

# QUANTIFICATION ACROSS BANTU LANGUAGES\*

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## 1 INTRODUCTION

This article outlines central aspects of quantification in Bantu languages. Our basic observation is that Bantu languages have few genuine quantifiers; this holds for both D-quantifiers, i.e. quantificational determiners in the nominal domain, and A-quantifiers, i.e. adverbial quantifiers in the verbal domain. Rather, Bantu languages display the standard range of nominal modification with quantitative interpretation. Complex morphosyntactic constructions or otherwise marked formatives are used for the expression of the universal quantifier ‘every’. Furthermore, adverbial quantifiers are expressed by analytical nominal structures, hence D-modification. As an alternative, verbal forms (both auxiliaries as well as aspectual forms) encode verbal quantification.

Given the size of the Bantu language family (around 500 languages spoken by approximately 240 million people (Nurse and Philippson, 2003: 1)), this paper cannot be an exhaustive treatment. In compiling the data for this article, it became apparent that the two languages mainly treated here, namely Swahili and Northern Sotho, are not always representative for the whole family. Consequently, data from further languages are cited from the literature when necessary in order to stress the diversity found within this language family.

A literature review on quantification in (whatever) Bantu languages reveals that few studies exist which touch upon quantification. The use of the pre-prefix for definiteness and specificity is among the issues related to quantification in the broadest sense that has attracted the most attention (for references see section 3). Yet unpublished work by Adams (2005a, b) deals with partitive constructions in Zulu. In descriptive grammars, translations of the various English quantifiers into the target language can only be found for those which have a

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morphological stem (e.g. the equivalent for ‘all’ and ‘some’). Thus, this article brings up some phenomena that might be interesting in the light of a typology of quantificational expressions.

Bantu languages show SVO word order, agglutinative verb structure, and nearly all are tone languages (with Swahili being an exception). They are spoken south of a line from Nigeria across the Central African Republic, the Democratic Republic of Congo, Uganda, Kenya to southern Somalia. Swahili, one of the languages that receive closer inspection in this article, is an Eastern Bantu language and the official language of Kenya and Tanzania. It is used as a lingua franca in the whole of East Africa. Having been used as a trade language, it has been in intensive contact with Arabic, and more recently English. The influence of these two languages can clearly be seen in the lexicon. More than 30 million people speak Swahili, though most only as a second language. There are comparatively many linguistic works on Swahili. However, the study that comes closest to being a comprehensive reference grammar is still Ashton (1944), which also was designed as a textbook.

The other language, Northern Sotho (Sesotho sa Leboa, also known as Sepedi after its standardized dialect) is a Southern Bantu language and is one of the eleven official languages of the Republic of South Africa. It is spoken in the northern provinces of South Africa by more than 4 million speakers (Statistics South Africa, 2004). According to Guthrie’s (1967-1971) classification it belongs to group S30. It is mutually intelligible with the other languages in this group, namely Tswana and Southern Sotho. There are at least two standard reference grammars available for Northern Sotho, Ziervogel *et al.* (1969) and Poulos and Louwrens (1994).

The article is organized as follows: In presenting the data pertaining to quantification in Bantu languages, we follow the basic dichotomy proposed for English by Partee *et al.* (1987) and address D-quantifiers, i.e. quantificational determiners in the nominal domain, and A-quantifiers, i.e. adverbial quantifiers in the verbal domain, separately. Thus, after a short introduction to the nominal domain in Bantu languages, section 2 deals with D-quantifiers. The section is subcategorized along the lines of the typology proposed by Keenan (this volume): Section 2.2 deals with intersective quantifiers such as ‘several’, ‘few’, ‘many’, ‘no’, as well as the quantifiers ‘some’ and ‘one’, ‘a/ an’. An additional subsection deals with the counting system of Bantu languages. Section 2.3 treats the universal quantifiers ‘all’ and ‘every’. Section 2.4 addresses the class of proportionality quantifiers such as ‘half of’. Section 2.5 reviews the correlations between syntactic position, agreement and quantifier realisation. Section 2.6 summarizes the presentation of data pertaining to quantification in the nominal domain.

Section 3 discusses (in-)definiteness effects in Bantu languages that use the pre-prefix, a prefix that precedes the nominal agreement marker. The absence of the pre-prefix frequently gives rise to indefinite readings similarly to indefinite readings showing up with intersective quantifiers. It is for this reason that pre-prefixes are discussed following the presentation of the

intersective quantifiers. However, the presence of the pre-prefix signals definiteness or specificity, interpretative effects that are typically not observed with intersective quantifiers.

Section 4 discusses A-quantification. Given the emphasis on the syntax/semantics relation within (DP)-generalized quantifiers in this collection, the section is considerably shorter. Section 4.1 presents data that show how quantification over events is expressed within the verbal domain by TMA-markers and auxiliary verb constructions. Section 4.2 discusses noun phrases used for quantification. Section 4.3 illustrates reduplication. Section 5 concludes the discussion of quantification across Bantu languages.

## 2 QUANTIFICATION IN THE NOMINAL DOMAIN

### 2.1 The nominal domain in Bantu languages

One of the best-known features of the Bantu languages is their noun class system. All nouns are assigned to a noun class, where the number of noun classes varies between 12 and 20. The examples in (1) illustrate the point. The glossing in (1) indicates the agreement pre-prefix (PPF) and the class prefix (CL) on nouns and adnominal modifiers. It also shows the agreement between the subject and the verb (subject concord, SC) referring to the specific noun class.<sup>1</sup> The noun class is indicated by arabic numbers. Odd numbers refer to a class expressing singular, even numbers to a class expressing plural. Semantic principles largely guide the assignment of nominal classes. The role of the pre-prefix in quantification is taken up in detail below in section 3.

- (1) (a) O-mú-límí            ó-mú-néné            ó-mú-kâddé            ó-mû            a-gênda.  
 PPF1-CL1-farmer    PPF1-CL1-fat        PPF1-CL1-old        PPF1-CL1.one    SC1-go  
 ‘One fat, old farmer is going.’    [Ganda; Katamba, 2003: 108]

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<sup>1</sup> The following abbreviations are used in the examples:  
 1, 2, 3... arabic numbers refer to noun classes

AFF	affirmative	COP	copula	PART	partitive	PREP	preposition
AGR	unspecific agreement	DEM	demonstrative	PASS	passive	PRES	present tense
APPL	applicative	FV	final vowel	PL	plural	PST	past tense
CL	nominal class	HAB	habitual	POSS	possessive	QP	question particle
COND	conditional	LOC	locative	POT	potential	REL	relative
CONJ	conjunction	NEG	negation	PPF	pre-prefix	SC	subject concord
CONS	consecutive	OC	object concord	PPX	pronominal prefix	SG	singular

- (b) A-ba-fana      ba-gijim-el-a      emithini.  
 PPF2-CL2-boy   SC2-run-APPL-FV      tree-LOC  
 ‘The boys run to the trees.’      [Zulu; Doke, 1927: 142]

With respect to word order, adjectives and demonstratives canonically follow the head noun in Bantu languages. Prenominal appearance is mainly possible for demonstratives (cf. Louwrens, 1985, for Northern Sotho; Krifka, 1995, for Swahili). The syntax of these constructions deserves further investigation (see Machobane, 2003, for an initial exploration of the syntactic structure of DPs in Southern Sotho). In Swahili, preposed demonstratives have a function similar to the English definite article (Krifka, 1995). In Northern Sotho, the prenominal appearance of a demonstrative pronoun results in ‘emphasis’ of the whole NP (Louwrens, 1985).<sup>2</sup>

Adjectives and demonstratives agree with their heads in noun classes, as shown in (1a). They can do so according to various agreement patterns with different (morpho-)syntactic characteristics.

- (2) Concord patterns (Meeussen, 1967: 96f)
- (a) nominal agreement (with nouns, locatives and adjectives) (CL);
  - (b) numeral agreement (with numerals for 1-5 and ‘how many’) (EPX);
  - (c) pronominal agreement (with a.o. demonstratives, some quantifiers) (PPX)
  - (d) verbal agreement

In Swahili, adjective stems (which include numerals) show nominal prefixes in agreement with the head noun (Krifka, 1995: 1398).

- (3) (a) **m-toto**    **m-dogo**      (b)    **ki-kombe**    **ki-dogo**  
 CL1-childCL1-small      CL5-cup      CL5-small  
 ‘small child’      ‘small cup’      [Swahili]

Numeral agreement differs from nominal agreement in morphological form. In Northern Sotho, numeral agreement is formed by inserting a subject concord (SC) between the modified noun and the adjective (Ziervogel *et al.*, 1969: 56). The adjective does not agree in noun class features. Although the name suggests that numeral agreement occurs with numerals, this agreement pattern is not limited to them. Across languages, it is found mostly with the number ‘one’ (see Kinyamwezi for numeral agreement with the numerals ‘two’ to ‘six’, Maganga and Schadeberg, 1992). Numeral agreement is limited to four stems in Northern Sotho, among

<sup>2</sup> ‘Emphasis’ has to be understood as salience rather than focus, as focused constituents in preverbal subject position are prohibited in Northern Sotho (Zerbian, 2007).

which is *-tee* ‘one’.

