

Number in Tswana

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Abstract. This chapter describes various aspects of the number category in Tswana, a Southern Bantu language spoken in Botswana and South Africa. Number is an obligatory category of Tswana common nouns. Number marking is morphologically complex and closely related to the gender system. Gender-number agreement is pervasive in Tswana morphosyntax. The semantic organization of the number category in Tswana is broadly similar to that found in Standard Average European languages.

1. Overview

1.1. The language

Tswana (aka Setswana), S31 in Guthrie's nomenclature of Bantu languages, is a Southern Bantu language with more than 6 million speakers. In Botswana, ethnic Batswana constitute 80% of the population, estimated at 2.3 million (2020). In South Africa, Tswana is dominant in the Northwest Province and in some districts of the Free State Province, and the number of its speakers is estimated at 4-5 million. The closest relatives of Tswana are Pedi and Southern Sotho. Tswana, Pedi and Southern Sotho are so close to each other that, from a strictly linguistic point of view, they may be considered as three varieties of a single language. Pedi is commonly designated as Northern Sotho, but this term is ambiguous, since it is also used with reference to some lects (Lobedu, Tswapong, etc.) that, linguistically, are better considered languages distinct from Sotho-Tswana proper.

Typologically, Tswana is in almost every respect a typical Bantu language.¹ Its locative system, very different from that found in Central Bantu languages, is the main exception to this generalization, but this is an areal feature, shared by the other Southern Bantu languages.²

¹ On the typological profile of Bantu languages, cf. Creissels (Forthcoming).

² For an overall presentation of Tswana, see Cole (1955), Creissels (2003). On Southern Sotho, see Doke & Mofokeng (1957). On the changes in the organization of the locative system that affected Southern Bantu languages, see Marten (2010), Creissels (2011).

1.2. The basics of Tswana morphosyntax

1.2.1. Nouns and noun phrases

Definiteness marking is not grammaticalized in Tswana. There is no distinction between a definite and an indefinite form of nouns, and NPs including no determiner can be used freely to introduce new referents or to represent discursively salient referents, or referents that can be viewed as identifiable by the addressee in one way or another.

In Tswana, nominal classification does not take the form of East Asian-style classifiers, but of a multiple-gender system of the type commonly found in Bantu (and more generally Niger-Congo) languages, in which the masculine vs. feminine distinction plays absolutely no role. Tswana has nine distinct genders. Two major characteristics of this type of gender system that are directly relevant to the topic of this article are that (a) the division of nouns into genders is closely correlated to the division of nouns into inflectional classes according to the pairs of obligatory prefixes marking the singular vs. plural distinction, and (b) gender agreement markers and number agreement markers are completely fused and show no evidence of ever having been dissociated, hence the traditional notion of ‘class agreement’ conflating gender and number agreement.

In this chapter, Tswana genders are designated according to the convention generally followed in Bantu studies, according to which numbering refers to the agreement classes of noun forms reconstructed for Proto-Bantu. An obvious advantage of using arbitrary numbers as labels for genders is that the use of semantically motivated labels would be hard to reconcile with the semantic heterogeneity of genders. On the content of Tswana genders, cf. Cole (1955: 68-101).

In Tswana, noun *forms* divide into 12 agreement classes, and each of the 9 genders can be defined as a set of nominal *lexemes* that have the same agreement behavior both in the singular and the plural. For example, the singular form *mosadi* **mò-sádí** ‘woman’ belongs to the agreement class of noun forms traditionally labeled class 1, the corresponding plural *basadi* **bà-sádí** ‘women’ belongs to an agreement class of noun forms traditionally designated as class 2, and consequently *mosadi* **mòsádí** as a *lexeme* belongs to a gender that can be designated as gender 1-2.³ *Monna* **mò-ńná** ‘man’ pl. *banna* **bà-ńná**, or *ntšhe* **ǀtšhé** ‘ostrich’ pl. *bontšhe* **bó-ǀtšhé**, have exactly the same agreement properties as *mosadi* **mòsádí**, both in the singular and in the plural, and consequently also belong to gender 1-2. The singular form *motse* **mò-tšì** ‘village’ shows the same singular prefix as *mosadi* **mò-sádí** ‘woman’ or *monna* **mò-ńná** ‘man’, but belongs to a distinct agreement class of noun forms, traditionally labeled class 3, whereas the corresponding plural form *metse* **mì-tšì** belongs to an agreement class traditionally labeled class 4, and consequently *motse* **mòtšì** as a *lexeme* belongs to gender 3-4. *Legodu* **lì-χòdù** ‘thief’ pl. *magodu* **mà-χòdù** belongs to another

³ In this article, Tswana forms are systematically quoted both according to current Tswana orthography (in italics), and in broad phonetic transcription (in bold). The reason is that current orthography may be quite misleading in a linguistic analysis, since it distinguishes only 5 vowels and does not indicate tones at all, whereas Tswana has 9 vowel phonemes, and tones are crucial for morphological analyses. Moreover, many morphemes that are unquestionably prefixes (in particular, subject indexes and object indexes) are written as if they were separate words. In the examples, the correct word division is given in the phonetic transcription (second line).

gender, traditionally labelled 5-6, whose singular forms belong to agreement class 5, whereas the corresponding plural forms belong to agreement class 6.⁴

As illustrated by example (1), in which *mosadi* **mò-sádí** ‘woman’ (gender 1-2) and *lekau* **lì-káú** ‘boy’ (gender 5-6) combine with two adjectives, a relative clause, and a demonstrative, Tswana NPs have two very general characteristics: noun dependents follow their head, and express gender and number agreement with their head.

