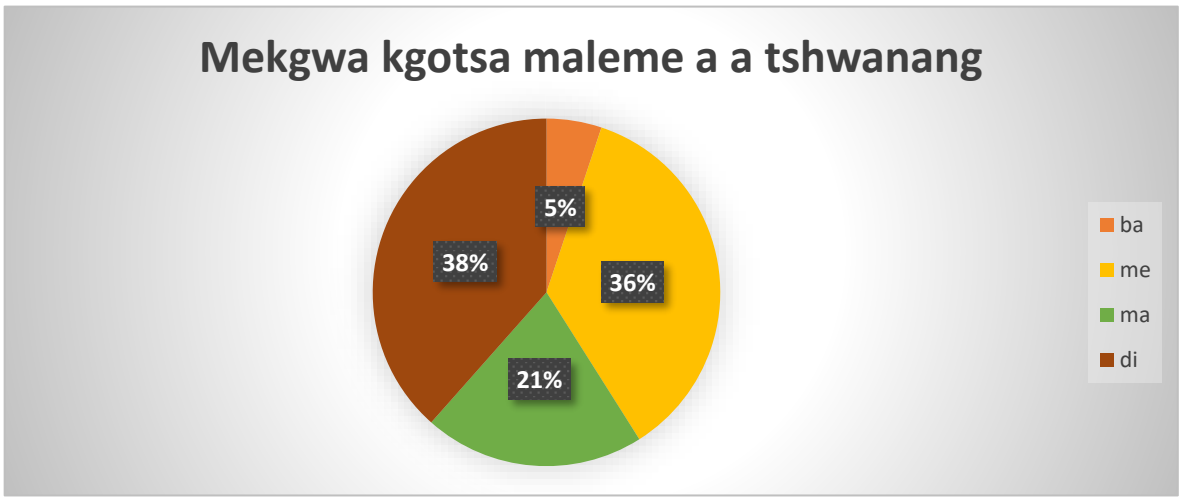

Figure 4.21 Set Twelve

4.3.4 The prefix /*me-*/ and /*ma-*/

In Figure 4.22 below, the results of Set Ten are shown. Here, class 6 /*ma-*/ (36%) and class 4 /*me-*/ (31%) were mostly associated with *many pairs of body parts (dipara di le pedi tsa dikarolo tsa mmele)*. The study suggests that class 6 was chosen due to its ability to denote multitudes, showing that the choice was made based on semantic inferences. Class 4 received almost the same amount of choices, which corresponded with the findings of the dictionary analysis, and how the semantic feature of BODY, appeared across class 3/4 and class 5/6.

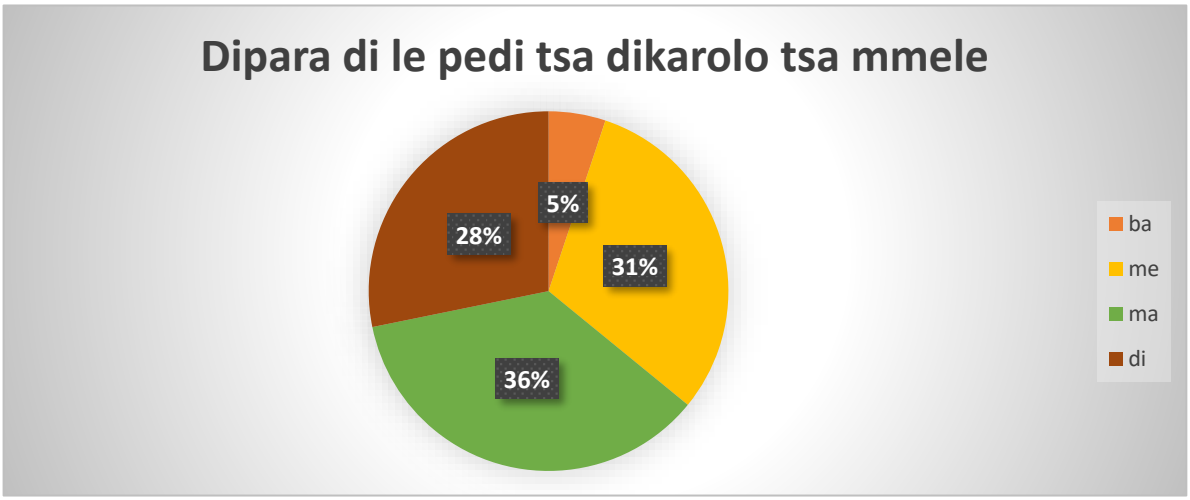

Figure 4.22. Set Ten

4.3.5 The prefix /*di-*/

The tested definitions in Set Eleven to Fifteen show that class 8 was mostly linked to *abstract results* (see Figure 4.23), *wild animals* (see Figure 4.24), *parts of the body* (see Figure 4.25), and *instruments* (see Figure 4.26). These results corresponded with the dictionary analysis, in that they showed the overlaps that exist between class 5 and 7. The results also confirmed class 7/8 association with *instruments and tools*, as well as its slight link to *animals* and *body parts*. The results are shown below:

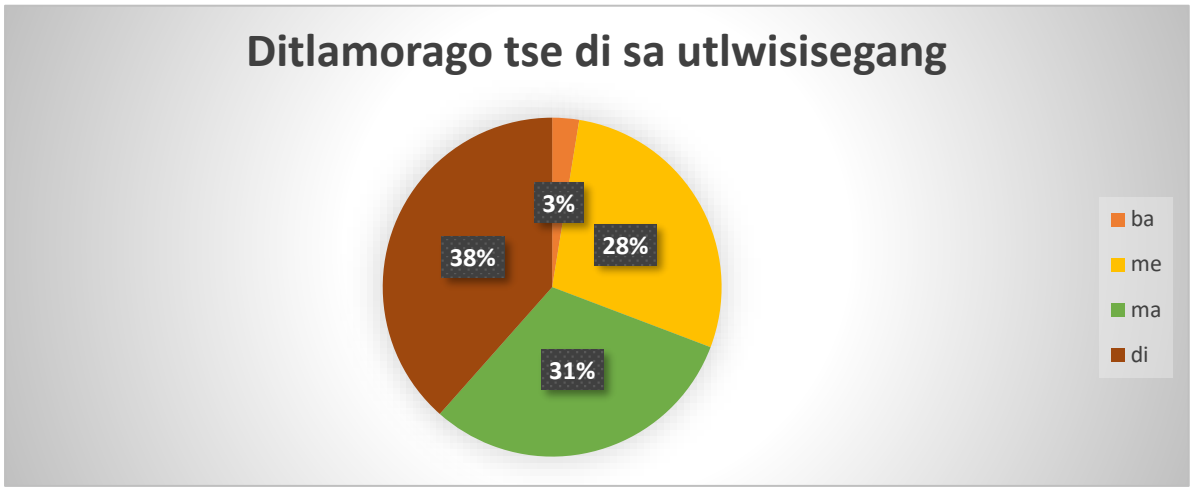

Figure 4.23. Set Eleven

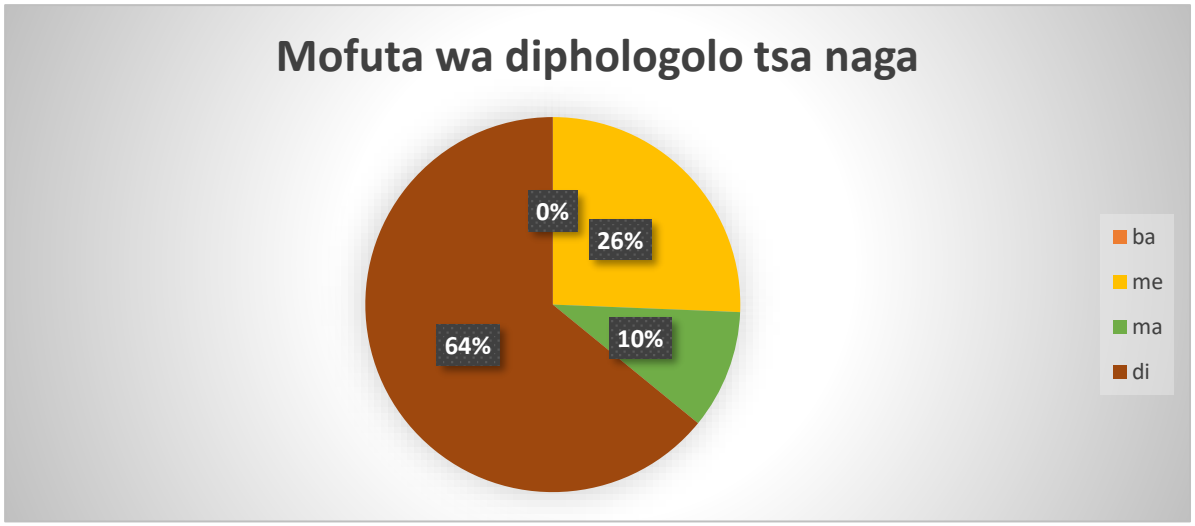

Figure 4.24. Set Twelve

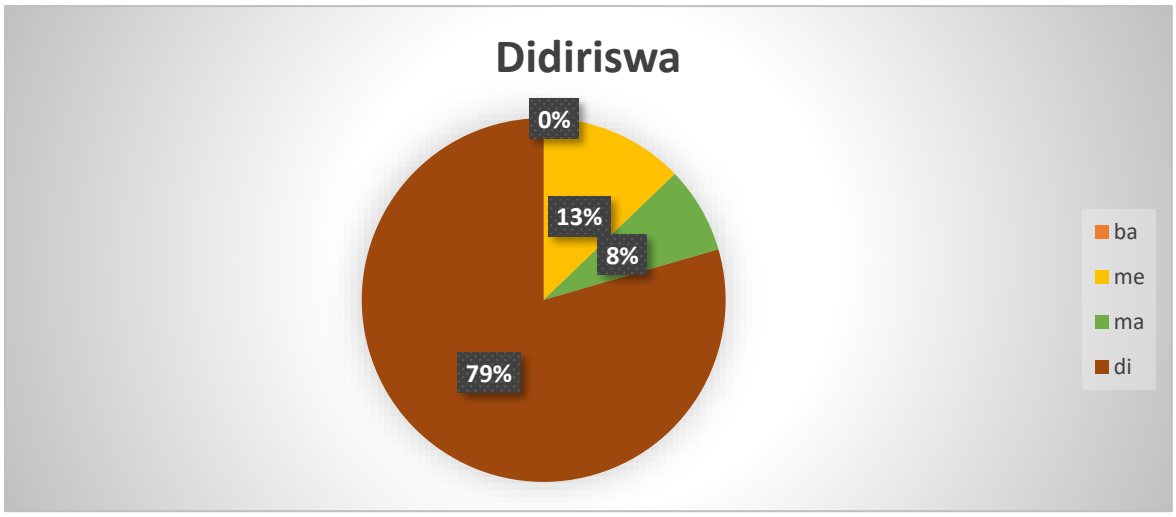

Figure 4.25. Set Fourteen

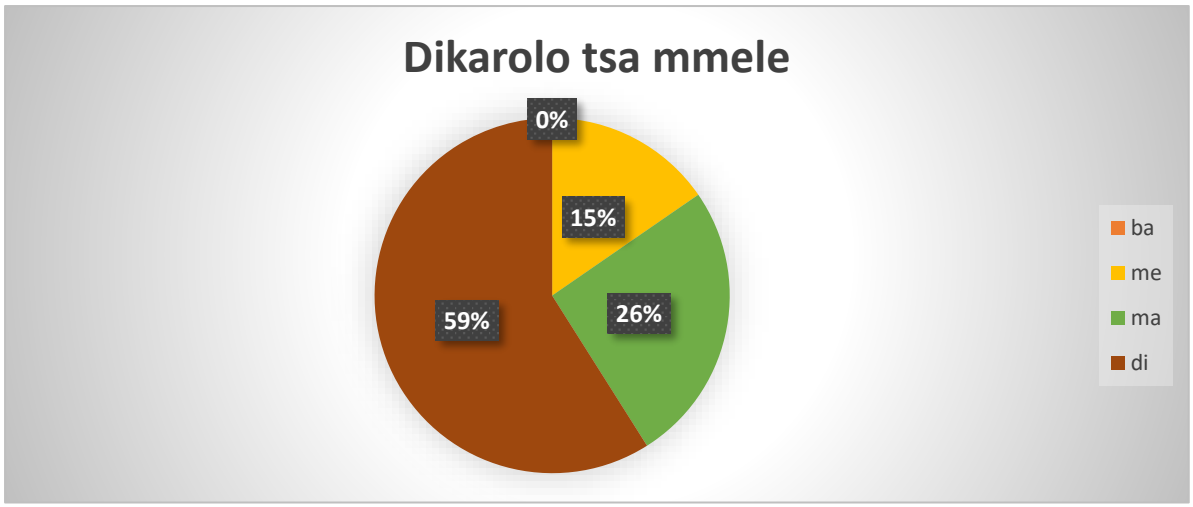

Figure 4.26. Set Fifteen

Overall, the results revealed that prefixes were linked to associations that were proposed in the dictionary analysis section of the study. When the classification shown in Table 4.2 and the results of the language test are compared, it seems that certain semantic values connect to specific prefixes, while others seem to spread across classes. It also appears that each class has some characteristic(s) that are specific to it and are not shared with any other class. Table 4.3 below lists these unique characteristics that the investigation concluded as the core meanings for each class.

Table 4.3. Core Meanings of Class 1, 3, 5 and 7

Class:	**Core Meanings:**
1	Persons (unmarked persons in various positions, circumstances, and professions, may include non-Setswana people and living things analogous to humans)
3	Trees (named after fruits or plants), nouns denoting manner or style of an action, (general) body parts, non-humans (e.g., animals), some nouns indicating periphery, state and dress
5	Personal nouns denoting connotation (referring to undesirable behaviour and exalted positions), body parts (specifically one of a pair of the body), concrete results, and (wild) animals, some nouns indicating abstract concepts, and elements and features found in nature.
7	Instruments and tools, languages and customs, personal nouns indicating skill, personal nouns denoting disability and (undesirable or desirable) positions in society, some nouns indicating things cultivated from nature and wild animals

As evident in Table 4.3 above, the current study has abandoned the categories *miscellaneous* and *deverbative* which were proposed in Kgukutli's (1994) framework because, as mentioned earlier, the first is not specific enough and the second is not, strictly speaking, a semantic category.

4.4 Discussion

Four central generalisations arise from the findings of this study. First, although there are various semantic overlaps between classes, each class carries certain semantic values that make it unique to any other class, resulting in each class holding some unique characteristics as core meanings. As seen above in Table 4.3, the overlaps are found in class 3, 5 and 7 which hold both the semantic category of *animal* and *nature*. It is interesting to note, that class 1, 5, and 7, to some extent share the semantic category of *person*; class 1 refers to *unmarked persons,* while class 5 and 7 refer to *personal nouns denoting some form of connotation*. The unique core meanings for each class can be summarised as follows: class 1 refers to *unmarked persons* and *human-like beings*, class 3 refers to *trees* (named after fruits and plants), and nouns referring to *manner or style of an action*, class 5 refers to *personal nouns denoting undesirable behaviour and exalted positions,* and class 7 refers to *instruments,*

languages and customs and *personal nouns indicating skill.* The findings of the investigation led to the conclusion that the noun class system was organised around core meanings.

Second, prefixes and meanings are matched based on semantic inferences. Third, prefixes and meanings are matched through the process of agreement. This resulted in certain classes being chosen due to their overt use in the provided definition, or due to the class's ability to stand as a default agreement class (i.e., class 8). Fourth, there were instances where the choices made were unpredictable, such as those illustrated in Figure 4.20 which will be discussed further in this section.

It was somewhat difficult to tell whether links were reliant on associating semantic value to the prefixes, or on the use of the agreement markers within definitions. The study suggests that choices were not entirely influenced by the existence of the prefix in the predetermined definitions. If this were the case then all participants would have made the same choice for each test item in the set but this did not take place. It is interesting to note that the notion of semantic and agreement links being made simultaneously has been noted by previous researchers, such as Carsten (1993), Corbett (2006), and Dingemanse (2006). They point out that to some extent grammatical gender, which inevitably results in agreement, works hand in hand with semantic criteria. It can be assumed that associations based on agreement matches only emphasise the underlying semantic content held by that particular prefix. This is because without semantic criteria guiding the gender system, there would be no agreement system to exhibit. Results suggest that speakers were making links, utilising the process of agreement with the belief that the agreement marker found within the definition was the most semantically suitable prefix.

This process of agreement, within choices did result in certain prefixes being predictably associated with certain semantic associations (e.g., class 4 being associated to *customs and languages* as shown in Figure 4.20), based on agreement. This unusual association to some extent speaks of a type of ordering that is semantic in nature. This is because the prefix /*me-*/, generally associated with '*manners or habits of performing an action'*, may have subconsciously been linked to '*customs*' which are in fact a way of '*living out or performing ones culture'*. So in the case of agreement it is proposed that prefixes do hold semantic content as far as their agreement classes allow them to. The study proposes that the agreement class associated with the prefix is what offers the prefix its distinct morphological and semantic features. Thus according to the analysis of class 1, 3, 5 and 7, noun class

prefixes carry semantic content. However, it may be difficult to have a unitary analysis of meanings associated with each class, since it seems like it is impossible to separate the semantic meaning of each class, with the morphosyntactic issues in the background.