- |     |     |                 |     |                     |     |                     |
|-----|-----|-----------------|-----|---------------------|-----|---------------------|
| (4) | (a) | mo-nna o tee    | (b) | kgomo e šele        | (c) | ngwana o fe         |
|     |     | CL1-man SC1 one |     | CL9.cow SC9 strange |     | CL1.child SC1 which |
|     |     | ‘one man’       |     | ‘a strange cow’     |     | ‘which child’       |
|     |     |                 |     |                     |     | [Northern Sotho]    |

Pronominal agreement (PPX for pronominal prefix, terminology used in Schadeberg, 1990) differs from both nominal agreement and numeral agreement in morphological form. It is found with demonstratives (5a), in possessive constructions (5b), in genitival constructions (with the morpheme *-a*) (5c), and in Northern Sotho also with adjectives (5d).

- |     |     |     |                          |       |      |                         |       |
|-----|-----|-----|--------------------------|-------|------|-------------------------|-------|
| (5) | (a) | (i) | ji- we li-le             | [Sw.] | (ii) | kgomo ye                | [NS.] |
|     |     |     | CL5-stone PPX5-DEM       |       |      | CL9.cow PPX9.DEM        |       |
|     |     |     | ‘that stone’             |       |      | ‘this cow’              |       |
|     | (b) |     | ji-we I-angu             | [Sw.] |      |                         |       |
|     |     |     | CL5-stone PPX5-mine      |       |      |                         |       |
|     |     |     | ‘my stone’               |       |      |                         |       |
|     | (c) | (i) | ji-we I-a Juma           | [Sw.] | (ii) | le-ina I-a ka           | [NS.] |
|     |     |     | CL5-stone PPX5-POSS NAME |       |      | CL5-name PPX5-POSS mine |       |
|     |     |     | ‘Juma’s stone’           |       |      | ‘my name’               |       |
|     | (d) | (i) | mo-nna yo mo-golo        | [NS.] | (ii) | mo-šemane yo bo-hlale   | [NS.] |
|     |     |     | CL1-man PPX1 CL1-big     |       |      | CL1-boy PPX1 CL14-wise  |       |
|     |     |     | ‘a big man’              |       |      | ‘a clever boy’          |       |

Thus, the category of adnominal modifiers is a heterogeneous category in Bantu languages if based on syntactic characteristics. Very little (if any) research has been done on the different types of agreement. Not even the terminology for the agreement patterns is agreed upon. In some Bantu languages, an interesting correlation of agreement pattern and the semantics of a quantifier can be found: In Swahili, e.g., the stem *-ote* (‘all’) does not agree with the head noun according to adjective formation in contrast to stems like *-engi* (‘many’) and the basic number words. Instead, *-ote* (‘all’) requires, like demonstratives, pronominal concord (Krifka, 1995: 1389), which may point at a different status of these two items, ‘all’ being more determiner-like, and ‘many’ being more adjectival. This aspect is taken up again in section 2.5.

However, upon wider comparison, no consistent pattern emerges across languages. In some other Bantu languages, the stem for ‘all’ requires the same agreement like adjectives (see e.g. Brauner, 1993, for Shona; Poulos and Bosch, 1997, for Zulu; Bentley and Kulemeka, 2001, for Chichewa), and in Northern Sotho the stem for ‘all’ exhibits an idiosyncratic agreement pattern (see also the pre-prefixes with *-he* ‘all’ in Mbalanhu, Fourie, 1992). Investigating the

syntax of quantifiers among each other or with relation to demonstratives is thus restricted to those Bantu languages for which agreement patterns have been reported meticulously.

## 2.2 Intersective quantifiers

*2.2.1 Non-numeral intersective quantifiers.* Intersective quantifiers are quantifiers whose truth conditions can be given in terms of the intersection of the noun meaning and the predicate meaning. The majority of intersective quantifiers in Bantu languages agrees with the quantifying head noun according to one of the agreement patterns listed in (2).<sup>3</sup> The equivalents for ‘many’ and ‘a certain, other’ are among the quantifiers that are best documented in grammatical sketches of respective Bantu languages (this is also true for ‘all’, see section 2.3). This might be due to the fact that these are all simple morphological stems that agree regularly with the head noun they quantify. Other quantifiers often involve more complex morpho-syntactic constructions. Quantifiers meaning ‘many’, ‘several’, ‘few’ are discussed as examples in the following and exemplify the points just made.

Typically, ‘many’ is expressed by a morphological stem.<sup>4</sup> It thus agrees with the head noun in noun class features. However, in Swahili, nominal agreement (2a) is used, whereas in Northern Sotho both nominal and pronominal agreement (2a and c) is employed.

- (6) (a) Cairo pa-li-kuwa na harakati **nyingi** za kisiasa.  
 Cairo CL16-PST-be with CL10.movement CL10.many POSS10 politics  
 ‘Many political activities were going on in Cairo.’ [Swahili; Möhlig, 2003: 32]
- (b) Ku-na maji **m-engi** kwa mto.  
 SC15.have CL6-water CL6-many PREP CL3.river  
 ‘There is a lot of water in the river.’ [Swahili]
- (c) Di-kgomo tše **di-ntši** di fula nage-ng.  
 CL10-cow PPX10 CL10-many SC10 graze CL9.field-LOC  
 ‘Many cows are grazing in the field.’ [Northern Sotho]
- (d) ma-di a **ma-ntši**  
 CL6-blood PPX6 CL6-many  
 ‘much blood’ [Northern Sotho]

The stems *-engi* (Sw.) and *-ntši* (NS.) can also be used with uncountables or mass nouns, as in (6b) and (6d), hence there is no ‘many/ much’-distinction.

<sup>3</sup> As opposed to complex syntactic structures, as in (9) or (11).

<sup>4</sup> Languages in which ‘many’ is not expressed by a stem include Chichewa (Bentley and Kulemeka, 2001) and Lucazi (Fleisch, 2000) in which it occurs with an associative construction as well as Mbalanhu (Fourie, 1992) where it occurs with numeral agreement.

As mentioned above, adjectives and demonstratives canonically follow the head noun in Bantu languages. The same holds for quantifiers. However, in some Bantu languages at least, quantifiers can also precede the head noun, as shown in (7) (example (7b) shows the universal quantifier ‘all’). As for the semantics of preposed quantifiers, the Northern Sotho example in (7a) is reported to have an additional meaning of emphasis. The Mbalanhu example is reported not to differ in meaning from the sentence containing a postposed quantifier (Fourie, 1992: 107).

- (7) (a) Tše      **di-ntši**      di-kgomo      di      fula      nage-ng.  
 PPX10    CL10-many    CL10-cow    SC10    graze    CL9.field-LOC  
 ‘Many cows are grazing in the field.’      [Northern Sotho]
- (b) **A-vi-he**      oongombe      ova      sa.  
 PPX10-AGR10-all CL10.cow      SC10.PST      die  
 ‘All the cattle died.’      [Mbalanhu; Fourie, 1992: 107]

In order to express ‘several’, an indefinite small number but more than a few, Northern Sotho uses the stem *-mmalwa*.<sup>5</sup> It agrees with the head noun in noun class features, involving pronominal agreement (8a). It cannot be used with uncountable nouns (8b).

- (8) (a) Di-kgomo      tše      **mmalwa**      di      fula      nage-ng.  
 CL10-cow      PPX10    CL10.several    SC10    graze    CL9.field-LOC  
 ‘Several cows are grazing in the field.’      [Northern Sotho]
- (b) \* N-tšhel-ele      meetse      a      mmalwa.  
 OC1ST-pour-APPL CL6.water      PPX6    several  
 Lit. ‘Pour me some water.’      [Northern Sotho]

In Zulu, the cognate *-mbalwa* roughly translates as ‘a few’ (Adams, 2005a, b). It is overtly constructed as a relative construction in this language, as shown in (9a).<sup>6</sup> Evidence for the relative construction in (9a) comes from the agreement concord used on the quantifier which is also used in relative clauses (9b).

- (9) (a) izin-hlamu      ezi-**mbalwa**  
 CL10-grain      REL10-few  
 Lit. ‘grains that are few’      [Zulu; Adams, 2005]
- (b) incwadi    isitshudeni    esi-yi-funda-yo

<sup>5</sup> According to our consultant it is rendered incorrectly as ‘many’ in the Northern Sotho dictionary by Ziervogel and Mokgokong (1975).

<sup>6</sup> Pronominal agreement in Northern Sotho (ex. (6c, d) and (7a)) can be argued to also involve a relative construction (cf. Zeller, 2006).

CL9.letterCL7.student REL7-OC9-read-REL  
 ‘the letter that the student is reading’ [Zulu; Zeller, 2006]

Among the Bantu expressions for English ‘few’, variation can be found as to the construction involved. As seen in (9), Zulu uses a construction involving a relative clause. In Swahili, the adjectival stem *-chache* is used, as in (10a), also for uncountable nouns as in (10b).