(1a) *mosadi yo moleele yo montsho yo o opelang yole*

mò-sádi **jó** **mò-léèlé** **’jó** **mó-ñts^hò**
 SG-woman (1)⁵ CL1.ATTR CL1-tall CL1.ATTR CL1-black
jó **’ó-ǎpélà-ǎ** **’jó-lé**
 CL1.ATTR S:CL1-sing:PRS-REL DEM.CL1-DIST
 ‘that tall woman with dark complexion who is singing’

(1b) *basadi ba baleele ba bantsho ba ba opelang bale*

bà-sádi **bá** **bà-léèlé** **’bá** **bá-ñts^hò**
 PL-woman(2) CL2.ATTR CL2-tall CL2.ATTR CL2-black
bá **’bá-ǎpélà-ǎ** **’bá-lé**
 CL2.ATTR S:CL2-sing:PRS-REL DEM.CL2-DIST
 ‘those tall women with dark complexion who are singing’

(1c) *lekau le leleele le lentsho le le opelang lele*

lì-káú **lé** **lì-léèlé** **’lé** **lí-ñts^hò**
 SG-boy(5) CL5.ATTR CL5-tall CL5.ATTR CL5-black
lé **’lí-ǎpélà-ǎ** **’lé-lé**
 CL5.ATTR S:CL5-sing:PRS-REL DEM.CL5-DIST
 ‘that tall boy with dark complexion who is singing’

(1d) *makau a maleele a mantsho a a opelang ale*

mà-káú **á** **mà-léèlé** **’á** **má-ñts^hò**
 PL-boy(6) CL6.ATTR CL6-tall CL6.ATTR CL6-black
á **’á-ǎpélà-ǎ** **’á-lé**
 CL6.ATTR S:CL6-sing:PRS-REL DEM.CL6-DIST

⁴ Traditionally, in Bantu linguistics, the choice of a particular number to designate a given agreement pattern is determined by the relationship between the gender-number agreement patterns of present-day Bantu languages and the gender-number agreement patterns reconstructed for Proto-Bantu. Note in particular that gaps in the numbering of the agreement patterns of Tswana are due to the fact that Tswana has no direct reflex of some of the agreement patterns reconstructed for Proto-Bantu. Note also that, for the sake of simplicity, in this article, I designate simply as ‘class 10’ and ‘class 17’ two agreement patterns that could be designated as ‘class 8/10’ and ‘class 15/17’ to better account for their relationships with reconstructed Proto-Bantu classes. On the reconstruction of Proto-Bantu inflectional classes of nouns and agreement patterns, cf. Meeussen (1967).

⁵ Contrary to the tradition in Bantu studies, the gloss CL (‘noun class’) is used here for gender-number agreement markers only. Noun prefixes are glossed SG (singular) or PL (plural), and the agreement pattern governed by the noun form is indicated by a number between parentheses after the lexical gloss. The number that follows CL in the glosses of gender-number agreement markers also refers to one of the 12 possible agreement patterns that may be triggered by Tswana noun forms.

‘those tall boys with dark complexion who are singing’

There is no exception to the rule of obligatory gender-number agreement between noun dependents and their head. In contrast, the *head-dependent* order is not absolutely obligatory, although noun dependents preceding their head are extremely rare in spontaneous texts. The anteposition of noun dependents adds emphasis, but never modifies the denotative meaning. Anteposition is equally possible (and equally rare) with all types of noun dependents.

Noun dependents divide into subtypes according to the particular sets of agreement markers by means of which they express gender-number agreement.

1.2.2. Verbs

Verb inflection involves TAM markers, negation markers, subject indexes, object indexes, and conjoint/disjoint markers.⁶ Tswana verbs are also characterized by a rich system of valency-changing derivations (reflexive, reciprocal, decausative, causative, passive, and applicative) – see Creissels (2002, 2006). The tonal morphology of the verb is particularly complex, even by Bantu standards – cf. Creissels (1999), Creissels & al. (1997), Creissels (2017).

1.2.3. Clauses

Basic verbal clauses have a rigid constituent order *subject – verb – objects – obliques*. Alignment is consistently nominative/accusative: the coding frames through which verbs express their argument structure invariably include a term whose coding properties are identical to those of the agent of prototypical transitive verbs. There is no case contrast, but the distinction between subjects and objects is apparent in indexation: with only the exception of the infinitive and the imperative, verb forms include an obligatory subject index, even in the presence of a subject noun phrase; objects can be indexed too, but object indexes occupy a distinct position in the verbal template, and occur only if the clause includes no noun phrase representing the same argument.

As illustrated in (2), if a co-referent NP is present, the subject index expresses person-gender-number agreement with it. The subject NP is syntactically optional, and in its absence, subject indexes that do not belong to 1st or 2nd person are interpreted anaphorically, triggering the identification of the argument they represent to a contextually salient referent compatible with the gender-number value expressed by the subject index.

⁶ In the context of Bantu studies, a conjoint verb form is a verb form that cannot be found in sentence-final position and cannot be separated from the following phrase by a pause. A disjoint verb form does not have this limitation, but is not excluded from non-final contexts either, and when in non-final sentence position, is not necessarily followed by a perceptible pause. There is some cross-linguistic variation in the function of the conjoint/disjoint contrast – Van der Wal & Hyman (2017). In Tswana, it marks the distinction between phrases in post-verbal position that form part of the verb phrase and contribute to the comment expressed by the verb, and phrases in post-verbal position that fulfill the discourse function of afterthought (alias antitopic) – Creissels (2017).

- (2a) *Ngwana o thubile mae.*
ηw-àná **ó-t^hùbílé** **mà:-í.**
 SG-child(1) S:CL1-break:PRF:CJ PL-egg(6)
 ‘The child broke the eggs.’
- (2b) *Ngwana o tsile.*
ηw-àná **’ó-tsî:lè.**
 SG-child(1) S:CL1-come:PRF:DJ
 ‘The child came.’
- (2c) *O thubile mae.*
ó-t^hùbílé **mà:-í.**
 S:CL1-break:PRF:CJ PL-egg(6)
 ‘He/She broke the eggs.’
- (2d) *O tsile.*
’ó-tsî:lè.
 S:CL1-come:PRF:DJ
 ‘He/she came.’
- (2e) **Ngwana thubile mae.*
- (2f) **Ngwana tsile.*

As illustrated in (2a) and (2c), the object of transitive verbs is not obligatorily indexed on the verb form, but topical objects whose precise description is considered superfluous by the speaker are represented by object indexes prefixed to verbs. Object indexes immediately precede the verb stem and may be separated from subject indexes by TAM or negation markers, as in (3a-b).

