

Feature licensing and the number interpretation of bare nominals in Wolof^{*}

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Manuscript, comments welcome!

Abstract

Several languages allow for their nominals to occur without any functional morphology. They are dubbed ‘bare nominals’ (BNs). BNs are often number-neutral, i.e., their number interpretation does not imply any commitment to a singular or plural interpretation. In Wolof, however, BNs are singular when unmodified. This can be argued based on, e.g. the impossibility of saturating a collective predicate, on the fact that they must be referred back to with a singular pronoun, and that they cannot be the antecedent of a plural anaphor. However, a plural interpretation becomes available when a nominal-internal plural feature is expounded in the form of relative complementizer or possessum agreement. The generalization is that BNs in Wolof are singular, unless plural morphology is expounded within the nominal. I propose a version of Kalin’s (2017; 2018; 2019) framework of nominal licensing whereby certain interpretable features require licensing by the operation Agree; they are “derivational time bombs” that must be “defused” by this operation. Specifically, I argue that the feature [+PLURAL] in Wolof nominals fall under this category. I assume that all nominals in Wolof, bare and full, can in principle be singular or plural. An obligatorily [+SINGULAR] interpretation arises in a BN when there is no probe to Agree with the [+PLURAL] version, causing the derivation to crash. Conversely, if the BN merges with structure that contains a number probe, [+PLURAL] can be defused, so that the corresponding construal can arise. This probe surfaces as relative complementizer or possessum agreement.

Keywords: Wolof; bare nominal; number neutrality; singular; feature licensing; derivational time bomb

1 Overview

Since Chomsky (2000, 2001), we conventionally understand Agree as an operation whereby an unvalued feature in a Probe receives a value from a matching Goal. More recently, Béjar & Rezac (2009) and Kalin (2017, 2018, 2019) have argued that Agree also plays a role in licensing valued, interpretable features. In this paper, I propose an extension to Kalin’s nominal licensing system to the nominal domain and I argue that number features must also be licensed by Agree. This proposal is empirically motivated by the number interpretation of bare nominals in Wolof.

Several languages allow for their nominals to occur in bare form, that is, without the functional morphology that otherwise characterizes the nominals of a given language, including determiners and number morphology. Following the relevant literature, I dub these nominals ‘bare nominals’

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(BNs). Correspondingly, I use the term ‘full nominal’ to refer to DPs that do contain that functional morphology. In Wolof specifically, as we are going to see, full nominals occur with a determiner and a class marker affixed to it. BNs, correspondingly, do not occur with either an overt determiner nor with a class marker. Some BN languages are illustrated in (1).

(1) a. *BN in Amharic*

lid3-u **mäs’haf** wässäd-ä.
 child-DEF book take.PF-3MS
 ‘The child took one or more books.’

(Kramer 2017, (2); see also Baker 2014)

b. *BN in Brazilian Portuguese*

Unicórnio tem **chifre**.
 unicorn has horn
 ‘Unicorns have (an unspecified number of) horns.’

(Müller 2002, (51); see also Schmitt & Munn 1999; Munn & Schmitt 2005; Pires de Oliveira & Rothstein 2011; a.o.)

c. *BN in Mandarin Chinese*

Zuotian wo mai le **shu**.
 yesterday I buy ASP book
 ‘Yesterday, I bought one or more books.’

(Rullmann & You 2006, (1); see also Jenks 2018 and references therein)

d. *BN in Hindi*

Anu **bacca** sambhaaltii hai.
 Anu child look.after-IMP be-PRS
 ‘Anu looks after (one or more) child(ren).’

(Dayal, 2011, (7b); adapted)

e. *BN in Official Malagasy*

Manolotra **penina** izy.
 AT.offer pen 3(NOM)
 ‘She offers a pen/pens.’

(Paul, 2016, (18a))

As can be gleaned from the translations, the BNs in (1a)–(1e) have a **number neutral** interpretation, that is, they lack a commitment to a singular or plural interpretation. This property is also known as ‘general number’ (Corbett, 2000) and is often taken to be a signature property of BNs crosslinguistically (see the references cited in (1)).

However, Dayal (2011) and Rinaldi (2018) cast doubt on this generalization, showing data from Hindi, Hungarian (Dayal), Spanish, Catalan, Greek, and Norwegian (Rinaldi) that the BNs in these languages are in fact singular. In this paper, I will show that this is also true of BNs in Wolof.

Dayal remarks that BNs in Hindi are not number-neutral, but rather singular and proposes that the plural interpretation arises as a byproduct of a pluractional operator that applies at the sentential level and which is introduced by aspect. The empirical basis for the proposal are data like the following. (2a) shows that the number interpretation of the BN *kitaab* ‘book’ depends on the telicity of the predicate. The temporal adverb *tiin ghanTe meN* ‘in three hours’ picks out the telic reading of the predicate. In that case, the BN has an exclusively singular interpretation. It

is only when an atelic reading is singled out (in (2a), by using *tiin ghanTe tak* ‘for three hours’) that the number-neutral interpretation of the BN arises. To drive the point home, in (2b), the atelic reading is eliminated via the addition of the completive particle *Daalii*. As expected from the pattern observed in (2a), only a singular interpretation is available. Or, more relevantly for Dayal’s claim, a number-neutral interpretation becomes impossible. Furthermore, in (2c), the verb is now a collective predicate and the telic reading is enforced by a completive particle; a BN is disallowed. Finally, if the BN is replaced with a bare plural, the result is well-formed again (2d).

(2) *Hindi*

- a. anu-ne [tiin ghanTe meN] / [tiin ghanTe tak] **kitaab** paRhii.
Anu-ERG [3 hours in] / [3 hours for] book read-PFV
i. ‘Anu read a book in three hours’ (= exactly one book.)
ii. ‘Anu read a book for three hours’ (= one or more books.)
- b. anu-ne [tiin ghanTe meN] / *[tiin ghanTe tak] **kitaab** paRh Daalii.
Anu-ERG [3 hours in] / *[3 hours for] book read COMPL.PFV
‘Anu read a book in three hours’ (= exactly one book)
- c. * anu-ne [tiin ghanTe meN] **kitaab** ikaTTaa kar lii.
Anu-ERG [3 hours in] book collect do COMPL.PFV
Lit.: ‘Anu got done collecting a book in three hours.’
- d. anu-ne [tiin ghanTe meN] **kitaabeN** ikaTTaa kar lii.
Anu-ERG [3 hours in] books collect do COMPL.PFV
‘Anu got done collecting books in three hours.’
(Dayal, 2011, (32); adapted)

The data in (2) demonstrate thus that the number interpretation of BNs in Hindi is correlated with the aspectual properties of the overall sentence where it is embedded. In order to account for this pattern, Dayal proposes that BNs in Hindi are singular, but aspect may introduce a pluractional operator that applies to the event the BN is a part of. The iterative interpretation of the event has as a byproduct a number neutral interpretation of the otherwise singular object BN.

In this paper, I will show that, while BNs in Wolof are also singular instead of number neutral, the mechanisms by which they can have a plural construal differ from those available in Hindi. Aspectual information remains constant across the data to be investigated here and yet the number interpretation is different. What will vary in the data is the presence or absence of a plural morpheme. Based on this correlation, I will propose an analysis where the number interpretation of the BN depends on nominal-internal components, rather than on sentential-level elements like aspect. Specifically, I will propose a condition on the requirement of licensing an interpretable number feature within the nominal spine.

In (3), we can see some instances of BNs in Wolof.^{1 2}

¹Abbreviations: CAUS = causative, CM = class marker, COMP = complementizer, COP = copula, DEF = definite, IMPF = imperfective, ITER = iterative, LNK = linker, NA = sentential particle for neutral sentences (*na*), NEG = negation, NON.FIN = nonfinite, OBJ = object, OBL = oblique, PL = plural, POSS = possessive, PREP = preposition, PROG = progressive, RECIP = reciprocal, REFL = reflexive, SG = singular. The glosses of data taken from other sources have been modified for uniformity.

²Regarding (3a) in particular, a speaker commented that this sentence is false if I saw more than one Senegalese student.

- (3) a. Gis-na-a **ndongo dara** senegalee.
 see-NA-1SG student Senegalese
 ‘I saw a Senegalese student.’
 b. Awa defar-na **oto**.
 Awa fix-NA.3SG car
 ‘Awa fixed a car.’
 c. Roxaya jàng-na **xibaar**.
 Roxaya read-NA.3SG newspaper
 ‘Roxaya read a newspaper.’

Similarly to Hindi and unlike what we witness in (1), BNs in Wolof seem to be exclusively singular. As we are going to see in §2, this claim can be backed up by the behavior of BNs regarding, for instance, the saturation of collective predicates and the binding of plural anaphors. (4) offers a preview of the data to be examined. It shows that BNs in Wolof cannot be the object of a collective predicate like *dajale* ‘gather’.

- (4) * Jàngalekat b-i dajale-na **xale** ci bayaal b-i.
 teacher CM.SG-DEF gather-NA.3SG child PREP park CM.SG-DEF
 Lit.: ‘The teacher gathered child in the park.’

In contrast, number-neutral BNs in some of the BN languages mentioned above can saturate the same type of predicate.

- (5) a. *BN can saturate a collective predicate in Brazilian Portuguese*
 A professora agrupou **aluno** no parque.
 the teacher grouped.together student in.the park
 ‘The teacher gathered students in the park.’
 (p.c. with native speaker)
 b. *BN can saturate a collective predicate in Mandarin*
 Laoshi zai gongyuan-li jihe-le **xuesheng**.
 teacher at park-in gather-PERF student
 ‘The teacher gathered the students in the park.’
 (p.c. with native speaker)
 c. *BN can saturate a collective predicate in Hindi*
 anu **botāl** ikaTThaa kartii hai.
 Anu bottle collect do-IMP be-PRS
 ‘Any collects bottles.’

(Dayal, 2011, (31))

Nonetheless, when a BN in Wolof is modified by a relative clause with plural morphology, it behaves as if it were a plural nominal. That the relative clause is plural can be inferred from the fact that it contains a plural class marker *y* (see more on this topic below). A BN thus modified is able to be the object of a collective predicate.

- (6) Jàngalekat b-i dajale-na **xale** [**y-u** Samba xam] ci bayaal
 teacher CM.SG-DEF gather-NA.3SG child [CM.PL-COMP Samba know] PREP park
 b-i.
 CM.SG-DEF
 ‘The teacher gathered some children who Samba knows in the park.’

Not every nominal modifier, however, has the same effect in the number interpretation of a Wolof BN. In particular, if a BN is merged with a modifier that does not have any number morphology, it still behaves as if it were singular (7).

- (7) * Roxaya dajale-na **fecckat** brezilien.
 Roxaya gather-NA.3SG dancer Brazilian
 Lit.: ‘Roxaya gathered Brazilian dancer.’

One of the differences between (6) and (7) lies in whether there is plural morphology in the modifier or not. Notice that aspectual properties nevertheless remain the same in all sentences, unlike what happens in Hindi (2). The same difference regarding the presence or absence of a plural exponent will be shown to arise in two types of possessive constructions, one that has number morphology and one which does not. In view of this distinction, this paper aims at addressing the following questions:

- (8) i. How can we account for the exclusively singular interpretation (and not number neutral) interpretation of unmodified BNs in Wolof?
 ii. Why does a BN without any plural morphology behave as if it were singular, while a BN merged that does contain plural morphology behaves as if it were plural?

In order to answer these questions, I propose that the interpretable number feature [+PLURAL] needs to be licensed by the operation Agree. This is only possible when the nominal spine has enough structure to house a number probe. The occurrence of such a feature can be diagnosed by the occurrence of morphemes that express number agreement morphology, including relative complementizer agreement in relative clauses (y- in (6)) and possessum agreement. In the absence of a number probe in the nominal structure, only a [+SINGULAR] BN can allow the derivation to converge, as this feature would not need licensing.

1.1 Methodology

Unless otherwise stated, the Wolof data collected here is due to in-person interviews conducted with a native speaker of the language in [location redacted]. This speaker is a male from Kaolack in his late forties. The speaker was asked to judge sentences in Wolof constructed by the author. He was also asked to translate English prompts. When the semantic properties of a particular sentence were at issue, a context was provided and the speaker was asked whether the given sentence was true or false in that scenario. Additional data was also provided by another consultant when the judgment of some sentences was unclear or when paradigms had to be completed. This consultant is a male in his mid-twenties from Dakar. I first established that the general properties of BNs accepted by the first consultant were accepted by him as well. Additionally, the judgments of this consultant was collected via online questionnaires sent to him; the speaker was asked to judge sentences in Wolof constructed by the author.

Uncited data from Mandarin and Brazilian Portuguese were elicited from linguists who are native speakers of these languages. These speakers were asked to translate English prompts.

Except for cases where scope properties were stake, most sentences were tested without a context. The meaning of a sentence was determined by asking consultants for a translation or by asking them whether a translation would be appropriate for a given sentence. When the number interpretation of a BN was not immediately clear, consultants were asked how many *X* (where *X* is the meaning of a BN) were involved, to which the answers were along the lines of ‘one’ or ‘more than one’.

1.2 Basics of Wolof

Wolof is a head-initial language (for recent literature, see [Tamba et al. 2012](#); [Torrence 2013](#); [Harris 2015](#); [Martinović 2015, 2017, 2019](#); [Jordanoska 2020](#) and references therein, a.o.). For instance, verbs (9a), prepositions (9b), and complementizers (9c) precede their complements.

- (9) a. Binta mungi **lekk** ceeb-u jën.
 Binta PROG.3SG eat rice-LNK fish
 ‘Binta is eating ceebu jen.’
- b. Jàngalekat b-i dajale-na a-y xale **ci** bayaal b-i.
 teacher CM.SG-DEF gather-NA.3SG INDEF-CM.PL child PREP park CM.SG-DEF
 ‘The teacher gathered some students in the park.’
- c. Defe-na-a **ne** macc-na-ñu màngo b-i.
 think-NA-1SG COMP suck-FIN-3PL mango CM-DEF.SG
 ‘I think that they sucked the mango.’
 (examples (a) and (c) from [Torrence 2013](#), p. 77)

However, some determiners surface post-nominally; a case in point is the definite determiner *i*. Indefinite determiners (both *a* and *enn*), on the other hand, follow the head-initial pattern of the language.

- (10) a. *Plural and singular definite determiners (post-nominal)*
 Xale **y-i** lekk-na-ñu gato **b-i**.
 child CM.PL-DEF eat-NA-3PL cake CM.SG-DEF
 ‘The children ate the cake.’
- b. *Singular indefinite determiner (pre-nominal)*
 Xadi gis-na **a-b** sàcc.
 Xadi see-NA.3SG INDEF-CM.SG thief
 ‘Xadi saw a thief.’
- c. *Plural indefinite determiner (pre-nominal)*
 Awa jàpp-na **a-y** sàcc.
 Awa catch-NA.3SG INDEF-CM.PL thief
 ‘Awa caught some thieves.’
- d. *Singular indefinite determiner (pre-nominal)*
B-enn xale b-u Samba xam jànga-na a-b taalif.
 CM.SG-one child CM.SG-COMP Samba know write-NA.3SG INDEF-CM.SG poem
 ‘A child who Samba knows wrote a poem.’
- e. *Plural indefinite determiner (pre-nominal)*
 Am-na **y-enn** góór y-u njool ci arme b-i.
 have-NA.3SG CM.PL-one man CM.PL-COMP be.tall PREP army CM.SG-DEF
 ‘There are some tall men in the army.’

([Tamba et al. , 2012](#), (2a/32a/33b/fn.30))

As we can see in (10), Wolof has two overt indefinite determiners, *a* and *enn*. For most sentences, the BN, which also has an indefinite interpretation, are compared with the *a* indefinite, though *enn* has also been used. For differences in the behavior between these two overt indefinite determiners, see [Tamba et al. \(2012\)](#), who also discuss the semantics of BNs. Nonetheless, the point of

comparison at stake in the present paper is the number interpretation and both *a* and *enn* nominals can be either singular or plural.³

Determiners contain a class marker (CM) affixed to them (Babou & Loporcaro, 2016). Besides the class a noun belongs to, the class marker encodes number information (singular or plural). For instance, *sàcc* ‘thief’ remains constant in (10b) and (10c); whether the DP it heads is interpreted as singular or plural is correlated with the class marker used, *b* and *y*, respectively.⁴

The class markers in Wolof are listed below:⁵

(11)

	Number	Noun	CM-DEF	Gloss
a.	Singular	yàmbaa	j-i	‘marijuana CM.SG-DEF’
b.		nit	k-i	‘person CM.SG-DEF’
c.		xaj	b-i	‘dog CM.SG-DEF’
d.		nit	k-i	‘person CM.SG-DEF’
e.		mbagg	m-i	‘shoulder CM.SG-DEF’
f.		weñ	w-i	‘metal CM.SG-DEF’
g.		suuf	s-i	‘ground CM.SG-DEF’
h.		ndap	l-i	‘pot CM.SG-DEF’
i.		góór	g-i	‘man CM.SG-DEF’
j.	Plural	xaj	y-i	‘dog CM.PL-DEF’
k.		góór	ñ-i	‘man CM.PL-DEF’

(Tamba *et al.* , 2012, tab. 17.2; adapted)

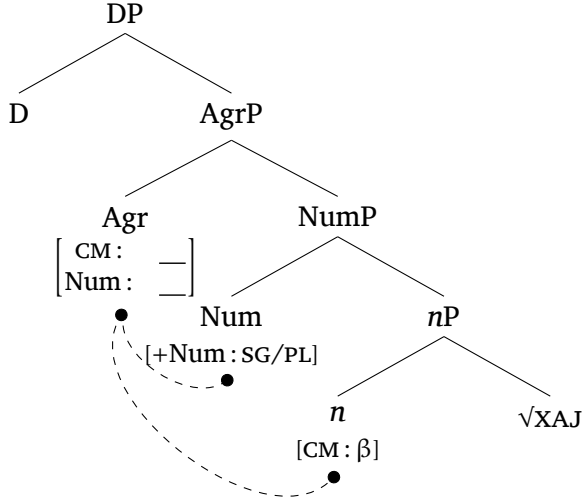
It is clear from (11) that there are more class markers for singular nouns than for plural ones. We could assume that there are as many vocabulary items as there are class markers (i.e. eleven, in (11)). While this analysis is consistent with the facts, it misses the asymmetry in the amount of singular and plural class markers. I follow Kihm (2005); Acquaviva (2009); Kramer (2015); Fuchs & Van der Wal (to appear) in assuming that gender and other root-specific morphology is encoded in the categorizer that merges with the root. As such, I propose that the Wolof class marker is a feature which is a specification of *n*, much like gender in e.g. Romance languages. Furthermore, I postulate a single head (AgrP; see more details in §4) that probes for a class marker and a number feature. It is this single head (Agr), I contend, that is exponed as the class marker morpheme in (11); this is a straightforward way to capture the fact that a single morpheme encodes both class and number information.

(12) *Structure of full nominals in Wolof*

³I thank a reviewer, who asked for clarifications on this issue.

⁴A reviewer notes that the class marker *y* may not be a bona fide plural marker, but rather an indicator of a lattice structure. The latter would be shared by both mass and plural nouns and the reviewer indicates there is evidence of this similarity in Wolof (see discussion of plural and of mass nouns in Wolof in ttz2012wolofQuatif). The relevant distinction then is not between singularity and plurality, as I assume here, but rather between atomicity and lattice structure. While I agree this is a viable avenue of research, I leave it for future work, since it suffices for the present paper that there be a distinction along the lines of singular vs. plural or an analogous distinction, as the reviewer suggests. The number interpretation of BNs in Wolof can be restated accordingly. I thank the reviewer for these remarks.

⁵Unlike what happens in Bantu languages, the class markers in Wolof do not occur in singular/plural pairs. Rather, there are several class markers for singular nouns, which are then collapsed into only two plural class markers (Babou & Loporcaro, 2016).