- (10) (a) Tu-me-rejea hospitali kwa siku **chache**.  
 1<sup>PL</sup>-PST-return CL9.hospital PREP CL10.day CL10.few  
 ‘We returned to hospital for a few days.’ [Swahili; Möhlig 2003: 26]
- (b) Ma-ji **ma-chache** teremka kwa mto.  
 CL6-water CL6-little get.off PREP CL3.river  
 ‘Little water is flowing in the river.’ [Swahili]

In Northern Sotho, a complex syntactic construction is employed to express ‘few’ whose classification remains unclear. This is shown in (11). It consists of a subject concord, a verbal negative marker, and the question word for ‘many’ *kae*, optionally with pronominal agreement as in questions (*dikgomo tše kae?* – ‘how many cows?’).

- (11) (a) Di-kgomo di **se (tše)-kae** di fula nage-ng.  
 CL10-cow SC10 NEG PPX10-many SC10 graze field-LOC  
 ‘Few cows are grazing in the field.’ [Northern Sotho]
- (b) Ba-setsana ba **se (ba)kae** ba raloka ka ntle.  
 CL2-girl SC2 NEG PPX2-many SC2 play PREP outside  
 ‘Few girls are playing outside.’ [Northern Sotho]

It is commonly found in Bantu languages that the morphological stem that is used to refer to smallness in size is also used to refer to smallness in quantity if the context allows for this interpretation (also Kinyamwezi *-doó* – ‘small, few’, Maganga and Schadeberg, 1992). This is illustrated in (12).

- (12) (a) Ba-na ba **ba-nnyane** ba raloka ka ntle.  
 CL2-childPPX2 CL2-small SC2 play PREP outside  
 ‘Small/ few children are playing outside.’ [Northern Sotho]
- (b) Meetse a **ma-nnyane** a ela ka noke-ng.  
 CL6.water PPX6 CL6-small/few SC6 flow PREP CL9.river-LOC  
 ‘Some water is flowing in the river.’ [Northern Sotho]



Interestingly, *kgolo* ‘big’ has not been found reported to refer both to bigness in size and quantity in Northern Sotho or any of the other languages investigated.

For English ‘some’, an unknown or unspecified quantity, an Arabic loan is used in Swahili. *Kadhaa* does not agree with the head noun in noun class features. It can be used in Swahili as the equivalent of both English ‘a few’ and ‘some, several’, but it cannot be used with uncountable mass nouns, as indicated in (13b). Instead, the alternative form *kadhri* is used, as shown in (13c).

- (13) (a) Wa-toto **kadhaa** wa-na-cheza inje.  
 CL2-childsome SC2-PRES-play outside  
 ‘Some/ few children are playing outside.’ [Swahili]
- (b) \*Ku-na ma-ji **kadhaa** kwa mto.  
 SC15-have CL6-water some PREP CL3.river  
 Intend. ‘There is some water in the river.’ [Swahili]
- (c) Ku-na ma-ji **kadhri** kwa mto.  
 SC15-have CL6-water some PREP CL3.river  
 ‘There is some water in the river.’ [Swahili]

The Northern Sotho equivalent for English ‘some’ is *-ngwe*. It is an adjectival stem and therefore agrees with the head noun in noun class features, involving both nominal and pronominal agreement.

- (14) (a) Ba-na ba **ba-ngwe** ba raloka ka ntle.  
 CL2-childPPX2 CL2-some SC2 play PREP outside  
 ‘Some children are playing outside.’ [Northern Sotho]
- (b) Di-kgomo tše **di-ngwe** di fula nageng.  
 CL10-cow PPX10 CL10-some SC10 graze CL9.field.LOC  
 ‘Some cows are grazing in the field.’ [Northern Sotho]
- (c) \*Me-etse a **ma-ngwe** a ela ka noke-ng.  
 CL6-water PPX6 CL6-some SC6 flow PREP CL9.river-LOC  
 Intend. ‘Some water is flowing in the river.’ [Northern Sotho]

The following two observations suggest that the quantity interpretation of *-ngwe* derives from the plural of the head noun so that the important semantic contribution of *-ngwe* is lack of definiteness: first, alternative translations for *dikgomo tše dingwe* are ‘certain (not further specified) cows’, or ‘other cows’. Second, *-ngwe* can also be used in the singular (just as English ‘some’) and then too, has an indefinite meaning. This is shown in (15).



(17) Northern Sotho	example (x children)	Swahili
1 -tee (adj./ enumerative)	ngwana yo mo-tee/ CL1.child PPX1 CL1-one ngwana o tee	-moja (adj.)
2 -bedi (adj.)	bana ba ba-bedi	-wili (adj.)
3 -raro (adj.)	bana ba ba-raro	-tatu (adj.)
4 -ne (adj.)	bana ba ba-ne	-nne (adj.)
5 -hlano (adj.)	bana ba ba-hlano	-tano (adj.)
6 -selela (verb) 'to jump'	ba-na ba ba selela-go CL2-child REL SC2 jump-REL	<i>sita</i> (no agreement)
7 -šupa (verb) 'to point'	ba-na ba ba šupa-go (relative structure)	<i>saba</i> (no agreement)
8 seswai (noun)	ba-na ba seswai CL2.child	-nane (4+4)
9 senyane (noun)	ba-na ba senyane	<i>kenda/ tisa</i>
10 le-some (noun)	ba-na ba le-some	<i>kumi</i>
11 le-some le e-tee		<i>kumi na kimoja</i>
20 ma-some a ma-bedi		<i>ishirini</i>
21 ma-some a ma-bedi le pedi		<i>ishirini na moja</i>
30 ma-some a ma-raro		<i>thelathini</i>
40 ma-some a ma-ne		<i>arobaini</i>
50 ma-some a ma-hlano		<i>hamsini</i>
60 ma-some a selela		<i>sitini</i>
70 ma-some a šupa		<i>sabini</i>
80 ma-some a seswai		<i>themanini</i>
90 ma-some a senyane		<i>tisini</i>
100 le-kgolo		<i>mia</i>

2.2.3 *Negation*. Northern Sotho, like many other Bantu languages, does not have a negative quantifier in the nominal domain (see also Maletse, 2003). Negative quantification is expressed by negation on the verb, as in (18a, b) for objects. As there is no adnominal negation in Northern Sotho and verbal negation does not have scope over the subject, the subject is negated in an inversion construction, (18c). In (18c), the logical subject can be argued to be in an underlying postverbal object position (Zerbian, 2006).

- (18) (a) **Ga** ke bon-e ngwana.  
NEG 1<sup>sg</sup> see-NEG CL1.child  
'I don't see a child./ I see no child.'  
[Northern Sotho]
- (b) ...wa-li-kuwa **ha-wa-pew-i** mishahara  
CL2-PST-be NEG-SC2-get-NEG CL4.salary  
'...and they didn't receive any salary'  
[Swahili; Möhlig, 2003: 24]
- (c) **Ga** go na ba-na ba ba raloka-ng ka ntle.  
NEG SC17 be CL2-child REL2 SC2 play-REL PREP outside  
'There are no children playing outside.'  
[Northern Sotho]

As there is no adnominal negative quantifier in Northern Sotho, negation of quantified logical subjects always involves the use of a syntactic construction that allows the logical subject to be in the scope of verbal negation. This is further exemplified in (19) by the negation of ‘many’. The examples shows a cleft sentence (*ga se* is the negated copula) which allows the logical subject to appear following the negated verb.

- (19) **Ga se** ba **ba-ntši** bao ba rakola-ng ka ntle.  
 NEG NEG PPX2 CL2-many REL2 SC2 play-REL PREP outside  
 ‘Not many (children) are playing outside.’ [Northern Sotho]

### 2.3 Universal quantifiers

For the quantifier expressing totality ‘all’ and for the universal distributive quantifier ‘every’, Bantu languages show different morphological stems and constructions with diverging syntactic and/ or semantic properties.

The morpheme for ‘all’ behaves idiosyncratically with respect to agreement both in Swahili and Northern Sotho. In Swahili, the stems *-ote* ‘all’ and *-o -ote* ‘any’ do not agree with the head noun by means of a nominal prefix (in contrast to e.g. *-engi* ‘many’). Instead, the stems *-ote* ‘all’ and *-o -ote* ‘any’ are formed like demonstratives in Swahili in requiring the pronominal concord (Krifka, 1995: 1389) (pronominal prefix with ‘all’ also with Chichewa *-nse*, Bentley and Kulemeka, 2001).

- (20) (a) Wa-toto **w-ote** wa-na-cheza inje.  
 CL2-child PPX2-all SC2-PRES-play outside  
 ‘All children are playing outside.’ [Swahili]
- (b) Wa-tu **w-ote** wa-li-uliz-wa...  
 CL2-person PPX2-all SC2-PST-ask-PASS  
 ‘All people were asked...’ [Swahili; Möhlig, 2003: 34]
- (c) ...si-wez-i ku-kumbukia **w-ote**  
 NEG.1<sup>SG</sup>-can-NEG CL15-remember PPX2-all  
 ‘...I can’t remember all’ [Swahili; Möhlig, 2003: 26]

In Northern Sotho, the stem *-ohle* ‘all’ occurs with its own concord which resembles neither nominal nor numeral nor pronominal agreement (Ziervogel *et al.*, 1969: 60).