- (3a) *Ngwana o a thubile.*
ηw-àná **ó-à-t^húbî:lè.**
 SG-child(1) S:CL1-O:CL6-break:PRF:DJ
 ‘The child broke them (the eggs).’
- (3b) *Ngwana o tlaa a thuba.*
ηw-àná **’ó-tlâà-á-t^hû:bà.**
 SG-child(1) S:CL1-FUT-O:CL6-break:DJ
 ‘The child will break them (the eggs).’

Tswana has very productive multiple-object constructions: non-derived verbs may have two non-coordinated objects expressing distinct semantic roles, and valency-increasing derivations (causative and applicative) may result in constructions with three objects – example (4). In multiple-object constructions, the syntactic differences between the objects are minimal: each object can be converted into the subject of a passive construction, or

represented by an object index. The linear order of the objects is rigid, and depends crucially on Animacy Hierarchy.

(4a) *Ngwana o nole maši.*

ᵛw-àná **ʼó-nólé** **mâ:-fì.**
 SG-child(1) S:CL1-drink:PRF:CJ PL-milk(6)
 ‘The child drank milk.’

(4b) *Ke nositse ngwana maši.*

kì-nósíté **ᵛw-àná** **mâ:-fì.**
 S:1SG-drink:CAUS:PRF:CJ SG-child(1) PL-milk(6)
 ‘I made the child drink milk.’

(4c) *Ke noseditse Dimpho ngwana maši.*

kì-nósédíté **dìmpʰó** **ᵛw-àná** **mâ:-fì.**
 S:1SG-drink:CAUS:APPL:PRF:CJ Dimpho(1) SG-child(1) PL-milk(6)
 ‘I made the child drink milk in Dimpho’s place.’

Obliques are commonly expressed as prepositional phrases, but due to (a) a very high degree of transitivity prominence and (b) the productivity of valency-increasing derivations and multiple-object constructions, many participants encoded as obliques in Standard Average European languages are encoded in Tswana as object NPs. On Tswana prepositions, cf. Creissels (2013)

1.2.4. Overview of the number category in Tswana

If inflection is defined as the part of morphology that may be directly involved in the application of syntactic rules, the inflectional nature of number in Tswana follows from the fact that agreement in number (and gender) is pervasive in Tswana NPs and clauses. With no exception, noun modifiers agree in number and gender with their head, and verbs agree in person and number (and in the third person, in gender) with their subject.

As already mentioned in 1.2.1, Tswana has a gender system characterized by a relatively high number of genders (9) and the kind of interaction with number marking commonly found in the Niger-Congo languages whose gender system is traditionally described in terms of ‘noun classes’.

Number is obligatory in the sense that the overwhelming majority of Tswana nouns have a singular form and a plural form, and in most contexts, singular forms are obligatorily interpreted as referring to a single individual. On this point, the situation in Tswana is basically the same as in Standard Average European languages. For example, the clauses in (5) provide no indication about the identifiability of the referent of *kgomo qʰòmó* ‘cow’ pl. *dikgomo dì-qʰòmó*, but (5a) implies reference to a situation in which no more than one cow is present, whereas (5b) implies reference to a plurality of cows.

- (5a) *Ke bonye kgomo ko nokeng.*
kì-bóǀní **q^hòǀmó** **kó** **nòkê:-ǀ̀.**
 S:1SG-see:PRF:CJ (SG)cow(9) at (SG)river(9)-LOC
 ‘I saw a/the cow at the river.’
- (5b) *Ke bonye dikgomo ko nokeng.*
kì-bóǀní **dí-q^hòǀmó** **kó** **nòkê:-ǀ̀.**
 S:1SG-see:PRF:CJ PL-cow(10) at (SG)river(9)-LOC
 ‘I saw (the) cows at the river.’

Number marking is complex. Each of the nine genders is characterized by a particular pair of prefixes acting as singular and plural markers, there is no one-to-one correspondence between singular and plural markers, and number agreement cannot be dissociated from gender agreement.

Number is a binary category (singular vs. plural). Notions such as ‘dual’ or ‘paucal’ are not grammaticalized in Tswana.

It is possible to use gender shift to express a collective meaning, but this mechanism is not very productive.

Tswana has an associative plural marker **bó-** that can combine with proper nouns and kinship terms. The same marker **bó-** is also used as an ordinary plural marker with some common nouns that have a zero prefix in the singular (see (9) below).

Verbal number does not exist in Tswana.

2. Pronominal, nominal, and verbal number

2.1. Generalities

The only asymmetry between nouns and pronouns concerns plural exponence in first and second person pronouns (cf. 2.2). Tswana has obligatory subject-verb agreement, but does not have verbal number.

2.2. Pronominal number

First and second person pronouns can be segmented into a person-number prefix and a stem **-ná**. As can be seen in (6), it is not possible to segment the prefix into a person marker and a plural marker.