4.5 Summary of findings

The findings indicated that noun class prefixes have semantic associations, meaning that prefixes carry real life conceptual semantic features in the minds of speakers. The findings of the study also confirm assumptions made by previous linguists, that prefixes hold some form of semantic content that is determined by their agreement class.

There are three general observations from the study concerning the semantic contents of prefixes. Firstly, additional semantic categories were required to capture the realities of each noun class. By considering a mere fifteen additional nouns in each class, it was deemed necessary to either re-label old categories or introduce new semantic categories. The new categories were added due to existing categories being inadequate, since the study found that they did not cope with the existing meanings found within each class. Old categories were re-labelled if they coincided or carried similar semantic content with any of the new categories. For example, class 5's classification of *person with unfavourable behaviour* was re-labelled as DEROGATION, which is not necessarily a new category but offers an umbrella term for the semantic content found within the domain. Table 4.4 below illustrates the new and re-labelled categories (cf Table 4 in Chapter 4):

Table 4.4 Semantic Categories

Codes:	**Class:**
PERSON	1
ENTITY	1
TRANSPORTATION	3
FRUIT	3, 5
PLANT	3
PERIPHERY	3, 5
BODY	3, 5, 7
ANIMAL	3, 5, 7
STATE	3, 5
COMMUNICATION	3
ABSTRACT RESULT	5
CONCRETE RESULT	5, 7
ABSTRACT CONCEPT	5
DRESS	3
NATURE	(3), 5, 7
DEROGATION	5, 7
EXALTATION	5
CULTURE	3, 7
SKILL	7
TOOL/INSTRUMENT	7

The table above illustrates the various overlaps that were found in the small sample of additional nouns. Some categories, as shown in the table, are found in more than one class. For example, FRUIT, PERIPHERY, and STATE were found in class 3 and 5, the categories BODY, ANIMAL, and NATURE were found in class 3, 5, and 7, and CONCRETE RESULT and DEROGATION were found in class 5 and 7. Future research may require a larger inventory of nouns to uncover whether more categories would emerge and show a different pattern of overlaps or whether the results would only repeat themselves.

Secondly, the study revealed that noun classes consist of specific semantic cores. In summary, for class 1 the core meaning is *person*, for class 3 it is *trees*, *body parts* and *nouns*

denoting manner of style of an action, for class 5 *derogation* and *animals, and* lastly for class 7 *instruments and tools*, *languages and customs*, and *skill*. The investigation notes that some of Kgukutli's original core meanings were retained since they managed to precisely label some of the contents of the class. However, the current study offered a fuller picture which includes additional 'peripheral' semantic categories, adding an element of specificity to the classification. The implication is that the study establishes that the classifications proposed by previous researchers were not sufficient in capturing the semantic content of the nouns in each class. The study revealed that there was a need to introduce additional semantic categories for one to better understand the semantic content of Bantu noun classes.

CHAPTER 5

Conclusion

This research set out to answer the following questions:

1. To what extent do the prefixes of class 1, 3, 5, and 7 have semantic content?
2. Are classes 1, 3, 5, and 7 organised/classified around certain core meanings?

The study's attempt at establishing precise semantic classification of nouns resulted in the creation of some vague categories, such as *non-typical nouns*, found in class 3, 5 and 7. Furthermore, the search for more semantic precision in distinguishing different nouns resulted in what turned out to be 'too many categories', some of which still overlap across noun classes. By ending up with many semantic categories in some classes, what the present investigation has shown is that some noun classes, in fact, consist of nouns with a diverse range of meanings rather than consisting of nouns belonging to a common or homogenous semantic class. In addition, the study has shown that it is impossible for the classification to avoid the overlaps between semantic domains and noun classes. This brings up the question of whether a semantic classification of noun classes is a satisfactory system for distinguishing noun classes. The overlaps in the semantic categories across noun classes demonstrate the difficulty one encounters when associating a particular semantic domain with a specific noun class. This may suggest that it is the grouping of nouns on the basis of agreement classes or morphological properties that hold those nouns together as a single class: semantic properties are less reliable. Future research may focus on whether it is possible to reduce the number of semantic domains whilst at the same time reducing the level of vagueness found in some of the proposed core meaning(s).

Thirdly, the study revealed that current speakers of Setswana perceive noun classes (or noun class prefixes) in terms of semantic content. This was shown in how speakers linked class 1/2 and 7/8 with *humans* and *living things*, class 3/4 and 7/8 with *trees,* and *manners of performing an action,* class 3/4 and 5/6 with *many pairs of a body part,* class 5/6 and class 7/8 with *concrete results,* and class 7/8 mostly with *instruments.* Interestingly, the results showed that *humans* and *living things* were associations that were spread across class 1, 5,

and 7. The study also noted the ambiguous nature of the prefix /*mo*-/ which is associated with *humans* (class 1) and *trees* (class 3) and that Setswana speakers are able to distinguish the associated meanings based on whether the term denotes humans or non-human living things. The study therefore proposes that these meanings mostly associated with each class may be said to be the possible core meanings of the selected classes.

The study encountered one major shortcoming: Finding labels that were semantically precise proved to be a challenge. As previously mentioned, this was demonstrated in how the label *non-typical nouns* offered a similar vagueness as Kgukutli's *miscellaneous category.* More importantly, it was the identification of additional semantic categories that added to the challenge. Despite this shortcoming, the limited study, managed to expose the need to have more refined semantic categories in order to better understand the semantic content of noun classes. Perhaps future research may explore the possibility of creating one unified semantic domain for each class, to distinguish them from one another. This will require more precise terminology that groups the nouns of each class from another on purely semantic grounds.

REFERENCES

Adams, K. L., & Conklin, N. F. (1973). Toward a theory of natural classification. *Paper from the Ninth Regional Meeting of the Chicago Linguistic Society*, pp. 1-10.

Basson, E. (1989). *Die naamwoordsisteem in Noord-Sotho*. Doctoral dissertation, University of Johannesburg.

Beckwith, C. I. (1998). Noun specification and classification in Uzbek. *Anthropological Linguistics*, Vol. 40, No. 1, pp. 124-140.

Bennet, P.R (1970). "The Problem of Class in Kikuyu ". *African Language Studies,* Vol. 11, pp. 48-59.

Berger, P.L. & Luckmann, T. (1966). *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Garden City, NY: Doubleday.

Bergvall, V. (1986). A typology of empty categories for Kikuyu and Swahili. In: Dimmendaal, G.J. (Ed.), *Current Approaches to African Linguistics III*. Foris, Dordrecht, pages 55–70.

Bickerton, D. (2007*).* Language Evolution: A Brief Guide for Lingusitics. *Lingua 117*, pp. 510-526, www.elsevier.com/locate/lingua.

Bleek, W.H.I. (1869). *A Comparative Grammar of South African Languages*. Vol 1, Gregg Internation. London, Cape Town.

Bloom, L. (1970). *Language Development; Form and function in emerging grammars*. Cambridge, MA: MIT Press.

Bokamba, E. (1976). *Question Formation in Some Bantu Languages.* Doctoral dissertation, Indiana University.

Bokamba, E. G. (1981). *Aspects of Bantu Syntax*, preliminary edition for comments. Department of Linguistics, University of Illinois, Urbana.

Bouka, L.Y (1994). L'accord des adjectifs du protobantou en zone H. *Africana Linguistica*, Vol. 11, No. 1, pp. 13-18.

Bresnan, J. & Mchombo, S.A. (1987). Topic, pronoun, and agreement in Chichewa. *Language*, Vol. 63, No. 4, pp. 741-782, Linguistic Society of America.

Bresnan, J., & Moshi, L. (1990). Object asymmetries in comparative Bantu. *Linguistic Inquiry,* Vol. 21, No. 2, pp. 147–185.

Brown, R. (1973). *A First Language: The Early Stages*. Cambridge, MA: Harvard University Press.

Bryman, A. (2008). Why do researchers integrate/ combine/mesh/blend/mix/merge/fuse quantitative and qualitative research?, In M. M. Bergman (Ed.), *Advances in mixed methods research*, pp. 87–100. London: SAGE.

Buell, L. (2007). Semantic and formal locatives: Implications for the Bantu locative inversion typology. SOAS Working Papers in *Linguistics*, Vol.15, pp. 105-120.

Burton, M. L & Kirk, L. (1976). *Semantic Reality of Bantu Noun Classes*: The Kikuyu Case. University of California, Vol. 7, No. 2, pp. 157-174.

Byamugisha, J., Keet, C. M., & DeRenzi, B. (2018). Pluralizing Nouns across Agglutinating Bantu Languages. *Proceedings of the 27th International Conference on Computational Linguistics*, pp. 2633-2643.

Canonici, N.N (1991*). A Manual of Comparative Bantu Studies*, University of Natal.