The Vocabulary Items that I propose for class markers (to reiterate, analyzed here as a single head that probes for a class marker feature, as well as number) are in (13). For concreteness, I represent the class marker feature with a Greek letter that corresponds to the singular class marker.⁶

(13) *Vocabulary Items for Agr*

- a. [CM: β] ↔ /b/
- b. [CM: κ] ↔ /k/
- c. [CM: μ] ↔ /m/
- d. [CM: γ] ↔ /g/
- ...
- e. [Num: PL] ↔ /y/
- f. [CM: γ; Num: PL] ↔ /ñ/

Wolof is well-known for its rich system of sentential particles, i.e., morphemes, which encode, among other things, information structure (Robert 1991; Zribi-Hertz & Diagne 2002; Torrence 2013; a.o.). Specifically, these are morphemes which are sensitive as to whether a constituent to its left is topical or focal, or if the whole sentence is new information, among other things. In (14) – and in most sentences in this paper –, it is the morpheme for neutral sentences, *na*. To the sentential particle is attached a morpheme that cross-references the φ -features of the subject, e.g. *-ñu* in (14b). This cross-referencing follows a nominative-accusative alignment: the subject of both transitive and intransitive verbs is cross-referenced.

⁶A reviewer asks what would differ in the analysis if the Vocabulary Items for the singular class markers included not only class (as I am proposing), but also the class itself (e.g. [CM: β, Num: SG]). As far as I can tell, nothing would change. Nonetheless, because class markers like *y* and *ñ* are plural-specific, [Num: PL] must, by assumption, be encoded in the Vocabulary Items for the plural class marker. The class part of these Vocabulary Items (represented here as ‘β’ for conspicuousness) is presumably the same. As such, if the Vocabulary Item for singular class markers included not only class, but also number, there would be more information than is needed to determine how to expone a particular instance of Agr.

The decision on how to write the Vocabulary Items in (13) was made on the basis of parsimony – and not empirically, as the reviewer also asks. I thank them for asking for a more explicit description of the Vocabulary Items proposed.

- (14) a. Jàngakat b-i lekk-na ceeb-u jën.
 student CM.SG-DEF eat-NA.3SG rice-LNK.SG fish
 ‘The student ate ceebu jen.’
 b. Jàngakat y-i lekk-na-ñu ceeb-u jën.
 student CM.PL-DEF eat-NA-3PL rice-LNK.SG fish
 ‘The students ate ceebu jen.’
- (15) a. A-b paket agsi-na.
 INDEF-CM.SG package arrive-NA.3SG
 ‘A package arrived.’
 b. A-y paket agsi-na-ñu.
 INDEF-CM.PL package arrive-NA-3PL
 ‘Some packages arrived.’

Additionally, while there is no case morphology in nominals, case can be argued to be reflected in the pronominal system (in a way that is reminiscent of what is found in e.g. Romance languages):

(16)

	Object clitics	Oblique pronouns	Subject markers
1SG	ma	man	(m)a
2SG	la	yaw	nga/ya
3SG	ko	moom	Ø/(m)u
1PL	ñu	ñoom	ñu
2PL	leen	yeen	ngeen/yeen
3PL	leen	ñoom	ñu

(Adapted from Zribi-Hertz & Diagne 2002, (29))

In the next section, we move on to the main focus of this paper. We will see that BNs in Wolof are narrow scope indefinites that have an exclusively singular interpretation when unmodified.

2 BNs in Wolof are singular

As mentioned above, even though Wolof has determiners, it also allows for its nominals to occur in bare form (represented in bold), that is, lacking a determiner and the class marker affixed to it. This paper is concerned with the number interpretation of such nominals.⁷

⁷Wolof nominals may also contain numerals. These nominals may also contain determiners.

- (i) a. ñett-i xale
 three-PL.AGR child
 ‘three children’
 b. ñeent-i xale
 four-PL.AGR child
 ‘four children’
 c. A-y juróom-i xale y-u njool jàng-na-ñu tééré b-i.
 INDEF-CM.PL five-PL.AGR child CM.PL-REL tall read-NA-3PL book CM.SG-DEF
 ‘Five tall children read the book.’
 [Tamba *et al.* 2012, (25/27)]

It is conceivable that the plural interpretation of *xale* ‘child’ is licensed by the presence of the plural agreement morpheme *-i* required by the numeral. The numeral *enn* ‘one’ is also used as an indefinite determiner, as can be seen in

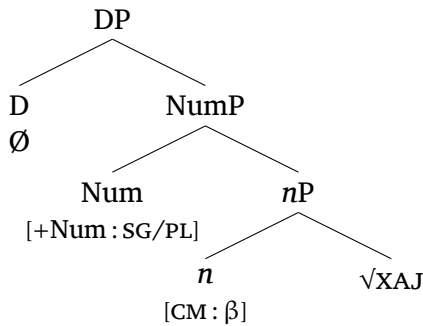
- (17) Awa defar-na oto b-i / oto y-i / a-y oto / **oto**.
 Awa fix-NA.3SG car CM.SG-DEF / car CM.PL-DEF / INDEF-CM.PL car / car
 ‘Awa fixed the car/the cars/some cars/a car.’
- (18) Xale y-i jënd-na-ñu a-b téere / **téere**.
 child CM.PL-DEF buy-NA-3PL INDEF-CM.SG book / book
 ‘The children bought a book.’

These BNs can also be used as predicates:

- (19) a. Samba a-b saasfaam la.
 Samba INDEF-CM.SG midwife COP.3SG
 ‘Samba is a nurse/midwife.’
 b. Samba **saasfaam** la.
 Samba midwife COP.3SG
 ‘Samba is a nurse/midwife.’
- (20) Jàppe-na-a Maymuna **nit** k-u baax.
 consider-NA-1SG Maymuna person CM.SG-COMP nice
 ‘I consider Maymuna a good/nice person.’ (lit.: ‘I consider Maymuna person who is nice’)

In (12), I proposed a structure for full nominals. We now turn a structure for their bare counterpart. Following Massam (2001), a.o., I assume that BNs have a truncated structure. Specifically, I propose that BNs in Wolof lack an AgrP layer, since they lack a class marker, here, to reiterate, analyzed as the exponent of Agree. NumP is retained under the assumption that this is the only locus of number interpretation (Ritter 1991, 1992; Harbour 2011; see a brief overview in Danon 2011).⁸ Finally, I also assume that BNs in Wolof contain a null DP layer.

(21) *Structure of bare nominals in Wolof*



An indirect argument for the presence of a null D in Wolof BNs is provided by the fact that, while these nominals cannot be the subject of a finite clause, this is possible if a BN is encapsulated within a coordination:

(10d) and (10e), the latter of which shows that *enn* can also head a nominal in the plural, as long as it combines with a plural class marker.

I believe it may be challenging to tease apart analyses where the plural or singular interpretation of the nominal accompanied with a numeral arises from the licensing of a number feature (as I propose here) or from the inherent interpretation of the numeral. I leave this issue for future work. I thank a reviewer for raising this issue.

⁸Further arguments for keeping a NumP in BNs are provided in §4.

- (22) a. * **Saasfaam** fàtte-na téj palanteer=am.
 nurse forget-NA.3SG close window=POSS.3SG
 Int.: ‘A nurse forgot to close his/her window.’
 b. **Xale** ak jàngalekat woy-na-ñu ci daara j-i.
 child with teacher sing-NA-3PL PREP school CM.SG-DEF
 ‘A child and a teacher sang in the school.’
 c. **Xale** ak a-b jàngalekat woy-na-ñu ci daara j-i.
 child with INDEF-CM.SG teacher sing-NA-3PL PREP school CM.SG-DEF
 ‘A child and a teacher sang in the school.’

This pattern is reminiscent of what happens in other BN languages, including bare plurals in Italian:

(23) *Italian*

- a. * In questo ufficio **marocchini** telefonano sempre.
 in this office Moroccans call.up always
 ‘In this office Moroccans always call up.’
 b. In questo ufficio **marocchini** e **brasiliani** telefonano sempre.
 in this office Moroccans and Brazilians call.up always
 ‘In this office Moroccans and Brazilians always call up.’

[Landau 2007, (10); (b): redacted, p.c.]

Landau (2007) argues that (23) can be explained if we assume that the EPP is a restriction on the phonological overtiness of the head of the phrase that occupies Spec-TP, combined with the assumption that bare plurals in languages like Italian have a null D. If this analysis is correct, the Wolof contrast in (22) can also be explained if we assume that BNs in this language project a DP with a phonologically null head.

I propose further that the D’s in full and bare nominals in Wolof make different c-selectional requirements. Full nominal D’s merge with an AgrP, while BN D’s merge directly with NumP. This postulation is grounded on the empirical fact that BNs do have a class marker, which I proposed earlier to be the exponent of Agr. This proposal will also be relevant in the analysis as to why BNs in Wolof are singular (and not number neutral) when unmodified (see §4).

Furthermore, BNs in Wolof seem to be narrow scope indefinites. In fact, this is a property shared by BNs in other languages (see references in (1)). They can be licensed in an existential construction, which displays definiteness effects.⁹ (24a) shows that a singular or plural indefinite full nominal can be used in an existential construction. This possibility contrasts with what is witnessed in (24b), where a definite full nominal cannot be used. Finally, (24c) shows that a BN can be used in the same structure where an indefinite nominal can be licensed.

- (24) a. Am-na a-b / a-y xaj ci biti.
 have-NA.3SG INDEF-CM.SG / INDEF-CM.PL dog PREP outside
 ‘There is/are a/some dog(s) outside.’

⁹For more on Wolof existential constructions and how they can be used as a diagnostic for indefiniteness, see (Tamba *et al.*, 2012, §17.10). However, there is a difference in the Wolof variants examined here and those investigated by Tamba *et al.*, in that BNs cannot occur within the aforementioned existential constructions (Tamba *et al.*, 2012, (129)), unless they are modified by a relative clause (Tamba *et al.*, 2012, fn. 31). I do not have an explanation for this contrast, since sentences like (24c) were systematically judged grammatical for the consultants whose judgment is reported in the present paper.

- b. * Am-na xaj b-i ci biti.
have-NA.3SG dog CM.SG-DEF PREP outside
Lit.: ‘There is the dog outside.’
- c. Am-na xaj ci tool b-i.
have-NA.3SG dog PREP garden CM.SG-DEF
‘There is a dog in the garden.’
(Speaker commented that this sentence cannot mean ‘There are dogs in the garden’.)

Whenever there is another operator in the same sentence, the BN has to take scope under it.¹⁰

(25) Full nominal: *again > \exists , $\checkmark\exists$ > again

- a. Mareem séy-aat-na ak a-b fecckat.
Mareem marry-ITER-NA.3SG with INDEF-CM.SG dancer
‘Mareem married a singer again.’
- b. i. # Mareem has a very specific preference and she has married several, different dancers.
ii. \checkmark Mareem married the same dancer several times (e.g. marriage, followed by divorce, followed by another marriage).

(26) BN: \checkmark again > \exists , * \exists > again

- a. Mareem séy-aat-na ak fecckat.
Mareem marry-ITER-NA.3SG with dancer
‘Mareem married a dancer again.’
- b. i. \checkmark Mareem has a very specific preference and she has married several, different dancers.
ii. # Mareem married the same dancer several times (e.g. marriage, followed by divorce, followed by another marriage).

(27) shows that an indefinite full nominal outscopes *fàtte* ‘forget’.

- (27) Samba fàtte-na téj a-b palanteer.
Samba forget-NA.3SG close INDEF-CM.SG window
‘Samba forgot to close a window.’
- i. \checkmark Samba lives in a big house, with a lot of windows. He likes to leave them open to let fresh air in. It starts raining, so he rushes to close the windows. There is a window that Samba forgot to close, though he closed all the other ones.
- ii. # Samba lives in a big house, with a lot of windows. He likes to leave them open to let fresh air in. It starts raining, but Samba does not close any window at all.

(28) is an equivalent example of the same type, though now the nominal is a BN and it scopes below *fàtte* ‘forget’.

- (28) Isaa fàtte-na jënd fowekaay.
Isaa forget-NA.3SG buy toy
‘Isaa forgot to a buy a toy.’
- a. # Isaa is going to a store and I gave him a list of toys that I want him to buy for my dogs. He succeeded in buying all toys, except for one (i.e. there is one toy that Isaa did not buy).

¹⁰In the sentences below, the # symbol is used to indicate that the sentence is not felicitous in the context given.

- b. ✓ *Isaa is going to a store and I gave him a list of toys that I want him to buy for my dogs. He ended up not buying any toy at all.*

Narrow scope is a property that BNs in other languages share (though see [Paul 2016](#), who shows that BNs in Malagasy may take wide scope), along with number neutrality (i.e. the lack of commitment to a singular or plural interpretation). However, BNs in Wolof lack the second property, since they seem to be exclusively singular. This can be demonstrated by looking at the following properties: (i) collective predicate; (ii) discourse anaphora; (iii) pronoun in sluicing context; (iv) reciprocal; (v) plural reflexive; (vi) ‘how many’ follow-up; (vii) ‘all of them’ follow-up. In the remainder of this section, we will investigate each of these properties by first looking at the behavior of full nominals. This will establish a baseline we can compare BNs with. We will see that BNs behave like their singular full nominal counterparts.

(29a) and (29b) show that the verbs *dajale* ‘gather’ and *boole* ‘put together’ require a plural object. In other words, they are collective predicates.

(29) *Dajale and boole require a plural object*

- a. Jàngalekat b-i dajale-na *a-b xale / a-y xale ci
 teacher CM.SG-DEF gather-NA.3SG *INDEF-CM.SG child / INDEF-CM.PL child PREP
 bayaal b-i.
 park CM.SG-DEF
 ‘The teacher gathered some students in the park.’
- b. Roxaya boole-na *a-b butéel / a-y butéel ci
 Roxaya put.together-NA.3SG *INDEF-CM.SG bottle / INDEF-CM.PL bottle PREP
 waañ w-i.
 kitchen CM.SG-DEF
 ‘Roxaya collected some bottles in the kitchen.’

(30a) and (30b) show that a BN cannot be the object of these collective predicates, mimicking the behavior of singular full nominals.

(30) *BN cannot be the object of dajale or boole*

- a. * Jàngalekat b-i dajale-na **xale** ci bayaal b-i.
 teacher CM.SG-DEF gather-NA.3SG child PREP park CM.SG-DEF
 Lit.: ‘The teacher gathered student in the park.’
- b. * Roxaya boole-na **butéel** ci waañ w-i.
 Roxaya put.together-NA.3SG bottle PREP kitchen CM.SG-DEF
 Lit.: ‘Roxaya collected bottle in the kitchen.’

A singular full nominal can only be the object of a collective predicate if a comitative argument (in (31), *ak ab woykat* ‘with a singer’) is added.

(31) *Singular nominal can be object of collective predicate if oblique argument is added*

- Faatu dajale-na a-b fecckat ak a-b woykat.
 Faatu gather-NA.3SG INDEF-CM.PL dancer with INDEF-CM.SG singer
 ‘Faatu gathered a dancer with a singer.’

The same effect arises when the core argument of the collective predicate is a BN (32). In other words, again, a BN displays the same behavior as its singular full nominal counterpart.

(32) *BN can be object of collective predicate if oblique argument is added*

Faatu dajale-na **fecckat** ak **woykat** / a-b woykat.
 Faatu gather-NA.3SG dancer with singer / INDEF-CM.SG singer
 ‘Faatu gathered a dancer with a singer.’

Dayal (2011, p. 155) remarks that collective predicates like *gather* or *collect* are different from collective predicates like *unite* and *compare*: the core process of the former does not have a plurality requirement (e.g. one can collect one bottle at a time), while the core process of the latter does (e.g. one cannot compare one student at a time). Collective predicates like *unite* and *compare* may thus provide a stronger case for a claim about the number interpretation of a nominal, given its more stringent restrictions. Relevantly, BNs in Wolof cannot saturate these predicates either. This holds of the predicate *tëkkale* ‘compare’.

(33) *Tëkkale requires a plural object*

- a. Jàngalekat b-i mungi tëkkale ndongo dara y-i.
 teacher CM.SG-DEF PROG.3SG compare student CM.PL-DEF
 ‘The teacher was comparing the students.’
- b. * Jàngalekat b-i mungi tëkkale ndongo dara b-i.
 teacher CM.SG-DEF PROG.3SG compare student CM.SG-DEF
 Lit.: ‘The teacher was comparing the student.’

(34) *BN cannot be the object of tëkkale*

- * Jàngalekat b-i mungi tëkkale **ndongo dara**.
 teacher CM.SG-DEF PROG.3SG compare student
 Lit.: ‘The teachers was comparing student.’

(35) makes the same point with the verb *juboole* ‘unite’.

- (35) a. Njiir b-i juboole-na liggéeykat y-i.
 boss CM.SG-DEF unite-NA.SG worker CM.PL-DEF
 ‘The boss united the workers.’
- b. * Njiir b-i juboole-na **liggéeykat**.
 boss CM.SG-DEF unite-NA.SG worker
 Lit.: ‘The boss united worker.’

The same general profile can be seen in the behavior of nominals with respect to pronouns that are used to be referred back to them. (36a) shows that a singular nominal (*ab jàngalekat* ‘a teacher’) must be referred back to with a singular pronoun – a plural pronoun cannot be used. Conversely, if the antecedent is plural (*ay jàngalekat* ‘some teachers’), only a plural pronoun is possible.¹¹

(36) *Discourse anaphora must match number of antecedent*

- a. Gis-na-a a-b jàngalekat. Maymuna bëgg-na ko / *leen.
 see-NA-1SG INDEF-CM.SG teacher Maymuna like-NA.3SG OBJ.3SG / *OBJ.3PL
 ‘I saw a teacher yesterday. Maymuna admires her/*them.’

¹¹A similar argument can be provided by a pronoun that appears in an object control-like structures, where said pronoun tracks the properties of a controller. The latter can be a BN, in which case the pronoun must be singular. The data can be found in [redacted].

- b. Gis-na-a a-y jàngalekat. Maymuna bëgg-na *ko / leen.
 see-NA-1SG INDEF-CM.PL teacher Maymuna like-NA.3SG *OBJ.3SG / OBJ.3PL
 ‘I saw some teachers yesterday. Maymuna admires *her/them.’

With this background in place, consider what happens when the antecedent is a BN. (37) shows that the pronoun that refers back to it can only be singular. Once again, this was also the behavior that a singular full nominal displayed.

(37) *BN cannot be antecedent of plural discourse anaphora*

- a. Gis-na-a jàngalekat. Maymuna bëgg-na ko.
 see-NA-1SG teacher Maymuna like-NA.3SG OBJ.3SG
 ‘I saw a teacher yesterday. Maymuna admires her.’
- b. *Gis-na-a jàngalekat. Maymuna bëgg-na leen.
 see-NA-1SG teacher Maymuna like-NA.3SG OBJ.3PL
 Lit.: ‘I saw teacher. Maymuna admires them.’

This pattern can be reproduced with interrogative pronouns, which can be used, for instance, in sluicing. In Wolof, interrogative pronouns are prefixed by a class marker, which, as mentioned above, displays number features. Identically to the discourse anaphora data above, the antecedent and the interrogative pronoun have to match in number, which is encoded in the choice of a singular or a plural class marker.

(38) *Full nominal and pronoun in sluicing must match*

- a. Jàngalekat b-i seet-na a-b ndongo dara, waaye
 teacher CM.SG-DEF visit-NA.3SG INDEF-CM.SG student but
 xa-w-ma k-an la / *y-an la.
 know-NEG-1SG CM.SG-which COP.3SG / *CM.PL-which COP.3SG
 ‘The teacher visited a student, but I do not know which one/*which ones.’
- b. Jàngalekat b-i seet-na a-y ndongo dara, waaye
 teacher CM.SG-DEF visit-NA.3SG INDEF-CM.PL student but
 xa-w-ma *k-an la / y-an la.
 know-NEG-1SG *CM.SG-which COP.3SG / CM.PL-which COP.3SG
 ‘The teacher visited some students, but I do not know which ones/*which one.’

Following the pattern so far, BNs can only be matched with a singular interrogative pronoun.

(39) *BN can only be antecedent of singular pronoun*

- Jàngalekat b-i seet-na ndongo dara, waaye xa-w-ma k-an
 teacher CM.SG-DEF visit-NA.3SG student but know-NEG-1SG CM.SG-which
 la / *y-an la.
 COP.3SG / *CM.PL-which COP.3SG
 ‘The teacher visited a student, but I do not know which one/*which ones.’

