

# **Adjective Stacking and Classification in Northern Sotho: A Southern Bantu Language of South Africa**

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## **Abstract**

In this paper, I investigate the nature of complex nominal modification in Northern Sotho, a Southern Bantu language and an official language of South Africa. Adjectives in Northern Sotho have traditionally been analysed as a subclass of nouns, based on morphological similarities between nouns and adjectives. Based on recent work on both Bantu lexical classification and the category ‘adjective’, I refer to the range of Northern Sotho nominal structures commonly termed ‘qualificatives’ as adjectives. There has been some limited discussion of the theory that there are universal structures in adjective order across different languages, although sequencing in languages with postnominal adjectives remains under-researched. Using a combination of corpus data and original fieldwork, I provide support for the suggestion that there are patterns in the syntax of complex modification strings which operate on a universal level, above that of individual languages.

## **1. Introduction**

This paper documents an investigation into the structure and organisation of poly-adjectival noun phrases (PNPs, Bache 1978) in Northern Sotho, a Southern Bantu language spoken mainly in South Africa. In section 2, I give some background on the language of Northern Sotho and in section 3, I discuss the phenomenon of ‘adjective stacking’ and outline critical theory which attempts to explain the ordering of attributive adjectives across different languages. In section 4, I provide an account and justification of my choice of a mixture of corpus and field methods for my study, before giving a detailed overview of the morphology, syntax and semantics of the adjective class in Northern Sotho in section 5. In section 6, I present my results and provide some discussion of these data before offering some conclusions on the nature and structure of complex modification in Northern Sotho.

This study relates not only to the phenomenon of adjective stacking, but also to the wider argument concerning the nature of the adjective class as an independent lexical category. Although major theorists have suggested that not all languages have a word class of adjectives (Jespersen 1961; Rijkhoff 2002: 133; McGregor 2009: 84; Dryer 2013), in recent years, there has been considerable work done to provide a counter-argument to this assumption, most notably by Baker (2003) and Dixon and Aikhenvald (2004). In this paper, I refer to refer to the structures labelled by Poulos and Louwrens (1994) as ‘qualificatives’ as adjectives, rather than their traditional analysis as a subclass of nouns (Van Wyk 1967). My study also provides evidence which supports Sproat and Shih’s suggestion (1988) that complex modification chains show similarities in their internal order across different languages.

## **2. Northern Sotho: Background**

Northern Sotho is a language or language cluster spoken predominantly in the North-East of South Africa by around 4 million people in the Limpopo and Mpumalanga provinces (Paul et al 2013). The language is commonly referred to as Sepedi, which is the dialect from which the standard form was developed by German missionaries in the 19<sup>th</sup> Century. However, this is only one of 27 dialects of the language (Mokgokong 1966), with other varieties such as Lobedu exhibiting considerable variation from Sepedi (Kotze 2001). There is a high degree of mutual intelligibility between Northern Sotho and other Southern Bantu languages, with Southern Sotho and more noticeably Tswana plausibly constituting something of a linguistic continuum with the language. Lombard et al (1985: 5) suggest that ‘some speakers of a Northern Sotho dialect will understand speakers of a Tswana dialect better than they would understand speakers of another Northern Sotho dialect’.

During my work with the language, it became apparent that the nomenclature of the Northern Sotho language was a subject of considerable sensitivity to native speakers of the language. In the Constitution of South Africa (1998, available on *gov.za*, the South African Government website), the language is referred to as ‘Sepedi’ in its capacity as a designated official language. The African Languages Website (2013) suggests that the language is often ‘wrongly referred to as "Sepedi", while in actual fact Sepedi is considered but a dialect of the language "Northern Sotho"’.

The term Northern Sotho is a label created by Western missionaries, who divided up the indigenous languages of the region as much by geography as by genealogy (Mojela 2008). While *sotho* is listed in some grammars of the language as a colour term (brown), none of my informants recognised this usage. In fact, *sotho* is a portmanteau word which

blends the adjectival root *-so* (*black*) with the nominal root *-tho* (person), and hence has an interpretation which essentially refers to 'black people' (Mokgoatjane 2013 p/c).

For the purpose of this investigation, I refer to the language as Northern Sotho as this is the name most commonly used in linguistic literature, and is the term used by *Ethnologue* (Paul et al 2013) and the *World Atlas of Language Structures* (Dryer et al 2013).

### **3. The Order of Attributive Adjectives**

The term 'Poly-adjectival Nominal Phrase (PNP)' was developed by Bache (1978) to refer to any noun phrase with more than one modifying adjective, and is the term I use for such structures in this paper. Bache separates adjectives in English PNPs into what he calls functional 'zones of modification', with Mod-I adjectives in the first zone, Mod-II in the second and Mod-III adjectives in the third zone, closest to the head. Mod-I adjectives such as *usual* are said to specify or identify a noun; Mod-II adjectives such as *big* describe or characterise a noun; Mod-III adjectives such as *political* classify or categorise a noun. Therefore, the ordering within a PNP such as *the usual big political issues* can be analysed based on Bache's theory into these three functional zones.

The order of adjectives within the second or 'central zone' (Quirk et al 1985: 1338) has been the subject of considerable investigation by linguists, with many theories proposed which predict adjective order based on the identification and sequencing of a variety of semantic subclasses. Scott (2002: 92) suggests that theorists do not always agree in their observations of 'just how many semantic categories of adjective there actually are', and points out that there is no general agreement on the ordering of such semantic categories. Even a brief glance at some of the more commonly cited semantic order typologies of PNPs shows that a number of patterns consistently occur:

Dixon (1982: 17):

VALUE > DIMENSION > PHYSICAL PROPERTY > SPEED > HUMAN PROPENSITY > AGE > COLOUR

Goyvaerts (1968: 27):

QUALITY > SIZE > LENGTH > SHAPE > AGE > COLOUR > NATIONALITY > STYLE > GERUND > DENOMINAL

Quirk and Greenbaum (1973: 404)

GENERAL > AGE > COLOUR > PARTICIPLE > PROVENANCE > NOUN > DENOMINAL

Alexander (1992: 86)

OPINION > SIZE > AGE > SHAPE > COLOUR > ORIGIN/NATIONALITY > PARTICIPLE

Scott (2002: 114)

DETERMINER > ORDINAL NUMBER > CARDINAL NUMBER > SUBJECTIVE COMMENT > EVIDENTIAL > SIZE > LENGTH > HEIGHT > SPEED > DEPTH > WIDTH > WEIGHT > TEMPERATURE > WETNESS > AGE > SHAPE > COLOUR > NATIONALITY/ORIGIN > MATERIAL > COMPOUND ELEMENT > HEAD

It is clear to see from these examples the difference of opinion to which Scott refers. However, it is also noticeable that each ordering features 'age' before 'colour' and 'nationality', with 'size' preceding them in some form (dimension, general) along with some manner of evaluative judgement (quality, value, opinion, subjective comment, general). It is a notion commonly agreed upon that English adjectives denoting subjective properties of a head tend to precede those which are more objective and inherent (Whorf 1937; Teyssier 1968; Quirk et al 1985: 1339; Adamson 2000: 55-6; Wulff 2003). Many theorists combine an explanation of adjective order based on functional and semantic factors, with an appreciation that contextual factors also affect such orders. Greenberg and Srinivasan (2003: 1) note that 'there are some cases where multiple orderings are not only legitimate, but carry different semantic content', and Quirk et al (1985: 1341) suggest that speakers will often place adjectives in an order which 'corresponds to the 'natural' order of recursive qualification',

and which sometimes ‘reflects the non-linguistic world’. Often an adjective will be placed earlier in the sequence either to foreground and emphasise it, or even to suggest an adverbial relationship with the following modifier, as in the phrase *the beautiful tall trees*.

While adjective order has been studied to a considerable extent in English, the same cannot be said about other languages. As noted, the adjective class is one which divides linguists as to whether all languages possess such a category, but those languages for which a distinctive adjective class is recognised exhibit considerable cross-linguistic variation in their syntax and morphology. While English has adjectives which appear before the noun (with the exception of occasional French calques and poetic usages), an estimated 62% of languages have adjectives which predominantly appear after the noun (Dryer 2013). Northern Sotho has exclusively postnominal adjectives and this study is intended to investigate to what extent the order of adjectives varies between Northern Sotho and English.

Sproat and Shih (1991: 591) suggest that the ordering of adjectives in Chinese and English is largely very similar, and relates this to the fact that both languages have typically prenominal attributive adjectives. The same authors also note, however, that the order of adjectives should be ‘stated in terms of closeness to the head, rather than in terms of linear ordering’, and suggest that comparing this feature in languages with different orderings of adjective and noun is more complex than in languages with similar constituent orders in nominal phrases.