Carey, J.W. (1993). Linking qualitative and quantitative methods: Integrating cultural factors into public health. *Qualitative Health Research*, Vol. 3, No. 3, pp. 298–318.

Carroll, J.B & Casagrande J.B (1958). The Functions of Language Classifications in Behaviour. In E.E Maccoby T.M. Newcomb, and E.L Hartley (eds.), *Readings in Social Psychology*, No, 3. New York: Holt, Rienhart, and Winston.

Carstens, V (1993). On nominal morphology and DP structure. In Mchombo, S.A (Ed.), *Theoretical Aspects of Bantu Grammar 1,* pp. 152-176. Stanford CA: CSLI.

Carstens, V. (1991). *The syntax and morphology of determiner phrases in Kiswahili*. Doctoral dissertation, UCLA, Los Angeles, California.

Casalis, E. (1882). My life In Basutoland, trans. *J. Brierley.* Cape Town: C. Struik.

Casebeer, A. L., & Verhoef M. J. (1997). Combining qualitative and quantitative research methods: Considering the possibilities for enhancing the study of chronic diseases. *Chronic diseases in Canada*, Vol. 18, No. 3, pp. 130-135.

Chebanne, A. (2016). *The Amplexives in Setswana*, Vol. 4, No. 4, pp. 65-78.

Chimhundu, H. (2002). *Duramazwi Guru reChiShona*. Harare. College Press.

Clark, E. (1985). Acquisition of Romance, with special reference to French. In D. I Slobin (Ed.), *The Crosslinguistic Study of Language Acquisition.* Hillsdale, N.J: Lawrence Erlbaum Associates.

Claudi, U. (1997). Some thoughts on the origin of gender marking. African linguistics at the crossroads*: Papers from Kwaluseni. Cologne: Köppe*, pp. 63-74.

Cole, D.T (1955). *An Introduction to Tswana Grammar*. Johannesburg: Longman South Africa.

Comrie, B. (1981). *Language Universals and Linguistic Typology.* Oxford: Basil Blackwell.

Comrie, B. (1999). Grammatical Gender Systems: A Linguist's Assessment: *Journal of Psycholinguistic Research*, Vol. 28, No. 5, pp. 457-466.

Connelly, M. J. (1984). *Basotho children's acquisition of noun morphology*. Doctoral dissertation, University of Essex.

Contini-Morava, E. (1996). *"Things In A Noun Class Language. Semantic functions of Agreement in Swahili",* in Edna Andrews and Yishai Tobin (eds.) *Toward a Calculus of Meaning. Studies in markedness, distinctive features and deixis*. Amsterdam/Philadelphia: John Benjamins, Vol. 43, pp. 251-290.

Corbett G.G. & Fedden S. (2018). New approaches to the typology of gender. *Non-Canonical Gender Systems*, pp. 9-35. Oxford University Press

Corbett G. & Mtenje A. (1987). Gender agreement in Chichewa. *Studies in African Linguistics,* Vol. 18, No. 1, pp. 1-38.

Corbett G.G. (2006). *Agreement First Edition:* Cambridge, UK: Cambridge University Press.

Corbett, G.G. (1991). *Gende*r. Cambridge, UK: Cambridge University Press.

Couto, M.C.P., Munarriz A., Epelde I., Deuchar M., & Oyharcabal B. (2016). Gender conflict resolution in Spanish–Basque mixed DPs. Bilingualism: *Language and cognition*, Vol. 19, No. 4, pp. 834-853.

Creider, C.A (1975). The Semantic System of Noun Classes in Proto-Bantu. *Anthropological Linguistics*, Vol. 17, No. 3, pp. 127-138.

Creissels D. (2004). Non-canonical applicatives and focalisation in Tswana. *Paper presented at the Syntax of the World's Languages (SWL1),* Liepzig, 5-8 August 2008.

Creissels, D. (2011). Tswana locatives and their status in the inversion construction. *Africana linguistica*, No. *17*, pp. 33-52.

Clark, V. L. P., & Creswell, J. W. (2008). *The mixed methods reader*. Sage Publications Inc., University of Nebraska, Lincoln

Crisp, W. (1905). *Notes Towards a Setswana Grammar, with a series of exercises*. London: Society for Promoting Christian Knowledge.

Dalrymple, M., & Kaplan R. M. (2000). Feature Indeterminacy and Feature. *Language*, Vol. 76, No. 4, pp. 759-798.

Demuth, K. (1988). Noun Classes and Agreement in Sesotho Acquisition: *Agreement in Natural Languages,* pages 305-321. CSLI: University of Chicago Press.

Demuth, K. (1992). The Acquisition of Sesotho. In D. Slobin (ed.), *The Crosslinguistic Study of Language Acquisition*, No 3, pp. 557-638. Hillsdale, NJ: Lawrence Erlbaum Associates.

Demuth, K. (2000). Bantu noun class systems: Loan word and acquisition evidence of semantic productivity. In G. Senft (ed.), *Classification Systems*. Cambridge University Press. pp. 270-292.

Demuth K., Faraclas N., & Marchese L (1986). Niger-Congo Noun Class and Agreement Systems in Language Acquisition and Historical Change. *Proceedings of a Symposium on Categorisation and Noun Classification*, Vol. 7, John Benjamins Publishing.

Demuth, K. & C. Harford. (1999). Verb Raising and Subject Inversion in Bantu Relatives. *Journal of African Languages and Linguistics*, Vol. 20, pp. 41-61.

Denny, J.P. & Credier C. (1986). The Semantics of Noun Classes in Proto-Bantu. In Craig C. (ed.), *Noun Classes and Categorisation*. Amsterdam: Benjamins, Vol. 7, pp. 217-239.

Denzin, N. K. & Lincoln, Y. S. (1994). Introduction: Entering the field of qualitative research. In: N. K.Denzin& Y.S.Lincoln (eds.), *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage, pp. 1–17.

Derbyshire, D., & Payne, D. L. (1990). Noun classification systems of Amazonian languages*. Amazonian linguistics* (First Edition). Studies in lowland South American languages, pp. 243-271.

De Vos M., & Mitchley H. (2012). Subject marking and preverbal coordination in Sesotho: A perspective from Optimality Theory. *Southern African Linguistics and Applied Language Studies*, Vol. 30, No. 2, pages 155-170.

Di Garbo, F. & Agbetsoamedo, Y. (2018). Non-canonical gender in African languages. *Non-Canonical Gender Systems*, pp. 176-210.

Dingemanse, M. (2006). The Semantics of Bantu Noun Classification*: A Review and Comparison of Three Approaches,* MA essay, Leiden University, pp. 1-25.

Dixon, R. M. W. (1982) *The Dyirbal language of North Queensland*, Cambridge: Cambridge.

Doke, C. (1997). *Textbook of Zulu grammar*. Maskew Miller Longman (Pty) Ltd, Cape Town.

Du Plessis, J. A. & Visser, M. (1992). *Xhosa syntax*, Pretoria: Via Afrika.

Ervin, S.M (1962). The Connotations of Gender. *Word*, No. 18, pp. 249-261.

Farkas, D. (1990). Two Cases of Underspecification in Morphology. *Linguistic Inquiry*. Vol. 21, No. 4, pp. 539–550.

Fasold & Connor-Linton (2006). *An Introduction to Language and Linguistics: Gender Features.* Paper presented at LFG 2000, University of California, Berkeley, CA.

Gerken, L.A (1993). Young Children's Representation of Prosodic Structure: Evidence from English-speakers weak syllable productions. *Journal of Memory and Language*, No. 32, pp. 19-38.

Givón, T. (1969). *Studies in Chibemba and Bantu grammar,* SAL Supplement.

Givón, T. (1970). The resolution of gender conflicts in Bantu conjunctions: when syntax and semantics clash, *Papers from the Sixth Regional Meeting of the Chicago Linguistic Society*, pp. 250–6.

Givón, T. (1971). Some Historical Changes in The Noun Class System of Bantu: their possible causes and wider implications. In C.W Kim and H. Stahlke (eds.), *Papers in African linguistics*: pp. 34-54. Champaign, IL: Linguistic Research Inc.

Goslin (1980). *Gothoburgensia*, No. 13. Göteborg: Acta Universitatis Gothoburgensis.

Greenberg, J.H. (1949). Studies in African Linguistic Classification: I. The Niger-Congo Family. *Southwestern Journal of Anthropology*, Vol. 5, No. 2, pp. 79-100. University of Chicago Press.

Greenberg, J.H (1963). *The languages of Africa,* The Hague: Mouton (Reprinted 1966).

Guthrie, M. (1948). Gender, number and person in Bantu languages. *Bulletin of the School of Oriental and African Studies*. Vol 12, No. 3-4, pp. 847-856.

Guthrie, M. (1967). *The Classification of Bantu Languages*. London, Dawsons of Pall Mall.