Turning now to binding, we will see that BNs cannot bind plural anaphors. (40a) shows that a plural full nominal like *ay ndongo dara* ‘some students’ can be used in a clause where a verb

(*xam* ‘know’) has a reciprocal morpheme (-*ante*) affixed to it. (40b) in turn shows that a singular antecedent like *ab ndongo dara* ‘a student’ renders the sentence ungrammatical.¹²

(40) *Reciprocal must have a plural antecedent*

- a. Jàngalekat b-i wonale-na a-y ndongo dara ñu
teacher CM.SG-DEF introduce-NA.3SG INDEF-CM.PL student 3PL
xam-ante.
know-RECIP
‘The teacher introduced some students to each other.’
- b. * Jàngalekat b-i wonale-na a-b ndongo dara mu
teacher CM.SG-DEF introduce-NA.3SG INDEF-CM.SG student 3SG
xam-ante.
know-RECIP
Lit.: ‘The teacher introduced a student to each other.’

In (41) are the BN versions of these sentences. These data show that a BN can simply not be used in a sentence with a reciprocalizer morpheme.

(41) *BN cannot be antecedent of reciprocal*

- a. * Jàngalekat b-i wonale-na **ndongo dara** mu xam-ante.
teacher CM.SG-DEF introduce-NA.3SG student 3SG know-RECIP
Lit.: ‘The teacher introduced student to each other.’
- b. * Jàngalekat b-i wonale-na **ndongo dara** ñu xam-ante.
teacher CM.SG-DEF introduce-NA.3SG student 3PL know-RECIP
Lit.: ‘The teacher introduced student to each other.’

We see the same behavior when we examine plural reflexives. (42) shows the expected behavior of singular and plural reflexives in Wolof. (42a) and (42b) show that a plural full nominal (*xale yi* ‘the children’) can be the antecedent of a plural reflexive, though not of a singular one. (42c) and (42d) show the reverse pattern with a singular full nominal antecedent (*xale bi* ‘the child’).

(42) *Plural DP can be antecedent of plural reflexive*

- a. Kadeer sang-oloo-na xale y-i seen bopp.
Kadeer wash-CAUS-NA.3SG child CM.PL-DEF POSS.3PL head
‘Kadeer made the children wash themselves.’
- b. * Kadeer sang-oloo-na xale y-i bopp=am.
Kadeer wash-CAUS-NA.3SG child CM.PL-DEF head=POSS.3SG
Lit.: ‘Kadeer made the children wash himself;herself.’
- c. Kadeer sang-oloo-na xale b-i bopp=am.
Kadeer wash-CAUS-NA.3SG child CM.SG-DEF head=POSS.3SG
‘Kadeer made the child wash himself;herself.’
- d. * Kadeer sang-oloo-na xale b-i seen bopp.
Kadeer wash-CAUS-NA.3SG child CM.SG-DEF POSS.3PL head
Lit.: ‘Kadeer made the child wash themselves.’

¹²The description of the data is intentionally vague, as I do not have an analysis of all morphemes that make up the sentence. For instance, I do not know the role played by *mu* and *ñu*, which Zribi-Hertz & Diagne (2002) argue to be a pronoun – rather than a person agreement affix. In any case, we will see in (41) that the BN counterpart of these sentences is ungrammatical irrespective of the number of the pronoun used.

In accordance with the pattern we have seen so far, (43a) shows that a BN cannot be the antecedent of a plural reflexive. It can nevertheless be the antecedent of a singular reflexive (43b). This is once again the same behavior displayed by a singular full nominal.

(43) a. *BN cannot be antecedent of plural reflexive*

* Jàngalekat b-i sang-oloo-na **ndongo dara** seen bopp.
 teacher CM.SG-DEF wash-CAUS-NA.3SG student POSS.3PL head
 Lit.: ‘The teacher made student wash themselves.’

b. *BN can be antecedent of singular reflexive*

Jàngalekat b-i sang-oloo-na **ndongo dara** bopp=am.
 teacher CM.SG-DEF wash-CAUS-NA.3SG student head=POSS.3SG
 ‘The teacher made some student wash himself;herself.’

(43b) is also relevant in evincing that BNs in Wolof are able to be antecedents, which dismisses an alternative analysis which attributes the ill-formedness of the sentences in (41) and (43a) to a potential inability for binding.

The exclusively singular interpretation of BNs in Wolof can be likewise inferred by its behavior regarding the possibility of targeting it with the question ‘how many’. (44) shows that a plural full nominal such as *ay neexal* ‘some gifts’ can be felicitously targeted by the question ‘how many’. (45) shows that this is not the case when the full nominal is singular.

(44) *Plural DP can be followed up by ‘how many’*

- A. Kadeer jot-na a-y neexal.
 Kadeer receive-NA.3SG INDEF-CM.PL gift
 ‘Kadeer received some gifts.’
- B. Ñaata neexal la Kadeer jot?
 how.many gift COP.3SG Kadeer receive
 ‘How many gifts did Kadeer receive?’

(45) *Singular DP cannot be followed up by ‘how many’*

- A. Kadeer jot-na b-enn neexal.
 Kadeer receive-NA.3SG CM.SG-one gift
 ‘Kadeer received one gift.’
- B. # Ñaata neexal la Kadeer jot?
 how.many gift COP.3SG Kadeer receive
 ‘How many gifts did Kadeer receive?’

(46) shows that this follow-up question is not felicitous either when it targets a BN. Once more, the BN behaves just like its singular full nominal counterpart.

(46) *BN cannot be followed up by ‘how many’*

- A. Kadeer jot-na **neexal**.
 Kadeer receive-NA.3SG gift
 ‘Kadeer received a gift.’
- B. # Ñaata neexal la Kadeer jot?
 how.many gift COP.3SG Kadeer receive
 ‘How many gifts did Kadeer receive?’

Finally and relatedly, BNs cannot be followed up by *all of them*.

(47) ‘All of them’ requires a plural antecedent

- a. *? Gis-na-a a-b xaj ci bayaal b-i démb. Y-ëpp
 see-NA-1SG INDEF-CM.SG dog PREP field CM.SG-DEF yesterday CM.PL-every
 sokola-na-ñu.
 brown-NA-3PL
 Lit.: ‘I saw a dog in the field yesterday. All of them were brown.’
- b. Gis-na-a a-y xaj ci bayaal b-i démb. Y-ëpp
 see-NA-1SG INDEF-CM.PL dog PREP field CM.SG-DEF yesterday CM.PL-every
 sokola-na-ñu.
 brown-NA-3PL
 ‘I saw some dogs in the field yesterday. All of them were brown.’

(48) BN cannot be followed up by ‘all of them’

- ?? Gis-na-a **xaj** ci bayaal b-i démb. Y-ëpp sokola-na-ñu.
 see-NA-1SG dog PREP field CM.SG-DEF yesterday CM.PL-every brown-NA-3PL
 Lit.: ‘I saw dog in the field yesterday. All of them were brown.’¹³

In brief, the generalization we arrive at from the data examined in this section is that BNs in Wolof are singular. These data are summarized in (49), which show in table form that BNs and singular full nominals in Wolof exhibit the same behavior.

(49)

		Full nominal		Bare nominal
		Singular	Plural	
i.	Collective predicate	*	✓	*
ii.	Discourse anaphora	SG	PL	SG
iii.	Pronoun (sluicing)	SG	PL	SG
iv.	Reciprocal	*	✓	*
v.	Plural reflexive	*	✓	*
vi.	‘How many’ follow-up	#	✓	#
vii.	‘All of them’ follow-up	#	✓	??

With this generalization in mind, let us consider the behavior of BNs in Mandarin regarding roughly the same properties. [Rullmann & You \(2006\)](#), among others, remark that BNs in this language receive a number neutral interpretation. (50) shows that Mandarin has the opposite behavior of that showcased by Wolof regarding most properties considered above.

(50) *Mandarin*

- a. Laoshi zai gongyuan-li jihe-le **xuesheng**.
 teacher at park-in gather-PERF student
 ‘The teacher gathered the students in the park.’ ✓collective predicate
 (p.c. with native speaker)

¹³(48) was judged just degraded rather than completely infelicitous. I do not have an explanation for this contrast.

- b. Zuotian wo mai le **shu**. Wo ba ta/tamen dai hui jia le.
yesterday I buy ASP book. I BA it/them bring back home ASP
'Yesterday, I bought one or more books. I brought it/them home.'

✓SG or PL discourse anaphora

(Rullmann & You, 2006)

- c. Wo rang **xuesheng** hua-le ta-men ziji.
I let student draw-PERF 3-PL SELF
'I let student draw themselves.'

✓PL reflexive

(p.c. with native speaker)

- d. A. Zuotian, wo zai xin xuexiao li yujian-le **lao tongxue**(*-men).
Yesterday I at new school in meet-PERF old classmate
'Yesterday, I met old classmate at the new school.'

- B. Ni yujian-le ji-ge lao tongxue?
You meet-PERF how.many-CL old classmate
'How many old classmates did you meet?'

✓'how many' follow-up

(p.c. with native speaker)

An exception however is the near impossibility a BN in Mandarin to license a reciprocal. I leave this divergence unaccounted for here.

- (51) Wo jieshao-le **xuesheng**^{??}(-men) gei bici.
I introduce-PERF student^{??}(-PL) to each.other
'I introduced student to each other.'
(p.c. with native speaker)

One may object that the comparison between BNs in Wolof and Mandarin is not adequate, given the differences between the two languages. For one, BNs in Mandarin can receive a definite interpretation, as this language lacks definite determiners (for a recent discussion and analysis, see Jenks 2018). At this point, we may turn to Brazilian Portuguese (BP), a language that has indefinite (and definite) determiners, but which also allows for nominals to occur in bare form, just like in Wolof. Relevantly for the comparison at hand, BNs in Brazilian Portuguese do not seem to have a definite interpretation. Nevertheless, BNs in Brazilian Portuguese are similar to those in Mandarin: both exhibit the opposite behavior regarding the properties discussed above that indicate that BNs in Wolof are exclusively singular.

(52) *Brazilian Portuguese*

- a. A Adriana juntou **criança** na quadra.
the Adriana gathered child in.the court
'Adriana gathered children in the playground.'
- b. Tem **criança** na sala. E ela está / elas estão ouvindo.
has child in.the room and she is / they are listening
'There is a child/some children in the room. And (s)he is/they are listening.'

✓collective predicate

✓SG or PL discourse anaphora

(Schmitt & Munn, 1999, (31a); glosses and translation added)

- c. A Ângela fica me recomendando **livro**, mas eu nunca lembro quais.
the Ângela keeps me recommending book but I never remember which.PL

‘Ângela keeps recommending books for me, but I never remember which ones.’

✓*PL interrogative pronoun*

- d. **Criança** aqui costuma se juntar na rua e desafiar uma a outra
 child here is.used.to SELF gather.INF in.the street and challenge.INF each.other
 em várias competições bobas.
 in several competitions silly
 ‘Children here are used to gathering in the street and challenging each other in several silly competitions.’

✓*reciprocal*

- e. A Soraia viu **criança** se lavando no riacho.
 the Soraia saw child SELF washing in.the stream
 ‘Soraia saw a child/some children washing herself/themselves in the stream.’ *PL reflexive*
- f. A. A Renata foi comprar **caneca** ontem.
 the Renata went buy.INF mug yesterday
 ‘Renata bought one or more mugs yesterday.’
- B. Quantas (canecas ela comprou)?
 how.many (mugs she bought)
 ‘How many (mugs did she buy)?’

In view of the data summarized in (49) and its comparison with BNs in two other languages, we may ask the following question:

- (53) How can we account for the exclusively singular interpretation (and not number neutral) of BNs in Wolof?

I will propose in §4 that the singular interpretation of BNs in Wolof can be modeled as a consequence of a derivation that can only converge if NumP is singular. However, before we get to an answer to (53), we must look at additional data to arrive at a complete picture of the number interpretation of BNs in Wolof. In the data that we have investigated so far, the BN is unmodified. It turns out that, when the BN combines with modifiers, it can either retain a singular interpretation (as that seen in the present section) or have a plural construal. We turn to modifier data in the next section.

3 Adding a modifier: relative clauses vs. plain modifiers

In this section, we return to the number interpretation diagnostics employed earlier, but this time focusing on BNs accompanied by relative clauses and adjectives. The generalization we arrived at in the previous section is that BNs in Wolof are singular and not number neutral, as BNs in other languages. However, this generalization only holds only if the BN is unmodified. In this section, we add relative clauses and adjectives to the BN. The former differ from the latter in that only relative clauses contain a class marker, which is prefixed to the relative complementizer. Importantly, as we saw earlier, class markers in Wolof encode number properties. Adjectives, on the other hand, do not contain a class marker. In fact, they cannot expone number features at all, hence why I call them ‘plain modifiers’. The broader generalization that we will arrive at is that, BNs in Wolof are exclusively singular, unless they are modified by a nominal element that is able to expone number morphology. In that case, it can have a plural interpretation.

3.1 Relative clause

Relative clauses in Wolof contain a class marker prefixed to the relative complementizer *u*. The class marker cross-references the class and number of the head of the relative (*palanteer* ‘window’ in (54)).

- (54) a. Samba tej-na palanteer [b-u tilim] b-i.
 Samba close-NA.3SG window [CM.SG-COMP dirty] CM.SG-DEF
 ‘Samba closed the window that is dirty.’
 b. Samba tej-na palanteer [y-u tilim] y-i.
 Samba close-NA.3SG window [CM.PL-COMP dirty] CM.PL-DEF
 ‘Samba closed the windows that are dirty.’

Relative clauses are a widely utilized type of nominal modifier. Predicates like *tilim* ‘dirty’ occur inside relative clauses in the same position as verbs do – examples of the latter can be found below. For more on nominal modification on Wolof, see [McLaughlin \(2004\)](#). The only type of nominal modifier that does not have the syntax of a relative clause found in my data set are plain modifiers, discussed below.

According to [Torrence \(2013\)](#), a.o., the complementizer in relative clauses in Wolof can encode the meaning otherwise encoded by determiners, for instance, definiteness and proximity. While this type of relative clause indeed occurs in my consultants’ dialects, the relative clauses I investigate in this paper uniformly contain the complementizer *-u*. This complementizer does not encode definiteness or proximity, as it can occur withing definite (54), indefinite (55d), and demonstrative (55f) DPs, irrespective of proximity. The choice is motivated by the fact that *-u* is the complementizer that occurs with BNs.

- (55) a. Awa defar-na oto [b-u Samba jënd] b-i.
 Awa fix-NA.3SG car [CM.SG-COMP Samba buy] CM.SG-DEF
 ‘Awa fixed the car that Samba bought.’
 b. Awa defar-na oto [y-u Samba jënd] y-i.
 Awa fix-NA.3SG car [CM.PL-COMP Samba buy] CM.PL-DEF
 ‘Awa fixed the cars that Samba bought.’
 c. Samba xam-na ndongo dara [b-u njool] b-i.
 Samba know-NA.3SG student [CM.SG-COMP tall] CM.SG-DEF
 ‘Samba knows the student who is tall.’
 d. Roxaya xam-na a-b jàngalekat [b-u Maymuna bëgg].
 Roxaya know-NA.3SG INDEF-CM.SG teacher [CM.SG-COMP Maymuna like]
 ‘Roxaya knows a teacher that Maymuna admires.’
 e. Dimbala-na-a a-y xale [y-u j’ang téere b-i].
 help-NA-1SG INDEF-CM.PL child [CM.PL-COMP read book CM.SG-DEF]
 ‘I helped some children who read the book.’
 f. Muus b-i daxee-na xaj [b-u sokola] b-ee.
 cat CM.SG-DEF chase-NA.3SG dog [CM.SG-COMP brown] CM.SG-DEM.DIST
 ‘The cat chased that brown dog (over there).’

Assuming a raising analysis of relative clauses (see overview in [Bhatt 2002](#), a.o.) for Wolof, [Torrence \(2013\)](#) analyzes the occurrence of the class marker prefixed to the relative complementizer as an instance of complementizer agreement. More precisely, in a relative clause like that in

(55d), *jàngalekat* ‘teacher’ is base-generated inside the relative clause CP. That class markers are the exponent of Agree is further suggested by the fact that more than one class marker can occur in the same nominal (cf. [Kramer’s 2009](#) analysis of multiple determiners in Amharic in terms of Agree). Examples of multiple occurrences of class markers in the same nominal can be found in (54) and (55) above, where the relative complementizer agrees in class with the head of the relative, and so does the determiner outside of it. Moreover, notice that the class markers in the determiner and in the relative complementizer must match (56). This is a property that can be attributed to multiple Agreement with the same goal.

- (56) a. Samba tej-na palanteer [b-u tilim] b-i. / *y-i
 Samba close-NA.3SG window [CM.SG-COMP dirty] CM.SG-DEF / *CM.PL-DEF
 ‘Samba closed the window that is dirty.’
 b. Samba tej-na palanteer [y-u tilim] y-i / *b-i.
 Samba close-NA.3SG window [CM.PL-COMP dirty] CM.PL-DEF / *CM.SG-DEF
 ‘Samba closed the windows that are dirty.’

[Torrence’s](#) arguments for a raising analysis are based on island and reconstruction facts. Here, I reproduce a Wolof-specific argument. I refer the interested reader to [Torrence \(2013\)](#) for additional arguments. The author shows that the applicative suffix *-el* is obligatory when an argument otherwise preceded by the preposition *ak* ‘with’ (57a) is \bar{A} -moved (57b/57c). [Torrence](#) shows additionally that pied-piping or stranding the preposition *ak* lead to ungrammaticality.

- (57) a. Jàngalekat y-i daje-na-ñu *(ak) Isaa.
 teacher CM.PL-DEF meet-NA-3PL *(with) Isaa
 ‘The teachers met with Isaa.’
 b. Isaa la jàngalekat y-i daje-*(el).
 Isaa xpl-cop teacher CM.PL-DEF meet-appl
 ‘It’s Isaa that the teachers met with.’ cleft
 c. K-an la jàngalekat y-i daje-*(el)?
 clan xpl-cop teacher CM.PL-DEF.pl meet-appl
 ‘Who did the teachers meet with?’ Wh-question
 [[Torrence 2013](#), p. 112]

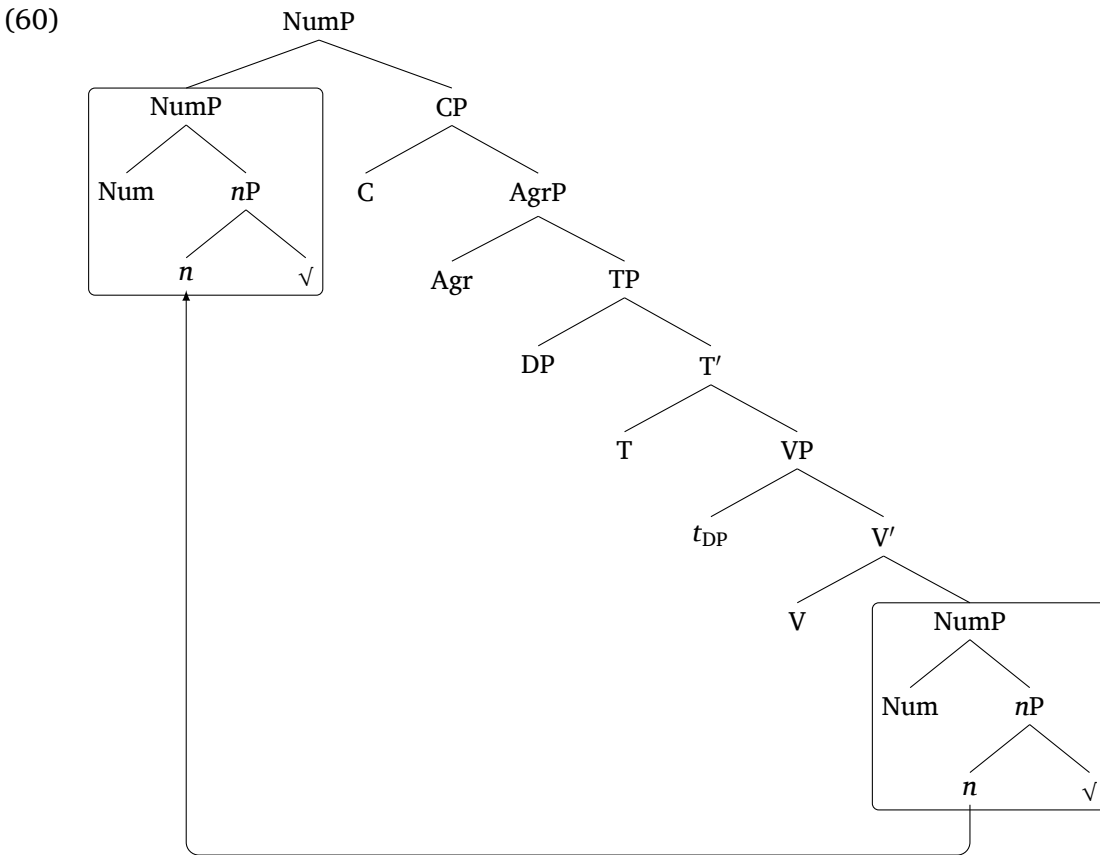
The occurrence of movement is a prerequisite for the occurrence of the applicative suffix *-el*. If the object remains in situ, it is prohibited, regardless of the presence of *ak*:

- (58) * Jàngalekat yi daje-el-na-ñu (ak) Isaa.
 teacher CM.PL-DEF meet-APPL-NA-3PL (with) Isaa
 Int.: ‘The teachers met with Isaa.’