- (21) (a) Di-kgomo      **tš-ohle**      di      fula      nage-ng.  
 CL10-cow      AGR10-all      SC10      graze      field-LOC  
 ‘All cows graze in the fields.’      [Northern Sotho]
- (b) Le-rumo      **l-ohle**      le      wetše      meetse-ng.  
 CL5-spear      AGR5-all      SC5      fall.PST      CL6.water-LOC  
 ‘The whole assegai fell into the water.’      [Northern Sotho]

The totality quantifier can also appear with mass nouns in both Swahili and Northern Sotho.

- (22) (a) Ni-me-funga      ma-ji      **yo-te.**  
 1<sup>SG</sup>-PST-block      CL6-water      CL6-all  
 ‘I blocked all the water.’      [Swahili]
- (b) ma-di      **ohle**  
 CL6-blood      AGR6.all  
 ‘all the blood’      [Northern Sotho]

For ‘all’, Northern Sotho also uses *ka moka*. This expression differs from the quantifier *-ohle* in (21) in that it does not agree with the head noun in noun class features. With respect to word order, its distribution is free in the sentence (though it can never separate an object from a verb), thus acting like a floating quantifier that occurs distant from an NP referring to a sum individual, as shown in (23).

- (23) (a) Ba-na      **ka moka**      ba      raloka      ka      ntle.  
 CL2-childPREP      all      SC2      play      PREP      outside  
 ‘All children are playing outside.’
- (b) Bana ba raloka ka ntle **ka moka.**
- (c) **Ka moka** bana ba raloka ka ntle.
- (d) Bana ba raloka **ka moka** ka ntle.      [Northern Sotho]

Although *moka* is not used on its own in Northern Sotho (except in connection with the copula *Ké moka*– ‘that’s all’), the construction *ka moka* is analytical and can be decomposed into the preposition *ka* and a modifier, as shown in (24).<sup>8</sup> Comparable structures are found in other Bantu languages as well.

- (24) (a) **ka**      moka      (b) **ka**      di-pedi      (c) **ka**      di-tharo  
 PREP      all      PREP      CL10-two      PREP      CL10-three  
 ‘all’      ‘both’      ‘all three’ [Northern Sotho]

<sup>8</sup> A reviewer points out that ‘all’ and ‘both’ are often argued to be semantically alike (cf. Brisson, 1998) so that the observed formal parallelism in (24a, b) does not come as a surprise.

As a general observation, the distributive universal quantifier ‘every’ is expressed in a morphologically complex way or by a loan word in the Bantu languages under inspection for this article. It often shows morphosyntactic features that diverge from adnominal modifiers. In Swahili, the Arabic loan *kila* is used. *Kila* does not agree with the quantified noun in noun class features, and strictly precedes the noun, as shown in (25).

- (25) (a) **Kila** m-toto a-na-cheza na sesere y-ake.  
 every CL1-child SC1-PRES-play PREP CL9.toy CL9-his  
 ‘Every child is playing with his/her toy.’ [Swahili]
- (b) **Kila** mgonjwa ka-rejesh-wa na majumba-ni mw-ao.  
 every CL1.sick CONS-go.back-PASS CONJ house-LOC LOC-POSS  
 ‘Every sick person was sent back home.’ [Swahili; Möhlig, 2003: 26]

Chingoni, spoken in Southern Tanzania, has adopted *kila* as its distributive quantifier from Swahili (Ngonyani, 2003: 46). Like in Swahili, also in Kimyamwezi (Maganga and Schadeberg, 1992), Runyoro-Rutooro (Rubongoya, 1999), and Lucazi (Fleisch, 2000) the distributive universal quantifier ‘every’ is the only adjectival modifier which precedes the noun, as illustrated by an example from Kinyamwezi in (26).

- (26) **Bul’** iidébe úutuula miinzí nhiínda.  
 each tin 2<sup>SG</sup>.pour.CONS water half.full  
 ‘Each tin you make about half full of water.’ [Kinyamwezi; M & S, 1992: 210]

In Swahili, both *kila* and *-ote* can have a distributive reading. This emerges from (25) for *kila* and (27) for *-ote*.

- (27) Wa-toto **w-ote** wa-na ma-tunda ma-wili.  
 CL2-child CL2-all SC2-have CL6-fruit CL6-two  
 ‘All children have two fruits [each].’ [Swahili]

A semantic difference between *kila* and *-ote* emerges in different acceptability when used with *pamoja-* ‘together’, as in (28). In light of these data, a reviewer suggests that *kila* is inherently distributive whereas *-ote* is underspecified concerning the distributive/ collective distinction.

- (28) (a) Wa-toto **w-ote** wa-na-cheza pamoja.  
 CL2-childPPX2-all SC2-PRES-play together  
 ‘All children are playing together.’ [Swahili]

- (b) \***Kila** m-toto a-na-cheza pamoja.  
 each CL1-child SC1-PRES-play together  
 Lit. ‘Every child is playing together.’ [Swahili]

In Northern Sotho, ‘every’ is expressed by the coordinated phrase *-ngwe le -ngwe* (from *-ngwe* ‘a certain, some, other’), whereby the quantifier *-ngwe* agrees each time with the quantified noun using both nominal and pronominal agreement. This is shown in (29).

- (29) (a) Ngwana **yo mo-ngwe le yo mo-ngwe** o a raloka  
 CL1.child PPX1 CL1-some CONJ PPX1 CL1-some SC1 PRES play  
 ‘Every child is playing outside.’ [Northern Sotho]  
 (b) Ke šoma offisi-ng le-tšatši **le le-ngwe le le le-ngwe.**  
 1<sup>SG</sup> work CL9.office-LOC CL5.day PPX5 CL5-some CONJ PPX5 CL5-some  
 ‘I work in the office every day.’ [Northern Sotho]

In Chichewa, ‘every’ is expressed in a syntactically complex way by means of a copula construction. The quantified noun is followed by a copula *-li*. The copula *-li* bears an agreement prefix that indicates a relative clause by carrying high tone. The stem *-onse* follows with the appropriate prefix relating to the modified noun. An example is given in (30).

- (30) mu-dzi ú-li **wo-onse**  
 CL3-village REL3-COP AGR-every  
 ‘every village’  
 Lit. ‘village which is every’ [Chichewa; Bentley and Kulemeka, 2001: 18]

In both Swahili and Northern Sotho, the universal quantifiers also allow for a free choice interpretation, i.e. that the speaker offers the addressee the choice of a referent; the sentence will hold with any choice. However, there is language-specific variation with respect to which of the universal quantifiers fulfils this function, as well as its morpho-syntactic properties. In Swahili, the stem *-ote* ‘all’ if used with a relative concord allows this interpretation (Schadeberg, 1992), (31a-c). In Northern Sotho, the construction *-ngwe le -ngwe* ‘every’ allows the free choice interpretation, (31d).

- (31) Swahili (Schadeberg, 1992: 19)  
 (a) CL1: mtu ye **yote** ‘anyone’  
 (b) CL2: watu wo **wote** ‘any people whatever’  
 (c) CL9: nyumba yo **yote** ‘any house whatsoever’

Northern Sotho

[reply to a question which of the cows present in the kraal can be slaughtered]

- (d) O ka hlaba kgomo ye ngwe le ye ngwe.  
 2<sup>SG</sup> POT slaughter CL9.cow PPX9 CL9.some CONJ PPX9 CL9.some  
 ‘You can slaughter any cow.’

## 2.4 Proportionality quantifiers

Proportionality quantifiers are expressed by complex (morpho)-syntactic constructions in Bantu languages. Data for ‘most’ and ‘half’ are given as examples.

‘Most’ is not a morphological stem in many Bantu languages but is rendered by an analytical morphological construction. In Swahili, this construction involves nouns, in Northern Sotho it involves a preposition. There are three words that refer to parts of a whole in Swahili. *Sehemu* refers to concrete things that can be divided, like cake or tables, but also to more abstract things such as neighborhoods. *Kiasi* refers to parts of liquids. *Idadi* refers to quantity, namely to parts of countable things, and is therefore used in quantification together with a quantifying adjective, as in (32a). However, as is seen in example (32b) (from the Kamusi site: <http://www.yale.edu/swahili>), its use is wider than English ‘most’.

In Northern Sotho we find the *ka* + quantifier construction, already mentioned for the inclusive quantifier in (24). The quantifier used is *-ntši* ‘many’ together with class 14-agreement, as shown in (32c).

- (32) (a) **Idadi kubwa** y-a wa-toto wa-na-cheza nje.  
 CL9.part CL9.big PPX9-of CL2-child PPX2-PRES-play outside  
 ‘The majority of children are playing outside.’ [Swahili]
- (b) **Idadi kubwa** y-a vi-fo vya kina mama  
 CL9.part CL9.big PPX9-of CL8-death PPX8-of group women  
 i-na-yo-kadiri-wa ku-fik-ia 506/100,000.  
 PPX9-PRES-PPX9.REL-estimate-PASS CL15-arrive-APPL 506/100,000  
 ‘a high maternal mortality rate estimated at 506/100,000’ [Swahili]
- (c) Di-kgomo **ka bo-ntši** di fula nage-ng.  
 CL10-cow PREP CL14-many SC10 graze CL9.field-LOC  
 ‘Most cows are grazing in the field.’ [Northern Sotho]

The status of the construction that indicates that half of the members from a given set are participating in an event needs further investigation. The English construction can be rendered as in (33a-c) in Swahili and (33d) in Northern Sotho, and is overheard in everyday speech. For



Northern Sotho, language experts state, however, that *seripagare* is primarily not used for quantification.