Guthrie, M. (1970-1971). *Comparative Bantu: an introduction to the comparative linguistics and prehistory of the Bantu languages*. Vol 1, London: Gregg Press.

Gvozdev, A. N. (1949). *Formirovanie u rebenka grammaticeskogo stroja russkogo jazyka [Development of the grammatical structure of Russian in the child],* Vol. 1. Moscow: Akademija pedagogiceskix nauk.

Haase, J.E. & Myers, S.T. (1988). Reconcilingparadigm assumptions of qualitative andquantitative research. *Western Journal of Nursing Research.* Vol. 10, pp. 128–137.

Hale, K. (1973). *A Note on Subject-Object Inversion in Navaho.* na.

Hannan (1984). *Standard Shona Dictionary*. Revised and enlarged edition. Harare, Zimbabwe: The College Press.

Harjula, L. (2004) *The Ha Language of Tanzania*: Grammar, Texts and Vocabulary. Cologne: Rüdiger Köppe.

Haspelmath, M (1992). Grammaticalization theory and heads in morphology, in M. Aronoff (ed.) *Morphology Now*, New York: State University of New York Press, Vol. 1, pp. 69–82.

Henderson, B. (2007). The syntax of agreement in Bantu relatives. *Texas Linguistics Society*, Vol. 9, pp. 167-184.

Hoffman, C. (1963). The Noun Class Systems of Central Kambari. *Journal of African Languages,* No. 2, pp. 160-169.

Hopkins, D. B. (1979). *Setswana: Grammar Handbook.* Peace Corps Language Handbook Series.

Idiata, D. F. (1998). *Quelques aspects de l'acquisition de la langue isangu par les enfants [Some aspects of the acquisition of the Isangu language by children].* Doctoral dissertation. University Lumiere Lyon 2. Munich: Lincom Europa. In Press.

Istvan, F. (1958). *Origins of Gender. Budapest*. Vol.60-61, pp. 186-214.

Jackendoff, R. (1983). *Semantics and cognition*. Cambridge MA: MIT press.

Janson, T., & Tsonope, J. (1991). *Birth of a national language: The history of Setswana*. Heinemann Botswana.

Kapust, W.H. (1998). *Universality in noun classification.* San Jose State University: UMI Dissertations Publishing.

Kgukutli, S. A. (1994). *The semantics of Setswana noun classes*. Doctoral dissertation, University of Johannesburg.

Kihm, A. (2002). What's in a noun: Noun classes, gender, and nounness. *Ms. Université Paris,* Vol. 7.

Kimenyi, A. (1980). *A relational grammar of Kinyarwanda*. Doctoral dissertation, University of California Press.

Konishi, T. (1993). The Semantics of Grammatical Gender: A Cross-Cultural Study. *Journal of Psycholinguistics Research,* Vol. 22, No. 5, pp. 519- 534.

Krauss, M. E. (1968). Noun-classification systems in Athapaskan, Eyak, Tlingit and Haida verbs. *International Journal of American Linguistics*, Vol.*34*, No. 3, pp. 194-203.

Krifka, M. (1995). *'*Swahili*',* in Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld & Theo Vennemann, (eds.), *Syntax: Ein internationales Handbuch zeitgenoessischer Forschung*, Berlin, New York: Walter de Gruyter,Vol. 2, pp. 1397-1418.

Kunene, E., (1979). *The Acquisition of Siswati as a first language: a morphological study with special reference to noun prefixes, noun classes and some agreement markers*. PhD Dissertation, UCLA.

Tucker, G. R., Lambert, W. E., & Rigault, A. (1977). *The French speaker's skill with grammatical gender: An example of rule-governed behavior*. Mouton De Gruyter, Vol. 8.

Langacker, R.W (1987). *Foundations of Cognitive Grammar*. Vol. 1, Theoretical Prerequisites. Stanford: Stanford University Press.

Larsen–Freeman, D., & Cameron, L. (2008). *Complex systems and applied linguistics*. Oxford: Oxford University Press.

Leakey, L.S.B (1959). *First Lesson in Kikuyu*. Nairobi: The Eagle Press.

Letsholo, R. (2002). Subjects and Agreement in Ikalanga. *26th Penn Linguistics Colloquium*. University of Pennsylvania, Philadelphia.

Letsholo, R., & Matlhaku, K. (2014). The Syntax of Setswana Noun Phrase: *Journal of Language and Literature.* Vol. 24, pp. 22-41. DOI: 1816-7659/05/13 1-9.

Letsholo-Tafila, R. (2018). A Characterisation of Setswana Complex Senetences. *Language Matters*, Vol. 49, No. 2, pp. 80-106.

Letsholo, R. (2013). Setswana Complementisers: Their forms, meanings and complementation. *Linguistics Association of Southern African Universities Journal (LASU)*, Vol. 4, No. 1, pp. 57-74.

Levy, Y. (1983). The Acquisition of Hebrew Plurals: The Case of the Missing Gender Category. *Journal of Child Language*. Vol. 10, No. 1, pp. 107-122.

Lieberman, E. S. (2005). Nested analysis as a mixed-method strategy for comparative research. *American political science review*. Vol. 99, No. 3, pp. 435-452.

Lumsden, J. (1992*). Underspecification in Grammatical and Natural Gender*. Linguistic Inquiry. Vol. 23, No. 3, pp. 469–86.

Maffot, R. (1826). *Bechuana Spelling Book and A Bechuana Catechism.* London: The London Missionary Society.

Maho, J. (1999). *A comparative study of Bantu noun* classes (PhD dissertation). Orientalia et africana gothoburgensia. Göteborg: Acta Universitatis Gothoburgensis.

Maho J.F (2004). How Many Languages Are There In Africa, Really? *Trends in Linguistics Studies and Monographs*, Vol. 156, pp. 279-296.

Mangulu, A.M (2014). *Le nom individual chez les Ngombe de l'Equateur congolais: Etude ethnolinguistique et sociohistorique*. Research Institute for Languages and Cultures of Asia and Africa (ILCAA). Tokyo University of Foreign Studies.

Marten, L. (2000). Agreement with Conjoined Noun Phrases in Swahili. *School of Oriental and African Studies*, pp. 1-16.

Massamba, D., Yared M.K., & Ismail, J. H. (1999). *Sarufi Miundo ya Kiswahili Sanifu; Sekondari na Vyuo.* TUKI, Chuo Kikuu cha Dar es Salaam.

Mathiot, M. (1962). Noun Class and Folk Taxonomy in Papago. *American Anthropologist*, No. 64, pp. 340-350.

Matthews, P. (1997*). The concise Oxford dictionary of linguistics*. Oxford: Oxford University Press.

Mc Laughlin, F. (1997). Noun classification in Wolof: When affixes are not renewed. *Studies in African linguistics*, Vol.*26*, pp. 1-28.

Mchombo, S. A. (Ed.). (1993). *Theoretical aspects of Bantu grammar 1*. Stanford CA: Center for the Study of Language and Information Publications.

Mchombo, S.A (2004). *The Syntax of Chichewa*. Cambridge; Cambridge University Press.

Meeussen, A.E (1967). Bantu Grammatical Reconstructions. *Africana Linguistica III*, pp. 79-121.

Meinhof, C. & van Warmelo (1932). *An Introductionn to the Phonology of the Bantu Languages.* Dietrich Reimer, Berlin.

Meinhof, C. (1899) *Grundriss einer Lautlehre der Bantusprachen, Leipzig*: F. A. Brockhaus. Revised edn. 1910, Berlin: Dietrich Reimer.

Mel'čuk, I. A. (2013). The notion of inflection and the expression of nominal gender in Spanish. *Studies in Language. International Journal sponsored by the Foundation "Foundations of Language"*, Vol. *37*, No. 4, pp. 736-763.

Mitchley, H. (2015). *Agreement and Coordination in Xitsonga, Sesotho, and isiXhosa: an Optimality theoretic perspective*, Rhodes University MA thesis.

Miti, L. M. (2006). *Comparative Bantu phonology and morphology: a study of the sound systems and word structure of the indigenous languages of Southern Africa*. Centre for Advanced Studies of African Society (CASAS).

Moffat, R. (1826). *Bechuana spelling book*: Compiled by Robert Moffat, missionary at Lattakoo.

Mokone, N. S. (2000). *Macrostructural and microstructural strategies to enhance reference quality of Thanodi ya Setswana* (Doctoral dissertation, Stellenbosch: Stellenbosch University).

Moosally, M. (1998). *Noun Phrase Coordination: Ndebele Agreement Patterns and Cross-Linguistic Variation*. Doctoral dissertation: University of Texas.

Morimoto, Y. (2013). *Agreement properties and word order in comparative Bantu*. Universitätsbibliothek Johann Christian Senckenberg.