- (6) first and second person pronouns

	sg.	pl.
1st	<i>nna</i>	<i>rona</i>
	ǀ̀-<i>ná</i>	rò-<i>ná</i>
2nd	<i>wena</i>	<i>lona</i>
	wè-<i>ná</i>	lò-<i>ná</i>

In the third person, pronouns agree in gender and number with their antecedent. With the exception of the singular of gender 1-2, they can be segmented into a stem **-ǎné** and a gender-number prefix. Note that the nouns in gender 17 do not vary in number, which explains the existence of a single form of the third person pronoun for this gender

(7) third person pronouns

	sg.	pl.
gender 1-2	<i>ene</i>	<i>bone</i>
	ǎné	b-ǎné
gender 3-4	<i>one</i>	<i>yone</i>
	Ø-ǎné	j-ǎné
gender 5-6	<i>lone</i>	<i>one</i>
	l-ǎné	Ø-ǎné
gender 7-10 ⁷	<i>sone</i>	<i>tsone</i>
	s-ǎné	ts-ǎné
gender 9-10	<i>yone</i>	<i>tsone</i>
	j-ǎné	ts-ǎné
gender 11-6	<i>lone</i>	<i>one</i>
	l-ǎné	Ø-ǎné
gender 11-10	<i>lone</i>	<i>tsone</i>
	l-ǎné	ts-ǎné
gender 14-6	<i>jone</i>	<i>one</i>
	ǎ-ǎné	Ø-ǎné
gender 17 ⁸	<i>gone</i>	
	χ-ǎné	

The interrogative pronouns *mang* **mǎǎ** ‘who?’ and *eng* **ǎǎ** ‘what?’ are invariably used pronominally. *Mang* **mǎǎ** ‘who?’ has a plural form *bomang* **bó-mǎǎ**, whereas *eng* **ǎǎ** ‘what?’ is invariable. The other types of pronouns are words also used adnominally. Their gender-number inflection expresses the same distinctions as that of third person pronouns. For example, *-pe* **-pǎ** ‘any’ has the inflection shown in (8), both in its adnominal and pronominal use.

⁷ Tswana has lost the distinction between the Proto-Bantu classes 8 and 10. This means that the plural prefix ***bi** of the nouns whose plural historically belonged to class 8 has been replaced in Tswana by the plural prefix of class 10, and their agreement pattern has changed accordingly.

⁸ In Tswana, this gender includes the infinitives and the two nouns *golo* **χòlò** ‘place’ and *felo* **filò** ‘place’. The nouns whose singular historically belonged to class 15 have been transferred to other genders, and the same occurred with most of the locative nouns that historically belonged to the locative classes (16, 17, and 18). Moreover, the distinction between the locative agreement patterns 16, 17 and 18 has been lost in Tswana, as in other Southern Bantu languages. For more details on the changes that have affected the system of locative classes in Tswana, see Creissels (2011).

(8) gender-number inflection of *-pe -pé* ‘any’

	sg.	pl.
gender 1-2	<i>ope</i>	<i>bape</i>
	ó-pé	bá-pé
gender 3-4	<i>ope</i>	<i>epe</i>
	ó-pé	í-pé
gender 5-6	<i>lepe</i>	<i>ape</i>
	lí-pé	á-pé
gender 7-10	<i>sepe</i>	<i>dipe</i>
	sí-pé	dí-pé
gender 9-10	<i>epe</i>	<i>dipe</i>
	í-pé	dí-pé
gender 11-6	<i>lope</i>	<i>ape</i>
	ló-pé	á-pé
gender 11-10	<i>lope</i>	<i>dipe</i>
	ló-pé	dí-pé
gender 14-6	<i>bope</i>	<i>ape</i>
	bó-pé	á-pé
gender 17	<i>gope</i>	
	χó-pé	

In Tswana, as mentioned above, subjects are obligatorily indexed, whereas the indexation of objects is syntactically optional. Subject and object indexes vary in person, number and gender exactly like personal pronouns (cf. 3.4).

2.3 Nominal number

2.3.1. Number inflection of nouns

The Tswana nouns that have a singular vs. plural distinction divide into 9 inflectional classes depending on the pair of prefixes they select as singular and plural markers. The following table gives the correspondence between pairs of number markers and genders.⁹ Gender 1-2 conflates two groups of nouns selecting distinct number prefixes, whereas the correspondence between the other genders and number inflection is a straightforward one-to-one correspondence. As can be seen in (9), the labeling of genders by means of numbers referring to agreement classes of noun forms makes immediately apparent the neutralization of some gender distinctions either in the singular (singular forms belonging to agreement class 11 may correspond to plural forms of class 6 or 10) or in the plural (plural forms belonging to agreement class 6 may correspond to singular forms of class 5, 11, or 14, and plural forms belonging to agreement class 10 may correspond to singular forms of class 7, 9, or 11).

⁹ A pattern similar to that described here for Tswana is found in most other Bantu languages (for example, Swahili). There is however variation due to the fact that pairs of classes reconstructed as distinct classes in Proto-Bantu (for example, class 3 and class 14, or class 8 and class 10) may have variously merged in the individual languages.

(9) number inflection of nouns and genders

number markers	gender	examples
mò- (sg.) / bà- (pl.)	1-2	<i>mosadi mò-sádí</i> ‘woman’ pl. <i>basadi bà-sádí</i>
Ø- (sg.) / bó- (pl.)	1-2	<i>ntšhe ñtšhé</i> ‘ostrich’ pl. <i>bontšhe bóñtšhé</i>
mò- (sg.) / mì- (pl.)	3-4	<i>motse mò-tsi</i> ‘village’ pl. <i>metse mì-tsi</i>
lì- (sg.) / mà- (pl.)	5-6	<i>lee lì-í</i> ‘egg’ pl. <i>mae mà-í</i>
sì- (sg.) / dì- (pl.)	7-10	<i>selepe sì-lépé</i> ‘axe’ pl. <i>dilepe dì-lépé</i>
Ø- (sg.) / dì- (pl.)	9-10	<i>podì pódí</i> ‘goat’ pl. <i>dipodì dì-pódí</i>
lò- (sg.) / mà- (pl.)	11-6	<i>losea lò-síá</i> ‘baby’ pl. <i>masea mà-síá</i>
lò- (sg.) / dì- (pl.)	11-10	<i>loso lò-sò</i> ‘spoon’ pl. <i>dintsho dì-ñtsò</i>
bò- (sg.) / mà- (pl.)	14-6	<i>bothata bò-tʰátá</i> ‘problem’ pl. <i>mathata mà-tʰátá</i>