Cinque (1994: 87; 2010) compares adjective placement in Romance and Germanic languages, and suggests that ordering is to some extent universal. He notes that two possible orderings of adjectives exist: the same order as English, and the reverse, or mirror-image order of English. Willis (2011: 1807) argues against this observation, claiming that such an analysis is ‘grounded in the theoretical context of recent work in comparative syntax’. He suggests that N-raising analyses of noun phrases such as that proposed by Cinque are

insufficient in explaining the nature of PNPs in Welsh, which, as a language with predominantly postnominal adjectives, exhibits both patterns Cinque observes, as well as other more distinctive orders. An analysis of the ordering in Northern Sotho offers a fresh perspective on this issue.

## **4. The Adjective Class in Northern Sotho**

### **4.1 Morphosyntax**

Like other Bantu languages, Northern Sotho is highly agglutinative in nature (Nurse and Philippson 2003: 44) and thus the morphological structure and syntax of attributive adjectives is particularly different to that of English. Adjectives are nearly always postnominal, are separated from the head by a particle and (in the case of central adjectives) an inflectional prefix, both of which express concord with the noun class of the head. Many theorists have referred to the adjective as a subclass of noun (Lombard 1985: 58, Ziervogel 1969, Van Wyk 1967), others refer to adjectival constructions (Prinsloo et al 2013) and Poulos and Louwrens (1994) consider ‘qualificatives’ as a loose equivalent of the adjective class in English. The usage by the first three authors of the term ‘adjectival noun’ is influenced by Doke’s (1954) seminal work on Southern Bantu which does not recognise adjectives as constituting an independent word class, instead labelling them as nouns based on their morphology. For the purpose of this study, the term ‘adjective’ is used to refer to the range of structures that Poulos and Louwrens (1994) label ‘qualificatives’ and which Prinsloo et al (2013) label ‘adjectival constructions’.

Adjectives in Northern Sotho are made up of a lexical root (*-golo* ‘big’) and a concordial morpheme (Lombard 1985: 84) which changes to reflect the class prefix of the modified head. The adjective is separated from the head by a small particle of two or three

letters, which also changes to express concord with the noun class of the head. This particle is most commonly called the qualificative particle (Lombard 1985: 171, Poulos and Louwrens 1994: 91), but is also referred to as the demonstrative (Ziervogel 1969: 58) the adjective prefix and the adjective particle (Poulos and Louwrens 1994: 91). Although the particle is very similar in form to the demonstrative, it performs a different function here and works only as a linker between adjectives and nouns.

<i>Monna</i>	<i>yo</i>	<i>mo-golo</i>
N1-man	QP1	CM6-ADJbig
‘big man’		

<i>Selepe</i>	<i>se</i>	<i>se-golo</i>
N5-axe	QP5	CM5-ADJbig
‘big axe’		

As well as adjectival nouns in Northern Sotho, there exists another group of modifiers which are commonly referred to as ‘relative nouns’ (Lombard et al 1985: 59-60), but also ‘nominal relatives’ and ‘pseudo-adjectival constructions’ (Prinsloo et al 2013: 76). The equivalent category has been analysed in Tswana and labelled as ‘new adjectives’ (Creissels 2010). The constructions do not share all the morphosyntactic properties of full adjectival nouns, and constitute a class similar to ‘peripheral adjectives’ in English (see Quirk et al 1985: 1338). While relative nouns follow the qualificative particle to modify a noun, they have an initial bound morpheme instead of inflecting to express concord with the head:

<i>Banna</i>	<i>ba</i>	<i>bohlale</i>	
N2-men	QP2	RELNclever	(Ziervogel 1969: 55)



Enumerative nouns (Poulos & Louwrens 1994), constitute a very small class of words with only four members, which are similar to adjectival nouns. While they usually follow the subject concord and do not always take a concordial morpheme, they can also function with the qualificative particle either with (like adjectival nouns) or without (like relative nouns) the concordial morpheme:

*Metše*        *ye*        *me-šele*  
 N4-villages    QP4    CM4-strange

*Metše*        *ye*        *šele*  
 N4-villages    QP4    strange

*Metše*        *e*        *šele*  
 N4-villages    SC4    strange

‘foreign villages’

(Poulos & Louwrens 1994: 112)

When more than one adjective is used to modify a noun at the same time, the qualificative particle is repeated for each adjective:

*Mahlo*        *a*        *ma-botse*                      *a*        *ma-tsothwa*  
 N6-eyes        QP6    CM6-ADJbeautiful    QP6    CM6-ADJbrown

‘beautiful brown eyes’

(De Schryver 2013: 110)

*Selo*        *se*        *se-ngwe*                      *se*        *se-kaone*  
 N7-thing        QP7    CM7-ADJother            QP6    CM6-ADJbetter

‘another better thing’

(Pretoria Sepedi Corpus)

Adjectival nouns can be combined in this way with relative nouns and enumerative nouns, as evidenced by the following examples (from De Schryver 2013: 110-115):

*Dintšhi*        *tše*        *telele*                      *tše*        *boleta*  
 N8-eyelash    QP8    CMØ-ADJtall            QP8    RELNsoft

‘long soft eyelashes’

<i>Mathebo</i>	<i>a</i>	<i>mabotse</i>	<i>a</i>	<i>dinkwe</i>
N6-skins	QP6	CM6-ADJbeautiful	QP6	RELNleopard
‘beautiful leopard skins’				

## 4.2 Semantics

The adjectival category constitutes a fairly small and relatively closed class in Northern Sotho. Segerer (2008: 1) notes that the nature of adjective classes in African languages is well documented and suggests that nearly all members Niger-Congo family have a ‘small, closed class [in which] the number of items ranges from 2 to more than 100’. This description applies to that of adjectival nouns in Northern Sotho, in which the number of items varies slightly from one source to another. Lombard (1985) lists 30 adjectival bases, while Ziervogel (1969) only names 26. Mphasha (2010) names 33, while Poulos and Louwrens (1994) name 35.

In addition to the roots noted in these sources, De Schryver (2013: 446) suggests that *-pink* ‘pink’, also functions as an adjectival noun, a borrowing which opposes the notion that Bantu adjective classes tend to be closed. Similarly, my own study of the *Pretoria Sepedi Corpus* reveals that the adverb *kaone* ‘better’ (see example on previous page) can also be used as an adjectival noun, a fact confirmed by my native speakers. Overall, it is possible to identify as many as 44 adjectival roots in Northern Sotho, which suggests that it has a fairly large class for a Niger-Congo language, and one which is potentially more open than others.

The adjectives of Northern Sotho can be divided into semantic subclasses as follows:

NUMERAL	SPECIFIER	COLOUR	SIZE	AGE/GENDER	EVALUATIVE
<i>-tee</i> (one)	<i>-ngwe</i> (other)	<i>-hubedu</i> (red)	<i>-golo</i> (big)	<i>-fsa</i> (new, young)	<i>-botse</i> (beautiful)
<i>-pedi</i> (two)	<i>-bjang</i> (what)	<i>-sehla</i> (grey)	<i>-nyane</i> (small)	<i>-tala</i> (old)	<i>-šoro</i> (cruel, vicious)
<i>-raro</i> (three)	<i>-bjalo</i> (such, so)	<i>-tala</i> (blue)	<i>-telele</i> (tall)	<i>-tona</i> (male)	<i>-šele</i> (strange)
<i>-ne</i> (four)	<i>-kaaka</i> (this/so big)	<i>-so</i> (black)	<i>-koto</i> (thick)	<i>-tshadi</i> (female)	<i>-thata</i> (hard)
<i>-hlano</i> (five)	<i>-kaakang</i> (how big?)	<i>-šweu</i> (white)	<i>-kopana</i> (short)		<i>-be</i> (bad, evil)
<i>-ntši</i> (many)	<i>-fe</i> (which?)	<i>-tsothwa</i> (brown)	<i>-sese</i> (thin)		<i>-bose</i> (nice, tasty)
<i>-kae?</i> (how many?)		<i>-pinki</i> (pink)	<i>-tona</i> (big)		<i>-kaone</i> (better, best)
<i>-nyane</i> (few)		<i>-tilo</i> (black &	<i>-kgopo</i> (crooked)		<i>-borethe</i> (smooth)
		<i>-khunou</i> (reddish-			<i>-boleta</i> (nice, tasty)