With this background in place, consider what happens in relative clauses. In (59), we see that the applicative suffix *-al* is also obligatory inside the relative clause. Given the baseline data, [Torrence](#) analyzes (59) as the result of raising of the nominal *góór* ‘man’ from within the relative CP, where it triggers the occurrence of the applicative suffix.

- (59) góór [_{RC} g-i Ayda wax*(-al)]
 man [CM.SG-REL.DEF Ayda speak(*-APPL)]
 ‘the man that Ayda talked to’
 [[Torrence 2013](#), p. 113]

As just mentioned, I follow Torrence in assuming that the class marker that appears affixed to the relative complementizer is the result of Agree with the head of the relative clause prior to raising. In compliance with the analysis proposed here, the class marker is represented as an Agr head that probes for both number and class. The Agr below CP probes down to value its [–NUMBER] and [–CM] features. It encounters the matching features in the head of the relative, the object in the diagram in (60).¹⁴ I assume that the head of the relative, prior to movement, projects at least an *n*P and a NumP, since their heads contain the number and class features that eventually appear in the relative complementizer (as a consequence of Agree with Agr, which is then affixed to the complementizer). NumP then raises and remerges with the CP and projects. Subsequently, the complex NumP represented in (60) merges with another AgrP and a DP, the former of which also Agrees with the head of the relative (now raised outside the CP) and whose head is exponed as a class marker affixed to the determiner.¹⁵



Against this backdrop, consider what happens to BNs. BNs can be modified by a relative clause with either a singular or a with plural class marker.

- (61) a. Samba tej-na **palanteer** [b-u tilim].
 Samba close-NA.3SG window [CM.SG-COMP dirty]
 ‘Samba closed some window that is dirty.’

¹⁴For concreteness, one can assume that the relative C bears an \bar{A} -feature that probes in unison (Coon & Bale, 2014) with the features in Agr. The result is that any intervening DPs that could in principle be Agreed with by Agr will be skipped over if they do not have an \bar{A} -feature. This is a technical issue that the present analysis faces, but which is absent in Torrence (2013), where the only relevant head is C.

¹⁵(60) is a simplified diagram, where *v*P and \bar{A} -movement of the BN object to the phase edge are omitted for visual simplicity.

- b. Samba tej-na **palanteer** [y-u tilim].
 Samba close-NA.3SG window [CM.PL-COMP dirty]
 ‘Samba closed some windows that are dirty.’

If the BN is modified by a relative clause with plural morphology, it receives an indefinite interpretation, as can be inferred by the fact that it can be licensed in an existential construction (cf. unmodified BN in (24c)):

- (62) Am-na **xaj** [b-u sokola] ci tool b-i.
 have-NA.3SG dog [CM.SG-COMP brown] PREP garden CL.SG-DEF
 ‘There is a brown dog in the garden.’

By the same token, recall that BNs are narrow scope indefinites (§2). This characterization persists if the BN is modified by a relative clause. This claim is motivated by the comparison between a full indefinite modified a relative clause and its BN counterpart. In (63), where the indefinite determiner *ab* is used, the indefinite modified by a relative clause can scope above or below the intensional predicate *bëgg* ‘want’.¹⁶

- (63) a. Sama doom bëgg-na jàng a-b téere [b-u Mariama Ba
 POSS.1SG child want-NA.3SG read INDEF-CM.SG book [CM.SG-COMP Mariama Ba
 bind], *Une si longue lettre* la tuddu.
 write] *Une si longue lettre* COP-3SG name
 ‘My child wants to read a book that Mariama Ba wrote. Its title is *So long a letter*.’
∃ > want
- b. Sama doom bëgg-na jàng a-b téere [b-u Mariama Ba
 POSS.1SG child want-NA.3SG read INDEF-CM.SG book [CM.SG-COMP Mariama Ba
 bind], waaye bu mu am baax-na.
 write] but BU 3SG have good-NA.3SG
 ‘My child wants to read a book that Mariama Ba wrote, but it does not matter which.’
want > ∃

Conversely, in (64), what the relative clause modifies is a BN. In that case, only a narrow scope reading is available (64b).

- (64) a. Roxaya bëgg-na gisee **woykat** [b-u dëkk Senegal]. # Wally Seck
 Roxaya want-NA.3SG meet singer [CM.SG-COMP from Senegal] # Wally Seck
 la tuddu.
 COP.3SG name
 ‘Roxaya wants to meet a singer who is from Senegal. # His name is Wally Seck.’

∃ > want

¹⁶A reviewer correctly notes that, while the full nominal indefinite in (63) can have both a wide and narrow scope indefinite reading, that in (25/26), etc only have a wide scope construal. I do not have a satisfactory explanation for this fact. Notice that, in (63), I employed an explicit continuation to pick out a particular reading, instead of setting up the sentences in a particular context. It is possible that sentences like (25/26) are also ambiguous, but they have a preferred reading – the availability of BNs in Wolof, which seem to only have a narrow scope interpretation, could contribute to a preferred wide scope for full nominals. In other words, the readings displayed here could have been an unfortunate consequence of the design of the elicitation. A more detailed study of the semantics of indefinites in Wolof would be in order. For a general study of quantifiers in Wolof, see Tamba *et al.* (2012).

- b. Mary bëgg-na gisee **woykat** [b-u dëkk Senegal], waaye bu mu
 Mary want-NA.3SG meet singer [CM.SG-COMP from Senegal] but BU 3SG
 am baax-na.
 meet good-NA.3SG

‘Mary wants to meet a singer who is from Senegal, and any will be good.’

want > ∃

Something along these lines can also be said of the comparison between BNs and full indefinites headed by *benn* ‘one’. In (65), the BN modified by a relative clause cannot scope above the intensional predicate *seet* ‘look for’. In (66a), the indefinite determiner *benn* is used and now a wide scope interpretation is available. (66b) shows that a narrow scope reading is also available for *benn*. Regrettably, the BN counterpart of (66b) is missing, due to an oversight on my part.

- (65) Jàngalekat b-i mungi seet **ndongo dara** [b-u njool]. # Xadi
 teacher CM.SG-DEF PROG.3SG look.for student [CM.SG-COMP tall] # Xadi
 la tuddu.
 COP.3SG name

‘The teacher is looking for a tall student. # Her name is Xadi.’

- (66) a. Jàngalekat b-i mungi seet b-enn ndongo dara [b-u
 teacher CM.SG-DEF PROG.3SG look.for CM.SG-one student [CM.SG-COMP
 njool]. Xadi la tuddu.
 tall] Xadi COP.3SG name

‘The teacher is looking for a tall student. Her name is Xadi.’

- b. Jàngalekat b-i mungi seet b-enn ndongo dara [b-u
 teacher CM.SG-DEF PROG.3SG look.for CM.SG-one student [CM.SG-COMP
 njool], waaye bu mu am baax-na.
 tall] but BU 3SG have good-NA.3SG

‘The teacher is looking for a tall student and any will be good.’

(67) and (68) are more examples to the same effect.

- (67) a. Roxaya seet-na b-enn xaj [b-u sokola]. Kumba la
 Roxaya look.for-NA.3SG CM.SG-one dog [CM.SG-COMP brown] Kumba COP.3SG
 tuddu.
 name

‘Roxaya looked for a dog who is brown. Kumba is his name.’

- b. Roxaya seet-na **xaj** [b-u sokola]. # Kumba la tuddu.
 Roxaya look.for-NA.3SG dog [CM.SG-COMP brown] # Kumba COP.3SG name

‘Roxaya looked for a dog who is brown. Kumba is his name.’

- (68) a. Roxaya mingi wut b-enn xaj [b-u sokola], waaye bu mu
 Roxaya PROG.3SG look.for CM.SG-one dog [CM.SG-COMP brown] but BU 3SG
 am baax-na.

have good-NA.3SG

‘Roxaya is looking for a dog who is brown, but she does not care which (all is good/anything goes).’

- b. Roxaya mingi wut xaj [b-u sokola], waaye bu mu am
 Roxaya PROG.3SG look.for dog [CM.SG-COMP brown] but BU 3SG have
 baax-na.
 good-NA.3SG
 ‘Roxaya is looking for a dog who is brown, but she does not care which (all is good/anything goes).’

Having examined the scope properties of BNs modified by relative clauses, we can turn to their number interpretation, the focus of this section. Because Wolof relative clauses contain a class marker, which encodes number properties, we may wonder then if BNs modified by a plural relative clause may behave like plural full nominals. In this section, we will go back to the properties investigated above and conclude that the answer to this question is positive.

First, the previous section showed that a BN cannot be the object of a collective predicate like *dajale* ‘gather’. Adding a singular relative clause (i.e. a relative with a singular class marker like *b*) does not change this behavior (69a). On the other hand, if the relative clause has a plural class marker affixed to the complementizer (69b), a BN can now saturate a collective predicate.

(69) *BN modified by plural relative clause can be object of collective predicate*

- a. * Jàngalekat b-i dajale-na xale [b-u Samba xam] ci
 teacher CM.SG-DEF gather-NA.3SG child [CM.SG-COMP Samba know] PREP
 bayaal b-i.
 park CM.SG-DEF
 Lit.: ‘The teacher gathered child who Samba knows in the park.’
- b. Jàngalekat b-i dajale-na xale [y-u Samba xam] ci
 teacher CM.SG-DEF gather-NA.3SG child [CM.PL-COMP Samba know] PREP
 bayaal b-i.
 park CM.SG-DEF
 ‘The teacher gathered some children who Samba knows in the park.’

Second, a singular relative clause does not change the singular behavior displayed by an unmodified BN regarding discourse anaphora: in both cases, the pronoun used to refer back to the nominal is singular (70a). Conversely, if the relative clause is plural (70b), discourse anaphora must now be plural.

(70) *BN modified by plural relative clause can be antecedent of plural discourse anaphora*

- a. Gis-na-a jàngalekat [b-u Roxaya xam]. Maymuna bëgg-na
 see-NA-1SG teacher [CM.SG-COMP Roxaya know] Maymuna like-NA.3SG
 ko / *leen.
 OBJ.3SG / *OBJ.3PL
 ‘I saw a teacher who Roxaya knows. Maymuna admires her.’
- b. Gis-na-a jàngalekat [y-u Roxaya xam]. Maymuna bëgg-na
 see-NA-1SG teacher [CM.PL-COMP Roxaya know] Maymuna like-NA.3SG
 *ko / leen.
 *OBJ.3SG / OBJ.3PL
 ‘I saw some teachers who Roxaya knows. Maymuna admires them.’

The same pattern can be seen in the sluicing sentences in (71), where the interrogative pronoun tracks the number of the BN depending on whether it is modified by a singular or a plural relative clause.

(71) *BN modified by plural relative clause can be antecedent of plural interrogative pronoun*

- a. Jàngalekat b-i seet-na **bindakat** [b-u Maymuna bëgg],
 teacher CM.SG-DEF visit-NA.3SG writer [CM.SG-COMP Maymuna like]
 waaye xa-w-ma k-an la / *y-an la.
 but know-NEG-1SG CM.SG-which COP.3SG / *CM.PL-which COP.3SG
 ‘The teacher visited a writer who Maymuna likes, but I do not know which one.’
- b. Jàngalekat b-i seet-na **bindakat** [y-u Maymuna bëgg],
 teacher CM.SG-DEF visit-NA.3SG writer [CM.PL-COMP Maymuna like]
 waaye xa-w-ma *k-an la / y-an la.
 but know-NEG-1SG *CM.SG-which COP.3SG / CM.PL-which COP.3SG
 ‘The teacher visited some writers who Maymuna likes, but I do not know which ones.’

Fourth, while a singular relative clause does not render a BN an appropriate binder for a reciprocal (72a), its plural counterpart does (72b).

(72) *BN modified by plural relative clause can be antecedent of reciprocal*

- a. * Jàngalekat b-i wonale-na **ndongo dara** [b-u Mareem
 teacher CM.SG-DEF introduce-NA.3SG student [CM.SG-COMP Mareem
 xam] ñu xam-ante.
 know] 3PL know-RECIP
 Lit.: ‘The teacher introduced student that Mareem knows to each other.’
- b. Jàngalekat b-i wonale-na **ndongo dara** [y-u Mareem
 teacher CM.SG-DEF introduce-NA.3SG student [CM.PL-COMP Mareem
 xam] ñu xam-ante.
 know] 3PL know-RECIP
 ‘The teacher introduced some students that Mareem knows to each other.’

Likewise, a BN modified by a plural relative clause is now an apt antecedent for a plural reflexive:

(73) *BN modified by plural relative clause can be antecedent of plural reflexive*

- a. * Jàngalekat b-i sang-oloo-na **ndongo dara** [b-u njool]
 teacher CM.SG-DEF wash-CAUS-NA.3SG student [CM.SG-COMP tall]
 seen bopp.
 POSS.3PL head
 Lit.: ‘The teacher made student who is tall wash themselves.’
- b. Jàngalekat b-i sang-oloo-na **ndongo dara** [y-u njool]
 teacher CM.SG-DEF wash-CAUS-NA.3SG student [CM.PL-COMP tall]
 seen bopp.
 POSS.3PL head
 ‘The teacher made some tall students wash themselves.’

The same conditions allow for a BN to be felicitously targeted by the question ‘how many’:

(74) *BN modified by relative clause targeted by ‘how many’*

- A. Mareem jàng-na **téere** [y-u Mariama Ba bind].
 Mareem read-NA.3SG book [CM.PL-COMP Mariama Ba write]
 ‘Mareem read some books that Mariama Ba wrote.’

- B. Ñaata téere [y-u Mariama Ba bind] la Mareem jàng?
 how.many book [CM.PL-COMP Mariama Ba write] COP.3SG Mareem read
 ‘How many books that Mariama Ba wrote did Mareem read?’

Finally, a BN modified by a singular relative clause cannot be followed-up with *all of them*.

- (75) a. Jënd-na-a téere [b-u Mariama Ba bind-oon daal]. Jàng-na-a
 buy-NA-1SG book [CM.SG-COMP Mariama Ba write-PST last.year] read-NA-1SG
 y-ëpp.
 all
 i. ‘I bought a book that Mariama Ba wrote last year. I read all of it yesterday.’
 ii. # ‘I bought a book that Mariama Ba wrote last year. I read all of them yesterday.’
- b. Jënd-na-a téere [y-u Mariama Ba bind-oon daal]. Jàng-na-a
 buy-NA-1SG book [CM.PL-COMP Mariama Ba write-PST last.year] read-NA-1SG
 y-ëpp.
 CM.PL-every
 i. # ‘I bought some books that Mariama Ba wrote last year. I read all of it yesterday.’
 ii. ‘I bought some books that Mariama Ba wrote last year. I read all of them
 yesterday.’
- c. Jënd-na-a téere [y-u Mariama Ba bind]. Jàng-na-a y-ëpp démb.
 buy-NA-1SG book [CM.PL Mariama Ba write] read-NA-1SG all yesterday.
 ‘I bought some books that Mariama Ba wrote. I read all of them yesterday.’
- (76) a. # Gis-na-a xaj [b-u muus] ci bayaal b-i démb.
 see-NA-1SG dog [CM.SG-COMP intelligent] PREP field CM.SG-DEF yesterday
 Y-ëpp sokola la-ñu.
 CM.PL-every brown COP-3PL
 Lit.: ‘I saw dog that is intelligent in the field yesterday. All of them were brown.’
- b. Gis-na-a xaj [y-u muus] ci bayaal b-i démb.
 see-NA-1SG dog [CM.PL-COMP intelligent] PREP field CM.SG-DEF yesterday
 Y-ëpp sokola la-ñu.
 CM.PL-every brown COP-3PL
 ‘I saw some intelligent dogs in the field yesterday. All of them were brown.’

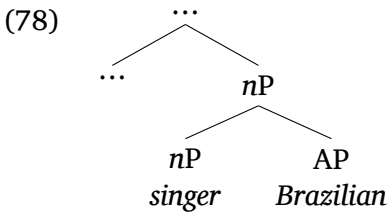
In §2, we had concluded that BNs in Wolof behave as if they were singular. The data examined in this section, however, lead us to conclude that this generalization has to be relativized to unmodified BNs only, since BNs modified by a plural relative clause behave as if they were plural. In the next section we will add to this data and see that nominal modifiers that do not have a plural morpheme like a relative clause do not have this “pluralizing” effect on the interpretation of BNs (i.e. they will retain an exclusively singular interpretation).

3.2 Plain (number-less) nominal modifier

In Wolof, nominal modifiers are usually relative clauses (see, for instance, *tall* in (73b), among many other examples). Nonetheless, expressions for nationality occur without the syntax of a relative clause. For convenience, I dub these expressions ‘plain modifiers’.

- (77) a. Mareem dajale-na a-y woykat brezilien.
 Mareem gather-NA.3SG INDEF-CM.PL singer Brazilian
 ‘Mareem gathered some Brazilian singers.’
 b. Samba bëgg-na tew/ataaya angale.
 Samba like-NA.3SG tea/tea English
 ‘Samba likes English tea.’

I assume that plain modifiers are APs adjoined to the nominal they modify:



This analysis is suggested by the fact that plain modifiers have to be adjacent to the noun they modify: they cannot merge outside a relative clause.

- (79) a. Gis-na-a **ndongo dara** brezilien [RC b-u Samba xam].
 see-NA-1SG student Brazilian [CM.SG-COMP Samba know]
 ‘I saw a Brazilian student who Samba knows.’
 b. * Gis-na-a **ndongo dara** [RC b-u Samba xam] brezilien.
 see-NA-1SG student [CM.SG-COMP Samba know] Brazilian
 Int.: ‘I saw a Brazilian student who Samba knows.’

Unlike what happens with plural relative clauses, plain modifiers do not have a “pluralizing” effect in the number interpretation of BN. A BN combined with a plain modifier still cannot be the object of a collective predicate (80), it must be referred back to with singular discourse anaphora (81) and a singular interrogative pronoun (82), it cannot be the antecedent of a reciprocal (83) or of a plural reflexive (84), and, finally, it cannot be followed up with ‘all of them’ (85). (Regrettably, the plain modifier counterpart of the ‘how many’ follow-up diagnostic is missing.)

(80) *BN modified by plain modifier cannot saturate collective predicate*

- a. * Roxaya dajale-na **fecckat** brezilien.
 Roxaya gather-NA.3SG dancer Brazilian
 Lit.: ‘Roxaya gathered Brazilian dancer.’
 b. * Jàngalekat b-i dajale-na **ndongo dara** angale ci bayaal
 teacher CM.SG-DEF gather-NA.3SG student English PREP park
 b-i.
 CM.SG-DEF
 Lit.: ‘The teacher gathered English student in the park.’

(81) *BN modified by plain modifier is referred back to with singular pronoun*

- Gis na-a **woykat** brezilien. Maymuna bëgg na ko / *leen.
 see NA-1SG singer Brazilian Maymuna like NA.3SG OBJ.3SG / *OBJ.3PL
 ‘I saw a Brazilian singer. Maymuna admires her/*them.’

(82) *BN modified by plain modifier is referred back to with singular interrogative pronoun*

Jàngalekat b-i gis na **ndongo dara** brezilien, waaye xa-w-ma
 teacher CM.SG-DEF see NA.3SG student Brazilian but know-NEG-1SG
 ?k-an la / *y-an la.
 ?CM.SG-which COP.3SG / *CM.PL-which COP.3SG
 ‘The teacher saw a student, but I do not know which.’