As already mentioned above, the nouns belonging to gender 17, characterized by an agreement pattern that coincides with none of the agreement patterns found with the singular or plural forms of any other gender, do not vary in number. This gender includes the infinitives (formed by adding the prefix **χò-** to verb stems), plus the two nouns *golo χò-lò* ‘place’ and *felo fulò* ‘place’.¹⁰

2.3.2. *Singularia tantum, pluralia tantum*

Much in the same way as in Standard Average European languages, in Tswana, number inflection is not limited to nouns relatively high on animacy hierarchy, and nouns lending themselves to number inflection can be found among all semantic types of nouns. Animacy hierarchy is relevant in the sense that the nouns that stand high in the hierarchy are more prone to be treated as count nouns (with obligatory plural marking when referring to more than one individual) than those standing lower, but it is not possible to formulate strict rules.

There are however nouns that do not have the singular vs. plural distinction. The case of the nouns belonging to gender 15-17 has already been evoked in 2.3.1, but among the nouns that do not lend themselves to the singular vs. plural distinction, there are also nouns with prefixes and agreement properties that coincide with those of either the singular or the plural of one of the other genders. I am aware of no in-depth study of this question on the basis of which precise generalizations could be put forward. However, as can be seen from the following examples, this behavior seems to be typically found with nouns for which the singular vs. plural distinction is more or less problematic conceptually:¹¹

- *lenyora lì-ñórá* ‘thirst’ has the same prefix and agreement properties as singular forms of gender 5-6,

¹⁰ *Felo fulò* ‘place’ was originally formed by adding the prefix of Bantu class 16 to a stem cognate with that of its synonym *golo χò-lò*, but synchronically, due to the obsolescence of the Bantu class 16 in Tswana, *felo fulò* cannot be segmented anymore, and has been re-assigned to the same agreement class as *golo χò-lò*. This irregularity tends to be eliminated by the replacement of *felo fulò* by a regular noun of gender 5-6: *lefelo lì-fulò* pl. *mafelo mà-fulò*.

¹¹ On the names of groups, see §2.3.5.

- *mala* **mà-lá** ‘cold’ and *madi* **mà-dí** ‘blood’ have the same prefix and agreement properties as plural forms of gender 5-6,
- *serame* **sì-rámé** ‘cold’ has the same prefix and agreement properties as singular forms of gender 7-10,
- *bosadi* **bò-sádí** ‘womanhood’ (abstract noun derived from *mosadi* **mò-sádí** ‘woman’ by gender shift)¹² and *botlhabatsatsi* **bò-tl^hàbà-tsàtsí** ‘east’ (cf. *tlhaba* **tl^hàbà** ‘pierce’ and *letsatsi* **lì-tsàtsí** ‘sun’) have the same prefix and agreement properties as singular forms of gender 14-6,
etc.

2.3.3. Special readings of number inflection

The nouns whose default behavior is that of mass nouns, for which the singular vs. plural distinction is not relevant, lend themselves to the cross-linguistically common types of ‘special readings’ of number inflection. For example:

- *bojalwa* **bò-dzàlwá** ‘traditional beer’ is most commonly used in the singular as a mass noun, but the plural form *majalwa* **mà-dzàlwá** is available to express ‘different kinds of beer’ or ‘several sets of beer containers’,
- ‘food’ is normally expressed by the plural form *dijo* **dì-dzǒ**, but the corresponding singular form *sejo* **sì-dzǒ** can be used with the meaning ‘a particular kind of food’,
- ‘money’ is expressed by the plural form *madi* **mà-dí** (homonymous with *madi* **mà-dí** ‘blood’), but the corresponding singular form *ledi* **lì-dí** can be used with the meaning ‘coin’,
etc.

In generic clauses such as ‘Bears hibernate’, nouns are most commonly in the plural form, i.e. in the same form as when they are used to refer to specific groups of individuals.

- (10) *Ditau di tshela ka go tsoma diphologolo tse dingwe.*
dì-tàú **dì-ts^hùlà** **ká** **χò-tsómá**
 PL-lion(10) S:CL10-live:PRS:CJ with INF-hunt
dì-p^hólǒχǒlò **tsé** **dì:-ŋwí.**
 PL-animal(10) CL10.ATTR CL10-other
 ‘Lions make their living by hunting other animals.’

¹² The case of *bosadi* **bò-sádí** ‘womanhood’ is illustrative of abstract nouns in general: their formation involves no specific derivational morphology, just gender shift by which nouns of individuals belonging to any other gender are converted into singularia tantum of gender 14-6 expressing abstract quality, as for example *tau* **tàú** ‘lion’ pl. *ditau* **dì-tàú** (gender 9-10) > *bolau* **bò-làú** ‘leonine nature’ (class 14), where the consonant alternation **t ~ l** is the result of an automatic morphophonological process operating at the junction between noun stems and prefixes.

2.3.4. Associative plural

The prefix **bó-** is the regular plural marker for the nouns of gender 1-2 that have a zero prefix in the singular, such as *ntšhe ñṭṭʰé* ‘ostrich’ pl. *bontšhe bó-ñṭṭʰé*, or *kgengwe qʰéṅwé* ‘tsamma melon’ pl. *bokgengwe bó-qʰéṅwé*, but the same prefix **bó-** can be used as an associative plural marker with proper names and kinship terms.

With proper names, associative plural is the only possible interpretation of **bó-** (as in *boMpho bó-mpʰó* ‘Mpho and others’), whereas with kinship terms, there is ambiguity between the associative plural and ordinary plural readings, since kinship terms belong to the subset of gender 1-2 nouns that have a zero prefix in the singular, cf. for example *malome málómé* ‘my maternal uncle’ / *bomalome bó-málómé* ‘my maternal uncles’ or ‘my maternal uncle and others’.