*Figure 1: Semantic Subclasses of Adjectives in Northern Sotho*

As shown above, adjectives in Northern Sotho do not occupy the same semantic space as their English counterparts. Numerals, as in other Bantu languages, are adjectives in Northern Sotho, and there are also question words which work in the same way, such as *banna ba bakae?* ‘how many men?’. My fieldwork suggests that even those which are also adjectives in English have particular distinctions in their usage and interpretation. Adjectives which denote size and age are very closely linked in Northern Sotho. This means that many phrases

which make reference to both size and age might seem perfectly natural in English but cannot be collocated without a suggestion of contradiction or tautology in Northern Sotho:

<i>*monna</i>	<i>yo</i>	<i>monyane</i>	<i>yo</i>	<i>motala</i>
N1-man	QP1	CM1-ADJ <small>small</small>	QP1	CM1-ADJ <small>old</small>
		‘little old man’		
<i>*basetšana</i>	<i>ba</i>	<i>batelele</i>		
N2-girls	QP2	CM2-ADJ <small>tall</small>		
		‘tall girls’		
<i>*kgomo</i>	<i>ye</i>	<i>nnyane</i>		
N9-cow	QP7	CM7-ADJ <small>small</small>		
		‘small cow’		
<i>*mošemane</i>	<i>yo</i>	<i>mofsa</i>		
N1boy	QP1	CM1-ADJ <small>young</small>		
		‘young boy’		

For the first two noun phrases, speakers of Northern Sotho would consider a strong sense of contradiction in the expression of qualities of size and age. In the first example, the adjective *nyane* ‘small’ is seen as contradictory to the adjective *tala* ‘old’. While the phrase ‘a little old man’ is a common collocation in English, the Northern Sotho term *nyane* refers not just to something which is small in size, but also has a strong indication of being young in age. Similarly, *kgomo ye nnyane* has a literal translation of ‘a small cow’, but this term in Northern Sotho refers more to a young cow, more commonly denoted by the noun *namane* ‘calf’. Similar problems arise from the terms *basetšana ba batelele* and *mošemane yo mofsa*. *Basetšana* ‘girls’ are considered to be small and to describe them as ‘tall’ sounds strange to a native speaker, while to describe a *mošemane* ‘boy’ as ‘young’ sounds like a tautology.

While English adjectives can describe the property of an object in relation to other objects of its kind, my informants’ comments suggest that Northern Sotho adjectives are more absolute and there are more complex collocational restrictions, both with heads and with other modifiers. Cinque (2010: 10) refers to these kinds of modification as ‘relative’ and ‘absolute’ readings, citing *a big tank* as an example of the former. My research strongly suggests that Northern Sotho adjectives are far more arbitrarily absolute than those in English, which are more flexible. The reflections elicited in my fieldwork are supported by the fact that no examples such as those discussed in the preceding paragraph appear in my corpus data.

Another interesting feature to note here is the variability in the interpretation of certain adjectives such as *-fsa*, *-telele* and *-tona*. Mphasha (2010: 23) suggests that for some adjectives, the meaning is selected by the head. The adjective *-fsa* can mean ‘young’ or ‘new’ depending upon the animacy of the modified head. If a snake or a road were modified by *-telele*, the interpretation would be ‘long’, while for a person it would be ‘tall’. The adjective *-tona* is particularly interesting, as it can mean ‘right’, ‘male’ or ‘big’, depending upon the nature of the modified head. Consider the following examples:

*Kgomo*          *ye*      *tona*  
 N9-cow          QP9      CMØ-ADJ-male  
 ‘a male cow’

*Seatle-ng*          *se*      *setona*  
 N7-Hand-LOC      QP7      CM7-ADJ-big  
 ‘in the right hand’

<i>Mello</i>	<i>ye</i>	<i>mentši</i>		<i>ye</i>	<i>metona</i>
N4-fires	QP4	CM4-ADJmany		QP4	CM4-ADJ-big
‘many big fires’					

The adjective *-tona* is quite rare in the *PSC* but based on my fieldwork, it seems to be most commonly used to refer to animals rather than people, with such a usage suggesting disrespect in a similar way to the adjective *bullish* might in English. It tends to refer to the alpha male in a group of animals and hence also has the interpretation of being of a large size. De Schryver (2013: 236) suggests that this term can also mean ‘important’. This interpretation, along with the usage to refer to the right hand or the right arm, seems to be the result of a semantic drift based on an association with power and strength. Interestingly, the adjective meaning ‘left’, *-tshadi* also denotes femininity (Prinsloo 2009: 169), suggesting a link between gender and the terms for right and left. This etymology is not quite clear, but it is reasonable to say that Mphasha’s (2010: 23) suggestion that meaning is distinguished by head is particularly salient here.

## **5. Methodology - mixed method approach**

For this investigation, I have adopted a mixed-method approach which combines the use of data from the *Pretoria Sepedi Corpus* with original fieldwork in the form of questionnaires with 30 native speakers, all of whom were teachers in the Sekhukhuneland area. The questionnaires are primarily quantitative in nature, but also allow participants to speculate as to what factors affect the order in which they choose to place adjectives in PNPs. The validity of an approach which combines corpus and field methods is widely attested, with Biber et al (1998: 9) suggesting that ‘corpus-based analysis should be seen as a complementary approach to more traditional approaches’ and that corpus studies alone are not always sufficient to investigate or explain fully, a linguistic phenomenon. McEnery and Wilson (2007: 30) suggest that corpus data allow us to investigate a language through a sample which is ‘maximally representative’ and which ‘provides us with as accurate a picture as possible of the tendencies’ of the grammar of a language.

Newman and Ratliff (2001: 49) suggest that it is important to work with native speakers of a language if a researcher wishes to gain valuable, realistic data. They suggest that native speakers ‘have background knowledge of context that an outsider may lack’ and that ‘good speakers have a sense of the difference between not only what is grammatical and what is ungrammatical but also of what is said and what could be said but is not’. While a corpus study provides us with information on commonly-appearing structures, it is not always possible to speculate on the respective grammaticality of structures which do not appear in the data set. Newman and Ratliff (2001: 51) stress this suggestion and add that native speaker informants can offer judgements beyond the realm of a pure corpus-based study. They note that ‘some speakers are especially sensitive to nuances of style and register, able to point out the effects of lexical and grammatical choices’.

My corpus data include over 300 Northern Sotho PNPs which feature a range of central and peripheral adjectives. A corpus search was performed of all structures in which a noun was followed by two or more ‘adjectives’, which included both ‘adjectival nouns’ and ‘relative nouns’. Therefore, all noun phrases studied had one of the following structures:

NOUN-ADJN-ADJN (-ADJN/RELN ... and so on)

NOUN-ADJN-RELN (-ADJN/RELN ... and so on)

NOUN-RELN-ADJN (-ADJN/RELN ... and so on)

NOUN-RELN-RELN (-ADJN/RELN ... and so on)

The questionnaire featured 40 questions in which participants were asked to select a preferred ordering for a variety of PNPs in Northern Sotho. A large range of combinations of different semantic types was selected, and the patterns were compared with the corpus data to identify whether the trends were comparable, and to provide a broader, varied and more reliable data set on which to base conclusions. For each question, a head noun was supplied,

along with a minimum of two adjectives which were presented in brackets in alphabetical order:

*Dikgabo* ..... (*be/ nyane/ tala/ tsothwa*)  
(Monkeys) (evil/ brown/ small/ old)

Participants were asked to construct the sentence as they felt they would say it in natural language usage. The omission of concordial morphemes and qualificative particles in the question format was also instructive in this measure. In most cases, more than one participant completed the questionnaire simultaneously, and I encouraged them to discuss which order they felt most natural with a view to getting reliable, vernacular data. The data were then analysed, with the number of each possible sequence of adjectives represented as a percentage. In some cases, there is a clearly preferred order, while in others a range of possible orders exist.