(83) *BN modified by plain modifier cannot be antecedent of reciprocal*

* Jàngalekat b-i desain-ante-loo-na **ndongo dara** brezilien.
 teacher CM.SG-DEF draw-RECIP-CAUS-NA.3SG student Brazilian
 Lit.: ‘The teacher made student draw each other.’

(84) *BN modified by plain modifier cannot be antecedent of plural reflexive*

?? Jàngalekat b-i nataal-oo-na **ndongo dara** angale seen bopp.
 teacher CM.SG-DEF draw-CAUS-NA.3SG student English POSS.3PL head
 Lit.: ‘The teacher made English student draw themselves.’

(85) *BN modified by plain modifier cannot be followed up with ‘all of them’*

?? Jënd-na-a **téere** angale démb. Y-ëpp baax-na-ñu.
 buy-NA-1SG book English yesterday CM.PL-every nice-NA-3PL
 Lit.: ‘I bought English book yesterday. They are all nice.’

The data above suggest that there is a contrast between relative clauses and plain modifiers. The former have number morphology, why the latter do not. A further property correlated with the presence or absence of a class marker is the number interpretation of the BN merged with these modifiers. A BN modified by a plural relative clause can receive a plural interpretation, while a BN combined with a plain modifier retains its exclusively singular interpretation.

In view of this contrast, in addition to (53), repeated below as (86i), we may also ask the question (86ii):

- (86) i. How can we account for the exclusively singular interpretation (and not number neutral) interpretation of BNs in Wolof?
- ii. Why does a BN without any plural morphology behave as if it were singular, while a BN merged that does contain plural morphology behaves as if it were plural?

The contrast between singular relative clauses in e.g. (69a) and plain modifiers (80a), on the one hand, and plural relative clauses in (69b), on the other, suggests that what is relevant is the occurrence of some morphology that expones a plural feature. Further support for this generalization is furnished by the contrast between two types of possessive constructions, which we turn to in the next section.

3.3 Number interpretation in two types of possessive nominals

In Wolof, there are at least two types of possessive nominals. In (87a), the possessive determiner *sama* ‘my’ is used. It precedes the possessum *xaj* ‘dog’. A definite determiner *bi* ‘the’ can be part of the same nominal. In (87b), the linker suffix *-u* is used. It is affixed to the possessum *muus* ‘cat’, which precedes the possessor *Mareem*.

(87) a. *Possessive determiner*

Gis-na-a **sama** **xaj b-i** ci baayal b-i.
 see-NA-1SG POSS.1SG dog CM.SG-DEF PREP park CM.SG-DEF
 ‘I saw my dog in the garden.’

b. *Linker suffix*

Toogakat b-i gis-na **a-y** **muus-u Mareem** (...).
 cook CM.SG-DEF see-NA.3SG INDEF.CM.PL cat-LNK Mareem
 ‘The cook saw some cats of Mareem’s.’

As we will see below, these constructions differ in whether or not they contain some number morphology. When a BN is used in these possessive constructions, its behavior resembles that of plural relative clauses and plain modifiers, depending on whether or not the possessive construction in question contains number morphology.

Starting with possessive determiners, the possessum can either be a full nominal (88) or a BN (89). Furthermore, the morphology affixed to the possessive determiner is sensitive to the number properties of the possessum that linearly follows it. In (89), *sama* is a 1st person possessive determiner that is linearly followed by a possessum. The possessive determiner is sensitive to the number of the possessum. In (89a) and (89b), the form of the possessive determiner remains the same (*sama* ‘my’) and so does the possessum *nit* ‘person’. However, a plural interpretation for the possessum arises in (89b), where there is the addition of the affix -y.

(88) sama jigéen y-i
 POSS.1SG woman CM.PL-DEF
 ‘the female friends of mine’ (lit.: ‘my women’)

(89) a. sama **nit**
 POSS.1SG person
 ‘my friend’ (lit.: ‘my person’)
 b. sama-y **nit**
 POSS.1SG-PL person
 ‘my friends’ (lit.: ‘my people’)

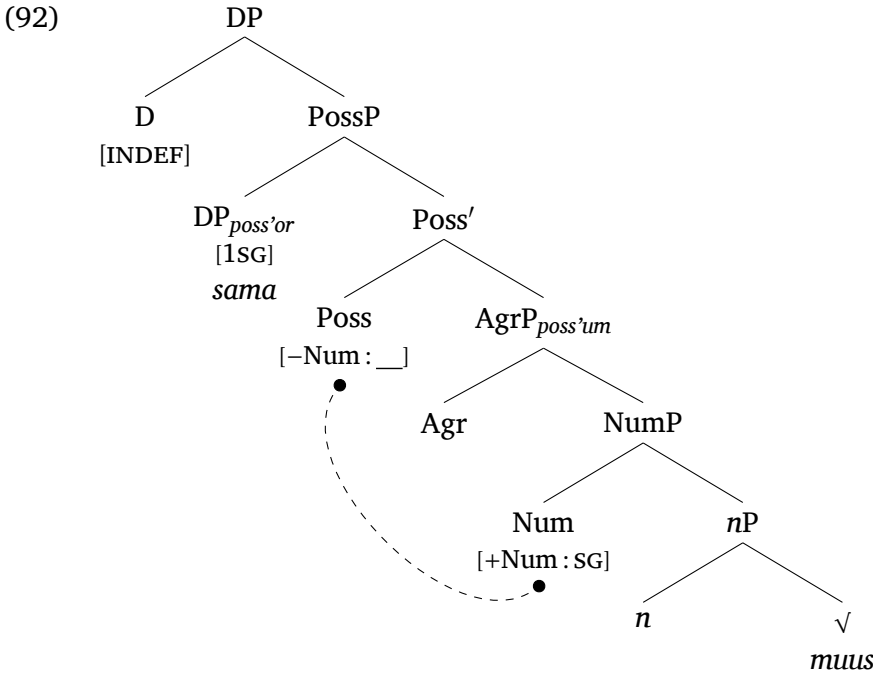
The possessive determiners in Wolof are listed below:

(90)	Possessor	Singular possessum	Translation	Plural possessum	Translation
	1SG	sama xarit	‘my friend’	sama-y xarit	‘my friends’
	2SG	sa xarit	‘your friend’	sa-y xarit	‘your friends’
	3SG	xarit=am	‘his/her friend’	ay xarit=am	‘his/her friends’
	1PL	suñu xarit	‘our friend’	suñu-y xarit	‘our friends’
	2PL	seen xarit	‘your friend’	seen-i xarit	‘your friends’
	3PL	seen xarit	‘their friend’	seen-i xarit	‘their friends’

Additional data illustrating the behavior of the possessive determiner are below. (91a), (91b), and (91c) demonstrate that the number of the definite determiner (*bi*) and that of the possessive determiner must match. (91d) shows that the plural class marker for *nit* ‘person’ can be *y* or *ñ*. (91e) shows that the number suffix in the possessive determiner remains *y* nonetheless, suggesting that the class marker *y* and the possessive determiner *y* are different morphemes, albeit homophonous ones.

- (91) a. Gis-na-a sama xaj b-i ci baayal b-i.
 see-NA-1SG POSS.1SG dog CM.SG-DEF PREP park CM.SG-DEF
 ‘I saw my dog in the garden.’
- b. * Gis-na-a sama-y xaj b-i ci baayal b-i.
 see-NA-1SG POSS.1SG-PL dog CM.SG-DEF PREP park CM.SG-DEF
 Int.: ‘I saw the.SG dog of mine.PL in the garden.’
- c. Gis-na-a sama-y xaj y-i ci baayal b-i.
 see-NA-1SG POSS.1SG-PL dog CM.PL-DEF PREP park CM.SG-DEF
 ‘I saw my dogs in the garden.’
- d. Gis-na-a nit y-i / nit ñ-i ci Boston.
 see-NA-1SG person CM.PL-DEF / person CM.PL-DEF PREP Boston
 ‘I saw the people in Boston.’
- e. Gis-na-a sama-y nit y-i / ñ-i ci Boston démb.
 see-NA-1SG POSS.1SG-PL person CM.PL-DEF / CM.PL-DEF PREP Boston yesterday
 ‘I met the people in Boston yesterday.’

I assume that this type of possessive nominal has the structure in (92), which represents *sama-y xaj y-i* ‘POSS.1SG-PL dog CM.PL-DEF (*my dogs*)’. In this possessive nominal, the head of PossP is proposed to probe for a number feature. This feature is valued by the possessum, which is in its c-command domain. If the possessum is singular, the exponent of Poss is phonologically null. If the possessum is plural, the head of PossP is exponed as -y.



I assume that the determiner that heads the entire possessive construction takes scope over it. Linear order evidence for this assumption is provided by the fact that the indefinite determiner *a-b* ‘INDEF-CM.SG’ must be placed to the left of the possessive *sama* ‘POSS.1SG’; it cannot immediately precede the possessum (*muus* ‘cat’).¹⁷

¹⁷Definite determiners would not be helpful in this regards, as they are always post-nominal.

- (93) { a-b } sama { *a-b } muus
 { INDEF-CM.SG } POSS.1SG { *INDEF-CM.SG } cat
 ‘a cat of mine’
 ([redacted], p.c.)

Additionally, I assume in (92) that the possessum projects its AgrP within PossP. Agr can then probe downwards for number and class (and eventually be exponed with a class marker). Agr then affixes to the determiner.¹⁸ Agr is placed below PossP because otherwise, the class marker would reflect the features of the possessor, which is contrary to fact.

With this background in mind, let us consider what happens when the possessum is a BN. (94) shows that, in this scenario, the possessive construction has an indefinite interpretation, hence why it can be used in an existential construction.

- (94) Am-na sama **butéel** ci waañ w-i.
 have-NA.3SG POSS.3SG bottle PREP kitchen CM.SG-DEF
 ‘There is a bottle of mine in the kitchen.’

Furthermore, BNs inside this type of possessive nominal have a singular interpretation, unless the plural possessum-sensitive -y occurs. In the data to follow, the (a) examples display the behavior of possessive constructions where the determiner is suffixed with the possessum-sensitive -y morpheme, while the (b) examples display the behavior of possessives without -y.

(95) *Collective predicate*

- a. dajale-na-a sama-y **muus** ci tool b-i.
 gather-NA-1SG POSS.1SG-PL cat PREP garden CM.SG-DEF
 ‘I gathered some cats of mine in the garden.’
 b. *dajale-na-a sama **muus** ci tool b-i.
 gather-NA-1SG POSS.1SG cat PREP garden CM.SG-DEF
 Lit.: ‘I gathered cat of mine in the garden.’

(96) *Discourse anaphora*

- a. Wën-na-a sama-y **xaj** Mareem. Bëgg-na-a *ko / leen.
 show-NA-1SG POSS.1SG-PL dog Mareem like-NA-1SG *OBJ.SG / OBJ.PL
 ‘I showed Mareem some dogs of mine. I like *him/them.’
 b. Wën-na-a sama **xaj** Mareem. Bëgg-na-a ko / *leen.
 show-NA-1SG POSS.1SG dog Mareem like-NA-1SG OBJ.SG / *OBJ.PL
 ‘I showed Mareem a dog of mine. She likes him/*them.’

(97) *Interrogative pronoun in sluicing*

- a. Mareem jàng-na sama-y **téere**, waaye xa-w-ma *b-an
 Mareem read-NA.3SG POSS.1SG-PL book but know-NEG-1SG *CM.SG-which
 la / y-an la.
 COP.3SG / CM.PL-which COP.3SG
 ‘Mareem read some books of mine, but I don’t know which one/which ones.’

¹⁸It is possible that the latter operation is post-syntactic (Harizanov & Gribanova, 2019), as it skips over intermediate heads.

- b. Mareem jàng-na sama **téere**, waaye xa-w-ma b-an la
 Mareem read-NA.3SG POSS.1SG book but know-NEG-1SG CM.SG-which COP.3SG
 / *y-an la.
 / *CM.PL-which COP.3SG
 ‘Mareem read a book of mine, but I don’t know which one/which ones.’

(98) *Reciprocal*

- a. Desin-ante-loo-na-a sama-y **doom** seen bopp.
 draw-RECIP-CAUS-NA-1SG POSS.1SG-PL child POSS.3PL head
 ‘I made some children of mine draw each other.’
- b. * Desin-ante-loo-na-a sama **doom** seen bopp.
 draw-RECIP-CAUS-NA-1SG POSS.1SG child POSS.3PL head
 Lit.: ‘I made child of mine draw each other.’
- c. wonale-na-a sama-y **ndongo dara** ñu xam-ante.
 introduce-NA-1SG POSS.1SG-PL student 3PL know-RECIP
 ‘I introduced some students of mine to each other.’
- d. wonale-na-a sama **ndongo dara** ??? (ak **ndongo dara** Kadeer) ñu
 introduce-NA-1SG POSS.1SG student ??? (with student Kadeer) 3PL
 xam-ante.
 know-RECIP
 ‘I introduced a student of mine and a student of Kadeer’s to each other.’

(99) *Plural reflexive*

- a. Jàngalekat y-i sang-aloo-na-ñu seen-i **ndongo dara** seen bopp.
 teacher CM.PL-DEF wash-CAUS-NA-3PL POSS.3PL student POSS.3PL head
 ‘The teachers made some students of theirs wash themselves.’
- b. * Jàngalekat y-i sang-aloo-na-ñu seen **ndongo dara** seen bopp.
 teacher CM.PL-DEF wash-CAUS-NA-3PL POSS student POSS.3PL head
 Lit.: ‘The teachers made a student of theirs wash themselves.’

(100) *‘How many’ follow-up*

- a. Maymuna ak Mareem jënd-na-ñu sama-y **téere**, waaye xa-w-ma
 Maymuna with Mareem buy-NA-3PL POSS.1SG-PL book but know-NEG-1SG
 ñaata lën jënd.
 how.many COP.3PL buy
 ‘Maymuna and Mareem bought some books of mine, but I do not know how many.’
- b. * Maymuna ak Mareem jënd-na-ñu sama **téere**, waaye xa-w-ma
 Maymuna with Mareem buy-NA-3PL POSS.1SG book but know-NEG-1SG
 ñaata lën jënd.
 how.many COP.3PL buy
 Lit.: ‘Maymuna and Mareem bought a book of mine, but I do not know how many.’

(101) *‘All of them’ follow-up*

- a. Sama muus toj-na sama-y **ndap**. Bëgg-na-a y-ëpp.
 POSS.1SG cat break-NA.3SG POSS.1SG-PL plate like-NA-1SG CM.PL-every
 ‘My cat broke some plates of mine. I liked all of them.’

- b. Sama muus toj-na sama **ndap**. # Bëgg-na-a y-ëpp.
 POSS.1SG cat break-NA.3SG POSS.1SG plate # like-NA-1SG CM.PL-every
 Lit.: ‘My cat broke a plate of mine. I liked all of them.’

To sum up, BNs can occur in a construction that features a possessive determiner which is sensitive to the number of the possessum they combine with. If a plural suffix *-y* occurs, a BN possessum receives a plural interpretation. In the absence of that morphology, the BN retains its exclusively singular interpretation.

We can now turn to the linker possessive nominal, illustrated below.¹⁹

- (102) Gis-na-a **doom-u** Roxaya.
 see-NA-1SG child-LNK Roxaya
 ‘I saw a child of Roxaya’s.’

Again, I take the possessum in this construction to be a BN because the latter alternates with a full nominal, as we can see in the pairs in (103). In (103e), it is particularly clear that what the definite determiner *b-i* combines with is the noun to which the linker is suffixed (i.e. *muus* ‘cat’), since the preceding proper name (*Roxaya*) cannot merge with it, as evidenced by (103d). (103f) and (103g) show clearly with the post-nominal definite determiners that determiners merge outside of linker possessives.

- (103) a. A-b muus-u Samba lekk-na céeb.
 INDEF-CM.SG cat-LNK Samba eat-NA.3SG rice
 ‘A cat of Samba’s ate rice.’
 b. A-y muus-u Samba lekk-na-ñu céeb.
 INDEF-CM.PL cat-LNK Samba eat NA-3PL rice
 ‘Some cats of Samba’s ate rice.’
 c. Gis-na-a a-y doom-u Roxaya.
 see-NA-1SG INDEF-CM.PL child-LNK Roxaya
 ‘I saw some children of Roxaya’s.’

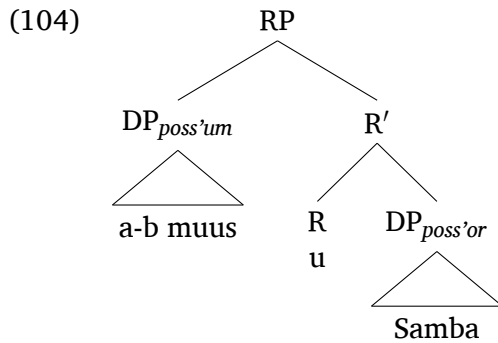
¹⁹A reviewer asks whether the linker *-u* and the relative complementizer *u* could be a single morpheme, as opposed to being separate albeit homophonous entities, as tacitly assumed here. According to the reviewer’s suggestion, in the former analysis, *u* would be similar to the adnominal linker *de* in Mandarin. There are some ways to distinguish between the linker *u* and the relative complementizer *u*. As we are going to see in the Appendix A, one of the speakers consulted allowed for the alternation between *u* and *i* as the linker possessive, the latter of which is used in the plural. The same speaker did not exhibit a similar alternation for the relative complementizer *u*, at least in indefinite relative clauses (Torrence 2013 argues that the relative complementizer in some Wolof dialects can be *i*, but only when the head of the relative is definite, irrespective of number). Likewise, the complementizer *u* is always preceded by a class marker, which is not the case for the linker.

The reviewer also suggests that, if there is a single *u* in Wolof and if it is analogous to Mandarin *de*, it is possible that a string like *muus-u Mareem* ‘cat-LNK Mareem’ would be more appropriately translated as ‘cat that Mareem has’, with a silent possessive copula. While I do not have conclusive evidence that this is not the case, it may be worth noting that Wolof expresses possession with an overt verb *am*, both within and outside relative clauses:

- (i) a. Mareem am-na ñaar-i kër, b-enn Dakar, b-enn Boston.
 Mareem have-NA.3SG two-LNK.PL house CM.SG-one Dakar CM.SG-one Boston
 ‘Marrem has two apartments, one in Boston and one in Dakar.’
 b. téere b-u am solo
 book CM.SG-COMP have importance
 ‘a book that is important/that has importance’
 [(b) from Dyer (2021)]

- d. Bëgg-na-ñu Roxaya / *Roxaya b-i.
like-NA-1PL Roxaya / *Roxaya CM.SG-DEF
'We like Roxaya.'
- e. Bëgg-na-ñu muus-u Roxaya b-i.
like-NA-1PL cat-LNK Roxaya CM.SG-DEF
'We like Roxaya's cat.'
- f. Muus-u Samba y-i lekk na-ñu céeb.
cat-LNK Samba CM.PL-DEF eat NA-3PL rice
'Samba's cats ate rice.'
- g. Liggéeykat b-i tabax-na kër-u Mareem g-i.
worker CM.SG-DEF build-BA.3SG house-LNK Mareem CM.SG-DEF
'The worker built Mareem's house.'

I assume the structure in (104) for linker possessives, illustrated with *a-b muus-u Samba* 'INDEF-CM.SG cat-LNK Samba' (*a cat of Samba's*). For concreteness, I assume Den Dikken's (2006) Relator Phrase, whose head here is realized by the linker morpheme *-u*. Contrary to the possessive in (92) examined above, in the linker (104), there is no probe for number.



When the possessum to which it is attached is a BN, it also receives an indefinite interpretation.

- (105) Am-na **muus**-u Kadeer ci bayaal b-i.
have-NA.3SG cat-LNK Kadeer PREP park CM.SG-DEF
'There is a cat of Kadeer's in the park.'

As just mentioned, in the linker possessive construction, there is no morpheme sensitive to number. In that case, only a singular reading is available. This is demonstrated by the plural-sensitive diagnostics employed so far.²⁰

(106) *Collective predicate*

²⁰A reviewer notes that some Wolof dialects allow for a class marker in linker constructions:

- (i) kër-u(g) buur
house-LNK(CM.SG) king
'the king's house'
(data provided by reviewer)

I have not found this possibility in my data set. They also correctly remark that, for these dialects, the prediction is that a plural interpretation can should also be licenseable, as long as a plural class marker occurs in these linker constructions. I thank the reviewer for this observation and for the data.