- (33) (a) **Nusu** ya wa-toto wa-na-cheza inje.  
 CL9.half POSS9 CL2-child SC2-PRES-play outside  
 ‘Half of the children are playing outside.’ [Swahili]
- (b) Watoto **nusu** wanacheza inje.
- (c) **Nusu** watoto wanacheza inje.
- (d) **Se-ripagare** sa ba-na se raloka ka ntle.  
 CL7-half POSS7 CL2-child SC7 play PREP outside  
 ‘Half of the children are playing outside.’ [Northern Sotho]

Bantu languages also show a so-called associative construction that occurs in noun phrase modification, in possessive constructions and with certain quantifiers. In its use with quantifiers, Adams (2005a, b) redefines this construction as partitive. The exposition of this phenomenon follows her description for Zulu.

The associate construction in Zulu is characterized by a morpheme similar to the pre-prefix in a sequence of two nouns. The morpheme agrees with the noun to its left, the head noun. In partitive constructions, it occurs optionally between an adnominal quantifier and a noun phrase, as shown in (34a, b), but it is obligatory between a quantifier and a DP headed by a demonstrative. Its absence in the latter context results in ungrammaticality, as shown in (34c, d).

- (34) (a) Aba-ningi **(b)a**-ba-fana ba-ya-dla.  
 CL2-many CL2PART-CL2-boy SC2-PRES-eat  
 ‘Many (of the) boys are eating.’ [Zulu; Adams, 2005]
- (b) Aba-nye **(b)a**-ba-fana ba-ya-dla.  
 CL2-one CL2PART-CL2-boy SC2-PRES-eat  
 ‘Some (of the) boys are eating.’ [Zulu; Adams, 2005]
- (c) ??Aba-ningi laba-ba-fana ba-ya-dla.  
 CL2-many DEM2-CL2-boy SC2-PRES-eat  
 Lit. ‘Many these boys are eating.’ [Zulu; Adams, 2005]
- (d) \*Ezi-nye lezo-zi-nyoni zi-ya-cula.  
 CL10-one DEM10-CL10-bird SC10-PRES-sing  
 Lit. ‘Some those birds are singing.’ [Zulu; Adams, 2005]

The quantifiers ‘many’, ‘some’, ‘each’, and ‘one’ can consequently be used both with a proportional and with an absolute interpretation. In the proportional interpretation they need a restriction on the set over which they quantify. This restriction is encoded by means of the

associative construction.

Interestingly, however, the universal quantifier ‘all’ cannot occur in the partitive construction in Zulu, as evidenced in (35).

- (35) (a) \***Bo-nke** b-aba-fana ba-ya-dla.  
 CL2-all CL2PART-CL2-boy SC2-PRES-eat  
 Int.: ‘All of the boys are eating.’ [Zulu; Adams, 2005]
- (b) \***Bo-nke** ba-laba-ba-fana ba-ya-dla.  
 CL2-all CL2PART-DEM2-CL2-boy SC2-PRES-eat  
 Int.: ‘All of these boys are eating.’ [Zulu; Adams, 2005]

Even if modified with a demonstrative, the universal quantifier appears either with modifier agreement, as in (36a), or in a relative construction, as in (36b).

- (36) (a) **Bo-nke** laba-ba-fana ba-ya-dla.  
 CL2-all DEM2-CL2-boy SC2-PRES-eat  
 ‘All these boys are eating.’ [Zulu; Adams, 2005]
- (b) **Bo-nke** aba-laba-ba-fana ba-ya-dla.  
 CL2-all REL2-DEM2-CL2-boy SC2-PRES-eat  
 Lit. ‘All who are these boys are eating.’ [Zulu; Adams, 2005]

One explanation why forms like *b-onke b-aba-fana* ‘all of the boys’ in (35) are ungrammatical could be that *b-onke* ‘all’ applies to sum individuals, rendering a quantification over all the parts of the sum individual. The partitive in *b-aba-fana* ‘of the boys’ applies to a sum individual denoting sums of boys, yielding a set of entities of boys. As *b-onke* requires a sum individual and not a set of individuals, the derivation fails.

## 2.5 Realisation of quantifiers by syntactic position and agreement

Reviewing the positional variants of the D-quantificational elements discussed so far, it is interesting to note their positional variation and the type of agreement they show.

While many quantificational elements occur postposed, there are some that are realized by prenominal expressions. In Swahili, these are *kila* ‘every’ and partitive constructions like *idadi kubwa ya* ‘a great part of’, as well as demonstratives used in the function of a definite article. One can argue that *kila* and expressions like *idadi kubwa ya* naturally would be expected in a Spec-DP position, as they necessarily have to be interpreted as quantificational

elements in the sense of Generalized Quantifier theory, of type  $\langle\langle e,t\rangle, \langle\langle e,t\rangle, t\rangle\rangle$ . Other quantificational elements do not have to be interpreted this way. For example, numerals can be analyzed as restricting the set a noun applies to to sum individuals with a number of atoms as indicated by the numeral, and the totality quantifier *-ote* can be analyzed as constructing the sum individual of all the entities that fall under the noun it applies to (cf. Link, 1983). Also, expressions like *-engi* ‘many’ and *-chache* ‘few’ can be interpreted as vague number words, that is, in a way that does not make them generalized quantifiers. The case of *kadhaa/ kadhri* ‘some, several’ is particularly interesting, as this is an Arabic loan, just as *kila* ‘every’. But while *kila* is preposed, *kadhaa/ kadhri* is postposed, which presumably is due to their different quantificational status as true quantifier vs. indefinite expression.

As for agreement morphology, we find that some quantifiers show adjectival agreement in Swahili (like the agreeing number words and *-engi* and *-chache*), while others, like *-ote* ‘all’, the demonstratives and the possessives, require pronominal agreement. This can be interpreted as indicating a type change: While adjectives and number words do not change the type of nouns (they remain  $\langle e, t \rangle$ ), and the quantifying force is provided from outside, as in DRT), *-ote* and the demonstratives and possessives do change it to type *e*. For example, *wa-toto w-ote* refers to the sum individual of all the children, and *wa-toto wa-le* to those children over there.

## 2.6 Summary

This section has given an overview of the expression of D-quantification in a range of Bantu languages, with special attention to Swahili and Northern Sotho. The basic observation is that Bantu languages have few genuine quantifiers. Rather, these languages display a range of adnominal modification with quantitative interpretation. The classification of the modifiers with quantitative interpretation into different classes according to the agreement pattern they display varies immensely across languages. Only for better documented languages can hypotheses be formulated regarding the relationship between quantifiers and agreement, as has been done for Swahili in 2.5.

Despite the cross-Bantu variation, at least two common properties of quantification in this language family can be established: First, there is no determiner-negation. Negation is always verbal. Second, it is striking that across all the Bantu languages investigated for this article, complex morphosyntactic constructions or otherwise marked formatives are used for the expression of the universal quantifier ‘every’. This is in line with diachronic observations that the sources for ‘all’ are much more homogeneous than the diachronic sources for ‘every’. Haspelmath (1995) establishes three possible sources for ‘every’: free choice indefinite determiners like ‘any’, distributive prepositions, and ‘all’. The study of Bantu languages shows that loan words and syntactic constructions should be added to this list.

For Mohawk (Iroquoian), Baker (1995) observes a total lack of genuine D-quantifiers and relates it to the fact that the language is polysynthetic, which means that arguments have to be recorded in the verbal head either by cross-reference or by incorporation. While Bantu languages do not incorporate, they do show cross-reference (or head marking; cf. Nichols, 1986) with subjects and various types of objects, and thus exhibit a similar setting of the polysynthesis parameter as Mohawk (cf. Baker, 2003). It is suggestive to correlate the low incidence of true D-quantifiers to cross-reference. A possible explanation for this correlation is as follows: Cross-reference works like resumptive pronouns (*John, he came* or *A man, he came*), but resumptive pronouns are excluded for D-quantifiers (*\*Every man, he came*), presumably because the remnant constituent “he came” is of the semantic type of a presupposition, whereas D-quantifiers need an expression of the semantic type of a predicate to apply to.

### 3 THE PRE-PREFIX

Some Bantu languages use so-called pre-prefixes (also called augments) which are prefixes preceding nominal agreement markers (cf. *o-mu-limi* in (1)) and which are related to definiteness. The absence of the pre-prefix frequently gives rise to indefinite readings similarly to indefinite readings showing up with intersective quantifiers. It is for this reason that pre-prefixes are mentioned following the presentation of the intersective quantifiers in the previous section. However, the presence of the pre-prefix signals definiteness or specificity, interpretative effects that are typically not observed with intersective quantifiers. This is why they are treated in an independent section.

Bantu languages do not have articles that indicate definiteness or indefiniteness obligatorily. Different morpho-syntactic means are employed to indicate specificity, definiteness, and referentiality. Often definiteness is indicated by the additional use of a demonstrative pronoun or an agreement marker on the verb in Bantu languages. Thus, the absence of such markers can lead to interpreting an NP as indefinite. For Swahili, preposed demonstratives have a function similar to definite articles, but they are not obligatory for definite NPs.