## **6. Results and Discussion**

### **6.1 Corpus Data**

As noted above, the corpus data contains over 300 tokens featuring all combinations of two or more ‘adjectives’, under which umbrella term I refer to both adjectival nouns and relative nouns (Lombard 1985). The results display a number of trends. The most commonly occurring adjective is *-ngwe* ‘other’ which appears in nearly half of all PNPs in my data set. It appears closest to the head in 91% of tokens, with the remaining 9% most likely marked orders employed to foreground the other adjective. Even numerals appear further from the head than *-ngwe*. Consider the following table:



Collocate	Sem-type	ngwe-X	X-ngwe	Total	% initial
-golo	size	17	3	20	85
-bedi	num	15	2	17	88
-ntši	spec/num	14	2	16	88
-botse	eval	9	0	9	100
-fsa/swa	age	6	0	6	100
-be	eval	5	1	6	83
-nyane	size	6	0	6	100
-raro	num	3	0	3	100
-hlano	num	3	0	3	100
-šweu	col	3	0	3	100
-kaone	eval	3	0	3	100
-so	col	3	0	3	100
-telele	size	1	1	2	50
-ne	num	1	0	1	100
TOTAL		89	9	98	91%

*Figure 2: Collocations with –ngwe ‘other’*

After *–ngwe*, the adjectives most commonly placed closest to the noun are numerals. The most commonly-occurring numeral is *–pedi* ‘two’, which appears closer to the head than other collocates in 94% of modification strings which do not include *–ngwe*. The other numerals, including *–ntshi* ‘many’, appear closest to the head in the majority of tokens. After numerals, adjectives of size tend to appear closer to the noun than adjectives from other semantic subclasses. Of these adjectives, *–golo* ‘big’ is by far the most common, and tends to precede other adjectives of size when they are combined. This is most likely because it is a more general and subjective descriptor, less specific than *–telele* ‘tall’ or *–koto* ‘thick’. Whorf (1937: 93, see also Adamson 2000: 55-6 and Wulff 2003 on this) suggests that subjective judgements tend to precede those which are more objective, and this tendency seems to reflect Whorf’s comments. The following table shows the percentage of tokens in which adjectives denoting size appear closest to the head:

	<i>with –ngwe</i>	<i>with numeral</i>	<i>with other size</i>	<i>with colour</i>	<i>with other</i>
<i>-golo</i>	15%	21%	83%	56%	100%
<i>-telele</i>	50%	20%	38%	83%	50%
<i>-nyane</i>	0%	0%	n/a	100%	n/a
<i>-koto</i>	n/a	0%	25%	100%	100%
<i>-šese/-kopana</i>	n/a	0%	33%	100%	n/a
<b>TOTAL</b>	<b>15%</b>	<b>19%</b>	<b>50%</b>	<b>75%</b>	<b>88%</b>

*Figure 3: Size Adjectives in String-initial Position*

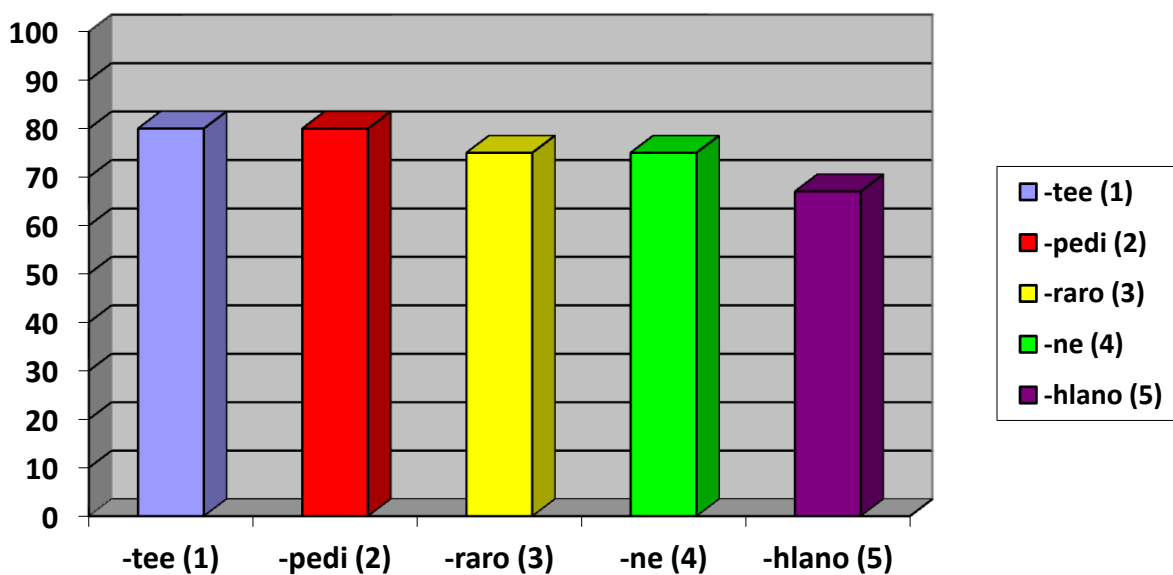
It is easy to deduce from these figures that there is a clear pattern in the order of adjectives, which is associated with semantic subclasses. Size adjectives precede colour adjectives and other more generally evaluative adjectives in a high proportion of cases, and follow numerals and *–ngwe* in similar proportion. Due to the fact that colour terms and evaluative adjectives are collocated in very few tokens in the data, it is difficult to provide an extensive theory as to their respective positions. However, in the eight tokens of such structures which exist, colour terms follow evaluative adjectives in each and every example, allowing a moderate deduction that this is the normative ordering. Additionally, adjectival nouns appear closer to the head than relative nouns in 92% of combinations. In light of this, the most common order of adjectives appearing in the *Pretoria Sepedi Corpus* is as follows:

*-NGWE* > NUMERAL > DIMENSION > EVALUATIVE > COLOUR > RELATIVE

This ordering to a large extent reflects the order in which adjectives are placed in English PNPs and is further explored and tested in my fieldwork.

## 6.2 Fieldwork

All field-based data were collected during a field trip to the Sekhukhune region of Limpopo, South Africa, which is considered to be the ‘birthplace’ of Northern Sotho, as it is the dialect area on which the first missionaries based the standardised form of the language (Mojela 2008). My questionnaire requires speakers to create noun phrases from a nominal head and a selection of adjectival roots. As well as exploring the conventions which seem to exist based on my corpus data, I was able to gain valuable, more qualitative insights into the usage and interpretation of adjective strings, such as those discussed in 4.2. The quantitative data elicited in my fieldwork largely reflect the conclusions drawn from my corpus data in 6.1, with numerals and size adjectives being selected closest to the head noun in a high proportion of questions. The questionnaire data was also used to determine the order of colour and evaluative adjectives, as well as the extent to which nominal and verbal relatives are restricted to the slot further from the head than adjectival nouns. The table in *Figure 4* illustrates the extent to which numerals appear in string-initial position:



*Figure 4: Graph illustrating percentage of tokens with numeral in string-initial position*

A major element I wished to investigate was whether orders were fixed or could be changed to emphasise one or another quality. In particular, I wanted to know if numerals and *-ngwe* could be preceded by adjectives typically appearing later in strings from my corpus data. These are properties of PNPs which are very difficult to analyse through corpus-methods alone and strongly justify a mixed-method approach. While the normative ordering reflects that in the corpus examples, participants were generally in agreement that this order could be reversed to indicate emphasis or contrast.

Hence, the following two phrases are both possible:

*Dieta tše pedi tše ntsho*  
N6-shoes QP6 CM6-ADJtwo QP6 CM6-ADJblack  
'two black shoes'

*Dieta tše ntsho tše pedi*  
N6-shoes QP6 CM6-ADJblack QP6 CM6-ADJtwo  
'the black two shoes'

While the first example is the more normative ordering for *two black shoes*, the second example is also possible, but with a marked emphasis on the colour. In this context, this is most likely to suggest contrast with shoes of other colours, such as when suggesting one prefers *the black two shoes* to *the brown two shoes*. This sounds a little awkward in English and not all participants agreed that such a change is possible in Northern Sotho. However, 20% of participants felt this was the more natural-sounding order, which strongly suggests that there is a degree of reversibility in such structures.

Another interesting finding was that certain adjectives do not naturally appear in modification strings. The interrogative-type adjectives *-kae* 'how many' and *-bjang* 'what kind of?' are the most notably resistant to co-ordination. The former does not seem to

collocate effectively with *-ngwe* while the using the latter in conjunction with other adjectives is particularly problematic. Participants asked to describe a vase using *-bjang*, *-so* and *-botse* found this very difficult. While it is possible to ask the question ‘what kind of beautiful black vase would you like?’ in English, native speakers generally agreed that such a compound sounded unnatural in Northern Sotho, with the other adjectives sounding like a response to the question posed by the use of *-bjang*.

The data obtained through my fieldwork largely reflect the order suggested by the corpus data, though I also investigated the combination of evaluative adjectives with colour terms in six different phrases. Overall, the evaluative adjectives precede colour terms in 75% of responses, lending support to my suggestion based on corpus data that this is the normative order. Where colour terms precede evaluative adjectives, this usually reflects contexts in which the colour is intrinsic to the head, while the evaluative adjective is more notional and transitory. Consider the following examples:

*mae a manyane a mašweu a mabose*  
N4-eggs QP4 CM4-ADJsmall QP4 CM4-ADJwhite QP4 CM4-ADJsweet  
‘delicious small white eggs’

*mahlo a mašweu a magolo*  
N4-eyes QP4 CM4-ADJwhite QP4 CM4-ADJbig  
‘big white eyes’

In both of these phrases, the colour term *-šweu* ‘white’ is an intrinsic and important quality of the respective head. In the first example the colour term has a strong classificatory function (Warren 1984), in which it sub-classifies the head as being a ‘white egg’ rather than a ‘brown egg’; in the second, it has an emphatic function. As all human eyes are by definition white, the usage of this colour term suggests that the whiteness is particularly striking and

noticeable, and is hence foregrounded by being moved closer to the noun, raised above the dimension adjective –*golo*.