- a. Roxaya boole-na a-y xaj-u Kadeer.
 Roxaya put.together-NA.3SG INDEF-CM.PL dog-LNK Kadeer
 ‘Roxaya gathered some of Kadeer’s dogs.’
- b. Roxaya boole-na **xaj-u** Kadeer *(ak xaj-u Kumba).
 Roxaya put.together-NA.3SG dog-LNK Kadeer *(with dog-LNK Kumba)
 ‘Roxaya put together Kadeer’s dog *(with Kumba’s dog).’
- c. Isaa juboole-na **muus-u** Kadeer ??(ak **muus-u** Roxaya).
 Isaa unite-NA.3SG cat-LNK Kadeer ??(with cat-LNK Roxaya)
 ‘Isaa united a cat of Kadeer’s (with a cat of Roxaya’s).’

(107) *Discourse anaphora*

Gis-na-a **muus-u** Kadeer ci tool b-i. Bëgg-na-a ko / *leen.
 see-NA-1SG cat-LNK Kadeer PREP garden CM.SG-DEF like-NA-1SG OBJ.3SG / *OBJ.3PL
 ‘I saw a cat of Kadeer’s in the garden. I like him;her/*them.’

(108) *Interrogative pronoun in sluicing*

- a. Toogakat b-i gis-na a-y muus-u Mareem, waaye
 cook CM.SG-DEF see-NA.3SG INDEF.CM.PL cat-LNK Mareem but
 xa-w-ma *b-an la / y-an la.
 know-NEG-1SG *CM.SG-which COP.3SG / CM.PL-which COP.3SG
 ‘The cook saw some cats of Mareem’s, but I don’t know which.’
- b. Toogakat b-i gis-na **muus-u** Mareem, waaye xa-w-ma
 cook CM.SG-DEF see-NA.3SG cat-LNK Mareem but know-NEG-1SG
 b-an la / *y-an la.
 CM.SG-which COP.3SG / *CM.PL-which COP.3SG
 ‘The cook saw a cat of Mareem’s, but I don’t know which.’

(109) *Reciprocal*

* Roxaya wonale-na **jàngalekat-u** Mareem ñu xam-ante.
 Roxaya introduce-NA.3SG teacher-LNK Mareem 3PL know-RECIP
 Lit.: ‘Roxaya introduced a teacher of Mareem’s to each other.’

(110) *Plural reflexive*

- a. Isaa sang-oloo-na a-y xaj-u Kadeer seen bopp.
 Isaa wash-CAUS-NA.3SG INDEF-CM.SG dog-LNK Kadeer POSS.3PL head
 ‘Isaa made some dogs of Kadeer’s wash themselves.’
- b. Isaa sang-oloo-na **xaj-u** Kadeer bopp=am / *seen bopp.
 Isaa wash-CAUS-NA.3SG dog-LNK Kadeer head=POSS.3SG / *POSS.3PL head
 ‘Isaa made a dog of Kadeer’s wash himself/themselves.’

(111) *‘All of them’*

Sama muus toj-na **ndap-u** Kadeer. # Bëgg-na-a y-ëpp.
 POSS.1SG cat break-NA.3SG plate-LNK Kadeer # like-NA-1SG CM.PL-every
 Lit.: ‘My cat broke my plate. I liked all of them.’

These data indicate that, unlike the possessive determiner, which has number morphology, the linker possessive is not compatible with a plural interpretation for a BN. Alternatively stated,

combining a BN with the linker *-u* does not have any effect on in the singular interpretation of the Wolof BN. However, in the appendix A I will discuss a difference found among the speakers consulted regarding the realization and properties. As we will see there, the behavior of that variant of the linker morpheme behaves as predicted by the analysis to be proposed.

3.4 Interim summary

All the data surveyed so far is summarized in the table (112). The grey boxes indicate missing data.

(112) *Number interpretation of BN*

		Unmodified BN	Plural RC	Plain modifier	Possessum -y	Linker -u
i.	Collective predicate	*	✓	*	✓	* / ??
ii.	Discourse anaphora	SG	PL	SG	PL	SG
iii.	Pronoun (sluicing)	SG	PL	?SG	PL	SG
iv.	Reciprocal	*	✓	*	✓	*
v.	Plural reflexive	*	✓	??	✓	*
vi.	‘How many’ follow-up	#	✓		✓	
vii.	‘All of them’ follow-up	#	✓	??	✓	#

Taking into account both the unmodified, modified, and different possessive BN constructions In Wolof, we arrive at the following generalization:

(113) BNs in Wolof are singular, unless there is some nominal-internal plural morphology.

I will propose an analysis to account for this generalization in the next section. The proposal will be grounded on a condition that requires the licensing of a marked number feature via Agree. First, however, we will evaluate plausible alternative analyses.

4 Analysis

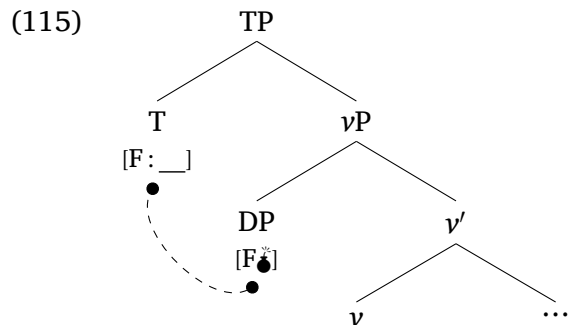
Kalin (2017, 2018, 2019) proposes a theory of nominal licensing that is driven by the need of certain interpretable features to undergo some operation. Kalin (2018) assumes that nominal licensing is governed by abstract Case assignment and thus by the Case Filter. Here, I assume Kalin’s (2019) more general formalization whereby certain interpretable features require licensing, otherwise the derivation crashes. Specifically, Kalin assumes the following typology of features:

(114) *Feature types*

- [F:] = unvalued/placeholder (= a probe)
- [F] = valued/snippet (= a potential goal)
- [F^{*}●] = valued/snippet (= a potential goal, derivational time bomb)

(Kalin, 2019, (12))

Derivational time bombs (114c) are those interpretable features that, despite being interpretable, need to be Agreed with in order for the derivation not to crash. In other words, Agree “defuses” these features. This diagrammed in (115), where T bears a feature *F* to be valued (i.e. a probe (114a)). This feature Agrees with a matching feature in its c-command domain. This feature is, furthermore, marked as a derivational time bomb. Agree suffices to defuse this feature, thereby allowing the derivation to converge.



(Kalin, 2019, (13); adapted)

According to Kalin (2017, 2018, 2019), languages may differ in which features are derivational time bombs. Another point of variation is the range of licensors available in a given language. Licensors are additionally, divided into two categories, primary and secondary. Primary licensors are $[F: _]$ probes merged in every clause. Secondary licensors are probes that enter the derivation only when the derivation would crash otherwise. The occurrence of secondary licensors are regulated by the following principle:

(116) *Licensing Economy Principle*

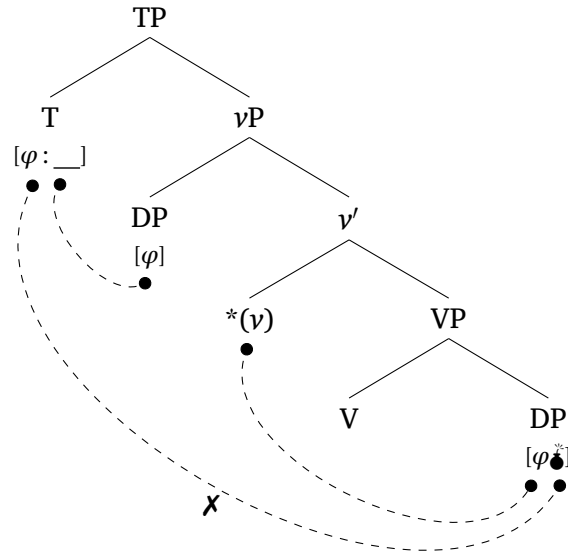
A secondary licensor is activated iff the derivation will otherwise not converge.

(Kalin, 2018, (36))

The empirical basis for this view of nominal licensing is provided by DOM (Differential Object Marking, Kalin 2018) and by the PCC (Person–Case Constraint), which Kalin (2017, 2019) show to share a number of similarities. The phenomena arise when interpretable features like $[+PARTICIPANT]$ (PCC) and $[+DEFINITENESS]$ or $[+ANIMACY]$ (DOM) are derivational time bombs. To be more precisely, under this framework, DOM and the PCC are the byproduct of the occurrence of a secondary licensor triggered by the need of an interpretable feature to be licensed. A primary licensor cannot Agree with these derivational time bombs due to the presence of an intervening nominal that the primary licensor can Agree with and thus cannot skip over. Furthermore, as alluded to above, there may be different secondary licensors made available for different languages. For instance, in DOM languages where the differentially marked DP bears accusative case, v may be a secondary licensor. In languages where the differentially marked DP bears dative case, Appl may play this role (cf. Kalin 2018).

A toy example (from Kalin 2018) is provided by a DOM language where $[+ANIMATE]$ objects are differently marked and T is a primary licensor, while v is a secondary licensor. In (117), the probe in T Agrees with the closest goal, the matching feature in the subject in Spec- vP . T cannot Agree with the lower object. A v that is able to Agree with the object must occur in the derivation as a secondary licensor because, otherwise, the interpretable feature in the object, a derivational time bomb, would not be defused otherwise.

(117)



(Kalin, 2018, (24); adapted)

In this paper, I propose to extend this theory of nominal licensing from the clausal to the nominal domain. Specifically, I propose that the interpretable feature [+PLURAL] is also a derivational time bomb that needs to be Agreed with in order to be licensed.

One may wonder why [+PLURAL] and not [+SINGULAR] is the number value that requires licensing via Agree. Crosslinguistically, it is not in fact uncommon for the feature [+PLURAL] to behave differently from [+SINGULAR] (Nevins, 2011). For instance, in past participle agreement in Abruzzese (D'alessandro & Roberts, 2008; D'Alessandro & Roberts, 2010; Longenbaugh, 2019), only [+PLURAL] triggers omnivorous agreement. In (118), the participle *painted* obligatorily agrees with a plural DP, irrespective of whether it is an object (118b) or subject (118c). The feature [+SINGULAR] does not participate in this pattern.

(118) *Past participle agreement in Abruzzese*

- a. Giuwanne a pittate nu mure.
John have.3 painted.SG a wall
'John has painted a wall.'
- b. Giuwanne a pittite ddu mure.
John have.3 painted.PL two walls
'John has painted two walls.'
- c. **Giuwanne e Mmarije** a *pittate/pittite nu mure.
John and Mary have.3 *painted.SG/painted.PL a wall
'John and Mary have painted a wall.'
- d. Giuwanne e Mmarije a *pittate/pittite ddu mure.
John and Mary have.3 *painted.SG/painted.PL two walls
'John and Mary have painted two walls.'

(D'Alessandro & Roberts, 2010, (2); adapted)

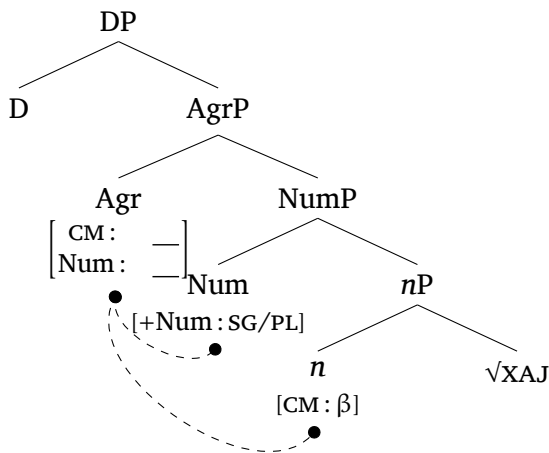
Indeed, [Harley & Ritter \(2002\)](#), a.o. argue that number is best syntactically represented as a single feature [+PLURAL], with a singular interpretation arising as the consequence of the absence of such a feature. While the present paper does not allow us to distinguish between bivalence and privativity, I take data like (118) to suggest that the feature [+PLURAL], as opposed to [+SINGULAR], have some syntactic “prominence”, so that only the former may require licensing.

Going back to Wolof nominals, I assume that the [+PLURAL] in the nominals in this language are the projections that require a [–Number: __] to be valued, namely:

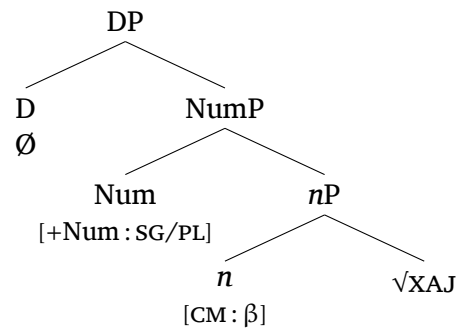
- (119) a. Agr (cf. full nominals in (12) and relative clauses in (60))
b. Poss (cf. (92))

Furthermore, instead of drawing a distinction between primary and secondary licensers and assuming that their occurrence is regulated by the economy principle (116), I assume that the licensers in (119) are all that is available in the Wolof nominal domain and, additionally, I hypothesize that the occurrence of these licensers is regulated by restrictions imposed by the nominal spine in Wolof. More precisely, my proposal is that the action of an economy principle like (116) cannot be seen due to the restrictions superimposed by the structure of nominals in Wolof, schematized in (12) and (21) above and repeated below for convenience.

(12) *Structure of full nominals in Wolof*



(21) *Structure of bare nominals in Wolof*



If Agr (119a) were to be introduced in the structure of the BN, the c-selectional requirements of the null D proposed for BNs would not be satisfied. Recall that I proposed that Agr is expounded by a class marker, which is absent in BNs. That the null D c-selects a NumP and not an AgrP was the solution proposed to prevent a class marker from surfacing in BNs. Conversely, if Poss (119b) were to be merged with a BN, the result would be a possessive nominal, with a different semantics. I tentatively assume that some interpretive principle is also at play when determining when a licenser can occur in a given derivation. Contrast the proposed plural licenser Poss with secondary licensers like Appl, which [Kalin \(2018\)](#) proposes for DOM languages where the differential case is dative. By assumption, Appl (unlike the Poss under discussion) does not alter the interpretive properties of a sentence – it just formally licenses an interpretable derivational time bomb.

With this system in place, we can turn to an explanation as to why BNs in Wolof are singular when unmodified, but plural only when merged with nominal elements that can expone number. A fact that must be reckoned with is that full nominals in Wolof can be either singular or plural, as see in e.g. (10a), repeated below.

- (10) a. Xale y-i lekk-na-ñu gato b-i.
 child CM.PL-DEF eat-NA-3PL cake CM.SG-DEF
 ‘The children ate the cake.’

All things equal, the same values for the number feature should be available for BNs as well. In the full nominal (12), the interpretable number feature in NumP is always Agreed with by Agr, which probes for both number and class. The need for the feature [+PLURAL] to be licensed can thus be satisfied. Conversely, in the BN in (21), there is no number probe. As such, if the numeration contains a plural Num, the derivation crashes because [+PLURAL] is not defused. Because no such requirement is imposed on [+SINGULAR], the derivation converges. We have now arrived at an explanation as to why BNs in Wolof exclusively singular when unmodified: of the two logically available derivations (one with a singular Num and one with a plural Num), only the one with a singular BN leads to a convergent derivation.

For this analysis to go through, we must assume that BNs in Wolof project NumP, which I assume, furthermore, to be either singular or plural, as a null hypothesis. It is the presence of a [+PLURAL] Num that triggers the need for licensing via Agree. However, a reasonable alternative is that BNs in Wolof, being truncated nominals, simply lack a NumP, in which case, some other strategy would have to be resorted to to engender licensing by Agree. Nonetheless, I believe that assuming that Wolof BNs do not have number may not be compatible with certain facts about the behavior of BNs when they are coordinated.

First, a suggestion that BNs may have number is provided by the fact that they can trigger plural morphology in the verb when coordinated in the subject position. (120a) shows that coordination of singular nominals trigger plural agreement necessarily. (120b) and (120c)/(120d) show that this restriction also holds when the coordinated nominals are bare.

- (120) a. A-b xale ak a-b jàngalekat woy-na*(-ñu) ci daara
 INDEF-CM.SG child with INDEF-CM.SG teacher sing-NA*(-3PL) PREP school
 j-i.
 CM.SG-DEF
 ‘A child and a teacher sang in the school.’
 b. *Xale ak jàngalekat woy-na ci daara j-i.
 child with teacher sing-NA.3SG PREP school CM.SG-DEF
 Int.: ‘A child and a teacher sang in the school.’
 c. Xale ak jàngalekat woy-na-ñu ci daara j-i.
 child with teacher sing-NA-3PL PREP school CM.SG-DEF
 ‘A child and a teacher sang in the school.’
 d. Xale ak a-b jàngalekat woy-na-ñu ci daara j-i.
 child with INDEF-CM.SG teacher sing-NA-3PL PREP school CM.SG-DEF
 ‘A child and a teacher sang in the school.’

A similar effect is found in French.²¹ (121) is a baseline example that shows that coordinated DPs require plural agreement in the verb.

- (121) *French: coordinated nominals require plural agreement*

Sur le moment, *Le Monde* et *Libération* *m’a semblé /
 on the moment *Le Monde* and *Libération* *1ST.DAT=had.3SG seemed /
 m’ont semblé être d’excellents journaux.
 1ST.DAT=had.3PL seemed be.INF INDEF=excellent newspapers

²¹I thank ...and ...for the French data and for insightful and useful discussion.

‘In the moment, Le Monde and Libération seemed to me to be excellent newspapers.’

(122) in turn shows that coordinated infinitival clauses obey the same constraint.

(122) *French: coordinated infinitival clauses require agreement*

[Séjourner dans les montagnes] et [longer la côte] me *paraît /
[stay.INF in the mountains] and [go.along the coast] 1SG.DAT *seem.3SG /
paraissent des façons admirables de connaître la vraie France.
seem.3PL INDEF.PL ways admirable for get.to.know.INF the true France
‘Traveling through the mountains and going along the coast appear to me an admirable
way to get to know the real France.’

(modeled after [Davies & Dubinsky 2001](#), p. 260)

Following [Davies & Dubinsky \(2001\)](#), we can conclude that sentences like (122) indicate that subject agreement provides evidence for the hidden number properties of the element that occupies the subject position – in this case, coordinated infinitival clauses. By analogy, the Wolof sentences (120c) and (120d) would be indicative that coordinated BNs have number properties as well.

Additionally, I tentatively assume, following [Kiss’s \(2012\)](#) analysis of coordination in Hungarian, that &P lacks φ -features of its own, so that these features are “projected” from its conjuncts. If this analysis can be extended to Wolof, this would imply that BNs like those in (120c) and (120d) have number features. Given the interpretation of these sentences, the number feature of the BN is, more precisely, singular. Needless, a fully fledged analysis of coordination in Wolof is due.²²

Furthermore, a brief comparison with previous literature on number neutral BNs may give the retention of NumP in Wolof BNs further traction. [Rullmann & You \(2006\)](#), [Müller \(2002\)](#), and [Kramer \(2017\)](#) investigate BNs in Mandarin, Brazilian Portuguese, and Amharic, respectively. In these languages, as mentioned above (see (1c), (1b), and (1a)), BNs are number neutral. [Rullmann & You](#), [Müller](#), and [Kramer](#) capture this semantic property by proposing that BNs in these languages lack NumP. They assume that entities of type e denote singleton sets (atoms) and all their sums. What number does is restrict that denotation to only singleton sets (singular) or pluralities (plural). Under this view, number neutrality in BNs emerges as a consequence of the absence of a restriction that picks out just atoms or pluralities, so that both possibilities are available. In other words, the NumP-less nominal ends up number-neutral. As I tried to argue above, this characterization does not fit Wolof BNs, which have a singular construal, exclusively. Hence, I keep NumP.