Pre-prefixes are another way to express definiteness. Whereas simple nominal prefixes typically have the phonological shape CV, addition of a pre-prefix leads to the phonological shape VCV, with identical vowels; the initial V is referred to as the pre-prefix, or augment.<sup>9</sup> Typically, CV nouns are indefinite, non-specific, or predicative, whereas VCV nouns are definite, specific, or referential. Hence the pre-prefix has a similar function as the definite article.

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<sup>9</sup> See Blanchon (1998) for a language where this distinction is made solely based on tone.

The pre-prefix has attracted attention in the literature from the earliest research on (e.g. Bleek, 1869; De Blois, 1970; Bokamba, 1971; Givón, 1978; Hyman and Katamba, 1993). Bleek (1869: 150) argued that the prefix in Xhosa evolved from a pronoun into an article. The overview in De Blois (1970) shows, however, that synchronically the use of the pre-prefix differs widely across Bantu languages. The synchronic use of the pre-prefix involves a complicated interaction of phonological, morphological, syntactic and semantic/ pragmatic factors.

Hyman and Katamba (1993: 219) point out that in the Ugandian Bantu language Luganda, speakers volunteer definite translations in English for Luganda forms taking the pre-prefix and indefinite translations for forms lacking the pre-prefix. An example is given in (37).

- |      |     |                 |               |     |                   |                 |
|------|-----|-----------------|---------------|-----|-------------------|-----------------|
| (37) | (a) | <b>e-bitabo</b> | <b>bisátu</b> | (b) | <b>e-bítábó</b>   | <b>é-bísatú</b> |
|      |     | PPF-books       | three         |     | PPF-books         | three           |
|      |     | ‘three books’   |               |     | ‘the three books’ |                 |
- [Luganda; Hyman and Katamba, 1993: 219, (12)]

The equation of the pre-prefix with the article in European languages, however, oversimplifies the issue. In actual fact, the two forms in (37) contrast for definiteness only in two syntactic contexts, namely in main clause subject position and main clause object position after an affirmative verb. As an object in a relative clause, as in (38), the pre-prefix must be used independent of the definiteness of the NP.

- |      |     |                                      |                                   |
|------|-----|--------------------------------------|-----------------------------------|
| (38) | (a) | <b>e-yasóma e-bítábó é-bísatú</b>    |                                   |
|      |     | ‘the one who read (the) three books’ |                                   |
|      | (b) | <b>*e-yasóma e-bitabo bisátu</b>     | [Luganda; H & K, 1993: 220, (13)] |

Hyman and Katamba consequently argue that neither a purely syntactic account (as proposed by Dewees, 1971) nor a purely semantic/pragmatic account (as argued for in Mould, 1974) can account for the distribution of the pre-prefix. Instead, they show that the semantic contribution of the pre-prefix relates to definiteness, specificity, and focus. Equally important, the syntax has an influence on the distribution of the pre-prefix as well. Whereas a pre-prefix normally occurs on a subject NP in an affirmative, main clause, it might be absent in a dependent clause, or following a negative verb.

Hyman and Katamba (1993) formulate the generalization that non-augmented forms are grammatical if they are licensed by one of two syntactic operators, NEG (negation) or FOC (focus). The examples in (39) from Luganda illustrate this point. In (39a), the non-augmented noun, though in a relative clause, falls under the scope of negation and can thus occur without a pre-prefix. In (39b), the first object, *báànà*, is focused and thus appears without the pre-prefix, even though it is definite, whereas the second, *è-bítábó*, appears with a pre-prefix, even though

it is indefinite.

- (39) (a) tè-báálàbà      báágùlà      bitábó  
 NEG-CL2.see.PST REL2.CL2.buy.PST      books  
 ‘They didn’t see the ones that bought books.’ [Luganda; H & K, 1993: (18b)]
- (b) yàgùlirà      báànà      è-bitábó  
 he bought      children      PPF-books  
 ‘He bought the CHILDREN books.’ [Luganda; H & K, 1993: (25c)]

In Bemba (Givón, 1978) and Kinande (Progovac, 1993), the pre-prefix has been claimed to express specificity, as exemplified by the data in (40): the occurrence of a noun phrase containing the pre-prefix after a negative verb, as in (40a), indicates that the referent is definite and specific (Givón, 1978; Progovac, 1993). If the referent lacks the pre-prefix, as in (40b), it has to be interpreted as indefinite, non-specific. After affirmative verb forms, as in (40c), a pre-prefix on a noun phrase indicates specificity but is neutral as to definiteness. However, after affirmative verbs, the pre-prefix has to occur in Bemba and Kinande, as the ungrammaticality of (40d) shows.

- (40) (a) Yoháni sí      ánzire o-mú-kali.      [+def,+spec]  
 John      NEG      like      PPF-CL1-woman  
 ‘John doesn’t like the woman.’ [Kinande; Progovac, 1993: 258, (2) – (5)]
- (b) Yoháni sí ánziré mú-kali.      [-def, -spec]  
 ‘John doesn’t like any woman.’
- (c) Yoháni ánzire o-mú-kali.      [+/-def, +spec]  
 ‘John likes the woman.’
- (d) \*Yoháni ánziré mú-kali.      [-def, -spec]

However, it has to be noted that the observation that in generic (=non-specific) sentences, a noun phrase cannot occur without a pre-prefix following affirmative verbs speaks against specificity as the determining factor of the pre-prefix, as shown in (41).

- (41) (a) Yoháni sí      ánzire bá-kali.  
 John      NEG      like      CL2-woman  
 ‘John doesn’t like women.’ [Kinande; H & K, 1993: ft.6]
- (b) \*Yoháni ánzire bá-kali.  
 John      like      CL2-woman  
 Int. ‘John likes women.’ [Kinande; H & K, 1993: ft.6]

Progovac (1993) proposes to analyse NPs without pre-prefixes as negative polarity items (NPI) in Kinande. She draws evidence for her claim from the observation that NPs without pre-prefixes (the objects in the examples in (42)) occur in the same contexts as ‘any’ does in English, namely in negatives (42a), interrogatives (42b), and conditional sentences (42c).

- (42) (a) **O**-mukali      si      anzire      Yohani.  
 PPF-woman      NEG      CL1.like      John  
 ‘The woman does not like John.’      [Kinande; Progovac, 1993: (11)]
- (b) **O**-mukali      a-na-nzire      Yohani(kwe)?  
 PPF-woman      CL1-QP-like      John  
 ‘Does the woman like John?’      [Kinande; Progovac, 1993: (13)]
- (c) **O**-mukali      a-ma-nza      Yohani,      inya      kandetsema.  
 PPF-woman      CL1-COND-like      John      is      happy  
 ‘If the woman likes John, s/he will be happy.’ [Kinande; Progovac, 1993: (15)]

Problems for this analysis come from the observation that NPs without a pre-prefix can also be found in the *by*-phrase of passives and in predicative position after a copula (Progovac, 1993: 267). Furthermore, also in SO-reversal structures, (43a), and impersonal inversion (43b), the logical subject must not bear a pre-prefix, as pointed out by Baker (2003).

- (43) (a) SO-reversal structure  
 Olukwi      si-lu-li-senya      (**\*a**-)ba-kali.  
 CL11.wood      NEG-SC11-PRES-chop      (PPF)-CL2-woman  
 ‘WOMEN do not chop wood.’
- (b) Impersonal inversion  
 Mo-ha-sat-ire      (**\*o**-)mu-kali      muyima.  
 AFF-there-dance-PST      (PPF)-CL1-woman      one  
 ‘Only one woman danced.’      [Kinande; Baker, 2003: 118, (24)]

As this brief review shows, further research is necessary to determine the role of the pre-prefix in the Bantu languages, and the parameters of variation across Bantu languages.

#### 4      **QUANTIFICATION IN THE VERBAL DOMAIN**

In quantifying an event, the prevalent feature of Northern Sotho is its use of an auxiliary verb construction (Ziervogel *et al.*, 1969; Poulos and Louwrens, 1994). Besides this special syntactic construction, also TMA-markers, adverbial expressions and reduplication are employed for expressing quantification in the verbal domain in Bantu languages. They will be

illustrated in turn.

#### 4.1 Verbal quantification

*4.1.1 TMA-markers.* The morphological structure of the verb in Bantu is complex. The verb stem can be decomposed into a root and suffixes that indicate argument-changing processes, such as applicative and passive. Furthermore, prefixes are used for subject and object agreement (SC, OC) as well as tense, aspect and mood marking. The following Swahili example illustrates this.

- (44) Wa-toto wa-li-mw-ona mw-alimu.  
 CL2-child SC2-PAST-OC1-see CL1-teacher  
 ‘The children saw the teacher.’ [Swahili]

Swahili has a generic tense that expresses habituality, marked by the prefix *hu-*, exemplified in (45). Formally, it is unique among the TMA-markers in Swahili insofar the subject agreement is dropped, contrary to other TMA-markers; in this it resembles the infinitive marker, *ku-*.