One notable trend in my elicited data is that phrase structure becomes less predictable as more adjectives are added. In questions with three or more adjectives, it was often the case that no ordering was considered the preferred order by a considerable majority of participants. In the table in *Figure 5*, the range of responses are illustrated for question 26, for translations of the English phrase *small soft brown loaves*. While *mannyane* ‘small’ appears closest to the head in the responses given by two thirds of participants, a more even spread was recorded for the ordering of the colour term *matsotho* ‘brown’ and the nominal relative *boleta* ‘soft’. This illustrates not only that the order of adjectives becomes more complex as the number of adjectives in a string increases, but also that nominal relatives are not constrained to appearing further from the head than strings of more central adjectives.

26	Marotho a mannyane a matsotho a boleta	size-col-rel	10	33
	Marotho a mannyane a boleta a matsotho	size-rel-col	7	23
	Marotho a boleta a mannyane a matsotho	rel-size-col	4	13
	Marothwana a matsotho a boleta	Hsize-col-rel	3	10
	Marotho a matsotho a mannyane a boleta	col-size-rel	2	7
	Marotho a boleta a matsotho a mannyane	rel-col-size	1	3
	Marotho a matsotho a boleta a mannyane	col-rel-size	2	7
	(no answer)	(n/a)	1	3

*Figure 5: Responses to Question 26*

This article provides an overview of the findings of both my corpus data and fieldwork, which are discussed in more detail in my PhD thesis (Flanagan 2014, Ch. 7). The quantitative results relating to all 42 questions are included in *Appendix 1*.

## **7. Summary Remarks and Conclusions**

The data from the *Pretoria Sepedi Corpus* and those obtained through questionnaires with native speakers both suggest that the ordering of adjectives in Northern Sotho PNPs follows a number of trends. Adjectival nouns typically precede relative nouns, and adjectives of dimension follow quantifiers (*-ngwe* and numerals) but are placed closer to the head than adjectives of evaluation and colour terms. This ordering is very similar to the order in which English adjectives are placed (Scott 2002, Dixon 1982). There is evidence to suggest that certain collocations of adjectives in Northern Sotho are problematic or even ungrammatical due largely to semantic restrictions.

There are, however, factors governing the order of attributive adjectives which go beyond the sentence-level, with such pragmatic considerations as emphasis, focus and contrast all being relevant. This suggests that, as well as proposing an arbitrary, normative order in which Northern Sotho adjectives are placed, we can study the respective force of individual adjectives within a string based on the extent to which these conventions are observed. When some property of a noun is to be emphasised (often its colour), the adjective denoting this quality is often raised upwards in the phrase and closer to the head.

Adjective order in Northern Sotho is similar to English in a number of ways. It is governed by collocational and syntactic restrictions, with some orders being fixed and arbitrary, while others are variable. Changing the order of adjectives in a string can have a variety of effects: It can change the meaning of the phrase; it can shift the focus of the phrase to emphasise one adjective over another; and it can even make the phrase ungrammatical. In unmarked orders, the sequence of adjectives is to a large extent similar to English and follows the order:

QUANTIFIER > DIMENSION > EVALUATIVE > COLOUR > RELATIVE

This order reflects that proposed by the theories in section 3 of this article, in so far as numerals (determiners) precede adjectives in English, and size adjectives and derived adjectives appear in string-initial and string-final positions respectively. Relatives occupy a similar position in Northern Sotho as derived adjectives do in English; their close correspondence with nominal and verbal forms is similar in many ways semantically and morphologically to both denominal and deverbal adjectives in English, and this correspondence of placement within a string suggests a level of equivalence between the two subclasses. The potential for evaluative/ subjective adjectives to precede size adjectives seems to be less considerable in Northern Sotho than in English, but the position of colour adjectives toward the end of a string reflects the position of colour terms in English-based order theories.

The fact that the structure of complex modification strings in Northern Sotho is similar to English is most interesting. As the syntactic and morphological structures of the two languages are considerably different, the factors which govern the ordering of adjectives on a cross-linguistic level cannot legitimately be related to grammatical form. The correlation between the positions assigned to the respective semantic subclasses of adjectives in English and Northern Sotho strongly suggests that there are universal syntactic structures which operate in accordance with these semantic subclasses. The possible variability in many orderings supports the notion that the ordering of adjectives is dependent upon discourse features such as focus and emphasis, but the overwhelming evidence here suggests that semantics is the dominant factor which governs adjective ordering at a universal level.



## References

- Adamson, S. (2000) 'A Lovely Little Example: Word Order Options and Category Shift in the Pre-modifying String' In Fischer, O., Rosenbach, A. & Stein, D. [Eds.] *Pathways of Change. Grammaticalisation in English* Amsterdam: John Benjamins 39-66
- Alexander, L.G (1992) *Longman English Grammar* London: Longman
- Bache, C (1978) *The Order of Pre-modifying Adjectives in Present-Day English* Odense University Press
- Baker, M.C (2003) *Lexical Categories: Verbs, Nouns and Adjectives* Cambridge University Press
- Biber, D, Conrad, S & Reppen, R (1998) *Corpus Linguistics: Investigating Language Structure and Use* Cambridge: CUP
- Cinque, G, (1994) 'On the Evidence for Partial N-Movement in the Romance DP' in Cinque, G, Koster, J, Pollock, J-Y, Rizzi, L, Zanuttini, R [Eds.] *Paths Towards Universal Grammar: Studies in Honor of Richard S. Kayne* Washington: Georgetown University Press pp. 85-110
- Cinque, G (2010) *The Syntax of Adjectives: A Comparative Study* Massachusetts Institute of Technology
- De Schryver, G-M (Ed) (2013) *Oxford Bilingual School Dictionary: Northern Sotho and English / Pukuntšu ya Polelopedi ya Sekolo: Sesotho sa Leboa le Seisimane. E gatišitšwe ke Oxford*. Cape Town: Oxford University Press Southern Africa.
- Dixon, R.M.W (1982) *Where Have All the Adjectives Gone?, and Other Essays in Semantics and Syntax* Berlin: Mouton de Gruyter
- Dixon, R.M.W & Aikhenvald, A.Y (2004) *Adjective Classes: A Cross-linguistic Typology* Oxford University Press
- Doke, C.M (1954) *Southern Bantu Languages* London: Oxford University Press

- Dryer, M.S (2013) 'Order of Adjective and Noun' in Dryer, M.S. & Haspelmath, M [Eds.] *The World Atlas of Language Structures Online* Leipzig: Max Planck Institute for Evolutionary Anthropology (Available online at <http://wals.info/chapter/87> ) [24/1/14]
- Flanagan, P.J. (2014) 'A Cross-linguistic Investigation of the Order of Attributive Adjectives' [PhD Thesis] Edge Hill University, UK
- Goyvaerts, D.L. (1968) 'An Introductory Study on the Ordering of a String of Adjectives in Present Day English' *Philologia Pragensia* 11, 12–28
- Greenberg, A & Srinivasan, P (2003) 'A Survey of Algorithms to Properly Order Adjective Trigrams' Stanford University- available online from [nlp.stanford.edu/courses/cs224n/2003/fp/praveens/finalproj.pdf](http://nlp.stanford.edu/courses/cs224n/2003/fp/praveens/finalproj.pdf) [18/1/14]
- Jespersen, O (1961) *A Modern English Grammar on Historical Principles: Part II Volume I* [4<sup>th</sup> Ed] London: George Unwin & Allen
- Kotze, A.E (2001) 'Prominent Features of Lobedu Nouns and Pronouns' *South African Journal of African Languages* 21: 1 (available in html form only)
- Lombard, D.P, Van Wyk, E.B & Mokgokong, P.C (1985) *Introduction to the Grammar of Northern Sotho* Pretoria: Van Schaik
- McGregor, W (2009) *Linguistics: An Introduction* London: Continuum
- Mojela, V.M (2008) 'Standardization or Stigmatization? Challenges of Confronting Lexicography and Terminology in Sesotho sa Leboa' *Lexikos* 18 119-130
- Mokgokong, P.C (1966) *A Dialect-geographical Survey of the Phonology of the*
- Mphasha, L.E (2010) *Adjectives in Northern Sotho: A Critical Overview of the Aspects of Theoretical Syntax, Morphology and Lexical Semantics of Words Which Modify Substantives* Berlin: Verlag Dr Müller
- Newman, P & Ratliff, N [Eds.] (2001) *Linguistic Fieldwork* Cambridge: CUP
- Nurse, D & Philippson, G (2003) *The Bantu Languages* London: Routledge