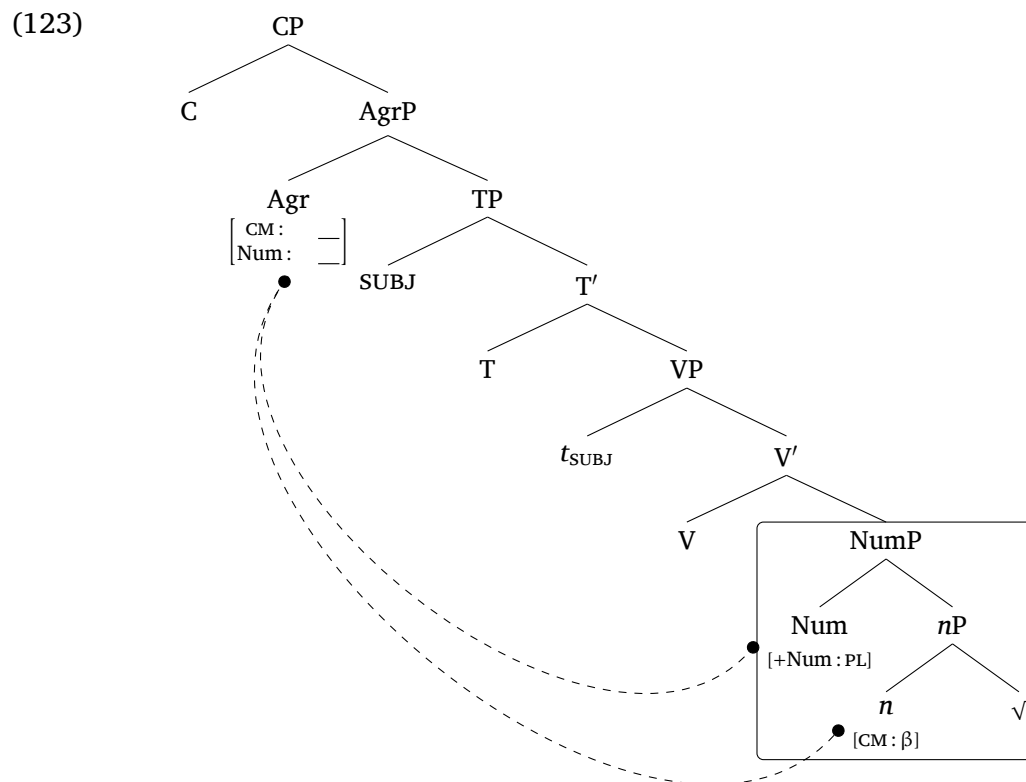
To summarize, I have argued that Wolof BNs project a NumP. This NumP can be either singular or plural, options that are independently available for full nominals in the language. A BN with a plural NumP causes the derivation to crash because the feature [+PLURAL] is not licensed or not defused. The feature [+SINGULAR] does not impose such a requirement, allowing the derivation to converge. The byproduct is that BNs in Wolof are exclusively singular when unmodified.

However, if the BN merges with some nominal element that can expone a number feature, a plural interpretation does become available, along with a singular one. We can now restate this generalization as the presence of a number probe in the nominal structure the BN belongs to, the exponent of which is a plural morpheme and which suffices to license the [+PLURAL] in a BN (or

²²I thank a reviewer, who called for clearer remarks on coordination. The same reviewer also observes that it could be surprising that BNs can occur in the subject position when coordinated though not otherwise, as will be seen below in §4.1.2. I provide an analysis of the syntactic distribution of BNs in Wolof in [\[Redacted\] \(2021\)](#). The same distributional properties (i.e. the impossibility of occurring in the subject position other than in a coordination environment) is in fact common in other BN languages, as [Landau \(2007\)](#) observes.

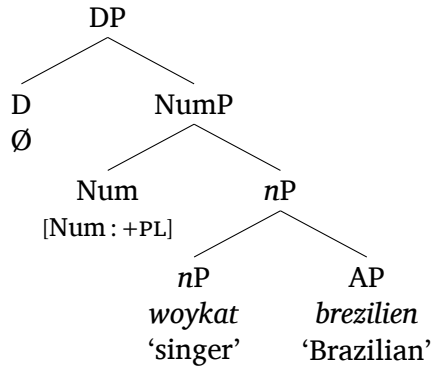
in any nominal in Wolof that bears such a feature). This is the case of relative clauses (as opposed to plain modifiers) and of possessive nominals (as opposed to linker possessives). We analyze each nominal construction in turn.

We start with relative clauses. In this structure, even though the BN itself does not have a [+PLURAL] licenser (i.e. a matching probe that Agrees with it), there is an Agr at the CP level. The interpretable feature [+PLURAL] can be Agreed with and licensed, hence why a BN can have a plural interpretation in this case. At the point of the derivation diagrammed in (123), the BN occupies its base generation position and is targeted for Agree by Agr. Afterwards, the BN raises out of the relative clause.

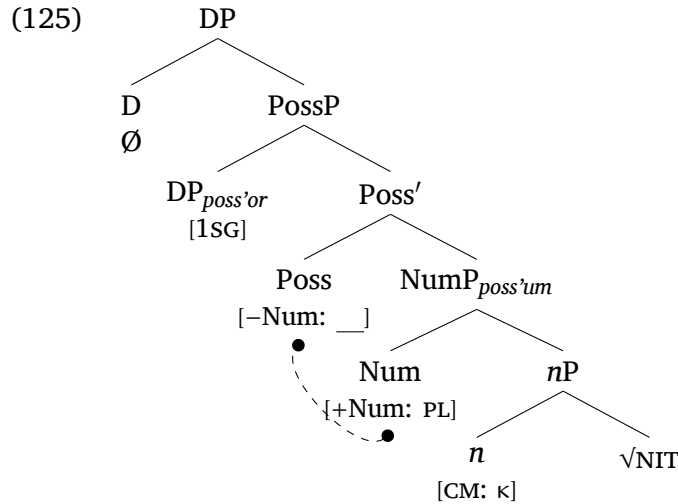


In plain modifiers, on the other hand, there is no probe that Agrees with the number feature in NumP. As a consequence, the interpretable feature [+PLURAL] cannot be defused, causing the derivation to crash. This is diagrammed in (125), which represents the BN object *woykat brezilien* ‘Brazilian singer’ in (81).

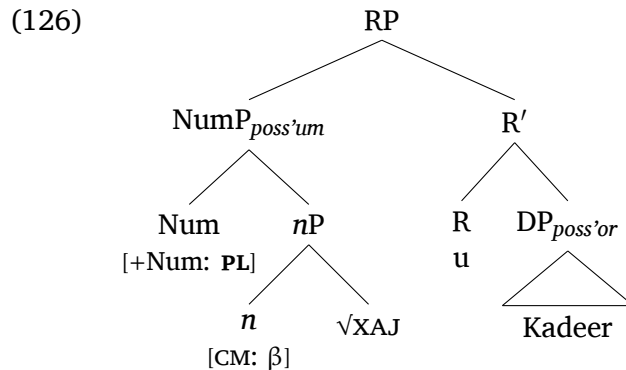
(124)



Licensing of a [+PLURAL] feature by Agree is possible in the possessive construction (89b), if *y* is the exponent of Agree. The derivation of (89b) (*sama-y nit* ‘POSS.1SG-PL person/friend’) would be as in (125), where the head of PossP probes for a number feature in the possesum. In this case, both a derivation with a singular and with a plural BN can converge, since, in the latter case, an interpretable feature requiring licensing is indeed Agreed with.



Finally, we turn to the number-less linker possessive construction in (126), which diagrams *xaj-u Kadeer* ‘dog-LNK Kadeer’ in (106b). There is no probe to Agree with the [+PLURAL] number of the BN, so, again, only a derivation with a singular NumP converges.



In brief, in this section, I provided answers to the questions this paper set out to address:

- (8) i. How can we account for the exclusively singular interpretation (and not number neutral) interpretation of unmodified BNs in Wolof?
 ii. Why does a BN without any plural morphology behave as if it were singular, while a BN merged that does contain plural morphology behaves as if it were plural?

BNs in Wolof project a NumP, hence why they are not number-neutral. In principle, they can be either singular or plural, just like the other nominals in the language. However, a plural interpretation is precluded because unmodified BNs do not contain any number probe that licenses [+PLURAL], which I proposed to be a derivational time bomb, in Kalin’s (2017; 2019) sense. If the nominal structure contains a number probe, licensing goes through, so that the BN can now have not only a singular interpretation, but also a plural one. Number probes can be found in relative clauses, which agree in class and number with a BN (or full nominal) head, and possessive constructions that display number agreement with a BN possessum. In contrast, plain modifiers and linker possessives do not contain a number probe, so that they retain the exclusively singular interpretation exhibited by unmodified BNs.

In the next section, we turn to some predictions that this analysis yields and how they can or cannot be tested in Wolof.

4.1 Predictions

4.1.1 Pluralia tantum nouns

According to the analysis put forward here, BNs can in principle combine with a singular or a plural NumP. However, the latter option only leads to a convergent derivation where some nominal-internal number probe Agrees with [+PLURAL], defusing this derivational time bomb. In the absence of such a probe, only a derivation with a singular BN converges, as the NLC is stipulated not to apply to [+SINGULAR] (or [−PLURAL]). A prediction that emerges from this analysis is that a sentence containing a BN may be completely ungrammatical, lacking even a singular interpretation. This would be the case for nouns that are themselves plural, above and beyond the specification of NumP. A case in point would be pluralia tantum nouns.²³

Babou & Loporcaro (2016) observe that *jooy* ‘weeping’ is an instance of such a noun in Wolof. This also holds for a consultant of mine: (127) shows that *jooy* can only combine with a plural class marker (y), both in the subject and in object position. (127a) and (127b) (originally from Babou & Loporcaro 2016 and confirmed by the aforementioned consultant) further demonstrate the plural requirement imposed by *jooy* with verbal morphology that cross-references the subject.

- (127) a. Jooy y-i metti-na-ñu lool.
 weeping CM.PL-DEF hard-NA-3PL much
 ‘The weeping is so hard.’
 b. *Jooy b-i metti-na lool.
 weeping CM.SG-DEF hard-NA.3SG much
 Int.: ‘The weeping is so hard.’
 c. Gis-na-a jooy y-i.
 see-NA-1SG weeping CM.PL-DEF
 ‘I saw the weepings.’
 d. *Gis-na-a jooy b-i.
 see-NA-1SG weeping CM.SG-DEF

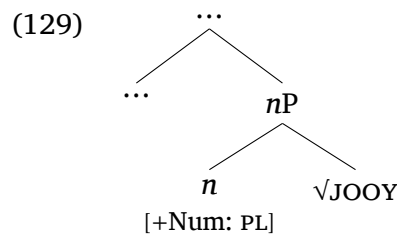
²³A few people brought up the relevance of pluralia tantum nouns to me, including [redacted].

Int.: ‘I saw the weeping.’

As also remarked by Babou & Loporcaro, *teggin* is another pluralia tantum noun:

- (128) a. * Faatu am-na a-b teggin.
 Faatu have-NA.3SG INDEF-CM.SG respect
 ‘Faatu has some respect.’
 b. Faatu am-na a-y teggin.
 Faatu have-NA.3SG INDEF-CM.PL respect
 ‘Faatu has some respect.’

Inspired by Harbour (2011), I encode the plurality requirement of pluralia tantum nouns at the categorizer *n*:



Recall that I assume that root-specific properties are encoded at the categorizer level. Under the assumption that whether or not a noun is a pluralia tantum noun is also an idiosyncratic property, (129) is aligned with this assumption.

If (129) is the correct representation for *jooy* and *teggin*, the prediction, as mentioned, is that a BN pluralia tantum is going to be ungrammatical, since there is no nominal-internal probe to Agree with [+PLURAL]. The BN cannot “fall back” to a singular interpretation due to the plurality encoded in at the *n* level. As shown in (130), the prediction is borne out by facts, as *jooy* and *teggin* cannot occur in bare form:

- (130) a. * Gis-na-a **jooy**.
 see-NA-1SG weeping
 Lit.: ‘I saw weeping.’
 b. ?? Faatu am-na **teggin**.
 Faatu have-NA.3SG respect
 Lit.: ‘Faatu has respect.’

(130)’s ungrammaticality is consistent the analysis put forward here: there is no probe that can license the [+PLURAL] feature that is assumed to be inherent in pluralia tantum nouns.

4.1.2 BNs in subject position

A further prediction that the analysis makes is that a nominal-external number probe could also allow a BN to have its [+PLURAL] feature defused. A case in point could be the subject position, which as hinted at before is cross-referenced by morphology in the verb. There is discussion about what this morphology could be (genuine agreement or subject clitic doubling, the latter view being advocated for by, for instance, Martinović 2015).

Beyond this debate, this potential prediction cannot be tested here, as BNs in Wolof cannot occur in the subject position. This holds of both root and finite embedded clauses.²⁴

- (131) a. * **Saasfaam** fàtte-na téj palanteer=am.
 nurse forget-NA.3SG close window=POSS.3SG
 Int.: ‘A nurse forgot to close his;her window.’
- b. * **Ndongo dara** lekk-na maafe.
 student eat-NA.3SG maafe
 Lit.: ‘Student ate maafe.’
- c. * Kumba wax-na [ne **muus** lekk-na a-b janax].
 Kumba say-NA.3SG [COMP cat eat-NA.3SG INDEF-CM.SG mouse]
 Int.: ‘Kumba said that a cat ate a mouse.’

The impossibility of BNs to occur in the subject position is not uncommon in pseudo noun incorporation languages, which I claim to be the case in [Redacted] (2021). What is relevant in this section is that a prediction that the analysis proposed here cannot be tested, for independent reasons.²⁵

Likewise, as mentioned earlier (see (19)), BNs can be predicates in Wolof. Another potential environment where the NLC could be tested is thus in predicational sentences.²⁶ However, it seems that the copula of these constructions agrees with the subject of the predication (*xale yi* ‘the children’), irrespective of the full or bare form of the nominal predicate ((*ay*) *sàcc* ‘(some) thieves’).

- (132) a. Xale y-i a-y sàcc l-a-ñu.
 child CM.PL-DEF INDEF-CM.PL thief l-COMP-3PL
 ‘The children are thieves.’
- b. Xale y-i sàcc l-a-ñu.
 child CM.PL-DEF thief l-COMP-3PL
 ‘The children are thieves.’

(Martinović, 2020, (8), adapted)

Having discussed the predictions that the analysis put forth here gives rise to, in the next section, we turn to alternative approaches to the same data.

4.2 Alternative analyses

In this section, we will evaluate the applicability of the following analyses:

We will see that, while these analyses are plausible, they may not be able to account for the data considered here in full.

²⁴A speaker commented that the sentence (131a) would only be grammatical if *Saasfaam* were parsed as a proper name (in which case this would not be a BN).

²⁵In [Redacted] (2021), I analyze the distribution of BNs in Wolof, which has the properties of pseudo noun incorporation (PNI). It is not uncommon for BNs in PNI languages not to be able to occur in the subject position. As a reviewer points out, one may expect that the gap inside a relative clause could not be the subject position either. In the aforementioned work, I show that this expectation is not met, but argue that it is caused by the further \bar{A} -movement of the BN, which leaves behind the subject position empty. This step of \bar{A} -movement happens in both relative clauses as in e.g. (65) and (64) and also in clefts where the gap is also in the subject position. I thank a reviewer for raising this issue to my attention.

²⁶I thank a reviewer for raising this possibility.

4.2.1 Martinović's (2017) obliteration analysis

In §3.1, we investigated BNs modified by relative clauses. It is implied here that BNs are primitive elements available in the Wolof grammar. However, Martinović (2017) analyzes these structures as derived: they are in fact full nominals modified by a relative clause to which a deletion operation has applied to the determiner. In this section, I try to show that this analysis cannot be carried over to the Wolof dialect studied in this paper.

Martinović's main goal is to provide an analysis for the alternation between the two types of *Wh*-questions in (133).

- (133) a. $[_{CP} \text{ lan } [_{C'} \text{ la } \text{Maymuna lekk-oon démb }]]?$
 $[\text{ CM.SG-Q } [\text{ COP Maymuna eat-PERF yesterday }]]$
 'What did Maymuna eat?'
 b. $[_{CP} [_{C'} \text{ L-u } \text{Maymuna lekk-oon démb? }]]$
 $[[\text{ CM.SG-COMP Maymuna eat-PERF yesterday }]]$
 'What did Maymuna eat?'

(Martinović, 2017)

The author proposes that both sentences in (133) have the same underlying structure, but in each either the head of the CP (133a) or the phrase in Spec-CP (133b) gets obliterated (i.e. a whole syntactic node is deleted; Arregi & Nevins 2007). Obliteration is triggered by the violation of an OCP (Obligatory Contour Principle) effect that operates at the syntactic level and which bans nodes that have identical featural specifications to occur close together (see details in Martinović 2017). Obliterating either offending node suffices to satisfy this requirement. Obliteration is schematized below, where an obliterated node is between '< >'. (On how *la* surfaces in (133a), see Martinović 2017; this detail is not relevant in the present discussion.)

- (134) a. $[_{CP} \text{ lan } [_{C'} < \text{l-u} > \text{Maymuna lekk-oon démb }]]?$
 $[\text{ CM.SG-Q } [\text{ CM.SG-COMP Maymuna eat-PERF yesterday }]]$
 b. $[_{CP} < \text{lan} > [_{C'} \text{ l-u } \text{Maymuna lekk-oon démb }]]?$
 $[\text{ CM.SG-Q } [\text{ CM.SG-COMP Maymuna eat-PERF yesterday }]]$

Martinović extends this analysis to relative clauses in Wolof. The author claims that, in the relative clauses of the dialects she investigates, there is no optionality in what is obliterated (either Spec-CP or the head of the CP in (134)). Rather, the only possibility in the derivation of a relative clause is for Spec-CP to be obliterated. The reason is that the relative complementizer in Wolof is claimed to encode definiteness and proximity features. The complementizer that occurs in the data surveyed in §3.1 is *u*. Martinović's Vocabulary Item for *u* is as follows:

- (135) $C[+Wh] \rightarrow u / \{\varphi, -Def\}$

(Martinović, 2017, (78a))

According to (135), the relative complementizer is exponed as *u* when the head of the relative is an indefinite nominal. This obliteration analysis for a nominal modified by a relative clause like (136a) can thus be diagramed as (136b). Martinović assumes a matching analysis of relative clauses, with *XP* representing the relative clause-internal nominal that moves to Spec-CP and which is obliterated.

- (136) a. (*a-b) xaj b-u ma bëgg
 (*INDEF-CM.SG) dog CM.SG-COMP 1SG like
 'a dog that I like'

b. *Step 1/2 of derivation of RC*

a-b xaj [CP <XP> [C' b-u ma bëgg]]
 INDEF-CM.SG dog [[CM.SG-COMP 1SG like]]

In the data investigated by Martinović, there cannot be an overt determiner in the nominal modified by a relative clause, as witnessed in (136a). Martinović then introduces the final ingredient of the analysis, deletion of the determiner. This is caused by the feature similarity between the determiner and complementizer: “In the dialect of Wolof that this paper is concerned with, D never occurs in relative clauses. The fact that the definiteness feature does not surface twice is reminiscent of a similar phenomenon in some Scandinavian languages. In Wolof, the two heads, D and C_{Wh}, agree in φ -features, definiteness and proximity. As a result, the determiner and the complementizer have identical feature specifications. I propose that in such a case only one of the two heads can be pronounced, and that in this configuration in Wolof, it is the lower one. The determiner is therefore deleted” (Martinović, 2017, p. 248).

This last step in the derivation is schematized below:

(137) *Step 2/2 of derivation of RC*

<a-b> xaj [CP <XP> [C' b-u ma bëgg]]
 INDEF-CM.SG dog [[CM.SG-COMP 1SG like]]

The result of the derivation is what I have been referring to here as a BN modified by a relative clause. However, in Martinović’s analysis, a nominal configuration like (136a) is not primitive, but rather the result of obliteration of Spec-CP, followed by deletion of the determiner. I believe there are reasons not to extend this analysis to the Wolof dialect examined here.

There is a difference in the syntactic positions where a BN and a full nominal can occur when they are modified by a relative clause. While a full nominal can occur in the subject position of a finite clause, the same does not hold of a BN.^{27 28}

- (138) a. A-b muus [b-u Isaa bëgg] lekk-na ginaar g-i.
 INDEF-CM.SG cat [CM.SG-COMP Isaa like] eat-NA.3SG chicken CM.SG-DEF
 ‘A cat that Isaa likes ate the chicken.’
 b. * **Muus** [b-u Isaa bëgg] lekk-na ginaar g-i.
 cat [CM.SG-COMP Isaa like] eat-NA.3SG chicken CM.SG-DEF
 Int.: ‘A cat that Isaa likes ate the chicken.’