Associative plural marking is involved in a cross-linguistically rare type of inclusory coordination. Tswana does not have inclusory coordination with a plural pronoun as the first term of the construction. In the Tswana inclusory coordination construction, the first term of the construction is the associative plural of a noun. For example, the literal meaning of *boMpho le Kitso bó-mpʰó ’lí-kítsó* is ‘Mpho and others with Kitso’, but this construction is commonly used as referring to a group consisting of two individuals only, Mpho and Kitso. For more details on the prefix used to express associative plural and on the inclusory coordination construction, cf. Creissels (2016).

2.3.5. Group nouns (collectives)

Nouns with intrinsically plural reference can be found in various genders, e.g. *motlhape mò-tʰàpí* ‘herd’ pl. *metlhape mì-tʰàpí* (gender 3-4), *morafe mò-ráfí* ‘tribe’ pl. *merafe mì-ráfí* (gender 3-4) or *letsomane lì-tsómání* ‘flock of sheep or goats’ pl. *matsomane mà-tsómání* (gender 5-6). They form plurals and agree exactly like the other nouns showing the same inflectional prefixes.

Group nouns can be productively formed from nouns referring to animate individuals by mere gender shift accompanied by the corresponding change in the inflectional prefixes, without the use of any overt derivational marker. Group nouns referring to humans are found in gender 9-10 (for example *nna Ø-ńná* ‘crowd of men’ < *monna mò-ńná* ‘man’), whereas group nouns referring to animals are found in gender 11-6 (for example *lobotsane lò-bótsání* ‘flock of goat-kids’ < *potsane pótsání* ‘goat-kid’, or *lolau lò-làú* ‘pride of lions’ < *tau tàú* ‘lion’, with a stem-initial alternation triggered by the change of prefix).¹³

In the plural, group nouns derived via gender shift may have a ‘greater plural’ reading, for example *malau mà-làú* (plural of *lolau lò-làú* ‘pride of lions’) ‘very many lions’ (Cole 1955: 100).

2.3.6. Number marking of nominalized adnominal modifiers

When nominalized, adnominal modifiers show exactly the same gender-number marking as when they agree with their head in a noun-modifier construction.

¹³ The explanation of this alternation is that, historically, nouns had a prefix *n-* in gender 9-10, as opposed to the CV prefixes found in the other genders.

2.4. Verbal number

Verbal number as a category encompassing repetition of action and plurality of participants does not exist in Tswana. Iterative verbs can be formed via reduplication (as for example *ragaraga ráǰaráǰà* ‘kick repeatedly’ < *raga ráǰá* ‘kick’, but verb reduplication is not used to encode plurality of participants.

3. Agreement and the syntax of number

3.1. Number agreement in noun-modifier constructions

In Tswana, all noun-modifier constructions without any exception are subject to agreement in gender and number. Depending on the nature of the modifier, the agreement marks may appear on the modifier itself (for example, with demonstratives, or the interrogative determiner *-fe -fǐ* ‘which’), on a linker introducing the modifier (for example, with adnominal possessors, or non-agreeing numerals), or both (for example, with adjectives, or agreeing numerals). (11) illustrates the agreement of the interrogative determiner, and (12) illustrates the agreement of attributive adjectives and of the attributive linker obligatorily inserted between attributive adjectives and their head.

(11) The agreement of the interrogative determiner

gender	singular	plural
1-2	<i>mosadi ofe</i> mò-sádì ó-fǐ ‘which woman?’	<i>basadi bafe</i> bà-sádì bá-fǐ ‘which women?’
	<i>ntšhe ofe</i> ǰǰʰé ó-fǐ ‘which ostrich?’	<i>bontšhe bafe</i> bó-ǰǰʰé bá-fǐ ‘which ostriches?’
3-4	<i>molemo ofe</i> mò-lìmò ó-fǐ ‘which medicine?’	<i>melema efe</i> mì-lìmò í-fǐ ‘which medicines?’
5-6	<i>legodu lefe</i> lì-ǰòdù lí-fǐ ‘which thief?’	<i>magodu afe</i> mà-ǰòdù á-fǐ ‘which thieves?’
7-10	<i>sekolo sefe</i> sì-kólò sí-fǐ ‘which school?’	<i>dikolo dife</i> dì-kólò dí-fǐ ‘which schools?’

9-10	<i>kgosi efe</i> q^hósi í-fí 'which chief?'	<i>dikgosi dife</i> dì-q^hósi dí-fí 'which chiefs?'
11-6	<i>losea lofe</i> lò-sià ló-fí 'which baby?'	<i>masea afe</i> mà-sià á-fí 'which babies?'
11-10	<i>lokwalo lofe</i> lò-kwálò ló-fí 'which book?'	<i>dikwalo dife</i> dì-kwálò dí-fí 'which books?'
14-6	<i>botshelo bofe</i> bò-ts^hílò bó-fí 'which life?'	<i>matshelo afe</i> mà-ts^hílò á-fí 'which lives?'
17	<i>golo gofe</i> χò-lò χó-fí 'which place?'	