Mufwene, S. S. (1980). Bantu class prefixes: inflectional or derivational? In Papers from the... Regional Meeting. *Chicago Ling. Soc. Chicago, III.* No. 16, pp. 246-258.

Nash, J. 1992. *Aspects of Ruwund Grammar. Doctoral dissertation*. University of Illinois at Urbana-Champaign.

Ngonyani, D. (2003) *A Grammar of Chingoni*. Languages of the world/Materials 425. Munchen: Lincom Europa.

Ngonyani, D., & Githinji P. (2006). The asymmetric nature of Bantu applicative constructions. *Lingua*, Vol. *116*, No.1, pp. 31-63.

Ntsime, J. & Krüger, C. J. (1991). *E antswe letseleng*. Setlhophasa 8. Pretoria: Via Afrika.

Nurse, D. & Philippson G. (2006). *The Bantu Languages.* London: Taylor & Francis.

Otlogetswe, T. (2012). *Tlhalosi ya medi ya Setswana*. Medi Publishing, Gaborone, Botswana.

Palmer, G. B & Woodman, C (2000). Ontological Classifiers as Polycentric Categories, as Seen in Shona Class 3 Nouns, in Martin Putz & Marjolijn H Verspoor (Eds.), *Explorations in Linguistics Relativity.* Amsterdam /Philledelphia: John Benjamins, pp. 225-249.

Payne, D. L. (1986). *Noun classification in Yagua*. Noun classes and categorization, pp. 113-31.

Peters, A. & Menn L (1993). *False Starts and Filler Syllables: Ways To Learn Grammatical Morphemes. Language*, No. 69, pp. 742-778.

Poulos, G. & Louwrens L (1994). *A linguistic analysis of Northern Sotho.* Via Afrika Limited. Pretoria, South Africa.

Radford, A. (1990). *Syntactic Theory and the Acquisition of English Syntax*. Oxford; Basil Blackwell.

Rakgokong, P.M (1986). *Nominal Shift of Original Nouns and Deverbatives in Setswana.* A Revaluation. Potchefstroom Universiteit.

Richardson, I. (1967*). Linguistic Evolution and Bantu Noun class Systems*. Paris: Centre National de la Recherche Scientifique, pp. 373-389.

Ritter, E (1991). "Two Functional Categories in Noun Phrases : Evidence from Modern Hebrew." In Susan D. Rothstein, ed., *Perspectives on Phrase Structure: Heads and Licensing*. Vol. 25 of Syntax and Semantics. Academic Press, New York, pp. 37-62.

Rugemalira, J. M. (2007). The structure of the Bantu noun phrase. SOAS Working Papers in *Linguistics*, Vol.15, pp. 135-148.

Sadler, L. (2006). Gender resolution in Rumanian, in *The Festschrift Volume*, pp. 1-21, CSLI Publications.

Sale, J. E. M., Lohfeld, L. H., & Brazil, K. (2002). *Revisiting the quantitative–qualitative debate: Implications for mixed-methods research*. Quality & Quantity, Vol. 36, pp. 43–53.

Sandilands, A. (1953). *Introduction to Tswana*. Botswana: London Missionary Society.

Schadeberg, T.C. (1992). *A Sketch of Swahili Morphology*, Vol.3. Köln: Köppe.

Schwichtenberg, B., & Schiller N.O. (2004). *Semantic gender assignment regularities in German*. *Brain and language*, Vol 90, No. 1-3, pp. 326-337.

Selvik, K. (2001). *'When a dance resembles a tree: a polysemy analysis of three Setswana noun classes'*. In Hubert Cuykens & Britta Zawada (eds.) *Polysemy in Cognitive Linguistics*: Selected papers from the fifth International Cognitive Linguistics Conference Amsterdam/Philadelphia: John Benjamins, pp. 161-184.

Setshedi, J.E (1980). *Ithuteng Setswana*. Diptlhopha tsa 8, 9, le 10 le tsa Borutabana. Bophuthatswana: Craft Press.

Setswana Oxford Dictionary (2020), https://tn.oxforddictionaries.com.

Simango, S.R. (2012). Subject Marking, Coordination and Noun Classes in ciNsenga. *Southern African Linguistics and Applied Language Studies*. Vol 30, No. 2, pp. 171-183.

Simango, S.R. (2006). Verb agreement and the syntax of ciNsenga relative clauses. *Southern African Linguistics and Applied Language Studies*, Vol. 24, No. 3, pp. 277-290, DOI: 10.2989/16073610609486421.

Snyman, J.W & Shole, S.J (1990). *Dikisinari ya Setswana, English and Afrikaans*. Pretoria: Via Afrika,

Suzman, S. (1980). *Acquisition of the noun class system in Zulu. Papers and Reports on Child Language Development*. Standford University, No. 19, pp. 45-52.

Taraldsen, K. T., Medová, L. T., & Langa, D. (2018). Class prefixes as specifiers in Southern Bantu. *Natural Language & Linguistic Theory*, Vol. *36*, No. 4, pp. 1339-1394.

Taraldsen, K.T (2010). The Nanosyntax of Nguni Noun Class Prefixes and Concords: *Lingua 120*, pages 1522-1548. Tervuren Musee Royal de l'Afrique Centrale, Annales No.61.

Trask, R. L. (2003). *A Dictionary of Grammatical Terms in Linguistics:* Routledge.

Tsonope, J. (1987). *The acquisition of Setswana noun class and agreement morphology, with special reference to demonstratives and possessives.* PhD thesis. Buffalo: State University of New York.

Twala E. K (1992). *Noun Classes of IsiZulu*. Johannesburg: Randse Afrikaanse Universeteit.

Van der Spuy, A. (2010). Generating Zulu noun class morphology. *Language Matters: Studies in the Languages of Africa*, Vol. *41*, No. 2, pp. 294-314.

Van de Velde, M. L. O, (2013). *The Bantu Connective Construction*: Case and Grammatical Relations Across Languages, pp. 1-72.

Vansina, J. (1995). New linguistic evidence and the Bantu expansion, *JAH 36*, pp. 173–195.

Vigliocco, G., Vinson, D. P., Paganelli, F., & Dworzynski, K. (2005). Grammatical gender effects on cognition: implications for language learning and language use. *Journal of Experimental Psychology: General*, Vol. *134,* No. 4, pp. 501.

Wechsler, S. & Zlati´, L. (2003). *The Many Faces of Agreement*. Stanford, CA: CSLI Publication

Wechsler, S. (2008). Elsewhere in gender resolution. *The nature of the word: Essays in honor of Paul Kiparsky*, pp. 567-586.

Wechsler, S. & Zlati', L (2000). A theory of agreement and its application to Serbo-Croatian. *Language*, Vol. 76, pp. 799-832.

Welmers, W.E (1973). *African Language Structures*. Berkeley: University of California Press.

Whitely, W.H (1961). '*Shape and meaning in Yao nominal classes'*, African Language Studies, No. 2, pp. 1-24.

Worsley, P.M. (1954). Noun-classification in Australian and Bantu: Formal or semantic?*, Oceania*, Vol. 24, No. 4, pp. 275-288.

Zeller, J. (2004). Relative Clause Formation in the Bantu Languages of South Africa. *Southern African Linguistics and Applied Language Studies*, Vol. 22, pp. 75-93.

Zeller, J. (2008). The subject marker in Bantu as an antifocus marker. *Stellenbosch papers in linguistics*, Vol. 38*,* No. 1, pp. 221-254.

Zerbian, S. (2010). *The Relative Clause and its Tones in Tswana*. Vol, 53, pp. 227-242.

Ziesler, Y., & Demuth, K. (1995). Noun class prefixes in Sesotho child-directed speech. In *Proceedings of the 26th Child Language Research Forum*. Vol. 13, No. 26, pp. 137-146. Stanford University: CSLI.

Zubin D. A., & Köpcke, K. M. (1981). Gender: A less than arbitrary grammatical category. In *Papers from the Regional Meeting. Chicago Ling. Soc. Chicago, III*. No. 17.