- Paul, L.M, Simons, G.F & Fennig, C.D [Eds] (2013) *Ethnologue: Languages of the World* [17<sup>th</sup> Ed] Dallas: SIL Internations (Available Online <http://www.ethnologue.com>) [24/1/14]
- Poulos, G & Louwrens, L.J (1994) *A Linguistic Analysis of Northern Sotho* Pretoria: Via Afrika
- Prinsloo, D.J, Kriel, T.J and Sathekge, B.P (2009) *Popular Northern Sotho Dictionary* [6<sup>th</sup> Ed] Cape Town: Pharos
- Prinsloo, D.J, Van Wyk, E.B, Groenewald, P.S, Kock, J.H.M & Taljard, E (2013) *Northern Sotho for First Years* [8<sup>th</sup> Ed] Pretoria: Van Shaik
- Quirk, R & Greenbaum, S (1973) *A Student's Grammar of the English Language* Essex: Longman
- Quirk, R, Greenbaum, S, Leech, G & Svartvik, J (1985) *A Comprehensive Grammar of the English Language* London: Longman
- Rijkhoff, J (2002) *The Noun Phrase* New York: Oxford University Press
- Scott, G.J 'Stacked Adjectival Modification and the Structure of Nominal Phrases' in Cinque, G [Ed] (2002) *Functional Structure in DP and IP* New York: Oxford University Press
- Segerer (2008) 'Closed Adjective Classes and Primary Adjectives in African Languages' *Langage, Langues et Cultures d'Afrique Noire (LLACAN)* (Available online at <http://halshs.archives-ouvertes.fr/halshs-00255943>) [24/1/14]
- Sproat, R & Shih, C (1988) 'Prenominal Adjective Ordering in English and Mandarin' in *Proceedings of NELS* 465-489
- Sproat, R, Shih, C, (1991) 'The Crosslinguistic Distribution of Adjective Ordering Restrictions' in Georgopoulos, C, Ishihara, R [Eds.] *Interdisciplinary Approaches to Language: Essays in Honor of S. Y. Kuroda*. Kluwer, Dordrecht, pp. 565-594
- Teyssier, J. (1968) 'Notes on the Syntax of the Adjective in Modern English'. *Lingua* 20 225-249 Amsterdam: North Holland Publishing Co.

- Warren, B (1984) *Classifying Adjectives* Gothenburg: Humanities Press
- Willis, D (2011) 'Against N-Raising and NP-Raising Analyses of Welsh Noun Phrases'  
*Lingua* 116(11): 1807 - 1839
- Van Wyk, E.B (1967) 'Northern Sotho' in *Lingua* 17 230-261
- Whorf, B.L. (1937) 'Grammatical Categories'. In Carroll, J.B [ed] (1956) *Language, Thought and Reality: Selected Writings of Benjamin Lee Whorf* Massachusetts: MIT Press 87-101
- Wulff, S. (2003) 'A Multifactorial Corpus Analysis of Adjective Order in English'.  
*International Journal of Corpus Linguistics* 8 (2) 245-282
- Ziervogel, D, Lombard, D.P & Mokgokong, P.C (1969) *A Handbook of the Northern Sotho Language* Pretoria: J.L Van Schaik Ltd
- The African Languages Website [www.africanlanguages.com](http://www.africanlanguages.com) [13/4/2013]
- 'The South African Constitution' The South Africa Government Website  
[www.info.gov.za/documents/constitution/1996/a108-96.pdf](http://www.info.gov.za/documents/constitution/1996/a108-96.pdf) [13/4/2103]

## Appendix 1: Quantitative Data from Sekhukhune Questionnaires.

Q	Phrase	Order	#	%
<b>1</b>	<b>Pere e tee ye ka(aka)</b>	<b>num-spec</b>	<b>24</b>	<b>80</b>
	Pere ye ka(aka) e tee	spec-num	5	17
	Ye ka(aka) pere e tee	spec-H-num	1	3

*'One horse this big'*

<b>2</b>	<b>Dieta tše pedi tše ntsho</b>	<b>num-col</b>	<b>24</b>	<b>80</b>
	Dieta tše ntsho tše pedi	col-num	6	20

*'Two black shoes'*

<b>3</b>	<b>Maboto a mararo a makoto</b>	<b>num-size</b>	<b>22</b>	<b>73</b>
	Maboto a makoto a mararo	size-num	8	27

*'Three thick walls'*

<b>4</b>	<b>Dipotšišo tše nne tše thata</b>	<b>num-eval</b>	<b>22</b>	<b>73</b>
	Dipotšišo tše thata tše nne	eval-num	8	27

*'Four difficult questions'*

<b>5</b>	<b>Dintlo tše tlhano tše mpsha</b>	<b>num-age</b>	<b>20</b>	<b>67</b>
	Dintlo tše mpsha tše tlhano	age-num	10	33

*'Five new houses'*

<b>6</b>	<b>Mpša ye kgolo ye tshothwa</b>	<b>size-col</b>	<b>23</b>	<b>77</b>
	Mpša ys tshothwa ye kgolo	col-size	7	23

*'Big brown dog'*

<b>7</b>	<b>Hempe ye botse ye tala</b>	<b>eval-col</b>	<b>23</b>	<b>77</b>
	Hempe ye tala ye botse	col-eval	7	23

*'Beautiful green shirt'*

<b>8</b>	<b>Polo ye mpsha ye khubedu</b>	<b>age-col</b>	<b>22</b>	<b>73</b>
	Polo ye khubedu ye mpsha	col-age	8	27

*'New red ball'*

<b>9</b>	<b>Dikuane tše tshothwa tše ntši</b>	<b>col-spec</b>	<b>16</b>	<b>53</b>
	Dikuane tše ntši tše tshothwa	spec-col	14	47

*Many brown hats*

<b>10</b>	<b>Phiri ye kgolo ye mpe</b>	<b>size-eval</b>	<b>23</b>	<b>77</b>
	Phiri ye mpe ye kgolo	eval-size	7	23

*'Big bad wolf'*

<b>11</b>	<b>Kgomo ye nnyane ye tona</b>	<b>size-gender</b>	<b>16</b>	<b>53</b>
	Kgomo ye tona ye nnyane	gender-size	7	23
	Namane ye tona	Hage-gender	4	14
	Namane ya pholwana	Hage-gendersize	2	7
	<i>(no answer)</i>	<i>(no answer)</i>	1	3

*'Small male cow'*

<b>12</b>	<b>Basadi ba bangwe ba batelele</b>	<b>spec-size</b>	<b>28</b>	<b>93</b>
	Basadi ba batelele ba bangwe	size-spec	2	7

*'Other tall women'*

<b>13</b>	<b>Beine ye bose ye mpsha</b>	<b>eval-age</b>	<b>16</b>	<b>53</b>
	Beine ye mpsha ye bose	age-eval	14	47

*'Delicious new wine'*

<b>14</b>	<b>Modiro wo mothata wo mobjalo</b>	<b>eval-spec</b>	<b>11</b>	<b>37</b>
	Modiro wo mobjalo wo mothata	spec-eval	8	27
	Modiro wo mothata bjalo	eval-spec/adv	5	17
	Modiro wo mothata wo bjalo	eval-rel	3	10
	Modiro wo bjalo wo mothata	rel-eval	2	7
	Modiro woo o mothata	dem-eval	1	3

*'Such difficult work'*

<b>15</b>	<b>(ke) Dimpša tše tala tše kae</b>	<b>age-spec</b>	<b>18</b>	<b>60</b>
	(ke) Dimpša tše kae tše tala	spec-age	12	40

*'How many old dogs?'*

<b>16</b>	<b>Motho yo mongwe o tee yo mobe</b>	<b>spec-eval-num</b>	<b>10</b>	<b>33</b>
	<b>Motho yo mongwe yo mobe</b>	<b>spec-eval</b>	<b>10</b>	<b>33</b>
	Motho yo mongwe yo mobe o tee	spec-eval-enum	5	17
	Motho o tee yo mobe yo mongwe	num-eval-spec	3	10
	Motho yo mobe yo mongwe	eval-spec	1	3

	Motho o tee yo mongwe yo mobe	num-spec-eval	1	3
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*'One other bad person'*