(12) The agreement of attributive adjectives and of the attributive linker

gender	singular	plural
1-2	<i>mosadi yo moša</i> mò-sádi jó mò-fá 'new woman'	<i>basadi ba baša</i> bà-sádi bá bà-fá 'new women'
	<i>ntšhe yo moša</i> ñtš^hé jó mò-fá 'new ostrich'	<i>bontšhe ba baša</i> bó-ñtš^hé bá bà-fá 'new ostriches'
3-4	<i>molemo o moša</i> mò-limò ó mò-fá 'new medecine'	<i>melemo e meša</i> mì-limò é mì-fá 'new medecines'
5-6	<i>legodu le leša</i> lì-χòdù lé lì-fá 'new thief'	<i>magodu a maša</i> mà-χòdù á mà-fá 'new thieves'
7-10	<i>sekolo se seša</i> sì-kólò sé sì-fá 'new school'	<i>dikolo tse dintšha</i> dì-kólò tsé dí-ñtš^há 'new schools'
9-10	<i>kgosi e ntšha</i> q^hósi é ñtš^há	<i>dikgosi tse dintšha</i> dì-q^hósi tsé dí-ñtš^há

	‘new chief’	‘new chiefs’
11-6	<i>losea lo loša</i> lò-sià ló lò-fá ‘new baby’	<i>masea a maša</i> mà-sià á mà-fá ‘new babies’
11-10	<i>lokwalo lo loša</i> lò-kwálò ló lò-fá ‘new book’	<i>dikwalo tse dintšha</i> dì-kwálò tsé dí-ṅṅhá ‘new books’
14-6	<i>botshelo jo boša</i> bò-tsʰilò dʒó bò-fá ‘new life’	<i>matshelo a maša</i> mà-tsʰilò á mà-fá ‘new lives’
17	<i>golo mo goša</i> χò-lò mó χò- fá ‘new place’	

3.2. Numeral modification and number

In Tswana, when modified by numerals other than ‘one’ or by other quantifiers denoting plurality, nouns are obligatorily in the plural. Some numeral modifiers agree in gender and number with their head, others don’t, but in all cases, they are obligatorily introduced by a linker expressing gender-number agreement.

Measure words combine with numbers like ordinary nouns. For example, in (13), *litara* **lítàrá** ‘liter’ pl. *dilitara* **dì-lítàrá** behaves exactly like any other noun of gender 9-10 modified by a numeral and an adnominal possessor.

(13a) *litara ya maši*
lítàrá **‘y-á-má-fi**
(SG)liter(9) CL9-GEN-PL-milk(6)
‘a liter of milk’

(13b) *dilitara di le pedi ya maši*
dì-lítàrá **‘dí-lí** **pèdí** **‘ts-á-má-fi**
PL-liter(10) CL10-NUM (CL10)two CL10-GEN-PL-milk(6)
‘two liters of milk’

3.3. NP coordination and number

In Tswana, the additive coordination of NPs is expressed as NP_1 *le* NP_2 , where *le* **lí-** ‘and’ is a proclitic also found in other constructions with the meanings ‘with’ and ‘even’.

As can be expected, if one of the coordinands is a 1st person pronoun, *NP₁ le NP₂* triggers 1st person plural agreement, irrespective of the nature of the second coordinand.¹⁴ If one of the coordinands is a 2nd person pronoun, and the other is not a 1st person pronoun, *NP₁ le NP₂* invariably triggers 2nd person plural agreement.

(14a) *Nna le Kitso re tlaa sala mono.*

nná 'lí-kítsó rí-tlāà-sálà mō:nò.
 1SG with-Kitso(1) S:1PL-FUT-stay:CJ here
 ‘Kitso and I will stay here.’

(14b) *Wena le Lorato lo tlaa apaya dijo.*

wèná lí-lòrátság 'lò-tlāá-àpàjà dì:dzǒ.
 2SG with-Lorato(1) S:2PL-FUT-cook:CJ PL-food(10)
 ‘Lorato and you will do the cooking.’

As regards gender resolution in constructions with coordinated NPs in subject or object function, if none of the coordinands is a 1st or 2nd person pronouns, it is always possible to apply the following resolution rule (Cole 1955: 429):

- if both coordinands have human referents, *NP₁ le NP₂* governs class 2 agreement: in (15a), both *Leburu lí-búrú* and *Lekula lí-kúlá* belong to agreement class 5 in the singular and to agreement class 6 in the plural, but *Leburu le Lekula lí-búrú lí-lì-kúlá* governs class 2 agreement;
- if both coordinands have non-human referents, *NP₁ le NP₂* governs class 10 agreement: in (15b), *mmidi m̂-mídí* ‘maize’ belongs to gender 3.4, *mabele mà-bèlé* is a plurale tantum of gender 5-6, but *mmidi le mabele m̂-mídí lí-má-bèlé* governs class 10 agreement.

(15a) *Leburu le Lekula ba tsamaile mmogo.*

lí-búrú lí-lì-kúlá bá-tsámáilé mmô:χǒ.
 SG-Afrikaner(5) with-SG-Indian(5) S:CL2-leave:PRF:CJ together
 ‘The Afrikaner and the Indian left together.’

(15b) *Mmidi le mabele di jelwe.*

m̂-mídí 'lí-má-bèlé dí-dzì:lwé.
 SG-maize(3) with-PL-millet(6) S:CL10-eat:PRF:DJ
 ‘The maize and the millet have been eaten.’

The semantic basis of this rule is obvious, since the hypernym ‘human being’ (*motho mò-tʰò* pl. *batho bà-tʰò*) belongs to gender 1-2, and the hypernym ‘thing’ (*selo sì-lǒ* pl. *dilo dì-lǒ*) belongs to gender 7-10.

¹⁴ Note that, in Tswana coordinate constructions involving 1st or 2nd person pronouns, the linear order must respect the following hierarchy: 1 > 2 > 3.

According to Cole (1955), an alternative strategy is possible when the coordinands belong to the same agreement class in the plural. In that case, the class in question can be selected instead of class 2 or class 10. According to my own observations, this is possible, but speakers tend to prefer the rule according to which the agreement class assigned to NP_1 *le* NP_2 phrases is selected on a purely semantic basis, regardless of the gender of the coordinands. In Tswana, this is the only case in which, within the limits of the clause, semantic agreement takes precedence over morphological agreement.

The resolution rule just formulated raises the following question: what could be the agreement properties of NP_1 *le* NP_2 phrases with one of the coordinands human, and the other non-human? In fact, Tswana speakers simply avoid such constructions, and when asked to give a Tswana equivalent of English sentences such as ‘The hunter and his dog got lost in the bush’, they suggest translations in which the second coordinand in the English sentence is rendered as a comitative adjunct (‘The hunter got lost with his dog in the bush’).