- (45) Wa-toto hu-mw-ona mw-alimu.  
 CL2-child HAB-OC1-see CL1-teacher  
 ‘The children usually see the teacher.’ [Swahili]

The *hu-* marker often occurs with the auxiliary stem *-wa* ‘be’. Cf. the following example, which contrasts a non-habitual (46a) and a habitual sentence (46b).

- (46) (a) Ng’ombe a-na-kula nyazi ha-pa.  
 CL1.cow SC1-PRES-eat field DEM16  
 ‘The cow is grazing in this field.’ [Swahili]
- (b) Ng’ombe **huwa** a-na-kula nyazi hapa.  
 CL1.cow HAB SC1-PRES-eat field DEM16  
 ‘The cow is habitually/ always grazing in this field.’ [Swahili]

Example (47) shows a similar case in Kinyamwezi, where the habitual marker is *búú-*.

- (47) Waapí wáa-buukí **búúbaági** buzikú.



collection POSS-honey 2.be.HAB night

‘The harvest of the honey always takes place at night.’ [Kinyamwezi, M & S: 216]

Habitual sentences can be negated, but only by negating the embedded verb, which expresses the habit that the action expressed is not performed.

- (48) (a) Ng’ombe ha-i-kuli nyazi hapa.  
 CL1.cow NEG-SC1-eat.NEG field DEM16  
 ‘The cow does not graze in this field.’ [Swahili]
- (b) Ng’ombe **huwa** ha-i-kuli nyazi hapa.  
 CL1.cow HAB NEG-SC1-eat.NEG field DEM16  
 ‘The cow never grazes in this field.’ [Swahili]
- (c) **Bakaápág’** úúbuukí búubumála boós’ uum-mziinga.  
 2.NEG.collect.HAB honey 2.14.finish.CONS all LOC-beehive  
 ‘They never take out all the honey from the beehive.’ [Kinyamwezi; M & S: 220]

Thus, both the universal verbal quantifier ‘always’ and its negation ‘never’ are expressed within the verb phrase in languages like Swahili and Kinyamwezi. For ‘always’ a TMA-marker is used that expresses habituality. Similarly to the nominal domain, Bantu languages do not use a morphological stem for the expression of negative quantification in the verbal domain. Instead, ‘never’ is expressed as negation plus ‘always’. As a reviewer points out, the surface order HAB >> NEG in the examples in (48b) is transparently mapped to the meaning ‘never (= always not)’.

*4.1.2 Auxiliary verb constructions.* The auxiliary verb constructions that are used in Northern Sotho for quantification in the verbal domain differ from the Swahili case presented in (46b) and (48b) as the auxiliary verb shows verbal properties like agreement.

‘Always’ and ‘often’ are not distinguished in Northern Sotho. High frequency of an event can be expressed by a variety of auxiliary verbs. It can be expressed by *phela* which means ‘to live’ if used as a main verb. If used as an auxiliary verb, it expresses ‘always’ or ‘often’.

- (49) (a) Ba-na ba ka ba **phela** ba raloka ka ntle.  
 CL2-child CL2.POSS my SC2 live SC2 play PREP outside  
 ‘My children are always/ often playing outside.’ [Northern Sotho]
- (b) Di-kgomo di **phela** di fula nage-ng ye.  
 CL10-cow SC10 live SC10 graze CL9.field-LOC DEM9  
 ‘The cows are always/ often grazing on this field.’ [Northern Sotho]



it as a negative auxiliary verb from *-ka* which probably has the meaning ‘be’ and which is thus rendered as ‘not to be’ in the negative. The parallelism to other auxiliary verb constructions is evident. The negation particle *ga* is followed by a subject marker which is followed by the “auxiliary verb” *ke*. The negative auxiliary is followed by the consecutive tense (Ziervogel *et al.*, 1969: 96).

A prevalent feature of verbal quantification in Northern Sotho is thus the use of auxiliary verb constructions in which the auxiliary verb has lost its original meaning and contributes a quantificational meaning instead. The properties of this auxiliary verb construction will be discussed in more detail in the following. The auxiliary + main verb construction is characterized by the double presence of the subject agreement markers both with the auxiliary verb as well as with the main verb. The subject marker of class 1a changes from *o* to *a* before the main verb, as can be observed more generally in subordinate clauses or dependent tenses. The order of the two verbs is fixed and cannot be reversed. The auxiliary verb always precedes the main verb. An object marker (if present) appears on the main verb, as shown in (54).

- (54) (a) Ke      **phela**      ke      bo      ja.  
 1<sup>SG</sup>      live      1<sup>SG</sup>      OC14      eat  
 ‘I always eat it.’ (*borotho-* ‘bread’) [Northern Sotho]
- (b) O      **hlwa**      a      n-thuša      ka      di-thuto      tša      ka.  
 SC1      spend      SC1      OC1<sup>SG</sup>-help      PREP      CL10-homework      POSS10      my  
 ‘He usually helps me with my studies.’ [N. Sotho; Louwrens, 1991: 51]

Interestingly, the auxiliary verbs bear the quantificational meaning only in the Present Tense. None of these verbs can be used in the Past with a quantificational meaning. If the auxiliary occurs in the past tense, it takes on its meaning as a main verb, as shown in (55).

- (55) (a) Ba-na      ba      **hw-ele**      ba      elwa  
 CL2-childSC2      spend-PST      SC2      fight  
 ‘The children spent the day fighting.’ [Northern Sotho]
- (b) Ke      **phed-ile**      ke      elwa      le      mo-golo      wa      ka.  
 1<sup>SG</sup>      live-PST      1<sup>SG</sup>      fight      PREP      CL1-brother      POSS1      my  
 ‘I lived fighting with my brother.’ [Northern Sotho]
- (c) Ke      **dutše**      ke      bala      kuranta.  
 1<sup>SG</sup>      live.PST      1<sup>SG</sup>      read      CL9.newspaper  
 ‘I lived reading the newspaper.’ [Northern Sotho]
- (d) Ke      **fed-ile**      ke      nwa      kofi.  
 1<sup>SG</sup>      finish-PST      1<sup>SG</sup>      drink      CL9.coffee  
 ‘I finished drinking coffee.’ [Northern Sotho]

Only *phela* occurs in the future tense and keeps its quantificational meaning, as shown in (56).

- (56) Di tla phela di fula mo.  
 SC10 will live SC10 graze here  
 ‘They will always be grazing here.’ [Northern Sotho]

Event quantification with auxiliaries has not yet received any attention in the linguistic literature on Northern Sotho. It reveals itself as a complex field both from the structural as well as the semantic point of view. One complicating aspect is that apparently for the expression of quantification of a past event, the auxiliary verb needs to occur in the continuous aspect in the past (expressed by the analytical form *SC PST SC main verb*).<sup>10</sup> However, this field needs to be left for further investigation.

#### 4.2 Adverbial quantification

Also adverbial expressions are used for the quantification over events. In Northern Sotho, ‘always’ can be expressed by *ka mehla* (cf. *ka moka* ‘all’ for quantification in the nominal domain).

- (57) Di-kgomo di fula nage-ng ye **ka mehla**.  
 CL10-cow SC10 graze CL9.field-LOC DEM9 PREP always  
 ‘The cows are always grazing in this field.’ [Northern Sotho]

The adverbial expression *nako yengwe le yengwe* can be used to express ‘every time’ (cf. *-ngwe le -ngwe* ‘every’ for quantification in the nominal domain), as in (58a). Similarly, *kila mara* is used in Swahili as an adverbial expression for ‘always’ (cf. *kila* ‘every’), as in (58b).

- (58) (a) Di-kgomo di fula nage-ng ye **nako ye-ngwe le**  
 CL10-cow SC10 graze CL9.field-LOC DEM9 CL9.time PPX9-some CONJ  
**ye-ngwe.**  
 PPX9-some  
 ‘The cows are always grazing in this field.’ [Northern Sotho]
- (b) Ng’ombe **kila mara** huwa i-na-kula nyazi hapa.  
 CL1.cow every time HAB SC1-PRES-eat field DEM16  
 ‘The cow is always grazing in this field.’ [Swahili]

<sup>10</sup> The restriction of the quantificational meaning to the Present Tense and the Continuous Past Tense which emerged from research contradicts Ziervogel *et al.* (1969: 93) who state that auxiliary verbs can be used in all tenses and moods.

The adverb *gantši* can be used in Northern Sotho to express ‘often’ (cf. *-ntši* ‘many’ for quantification in the nominal domain).

- (59) (a) Di-kgomo      di      fula      nage-ng      ye      **gantši**.  
 CL10-cow      SC10      graze      CL9.field-LOC      DEM9      often  
 ‘The cows are often grazing in this field.’      [Northern Sotho]
- (b) Dikgomo di fula **gantši** nageng ye.

The adverbial expression *nako yengwe* can be employed to refer to ‘sometimes’ (cf. *-ngwe* ‘some’ for quantification in the nominal domain).

- (60) (a) Ba-na      ba      ka      ba      raloka      ka      ntle      **nako**      **ye-ngwe**.  
 CL2-child      POSS2      my      SC2      play      PREP      outside      CL9.time      PPX9-some  
 ‘My children sometimes play outside.’      [Northern Sotho]
- (b) \***Nako yengwe** bana ba ka ba raloka ka ntle.’