<b>17</b>	<b>Mae a mannyane a mašweu a mabose</b>	<b>size-col-eval</b>	<b>14</b>	<b>47</b>
	Mae a mabose a mannyane a mašweu	eval-size-col	5	17
	Mae a mašweu a mannyane a mabose	col-size-eval	4	13
	Mae a mannyane a mabose a mašweu	size-eval-col	3	10
	Mae a mašweu a mabose a mannyane	col-eval-size	2	7
	Mae a mabose a mašweu a mannyane	eval-col-size	1	3
	Mayana a mabose a mašweu	Hsize-eval-col	1	3

*'Delicious small white eggs'*

<b>18</b>	<b>Sebjanatsopa se sebjang se sebotse se seso</b>	<b>spec-eval-col</b>	<b>12</b>	<b>40</b>
	(various)	(no answer)	6	20
	Sebjanatsopa se sefe se sebotse se seso	spec-eval-col	3	10
	Sebjanatsopa se seso se sebotse se sebjang	col-eval-spec	3	10
	Sebjanatsopa se sebjang se seso se sebotse	spec-col-eval	2	7
	Sebjanatsopa se seso se sebjang se sebotse	col-spec-eval	2	7
	Sebjanatsopa se sebotse se seso se sebjang	eval-col-spec	1	3
	Se sebjang sebjanatsopa se sebotse se seso	spec-H-eval-col	1	3

*'What kind of beautiful black vase?'*

<b>19</b>	<b>Makako a mabedi a makoto a mašweu</b>	<b>num-size-col</b>	<b>12</b>	<b>40</b>
	Makako a mabedi a mašweu a makoto	num-col-size	5	17
	Makako a mašweu a mabedi a makoto	col-num-size	4	13
	Makako a makoto a mabedi a mašweu	size-num-col	4	13
	Makako a makoto a mašweu a mabedi	size-col-num	1	3
	Makako a mašweu a makoto a mabedi	col-size-num	1	3
	(no answer)	(no answer)	3	10

*'Two thick white loaves'*

<b>20</b>	<b>Meago ye mengwe ye meraro ye metala</b>	<b>spec-num-age</b>	<b>24</b>	<b>80</b>
	Meago ye mengwe ye metala ye meraro	spec-age-num	3	10
	Meago ye meraro ye mengwe ye metala	num-spec-age	1	3
	Meago ye meraro ye metala ye mengwe	num-age-spec	1	3
	Ye mengwe meago ye meraro ye metala	spec-H-num-age	1	3

*'Three other old buildings'*

21	Dikgabo tše nnyane tše mpe tše tala tše disotho	size-eval-age-col	12	40
	Dikgabjana tše mpe tše disotho	Hsize-eval-col	5	17
	Dikgabo tše disotho tše nnyane tše tala tše mpe	col-size-age-eval	2	7
	Dikgabo tše nnyane tše disotho tše mpe tše tala	size-col-eval-age	1	3
	Dikgabo tše nnyane tše tala tše disotho tše mpe	size-age-col-eval	1	3
	Dikgabo tše tala tše nnyane <sup>2</sup> tše disotho tše mpe	age-size-col-eval	1	3
	Dikgabo tše mpe tše nnyane tše disotho tše tala	eval-size-col-age	1	3
	Dikgabo tše mpe tše tala tše disotho tše nnyane	eval-age-col-size	1	3
	Dikgabjana tše mpe tše tala tše disotho	Hsize-eval-age-col	1	3
	Dikgabo tše mpe tše tala tše disotho	eval-age-col	1	3
	Dikgabo tše tala tše nnyane tše mpe	age-size-eval	1	3
	Dikgabo tše nnyane tše tala tše disotho <sup>3</sup>	size-age-col	1	3
	Dikgabjana tše disotho tše mpe	Hsize-col-eval	1	3
	(no answer)	(no answer)	1	3

*'Small evil old brown monkeys'*

22	Dihlare tše koto tše telele tše boima	width-height-	12	40
	Dihlare tše telele tše koto tše boima	height-width-weight	8	27
	Dihlare tše koto tše boima tše telele	width-weight-height	3	10
	Dihlare tše boima tše koto tše telele	weight-width-height	3	10
	Dihlare tše boima tše telele tše koto	weight-height-width	1	3
	(no answer)	(no answer)	3	10

*'Tall thick heavy trees'*

23	Ditshwene tše nanana tše tona tše (di) befetswego	size-gender-rel	9	30
	Ditshwenyana tša dipholo/ (di)tona tše (di) befetswego	Hsize-gender-rel	6	20
	Ditshwene tše befetswego tše nanana tše tona	rel-size-gender	6	20
	Ditshwene tše tona tše nanana tše (di) befetswego	gender-size-rel	3	10
	Ditshwene tše befetswego tše tona tše nanana	rel-gender-size	2	7
	Dirotwana tše di befetswego	Hsize+gen-rel	2	7
	Ditshwene tše nanana tše befetswego tše tona	size-rel-gender	1	3
	Dirotwana tše tona tše di befetswego	Hsize-gender-rel	1	3



*'Angry young male baboons'*

<b>24</b>	<b>(ke) Ditlou tše kae tše dingwe tše kgolo</b>	<b>spec-spec-size</b>	<b>7</b>	<b>23</b>
	(ke) Ditlou tše kae tše kgolo tše dingwe	spec-size-spec	6	20
	(ke) Ditlou tše dingwe tše kae tše kgolo	spec-spec-size	4	13
	(ke) Ditlou tše dingwe tše kgolo tše kae	spec-size-spec	4	13
	(ke) Ditlou tše kae tše kgolo	spec-size	3	10
	Ditlou tše kgolo tše kae	size-spec	2	7
	Ditlou tše kgolo tše dingwe (ke) tše kae	size-spec-spec	1	3
	Ditlou tše kgolo tše kae tše dingwe	size-spec-spec	1	3
	Tše dikae tše dingwe ditlou tše dikgolo	spec-spec-H-size	1	3
	Tše dikae ditlou tše dingwe	spec-H-spec	1	3

*'How many other big elephants?'*

<b>25</b>	<b>Barwarre ba bantši ba bakaaka</b>	<b>specnum-specsize</b>	<b>19</b>	<b>63</b>
	Barwarre ba bakaaka	specsize/num	4	13
	Barwarre ba bakaaka ba bantši	specsize-specnum	4	13
	Ba bantši barware ba bakaaka	specnum-H-specsize	1	3
	(No answer)	(no answer)	2	7

*'Other brothers this big'*

<b>26</b>	<b>Marotho a mannyane a matsotho a boleta</b>	<b>size-col-rel</b>	<b>10</b>	<b>33</b>
	Marotho a mannyane a boleta a matsotho	size-rel-col	7	23
	Marotho a boleta a mannyane a matsotho	rel-size-col	4	13
	Marothwana a matsotho a boleta	Hsize-col-rel	3	10
	Marotho a matsotho a mannyane a boleta	col-size-rel	2	7
	Marotho a boleta a matsotho a mannyane	rel-col-size	1	3
	Marotho a matsotho a boleta a mannyane	col-rel-size	2	7
	(no answer)	(n/a)	1	3

*'Small soft brown loaves'*

<b>27</b>	<b>Dipuku tše tala tše thata bjalo</b>	<b>age-eval-adv</b>	<b>8</b>	<b>27</b>
	Dipuku tše tala tše thata tše bjalo	age-eval-spec	6	20
	Dipuku tše thata tše tala tše bjalo	eval-age-spec	6	20

	Dipuku tše bjalo tše tala tše thata	spec-age-eval	4	13
	Dipuku tše tala tše thata di bjalo	age-eval-adv	2	7
	Dipuku tše bjalo tše thata tše tala	spec-eval-age	2	7
	Dipuku tše thata tše bjalo tše tala	eval-spec-age	1	3
	Ke dipuku tše tala tše thata	interr-age-eval	1	3

*'Such difficult old books'*

<b>28</b>	<b>Ditapola tše nne tše monate</b>	<b>num-rel</b>	<b>22</b>	<b>73</b>
	Ditapola tše monate tše nne	rel-num	8	27

*'Four tasty potatoes'*

<b>29</b>	<b>Barutiši ba bantši ba bohlale</b>	<b>spec-rel</b>	<b>20</b>	<b>67</b>
	Barutiši ba bohlale ba bantši	rel-spec	10	33

*'Manny clever teachers'*

<b>30</b>	<b>Kantoro ye kgolo ya selete</b>	<b>size-NR</b>	<b>19</b>	<b>63</b>
	Kantoro ya selete ye kgolo	NR-size	9	30
	Kantorokgolo ya selete	Hsize-NR	2	7