APPENDIX

APPENDIX A: Dictionary Analysis Results

Noun Analysing			Semantic Domain:	Comment:
Class 1:	moruti	teacher	Person/Profession	
	motho	person	Person	
	mosetsana	girl	Person	
	mogolo	elder	Person	
	moabi	benefactor	Person	
	moagisani	neighbour	Person	
	moabêlwa	recipient	Person	
	moagedi	citizen	Person	
	mogaisane	contestant	Person	
	mofaladi	refugee	Person	
	mofenyi	winner	Person	
	mokapelo	lover	Person	
	mogatsaka	marriage partner	Person	
* (class 3?)	modimo	God	Being/Entity	God is analogous to humans
	motaki	painter	Person/Profession	
Class 3:	mogobagoba	truck	Transportation	
	mogabala	wild melon	Fruit	
	mogaga	river lily	Plant	
	modiga	end	Periphery	
	modikolosa	detour	Periphery	
	mosakô	large enclousre	Periphery	
	mokô	bone marrow	Body	
	mohu	paper wasp	Animal	
* (class 1?)	mokaikai	confusion	State	Emotion?
	morafe	tribe	Culture	
	molaetsa	message	Communication	
	momenô	hem	Dress	
	moferefere	chaos	State	
	moalô	covering	Dress	
	molala	neck	Body	
Class 5:	leanô	plan	Abstract result	
	learogi	rebel	Derogation	
	leakaretsi	quantitative pronoun	Abstract concept	
	leamanyi	relative pronoun	Abstract concept	
	leôbô	fence	Periphery	
	lejabatho	man-eater	Derogation	
	lewapi	sky	Nature	
	Lewatlê	sea	Nature	
	lewa	skeleton	Body	
	legakwa	crystal	Nature	
*	legagola	hero	Exaltation	Person
	lekaka	termite	Animal	
	lekgabana	pebble	Nature	
	lehuha	jealousy	State	
	leraaraa	disorder	State	
Class 7:	Seabê	contribution	Concrete result	
	seaka	adulterer	Derogation	
	sediba	well	Nature	a shaft sunk into the earth to obtain water, oil, or gas
	setagi	drug	Nature/narcotic	Cultivation of a plant
	sefane	surname	Culture	Indicates a persons tribe or community, depedning on culture
	sehuba	chest	Body	
	sefadi	scourer	Tool/instrument	
	sealogane	graduate	Skill	
	semane	swarm of bees	Animal	
	segai	spear	Tool/instrument	
	setatalala	debater	Skill	
	segagane	frost	Nature	
	sekale	scale	Tool/instrument	
	sejaro	loner	Derogation	
	sejana	dish	Tool/instrument	

Dictionary Analysis Results

	Semantic domain	Occurrence
Class 1	Person	14
	Entity	1
Class 3	Transportation	1
	Fruit	1
	Plant	1
	Periphery	3
	Body	2
	Animal	1
	State	2
	Communication	1
	Culture	1
	Dress	2
Class 5	Abstract result	1
	Abstract concept	2
	Periphery	1
	Derogation	2
	Nature	4
	Body	1
	Exaltation	1
	Animal	1
	Concrete result	1
	State	2
Class 7	Derogation	2
	Nature	3
	Culture	1
	Body	1
	Tool/instrument	4
	Animal	1
	Skill	2
	Concrete result	1

APPENDIX B:

Questionnaire Result: Part One

Part 1	Made-Up Word	Association:	Choices:
A	Mo-...o	setshedi se se tshelang	6
		mofuta wa setlhare	12
		karolo ya mmele	4
		motho yo o leng mo maemong a a sa itumediseng	17
		para e le nngwe ya karolo ya mmele	1
B	Mo-...a	setshedi se se tshelang	4
		mofuta wa setlhare	19
		mokgwa kgotsa tlwaelo wa go dira sengwe	0
		motho yo o nang le kgweetlho mo mmeleng	12
		karolo ya mmele	4
C			
	Mo-...i	setshedi se se tshelang	6
		mokgwa kgotsa tlwaelo wa go dira sengwe	12
		mofuta wa setlhare	1
		karolo ya mmele	4
		motho yo o leng mo maemong a a sa itumediseng	16
D			
	Le-...e	motho yo o leng mo maemong a a sa itumediseng	3
		motho yo e seng Motswana	6
		para e le nngwe ya karolo ya mmele	7
		motho yo o nang le maitsholo a a sa itumediseng	10
		ditlamorago tse di sa utlwisisegeng/tshwaregeng	13
E			
	Le-...o	ditlamorago tse di utlwisisegang	6
		ditlamorago tse di sa utlwisisegang/tshwaregeng	5
		motho yo o leng mo maemong a a sa itumediseng	2
		phologolo ya mofuta mongwe	17
		para e le nngwe ya karolo ya mmele	9
F			
	Se-...o	motho yo o nang le kgweetlho mo mmeleng	0
		mokgwa kgotsa tlwaelo wa go dira sengwe	7
		sediriswa	22
		para e le nngwe ya karolo ya mmele	0
		motho yo o nang le bokgoni jwa maemo a a kwa godimo	10
G			
	Se-...i	motho yo o nang le kgweetlho mo mmeleng	6
		mokgwa/tlwaelo kgotsa leleme le le tshwanang	7
		sediriswa	14
		motho yo o nang le bokgoni jwa maemo a a kwa godimo	10
		mokgwa kgotsa tlwaelo wa go dira sengwe	2
H			
	Se-...a	motho yo o leng mo maemong a a sa itumediseng	5
		mokgwa/tlwaelo kgotsa leleme le le tshwanang	6
		para e le nngwe ya karolo ya mmele	3
		mokgwa kgotsa tlwaelo wa go dira sengwe	14
		ditlamorago tse di sa utlwisisegeng/tshwaregeng	11

Questionnaire Results Part Two

Part 2	Association:	Prefix	Choices:
1	Ditshedi tse di tshelang	ba	16
		me	7
		ma	1
		di	15
2	Mekgwa kgotsa ditlwaelo tsa go dira sengwe	ba	2
		me	18
		ma	5
		di	14
3	Dikarolo tsa mmele	ba	0
		me	6
		ma	10
		di	23
4	Mefuta e le mmalwa ya ditlhare	ba	0
		me	20
		ma	1
		di	18
5	Mekgwa/ditlwaelo kgotsa maleme a a tshwanang	ba	2
		me	14
		ma	8
		di	15
6	Batho ba e seng batswana	ba	28
		me	6
		ma	4
		di	1
7	Batho ba ba leng mo maemong a a sa itumediseng	ba	26
		me	4
		ma	4
		di	5
8	Batho ba ba nang le maitsholo a a sa itumediseng	ba	17
		me	8
		ma	10
		di	4
9	Dipara di le pedi tsa dikarolo tsa mmele	ba	2
		me	12
		ma	14
		di	11
10	Ditlamorago tse di sa utlwisisegeng	ba	1
		me	11
		ma	12
		di	15
11	Ditlamorago tse di utlwisisegang	ba	2
		me	12
		ma	10
		di	15
12	Mofuta wa diphologolo tsa naga	ba	0
		me	10
		ma	4
		di	25
13	Batho ba ba nang le dikgweetlho mo mmeleng	ba	15
		me	6
		ma	2
		di	16
14	Didiriswa	ba	0
		me	5
		ma	3
		di	31
15	Batho ba ba nang le bokgoni jwa maemo a a kwa godimo	ba	25
		me	2
		ma	1
		di	11

APPENDIX C:

English version

Consent form:

The purpose of this study is to gain understanding of the meanings that are associated with Setswana nouns.

You are required to participate in this study by selecting nouns or meanings provided in the attached questionnaire. Kindly take note that participation in this investigation is entirely voluntary and that you have the right to opt out at any given time. Your responses shall remain anonymous at every stage. Your responses will be used solely for the purpose of this study and nothing else.

By signing this documenting you agree to participate in the investigation "The Content of Noun Classes: A Focus on Setswana"

Participant

Date

Questionnaire

'The Contents of Bantu Noun Classes: A Focus on Setswana'

Name:

City/town:

In this questionnaire you will be exposed to Setswana nouns taken from an ancient text. Please complete both tasks. Note that there are no right or wrong answers.

All documents should be completed and will be collected within 14 days of receiving the task.

1: Tick the most suitable definition/association for the word

A. mopitamo	1. setshedi se se tshelang	
	2. mofuta wa setlhare	

	3. karolo ya mmele	
	4. motho yo o leng mo maemong a a sa itumediseng	
	5. para e le nngwe ya karolo ya mmele	

B. mosatlora	1. setshedi se se tshelang	
	2. mofuta wa setlhare	
	3. mokgwa kgotsa tlwaelo wa go dira sengwe	
	4. motho yo o nang le kgweetlho mo mmeleng	
	5. karolo ya mmele	

C. mobagi	1. setshedi se se tshelang	
	2. mokgwa kgotsa tlwaelo wa go dira sengwe	
	3. mofuta wa setlhare	
	4. karolo ya mmele	
	5. motho yo o leng mo maemong a a sa itumediseng	

D. leape	1. motho yo o leng mo maemong a a sa itumediseng	
	2. motho yo e seng Motswana	
	3. para e le nngwe ya karolo ya mmele	
	4. motho yo o nang le maitsholo a a sa itumediseng	
	5. ditlamorago tse di sa utlwisisegeng/tshwaregeng	

E. lebolo	1. ditlamorago tse di utlwisisegang	
	2. ditlamorago tse di sa utlwisisegeng/tshwaregeng	
	3. motho yo o leng mo maemong a a sa itumediseng	
	4. phologolo ya mofuta mongwe	
	5. para e le nngwe ya karolo ya mmele	