### 4.3 Reduplication

Another morphosyntactic device expresses quantification of events. Reduplication of verb stems often expresses that the action is carried out frequently or that it is repetitive. An example from Kinyamwezi illustrates that in (61).

- (61) Úúby’ uúbitáá-bita kuyílaabila.  
 2SG.be      pass-pass      4.inspect  
 ‘You should inspect them [the beehives] frequently.’ [Kinyamwezi, M & S, 1992: 216]

## 5 CONCLUSION

The investigation of the grammatical means which are employed in Bantu languages to express quantification over entities and events has brought to light a huge variety of grammatical structures involved. For quantification in the nominal domain we find different morphological stems that often evoke different agreement patterns. Moreover, we find syntactic constructions such as coordinated structures and copula constructions. For numerals and ‘every’ we additionally find the adaptation of loan words. With numerals and also with negation we find verbal constructions.

Quantification of events is often encoded in the verbal domain, either by TMA-markers, auxiliary verbs or reduplication. Simultaneously, we find the use of quantified nominal phrases that modify the verbal action.

The huge variety found among the Bantu languages as well as the gaps in documentation necessitate further detailed work on aspects of quantification.

## REFERENCES

- Adams, N. (2005a). Partitive constructions in Zulu. Handout, University of Chicago.
- Adams, N. (2005b). Quantification and Partitivity in Zulu. Handout, University of Chicago.
- Ashton, E. O. (1944). *Swahili Grammar (Including Intonation)*. Harlow, Longman.
- Baker, M. C. (1995). On the absence of certain quantifiers in Mohawk. In: *Quantification in Natural Languages* (E. Bach, E. Jelinek, A. Kratzer and B. H. Partee, eds.), pp. 21-58. Kluwer, Dordrecht.
- Baker, M. C. (2003). Agreement, dislocation, and partial configurationality. In: *Formal approaches to function in grammar: In honor of Eloise Jelinek* (A. Carnie, H. Harley and M. Willie, eds.), pp. 107-132. John Benjamins, Amsterdam.
- Bentley, M. and A. Kulemeka (2001). *Chichewa*. Lincom Europe, Munich.
- Blanchon, J. A. (1998). Semantic/pragmatic conditions on the tonology of the Kongo noun phrase: A diachronic hypothesis. In: *Theoretical Aspects of Bantu Tone* (L. M. Hyman and C. W. Kisseberth, eds.), pp. 1-32. CSLI Publications, Stanford.
- Bleek, W. H. I. (1869). *A Comparative Grammar of South African languages*. Trübner, London.
- Bokamba, G. D. (1971). Specificity and definiteness in Dzamba. *SAL*, 2 (3), 217-237.
- Brauner, S. (1993). *Einführung ins Schona*. Rüdiger Köppe, Köln.
- Brisson, C. (1998). Distributivity, Maximality, and Floating Quantifiers. Ph.D. dissertation, Rutgers University.
- De Blois, K. F. (1970). The augment in the Bantu languages. *Africana Linguistica*, IV, 87-165.
- Deweese, J. W. (1971). The Role of Syntax in the Occurrence of the Initial Vowel in Luganda and Some Other Bantu Languages. Ph.D. dissertation, University of Wisconsin.
- Doke, C. M. (1927). *Textbook of Zulu Grammar*. Maskew Miller Longman, Cape Town.
- Fleisch, A. (2000). *Lucazi Grammar: A Morphosemantic Analysis*. Rüdiger Köppe, Köln.
- Fourie, D. J. (1992). Nominal qualifiers of Mbalanhu: Quantitatives and enumeratives. *Afrikanistische Arbeitspapiere*, 31, 105-118.
- Givón, T. (1978). Definiteness and referentiality. In: *Universals of Human Language*, (J. H. Greenberg, ed.), pp. 291-330. Stanford University Press, Stanford.
- Guthrie, M. (1967-1971). *Comparative Bantu*. Gregg, Farnborough.

- Haspelmath, M. (1995). Diachronic sources of 'all' and 'every'. In: *Quantification in Natural Languages* (E. Bach, E. Jelinek, A. Kratzer and B. H. Partee, eds.), pp. 363-382. Kluwer, Dordrecht.
- Hyman, L. M. and F. X. Katamba (1993). The augment in Luganda: Syntax or pragmatics? In: *Theoretical Aspects of Bantu Grammar* (S. A. Mchombo, ed.), pp. 209-256. CSLI Publications, Stanford.
- Katamba, F. (2003). Bantu nominal morphology. In: *The Bantu Languages* (D. Nurse and G. Philippson, eds.), pp. 103-120. Routledge, London and New York.
- Keenan, E. L. (this volume.) Quantification in Malagasy.
- Krifka, M. (1995). Swahili. In: *Syntax: An International Handbook of Contemporary Research* (J. Jacobs, A. von Stechow, W. Sternefeld and T. Vennemann, eds.), pp. 1397-1418. Mouton de Gruyter, Berlin.
- Link, G. (1983). The logical analysis of plurals and mass terms: A lattice-theoretical approach. In: *Meaning, use and the interpretation of language* (R. Bäuerle, C. Schwarze and A. von Stechow, eds.), pp. 303-323. Walter de Gruyter, Berlin, New York.
- Louwrens, L. J. (1985). Contrastiveness and the so-called absolute pronoun in Northern Sotho. *SAJAL*, **5** (2), 58-61.
- Louwrens, L. J. (1991). *Aspects of Northern Sotho Grammar*. Via Afrika Limited, Hatfield.
- Machobane, M. (2003). Variation in Bantu DP structure: Evidence from Sesotho. *Malilime: Malawian Journal of Linguistics*, **3**, 85-105.
- Maganga, C. and T. C. Schadeberg (1992). *Kinyamwezi: Grammar, Texts, Vocabulary*. Rüdiger Köppe, Köln.
- Malete, E. N. (2003). Subject negation in Sesotho subordinate clauses. *SAJAL*, **23** (4), 189-198.
- Meeussen, A. E. (1967). Bantu grammatical reconstruction. *Annales du Musee Royal de l'Afrique Centrale*, **61**, 81-121.
- Möhlig, W. J. G. (2003). *Unser Leben vor der Revolution und danach – Maisha yetu kabla ya mapinduzi na baadaye*. Rüdiger Köppe, Köln.
- Mojapelo, M. L. (2007). Definiteness in Northern Sotho. Ph.D. dissertation, University of Stellenbosch.
- Mould, M. (1974). The syntax and semantics of the initial vowel in Luganda. In: *Proceedings of the 3rd Annual Conference on African Linguistics* (E. Voeltz, ed.), pp. 223-229. Indiana University Press, Bloomington.
- Ngonyani, D. (2003). *A Grammar of Chingoni*. Lincom Europe, Munich.
- Nichols, J. (1986). Head-marking and dependent-marking grammar. *Language*, **62** (1), 56-119.
- Nurse, D. and G. Philippson (2003). Introduction. In: *The Bantu languages* (D. Nurse and G. Philippson, eds.), pp. 1-12. Routledge, London & New York.
- Poulos, G. and S. E. Bosch (1997). *Zulu*. Lincom Europe, Munich.
- Poulos, G. and L. J. Louwrens (1994). *A Linguistic Analysis of Northern Sotho*. Via Afrika Limited, Hatfield.

- Progovac, L. (1993). Non-augmented NPs in Kinande as negative polarity items. In: *Theoretical Aspects of Bantu Grammar* (S. A. Mchombo, ed.), pp. 257-269. Leland Stanford Junior University, Stanford.
- Rubongoya, L. T. (1999). *A Modern Runyoro-Rutooro Grammar*. Rüdiger Köppe, Köln.
- Schadeberg, T. C. (1990). *A Sketch of Umbundu*. Rüdiger Köppe, Köln.
- Schadeberg, T. C. (1992). *A Sketch of Swahili Morphology*. Rüdiger Köppe, Köln.
- Stappers, L. (1965). Het Hoofdtelwoord in de Bantoe-Talen. *Africana Linguistica*, **II**, 177-199.
- Statistics South Africa (2004). *Census 2001: Primary Tables South Africa: Census '96 and 2001 Compared*. Statistics South Africa, Pretoria. Available on-line at: [www.statsa.gov.za](http://www.statsa.gov.za).
- Zeller, J. (2006). On the relation between noun prefixes and grammaticalisation in Nguni relative clauses. *Studia Linguistica*, **60.2**, 220-249.
- Zerbian, S. (2006). Inversion structures in Northern Sotho. *SALALS*, **24(3)**, N. Thwala (ed.), pp. 361-376.
- Zerbian, S. (2007). The subject/object-asymmetry in Northern Sotho. In: *Information Structure and the Architecture of Grammar: A Typological Perspective* (K. Schwabe and S. Winkler, eds.), pp. 323-346. John Benjamins, Amsterdam.
- Ziervogel, D., D. P. Lombard, et al. (1969). *A Handbook of the Northern Sotho Language*. Schaik, Pretoria.
- Ziervogel, D. and P. C. Mokgokong (1975). *Groot Noord-Sotho Woordeboek*. Van Schaik, Pretoria.
- Zimmermann, M. (this volume). Quantification in Hausa.