*'Big regional centres'*

<b>31</b>	<b>Banna ba bašoro ba dipolitiki</b>	<b>eval-rel</b>	<b>13</b>	<b>43</b>
	Banna ba dipolitiki ba bašoro	rel-eval	12	40
	Boradipolitiki ba bašoro	Nrel-eval	4	13
	(no answer)	(n/a)	1	3

*'Cruel political men'*

<b>32</b>	<b>Basemane ba bararo ba Basotho ba borwa</b>	<b>num-nat.rel-rel</b>	<b>16</b>	<b>53</b>
	Basemane ba bararo ba ba borwa ba Basotho	num-rel-nat.rel	5	17
	Basemane ba borwa ba Basotho babararo	rel-nat.rel-num	3	10
	Basemane ba Basotho ba bararo ba borwa	nat.rel-num-rel	2	6
	Basemane ba Basotho ba borwa ba bararo	nat.rel-rel-num	2	6
	Basemane ba bararo ba Basotho	num-nat.rel	1	3
	Basemane ba Basotho ba bararo	nat.rel-num	1	3

*'Three Southern African boys'*

<b>33</b>	<b>(ke) Boramotse ba bakae ba batona ba ma Afrika</b>	<b>spec-gender-nat.rel</b>	<b>9</b>	<b>30</b>
	(ke) Boramotse ba ma Afrika ba batona <sup>4</sup> ba bakae	nat.rel-gender-spec	6	20

	Boramotse ba batona ba ma Afrika ba bakae	gender-nat.rel-spec	5	17
	(ke) Boramotse ba bakae ba bathobaso/ma Afrika	spec-nat.rel	4	13
	(ke) Boramotse ba ma Afrika ba bakae	nat.rel-spec	2	7
	Ma Afrika Boramotse ba batona ba bakae	natrel-H-gend-spec	2	7
	Boramotse ba batona ba bakae ba ma Afrika	gender-spec-nat.rel	1	3
	(no answer)	(n/a)	1	3

*'How many male African mayors?'*

<b>34</b>	<b>Baprista ba batala ba go rapela</b>	<b>age-VR</b>	<b>21</b>	<b>70</b>
	Baprista ba go rapela ba batala	VR-age	8	27
	(no answer)	(n/a)	1	3

*'Old praying priests'*

<b>35</b>	<b>Dinonyana tše sorolwana tša go opela</b>	<b>col-VR</b>	<b>16</b>	<b>53</b>
	Dinonyana tša go opela tše sorolwana	VR-col	14	47

*'Yellow singing birds'*

<b>36</b>	<b>Nku ye nngwe ye tshese ya go ja</b>	<b>spec-size-VR</b>	<b>21</b>	<b>70</b>
	Nku ye tshese ye nngwe ya go ja	size-spec-VR	4	13
	Nku ye nngwe ya go ja ye tshese	spec-VR-size	3	10
	Nku ya go ja ye nngwe ye tshese	VR-spec-size	1	3
	Ye nngwe nku ye tshese ya go ja	spec-H-size-VR	1	3

*'Another thin grazing sheep'*

<b>37</b>	<b>Dikolobe tše tlhano tša go befa tša go kitima</b>	<b>num-VRadj-Vrpart</b>	<b>18</b>	<b>60</b>
	Dikolobe tša go befa tše tlhano tša go kitima	Vradj-num-Vrpart	5	17
	Dikolobe tša go kitima tše tlhano tša go befa	Vrpart-num-Vradj	3	10
	Dikolobe tše tlhano tša go kitima tša go befa	num-Vrpart-Vradj	2	7
	Dikolobe tša go kitima tša go befa tše tlhano	VRpart-VRadj-num	1	3
	Dikolobe tše tlhano tša go kitima	num-VRpart	1	3

*'Five ugly running pigs'*

<b>38</b>	<b>Basetsana ba batelele ba mafolofolo</b>	<b>size-rel</b>	<b>8</b>	<b>27</b>
	Basetsana ba batelele ba baswa ba mafolofolo	size-age-rel	5	17
	Basetsana ba batelele ba mafolofolo ba baswa	size-rel-age	5	17
	Basetsana ba baswa ba mafolofolo ba batelele	age-rel-size	5	17

	Basetsana ba baswa ba batelele ba mafolofolo	age-size-rel	4	13
	Basetsana ba mafolofolo ba baswa ba batelele	rel-age-size	2	7
	Basetsana ba baswa ba mafolofolo	age-rel	1	3

*'Tall energetic young girls'*

<b>39</b>	<b>Sebjanatsopa se sebjalo se segolo se setala sa go kganya sa Polokwane</b>	<b>spec-size-col-VR-NR</b>	<b>6</b>	<b>20</b>
	Sebjanatsopa se setala se sebjalo sa go kganya sa Polokwane se segolo	col-spec-VR-NR-size	2	7
	Sebjanatsopa se sebjalo sa go kganya se setala se segolo sa Polokwane	spec-VR-col-size-NR	2	7
	Sebjanatsopa se segolo sa Polokwane se setala sa go kganya	size-NR-col-VR	2	7
	Sebjanatsopa se setala sa go kganya se segolo sa Polokwane	col-VR-size-NR	2	7
	Sebjanatsopa se sebjalo se segolo sa go kganya se setala sa Polokwane	spec-size-VR-col-NR	1	3
	Sebjanatsopa se sebjalo se setala sa go kganya sa Polokwane se segolo	spec-col-VR-NR-size	1	3
	Sebjanatsopa se setala se segolo sa go kganya se sebjalo sa Polokwane	col-size-VR-spec-NR	1	3
	Sebjanatsopa se setala sa Polokwane se segolo sa go kganya se sebjalo	col-NR-size-VR-spec	1	3
	Sebjanatsopa se segolo sa go kganya se setala sa Polokwane se sebjalo	size-VR-col-NR-spec	1	3
	Sebjanatsopa sa Polokwane se setala se segolo sa go kganya se sebjalo	NR-col-size-VR-spec	1	3
	Sebjanatsopa sa go kganya se setala sa Polokwane se sebjalo	VR-col-NR-spec	1	3
	Sebjanatsopa se setala se sebjalo sa go kganya sa Polokwane	col-spec-VR-NR	1	3
	Sebjanatsopa se sebjalo se segolo sa go kganya sa Polokwane	spec-size-VR-NR	1	3
	Sebjanatsopa sa Polokwane se segolo sa go kganya se sebjalo	NR-size-VR-spec	1	3

	Sebjanatsopa sa Polokwane se segolo se setala se sebjalo	NR-size-col-spec	1	3
	Sebjanatsopa sa Polokwane sa go kganya se setala se segolo	NR-VR-col-size	1	3
	Sebjanatsopa se segolo se sebjalo sa go kganya sa Polokwane	size-spec-VR-NR	1	3
	Sebjanatsopa se setala sa Polokwane sa go kganya	col-NR-VR	1	3
	Sebjanatsopa se setala sa go kganya sa Polokwane	col-VR-NR	1	3
	(no answer)	(n/a)	1	3

*'Such, blue, shining, Polokwane vases'*

<b>40</b>	<b>Banna ba babedi ba bašoro ba maatla ba go hlabana</b>	<b>num-eval-rel-VR</b>	<b>12</b>	<b>40</b>
	Banna ba babedi ba bašoro ba maatla ba bahlabani	num-eval-rel-VR	3	10
	Banna ba babedi ba maatla ba bašoro ba bahlabani	num-rel-eval-VR	3	10
	Banna ba babedi ba go hlabana ba bašoro ba maatla	num-VR-eval-rel	1	3
	Banna ba babedi ba go hlabana ba maatla ba bašoro	num-VR-rel-eval	1	3
	Banna ba babedi ba maatla ba go hlabana ba bašoro	num-rel-VR-eval	1	3
	Banna ba babedi ba bašoro ba go hlabana ba maatla	num-eval-VR-rel	1	3
	Banna ba bašoro ba maatla ba babedi ba go hlabana	eval-rel-num-VR	1	3
	Banna ba bašoro ba babedi ba maatla ba go hlabana	eval-num-rel-VR	1	3
	Banna ba maatla ba babedi ba bašoro ba go hlabana	rel-num-eval-VR	1	3
	Banna ba go hlabana ba bašoro ba maatla ba babedi	VR-eval-rel-num	1	3
	Banna ba bašoro ba maatla ba go hlabana ba babedi	eval-rel-VR-num	1	3
	Banna ba babedi ba maatla ba bašoro	num-rel-eval	1	3
	Banna ba babedi ba dinatla ba go hlabana	num-rel/eval-VR	1	3
	Banna ba dinatla ba babedi ba go hlabana	rel/eval-num-VR	1	3

*'Two strong, cruel, fighting men'*