3.4. Number agreement of verbs

Tswana verbs include an obligatory subject index and optional object indexes. In the first and second person, indexes express person and number, with four possible values: 1st singular, 2nd singular, 1st plural, and 2nd plural. In the third person, indexes express number and gender, with the same possible values as pronouns and adnominals.

- (16) Subject indexes in the present affirmative
with first and second person subjects

person	singular	plural
1st	kì-	rì-
2nd	ò-	lò-

- (17) Subject indexes in the present affirmative
with third person subjects

gender	singular	plural
1-2	ó-	bá-
3-4	ó-	í-
5-6	lí-	á-
7-10	sí-	dí-
9-10	í-	dí-
11-6	ló-	á-
11-10	ló-	dí-
14-6	bó-	á-
17		χó-

The paradigm of object indexes expresses exactly the same distinctions.

(18) First and second person object indexes

person	singular	plural
1st	ḡ-	`rí-
2nd	χò-	`ló-

(19) Third person object indexes

gender	singular	plural
1-2	mò-	`bá-
3-4	`ó-	`í-
5-6	`lí-	`á-
7-10	`sí-	`dí-
9-10	`í-	`dí-
11-6	`ló-	`á-
11-10	`ló-	`dí-
14-6	`bó-	`á-
17		`χó-

4. Semantics and discourse

I am aware of no pragmatic function that would be regularly fulfilled by number marking in Tswana. In the same way as in most sub-Saharan languages, deference towards the addressee tends to be expressed at the level of communicative strategies (including physical posture) rather than by the choice of linguistic forms.

The generic use of the second person singular pronoun is possible in Tswana, as well as the use of the third person plural pronoun to encode non-specific reference to a group of humans, but the productivity of these strategies is limited by the remarkably high productivity of impersonal and passive constructions.

As already mentioned, reference to kinds is usually expressed by the plural form of nouns, and the categorization of nouns as count nouns or mass nouns does not show obvious contrasts with European languages. Similarly, plural forms admit non-plural reference in the same way as in the European examples put forward in the questionnaire (for example in questions such as ‘Do you have children?’).

5. Conclusion

The number category of Tswana shows very few cross-linguistically unusual properties. Its most salient aspects are the morphological complexity of number marking, the close relationship between number inflection of nouns and gender, the impossibility of dissociating number agreement from gender agreement, and the pervasiveness of gender-number agreement in Tswana morphosyntax. As regards its semantic organization, the number

category of Tswana is very similar to the number category of Standard Average European languages.

Abbreviations

APPL: applicative
ATTR: attributive linker
CAUS: causative
CJ: conjoint
CL: agreement class
DEM: demonstrative
DIST: distal
DJ: disjoint
FUT: future
GEN: genitive linker
INF: infinitive
LOC: locative
NP: noun phrase
NUM: numerative linker
O: object index
PL: plural
POT: potential
PRF: perfect
PRS: present
REL: relative
S: subject index
SG: singular.

References

- Cole D.T. 1955. *An introduction to Tswana grammar*. Cape Town: Longman.
- Creissels, Denis. 1997. Prépositions issues de déictiques locatifs: L'exemple du tswana. *Faits de langues* 9. 71-80.
- Creissels, Denis. 1999. The role of tone in the conjugation of Setswana. In Jean Blanchon & Denis Creissels (eds.), *Issues in Bantu Tonology*, 109-152. Cologne: Rüdiger Köppe.
- Creissels, Denis. 2002. Valence verbale et voix en tswana. *Bulletin de la Société de Linguistique de Paris* 97(1). 371-416.
- Creissels, Denis. 2003. Présentation du tswana. *Lalies*. 5-128.
- Creissels, Denis. 2004. Non-canonical applicatives and focalization in Tswana. Paper presented at the Syntax of the World's Languages conference. Leipzig, 5-8 August 2004.
- Creissels, Denis. 2006. Tswana verb morphology and the Lexical Integrity Principle. *Lingue e linguaggio* 5-1. 49-66.
- Creissels, Denis. 2011. Tswana locatives and their status in the inversion construction. *Africana Linguistica* 17. 33-52.

- Creissels, Denis. 2013. Les prépositions simples du tswana. In Jesse Teng (ed.), *Prépositions et postpositions: approches typologiques et formelles*, 17-56. Paris: Lavoisier.
- Creissels, Denis. 2016. Additive coordination, comitative adjunction, and associative plural in Tswana. *Linguistique et langues africaines* 2. 11-42.
- Creissels, Denis. 2017. The conjoint-disjoint distinction in the tonal morphology of Tswana. In Jenneke Van der Wal & Larry Hyman (eds.), *The conjoint / disjoint alternation in Bantu*, 200-238. Berlin/Boston: De Gruyter Mouton.
- Creissels, Denis. Forthcoming 2022. Bantu languages: Typology and variation. In Lutz Marten, Ellen Hurst, Nancy Kula & Jochen Zeller (eds.), *The Oxford guide to the Bantu languages*, XX-XX. Oxford: Oxford University Press.
- Creissels, Denis, Anderson Chebanne and Heather Nkhwa. 1997. *Tonal morphology of the Setswana verb*. Munich: Lincom Europa.
- Doke, C. M. & S. M. Mofokeng. 1957. *Textbook of Southern Sotho grammar*. Cape Town: Longman South Africa.
- Marten, Lutz. 2010. The great siSwati locative shift. In A. Breitbarth, C. Lucas, S. Watts & D. Willis (eds.), *Continuity and Change in Grammar*, 249-268. Amsterdam: John Benjamins.
- Meeussen, A. E. 1967. Bantu grammatical reconstructions. *Annales du Musée Royal de l'Afrique Centrale* 61. 79-121
- Van der Wal, Jenneke & Larry Hyman (eds.). 2017. *The conjoint / disjoint alternation in Bantu*. Berlin/Boston: De Gruyter Mouton.