F. sebalo	1. motho yo o nang le kgweetlho mo mmeleng	
	2. mokgwa kgotsa tlwaelo wa go dira sengwe	
	3. sediriswa	
	4. para e le nngwe ya karolo ya mmele	
	5. motho yo o nang le bokgoni jwa maemo a a kwa godimo	

G. seali	1. motho yo o nang le kgweetlho mo mmeleng	
	2. mokgwa/tlwaelo kgotsa leleme le le tshwanang	
	3. sediriswa	
	4. motho yo o nang le bokgoni jwa maemo a a kwa godimo	
	5. mokgwa kgotsa tlwaelo wa go dira sengwe	

H. setsebela	6. motho yo o leng mo maemong a a sa itumediseng	
	7. mokgwa/tlwaelo kgotsa leleme le le tshwanang	
	8. para e le nngwe ya karolo ya mmele	
	9. mokgwa kgotsa tlwaelo wa go dira sengwe	
	10. ditlamorago tse di sa utlwisisegeng/tshwaregeng	

2: Tick the most suitable word for the definition/association provided

1. Ditshedi tse di tshelang	Bapali	
	Mepali	
	Mapali	
	Dipali	

2. Mekgwa kgotsa ditlwaelo tsa go dira sengwe	Bapamo	

	Mepamo	
	Mapamo	
	Dipamo	

3. Dikarolo tsa mmele	bapolobo	
	mepolobo	
	mapolobo	
	dipolobo	

4. Mefuta e le mmalwa ya ditlhare	baphata	
	mephata	
	maphata	
	diphata	

5. Mekgwa/ditlwaelo kgotsa maleme a a tshwanang	baale	
	meale	
	maale	
	diale	

6. Batho ba e seng Batswana	bagame	
	megame	
	magame	
	digame	

7. Batho ba ba leng mo maemong a a sa itumediseng	babaki	

	mabaki	
	mebaki	
	dibaki	

8. Batho ba ba nang le maitsholo a a sa itumediseng	batuja	
	metuja	
	matuja	
	dituja	

9. Dipara di le pedi tsa dikarolo tsa mmele	bajelofa	
	mejelofa	
	majelofa	
	dijelofa	

10. Ditlamorago tse di sa utlwisisegeng	babathe	
	mebathe	
	mabathe	
	dibathe	

11. Ditlamorago tse di utlwisisegang	bakule	
	mekule	
	makule	
	dikule	

12. Mofuta wa diphologolo tsa naga	basepola	
	mesepola	
	masepola	
	disepola	

13. Batho ba ba nang le dikgweetlho mo mmeleng	baragala	
	meragala	
	maragala	
	diragala	

14. Didiriswa	bakatame	
	mekatame	
	makatame	
	dikatame	

15. Batho ba ba nang le bokgoni jwa maemo a a kwa godimo	bafagi	
	mefagi	
	mafagi	
	difagi	

Thank you for your participation

For any enquiries please contact: oboit.tladi@gmail.com

Setswana version

Foromo ya tetlelelo:

Maitlhomo a serutwa se ke go utlwisisa bokao jo bo golaganeng le maina a Setswana.

O tlhoka go tsaya karolo mo serutweng se ka go tlhopha maina kgotsa bokao jo bo neetsweng mo dipotsong tse di gokeletsweng. Tsweetswee, ela tlhoko gore ga o pateletsege go tsaa karolo mo patlisisong e, o na le tetla ya go ikgogela morago nako ngwe le ngwe. Dikarabo tsa gago di tla fitlhwa ka dinako tsotlhe. Dikarabo tsa gago di tla dirisetswa serutwa se fela e seng sengwe gape.

Ka go saena lekwalo le, o dumela gore o tla tsaakarolo mo patlisisong e 'Diteng tsa ditlhopha tsa maina a Bantu: Ntlhathakanelo e le mo Setswaneng'

Motsaakarolo

Letlha

Dipotso

'Diteng tsa ditlhopha tsa maina a Bantu: Ntlhathakanelo e le mo Setswaneng'

Leina:

Toropo:

Mo dipotsong tse o tla bona maina a Setswana a a tserweng go tswa mo lekwalong la bogologolo. Tsweetswee dira ditiro ka bobedi. Lemoga gore ga go na karabo e e fosagetseng kgotsa e e nepagetseng

Makwalo a a feditsweng go arabiwa, a tla kgobokanywa mo malatsing a le 14 morago ga go amogela tiro.

1: Tshwaya bokao jwa lefoko jo bo maleba go gaisa

A. mopitamo	6. setshedi se se tshelang	
	7. mofuta wa setlhare	

	8. karolo ya mmele	
	9. motho yo o leng mo maemong a a sa itumediseng	
	10. para e le nngwe ya karolo ya mmele	

B. mosatlora	6. setshedi se se tshelang	
	7. mofuta wa setlhare	
	8. mokgwa kgotsa tlwaelo wa go dira sengwe	
	9. motho yo o nang le kgweetlho mo mmeleng	
	10. karolo ya mmele	

C. mobagi	6. setshedi se se tshelang	
	7. mokgwa kgotsa tlwaelo wa go dira sengwe	
	8. mofuta wa setlhare	
	9. karolo ya mmele	
	10. motho yo o leng mo maemong a a sa itumediseng	

D. leape	6. motho yo o leng mo maemong a a sa itumediseng	
	7. motho yo e seng Motswana	
	8. para e le nngwe ya karolo ya mmele	
	9. motho yo o nang le maitsholo a a sa itumediseng	
	10. ditlamorago tse di sa utlwisisegeng/tshwaregeng	

E. lebolo	6. ditlamorago tse di utlwisisegang	
	7. ditlamorago tse di utlwisisegang	
	8. motho yo o leng mo maemong a a sa itumediseng	
	9. phologolo ya mofuta mongwe	
	10. para e le nngwe ya karolo ya mmele	

F. sebalo	6. motho yo o nang le kgweetlho mo mmeleng	
	7. mokgwa kgotsa tlwaelo wa go dira sengwe	
	8. sediriswa	
	9. para e le nngwe ya karolo ya mmele	
	10. motho yo o nang le bokgoni jwa maemo a a kwa godimo	

G. seali	6. motho yo o nang le kgweetlho mo mmeleng	
	7. mokgwa/tlwaelo kgotsa leleme le le tshwanang	
	8. sediriswa	
	9. motho yo o nang le bokgoni jwa maemo a a kwa godimo	
	10. mokgwa kgotsa tlwaelo wa go dira sengwe	

H. setsebela	I. motho yo o leng mo maemong a a sa itumediseng	
	J. mokgwa/tlwaelo kgotsa leleme le le tshwanang	
	K. para e le nngwe ya karolo ya mmele	
	L. mokgwa kgotsa tlwaelo wa go dira sengwe	
	M. ditlamorago tse di sa utlwisisegeng/tshwaregeng	

2: Tshwaya lefoko le le maleba go gaisa le le neetsweng go fa tlhaloso

1. Ditshedi tse di tshelang	bapali	
	mepali	
	mapali	
	dipali	

2. Mekgwa kgotsa ditlwaelo tsa go dira sengwe	bapamo	
	mepamo	
	mapamo	
	dipamo	

3. Dikarolo tsa mmele	bapolobo	
	mepolobo	
	mapolobo	
	dipolobo	

4. Mefuta e le mmalwa ya ditlhare	baphata	
	mephata	
	maphata	
	diphata	

5. Mekgwa/ditlwaelo kgotsa maleme a a tshwanang	baale	
	meale	
	maale	
	diale	

6. Batho ba e seng Batswana	bagame	
	megame	
	magame	
	digame	

7. Batho ba ba leng mo maemong a a sa itumediseng	babaki	
	mabaki	
	mebaki	
	dibaki	

8. Batho ba ba nang le maitsholo a a sa itumediseng	batuja	
	metuja	
	matuja	
	dituja	

9. Dipara di le pedi tsa dikarolo tsa mmele	bajelofa	
	mejelofa	
	majelofa	
	dijelofa	

10. Ditlamorago tse di sa utlwisisegeng	babathe	
	mebathe	
	mabathe	
	dibathe	

11. Ditlamorago tse di utlwisisegang	bakule	
	mekule	

	makule	
	dikule	

12. Mofuta wa diphologolo tsa naga	basepola	
	mesepola	
	masepola	
	disepola	

13. Batho ba ba nang le dikgweetlho mo mmeleng	baragala	
	meragala	
	maragala	
	diragala	

14. Didiriswa	bakatame	
	mekatame	
	makatame	
	dikatame	

15. Batho ba ba nang le bokgoni jwa maemo a a kwa godimo	bafagi	
	mefagi	
	mafagi	
	difagi	

Ke lebogela go tsaakarolo ga gago

Fa o na le dipotso ikgolaganye le: oboit.tladi@gmail.com