- (139) a. Xadi xalaat-na [ne a-y ndongo dara [y-u Samba xam
 Xadi think-NA.3SG [COMP INDEF-CM.PL student [CM.PL-COMP Samba know
] daw-na-ñu ci baayal b-i].
] run-NA-3PL PREP park CM.SG-DEF]

²⁷This paper does not address the syntactic positions where BNs in Wolof can or cannot occur. See [Redacted] (2021).

²⁸A reviewer notes that Tamba *et al.* (2012), among others, note that sentences like (138b) are grammatical in the Wolof dialects they investigate. It is possible that these dialects can be accounted for by what Dayal (2004) dubs ‘licensing by modification’: the author shows several phenomenon where a nominal cannot be licensed unless a modifier like a relative clause is adjoined to it. This includes the impossibility of BNs in some languages to occur in the subject position of finite clauses, unless they are modified by a relative clause. Nonetheless, for the purposes of the present section, however, this point of linguistic variation is not of great consequence, since there is another way BNs and FNs differ, namely with respect to their scope properties. An analysis of the data in (138) and (139) is offered in [Redacted] (2021).

‘Xadi thinks that some students who Samba knows run in the park.’

- b. * Isaa wax-na [ne **fecckat** [b-u ma xam] fécc-na
 Isaa say-NA.3SG [COMP dancer [CM.SG-COMP OBJ.1SG know] dance-NA.3SG
 ci xeel b-i].
 PREP party CM.SG-DEF]
 Int.: ‘Isaa said that a dancer that knows me danced in the party.’

If e.g. (138b) were derived from (138a) by obliteration and deletion, post-syntactic operations, why could the BN there not be licensed in the same position at the narrow syntax?

A more decisive argument is provided by the semantic properties of nominals modified by a relative clause that also have an overt determiner and (what surfaces as a) BN combined with a relative clause. We saw above that BNs are narrow scope indefinites. We also saw that the baseline indefinite full nominals could take wide scope. If BNs are primitives in the Wolof grammar, we may expect that merging a relative clause with them will not change its scope properties – it will remain as a narrow scope indefinite. On the other hand, if BNs are in fact the byproduct of obliteration, an operation that applies at morphology, we would expect their LF properties to remain intact – wide scope should therefore be a possibility. As we have already seen in §3.1 that *ab* full indefinites may scope above or below an intensional predicate (63), while BNs can only take narrow scope (64). In both cases, the nominal (full or bare) is modified by a relative clause.

In brief, applying a version of Martinović’s analysis to the Wolof dialect studied here does not seem to be empirically tenable. The discussion leads towards the conclusion that BNs modified by relative clauses can be primitives in the Wolof grammar, rather than being epiphenomenal (i.e. the result of a morphological operation of deletion of the determiner). Needless to say, what was discussed above does not bear on the dialect that Martinović has investigated, nor does it have any bearing on their analysis of interrogative sentences.

4.2.2 BNs in Wolof as mass nouns

Another plausible analysis is that BNs in general could occur in bare form because they are mass nouns – in fact, Pires de Oliveira & Rothstein (2011) make exactly this proposal for BNs in Brazilian Portuguese.²⁹ There may be reason, nevertheless, not to apply the same analysis to BNs in Wolof.

First, recall from (46) that *ñaata* ‘how many’ is not a felicitous follow-up to a sentence containing a BN. The same expression can be used with mass nouns (i.e. there is no morphological distinction between *how much* and *how many* in Wolof, at least as far as *ñaata* is concerned).

- (140) A. Binta jënd-na sukkar ci luuma b-i démb.
 Binta buy-NA.3SG sugar PREP market CM.SG-DEF yesterday
 ‘Binta bought sugar in the market yesterday.’
 B. Ñaata sukkar la Binta jënd?
 how.much sugar COP.3SG Binta buy
 ‘How much sugar did Binta buy?’
- (141) A. Binta naan-na ndox démb.
 Binta drink-NA.3SG water yesterday
 ‘Binta drank water yesterday.’

²⁹Thank you [...] (p.c) and to [...] (p.c.) for the suggestion.

- B. Ñaata ndox la Binta naan?
 how.much water COP.3SG Binta drink
 ‘How much water did Binta drink?’

Second, recall also that BNs can only be referred back to with a singular pronoun – a plural pronoun renders the sentence ungrammatical. However, if the antecedent of discourse anaphora is a mass noun, a plural pronoun is possible, albeit with a different corresponding interpretation for the mass noun.

- (142) a. Binta lekk-na sukkar / sukkar b-i tey. Jënd-oon-na ko
 Binta eat-NA.3SG sugar / sugar CM.SG-DEF today buy-PERF-NA.3SG OBJ.3SG
 démb.
 yesterday
 ‘Binta ate sugar/the sugar today. She had bought it yesterday.’
 b. Binta lekk-na sukkar / a-y sukkar tey. Jënd-oon-na leen
 Binta eat-NA.3SG sugar / INDEF-CM.PL sugar today buy-PERF-NA.3SG OBJ.3PL
 démb.
 yesterday
 ‘Binta ate sugar/some sugars today. She had bought them yesterday.’
(Felicitous in a scenario where e.g. Binta bought a box with packets of sugar; leen is judged to refer back to these packets.)

I take these two arguments to be sufficient to show us that analyzing BNs in Wolof as mass nouns is not empirically tenable.

4.2.3 BNs in Wolof denote atoms exclusively

Yet another plausible way to examine the data would be to say that what is different about Wolof is that its nouns denote not atoms and all their possible sums, but rather atoms only. Recall that I proposed that BNs in Wolof can indeed be singular or plural (like the other nominals in the language), with the need to license the interpretable feature [+PLURAL], in combination with resources available within given nominal, being what regulates what the ultimate number interpretation is at the end of the derivation. According to the atom-only alternative, a plural interpretation would only arise if the nominal combines with a plural operator. This operator would be exponed as plural morphology in the form of relative complementizer or possessum agreement.³⁰

While this analysis seems consistent with the behavior of BNs in Wolof, I believe it faces a potential technical issue. The occurrence of the proposed number operator is determined by the resources and restrictions of each nominal construction considered here. As such, I believe an analysis of the number interpretation of BNs in Wolof must include a syntactic component. Perhaps specially relevant in this context is the fact that relative complementizer agreement is at long distance and, furthermore, it seems to be exclusively the effect of a formal operation (i.e. Agree). This seems particularly clear in cases like (56) above, where the class marker (which includes number information) appears in more than one head of the nominal structure, but presumably without semantic import. The occurrence of agreement morphology without an impact to the meaning of a construction can be taken to be the residue of the Agree operation.

In the alternative analysis under discussion may have to be made more complex to account for how a plural operator can affect the interpretation of a nominal at long distance in relative

³⁰For suggesting this analysis to me, I thank [redacted] and [redacted].

clauses and for determining which occurrence of an operator can do so. No new component has to be added in the present analysis. The number interpretation of a nominal is encoded as an interpretable feature at NumP (a conventional assumption) and the occurrence of “number operators” are just instances of formal number agreement that are expected given the internal structure of the nominal constructions considered in this study.

5 Summary and open issues

In this paper, we investigated BNs in Wolof, which, when unmodified, are exclusively singular, unlike their number neutral counterparts in other languages. More precisely, I tried to provide an analysis to the following generalization:

(113) BNs in Wolof are singular, unless there is some nominal-internal plural morphology.

According to the analysis put forward here, BNs in Wolof are singular when unmodified because this is the only option that allows a derivation to converge: BNs can be either singular or plural, but a plural BN causes a derivation to crash because the interpretable feature [+PLURAL] cannot be licensed. The nominal internal morphology that can appear in the nominal construction a BN is embedded within is the realization of a number probe that Agrees with [+PLURAL], thereby defusing it. If this analysis is on the right track, it provides support for the proposal that interpretable features may require licensing as well (Béjar & Rezac 2003, 2009; Kalin 2017, 2018, 2019; Keine *et al.* 2019; though see Coon & Keine 2019 for a diverging view).

The analysis also provides an account as to why BNs in Wolof are singular (when unmodified) and not number-neutral, as is the crosslinguistic tendency. The number interpretation of BNs in Wolof in the analysis advocated for here is the result of a conspiracy between the requirement to license [+PLURAL] and the restrictions imposed by the nominal spine in Wolof. The latter regulates the availability of number probes that can defuse the aforementioned interpretable feature. A potential reason why singular BNs are less common than number neutral ones across BN languages is that the former may be the byproduct of a combination of factors, while the latter may be the straightforward result of the lack of a NumP.

A Appendix: A note on variation in the linker

One of the speakers consulted (though not all of them) allowed for two different allomorphs of the linker suffix, namely, *-u* and *-i*, such that the latter is a plural version of the former. For convenience, I call the dialect where the linker occurs in the invariable form ‘Dialect A’ and the dialect where both forms *-u* and *-i* can be found ‘Dialect B’.³¹ While I do not have the data where all plurality diagnostics considered in this paper, the difference between these allomorphs can be seen in the discourse anaphors paradigm in (143), where the number of the pronoun tracks the number of the possessum the linker is suffixed to. More precisely, in (143a), the linker attached to the possessum *kër* ‘house’ is the singular *-u*. The determiner that heads this nominal is also in the singular (*g-i*). Correspondingly, the pronoun that refers back to this possessive nominal is the singular *ko*. Conversely, in (143b), the plural allomorph *-i* is used. Now, the determiner of the overall nominal bears the plural class marker *y* and the pronoun is also plural (*leen*).

(143) *Wolof Dialect B: form of the linker and discourse anaphora*

³¹No prominence or preference is implied in choice of these terms.

- a. Liggéeykat b-i tabax-na kër-u Mareem g-i. Bëgg-na-a
 worker CM.SG-DEF build-NA.3SG house-LNK.SG Mareem CM.SG-DEF like-NA-1SG
 ko / *leen.
 OBJ.3SG / *OBJ.3PL
 ‘The worker built Mareem’s house. I like it/them.’
- b. Liggéeykat b-i tabax-na kër-i Mareem y-i. Bëgg-na-a
 worker CM.SG-DEF build-NA.3SG house-LNK.PL Mareem CM.PL-DEF like-NA-1SG
 *ko / leen.
 *OBJ.3SG / OBJ.3PL
 ‘The worker built Mareem’s houses. I like it/them.’

Converging evidence that the *-u/-i* alternation in Dialect B is conditioned by the number of the possessum is furnished by the possibility of using the plural *-i* linker in a nominal that is the complement to a collective predicate (*boole* ‘gather’).³²

(144) *Wolof Dialect B: form of the linker and collective predicates*

- Liggéeykat b-i boole-na taabal-i Mareem y-i.
 worker CM.SG-DEF put.together-NA.3SG table-LNK.PL Mareem
 ‘The worker gathered Mareem’s tables.’

In the analysis put forth in this paper, the interpretable number feature must enter an Agree relation in order to be licensed, in compliance with the the Number Licensing Condition (??). If *-i* is the realization of an Agree operation that targets the number of the possessum, we would predict that a BN to which *-i* is suffixed to behave as a plural nominal. This is indeed the case, as demonstrated by the interrogative pronouns in (145). In (145a), to the possessum BN *xaj* ‘dog’ is suffixed the singular linker *-u* and the interrogative pronoun must be singular. On the other hand, if the linker suffixed to *xaj* is the plural *-i*, the pronoun must be plural too (cf. (108b) above, a data point from the Wolof dialect where only the invariable *-u* is present and the interrogative pronoun used must be singular).

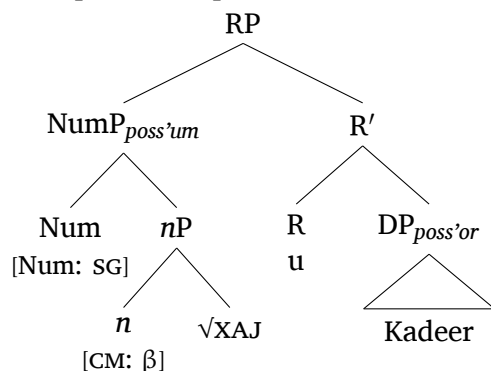
(145) *Wolof Dialect B: form of the linker and interrogative pronouns*

- a. Roxaya bëgg-na **xaj**-u Kadeer, waaye xa-w-ma b-an
 Roxaya like-NA.3SG dog-LNK.SG Kadeer but know-NEG-1SG CM.SG-which
 la / *y-an la.
 COP.3SG / *CM.PL-which COP.3SG
 ‘Roxaya likes a dog of Kadeer’s, but I don’t know which one/which ones.’
- b. Roxaya bëgg-na **xaj**-i Kadeer, waaye xa-w-ma *b-an
 Roxaya like-NA.3SG dog-LNK.PL Kadeer but know-NEG-1SG *CM.SG-which
 la / y-an la.
 COP.3SG / CM.PL-which COP.3SG
 ‘Roxaya likes some dogs of Kadeer’s, but I don’t know which ones.’

However, the structure and derivation I assumed above for linker possessive constructions in (126), repeated below for convenience, is not compatible with this state-of-affairs, given that the possessum is outside of the c-command domain of the linker (here, the head of the Relator Phrase). In order to correct this analysis-internal issue, I propose the amendment in (146b), representing *xaj-i Kadeer* ‘some dogs of Kadeer’s’.

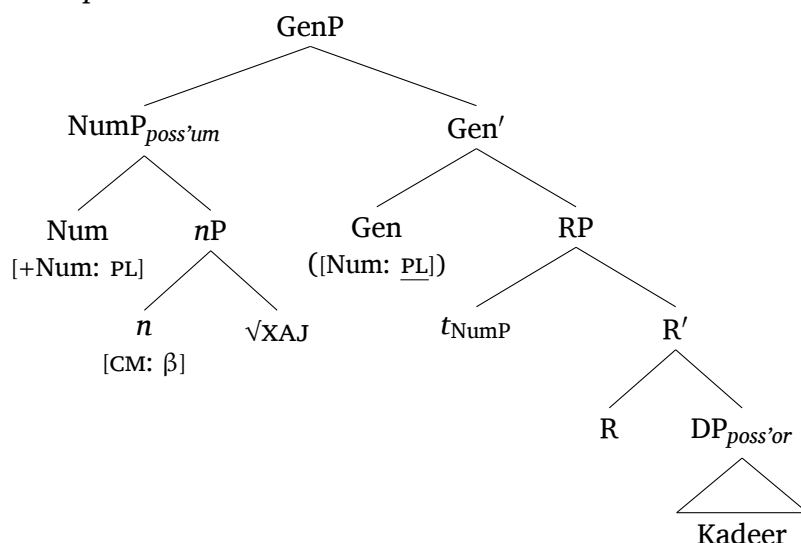
³²Regrettably, I did not elicit a version of (144) where the possessum is singular (in that case, the class marker in the definite determiner would be *b*). This example is expected to be ungrammatical.

(146) a. *linker possessive: previous structure*



[≈ (126)]

b. *Linker possessive: amended structure*



In (146b), the Relator Phrase (RP) is now embedded another layer of functional structure, which I dub ‘GenP’ for convenience. It is the head of the latter that is now expounded as *-u* in Dialect A or as *-u/-i* in Dialect B. This head may also have a number feature to be valued, depending on the dialect. In Dialect A, the linker is invariable and can only combine with BNs with a singular interpretation (recall the data in §3.3). In keeping with the analysis advanced in this paper, I encode these properties as the absence of a number probe in Gen. Correspondingly, in Dialect B, where the linker can be realized as *-u* or *-i* depending the number interpretation of the possessum it is affixed to, as described above. In both Dialects, Gen triggers the movement of the possessum base-generated at Spec-RP to its own specifier position.³³

For completeness, I assume the following Vocabulary Items for the linker in each dialect considered here:

(147) *Linker Vocabulary Item: Dialect A*

[GEN] ↔ /-u/

(148) *Linker Vocabulary Item: Dialect B*

i. [GEN] ↔ -u

³³I abstract away from anti-locality (cf. Erlewine 2016 and references therein) issues here.

ii. [GEN, PL] ↔ -i

In this appendix, we briefly considered a dialectal variation observed in the morphology of the linker. This variation is correlated with the number interpretation the possessum the linker is suffixed to. If the dialect where this suffix is sensitive to number, a BN possessum can receive a plural interpretation. In the present analysis, this possibility can be modeled in terms of an Agree operation that allows an interpretable plural feature in the BN to be licensed.

References

- Acquaviva, Paolo. 2009. Roots and lexicality in Distributed Morphology. In: *Fifth York-Essex Morphology Meeting (YEMM), 9th February and 10th February 2008, Department of Language and Linguistic Science, University of York*. University of York. Department of Language and Linguistic Science.
- Arregi, Karlos, & Nevins, Andrew. 2007. Obliteration vs. impoverishment in the Basque g-/z-constraint. In: *University of Pennsylvania Working Papers in Linguistics*. University of Pennsylvania Press.
- Babou, Cheikh Anta, & Loporcaro, Michele. 2016. Noun classes and grammatical gender in Wolof. *Journal of African Languages and Linguistics*, 37(1), 1–57. DOI: <https://doi.org/10.1515/jall-2016-0001>.
- Baker, Mark C. 2014. Pseudo noun incorporation as covert noun incorporation: Linearization and crosslinguistic variation. *Language and Linguistics*, 15(1), 5–46. DOI: <https://doi.org/10.1177/1606822X13506154>.
- Béjar, Susana, & Rezac, Milan. 2003. Person licensing and the derivation of PCC effects. *Amsterdam Studies in the Theory and History of Linguistic Science Series 4*, 49–62.
- Béjar, Susana, & Rezac, Milan. 2009. Cyclic agree. *Linguistic Inquiry*, 40(1), 35–73. DOI: <https://doi.org/10.1162/ling.2009.40.1.35>.
- Bhatt, Rajesh. 2002. The raising analysis of relative clauses: Evidence from adjectival modification. *Natural language semantics*, 10(1), 43–90. DOI: <https://doi.org/10.1023/A:1015536226396>.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In: Martin, Roger, Michaels, David, & Uriagereka, Juan (eds), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. *Pages 1–52 of: Kenstowicz, Michael (ed), Ken Hale: A life in language*. Cambridge, MA: MIT Press.
- Coon, Jessica, & Bale, Alan. 2014. The interaction of person and number in Mi'gmaq. *Nordlyd*, 41(1), 85–101. DOI: <https://doi.org/10.7557/12.3235>.
- Coon, Jessica, & Keine, Stefan. 2019. *Feature Gluttony*. Ms. McGill, USC. Available at: <https://ling.auf.net/lingbuzz/004224>.
- Corbett, Greville. 2000. *Number*. Cambridge: Cambridge University Press.
- D'alessandro, Roberta, & Roberts, Ian. 2008. Movement and agreement in Italian past participles and defective phases. *Linguistic Inquiry*, 39(3), 477–491. DOI: <https://doi.org/10.1162/ling.2008.39.3.477>.
- Danon, Gabi. 2011. Agreement and DP-internal feature distribution. *Syntax*, 14(4), 297–317. DOI: <https://doi.org/10.1111/j.1467-9612.2011.00154.x>.
- Davies, William D, & Dubinsky, Stanley. 2001. In: *Objects and other Subjects: Functional architecture and the distribution of subject properties*. Springer. DOI: <https://doi.org/10.1007/978-94-010-0991-1>.

- Dayal, Veneeta. 2004. Licensing by modification. *Ilha do Desterro A Journal of English Language, Literatures in English and Cultural Studies*, 217–238. DOI: <https://doi.org/10.5007/%25x>.
- Dayal, Veneeta. 2011. Hindi pseudo-incorporation. *Natural Language & Linguistic Theory*, 29(1), 123–167. DOI: <https://doi.org/10.1007/s11049-011-9118-4>.
- Den Dikken, Marcel. 2006. *Relators and linkers: The syntax of predication, predicate inversion, and copulas*. Vol. 47. MIT press. DOI: <https://doi.org/10.7551/mitpress/5873.001.0001>.
- D'Alessandro, Roberta, & Roberts, Ian. 2010. Past participle agreement in Abruzzese: split auxiliary selection and the null-subject parameter. *Natural Language & Linguistic Theory*, 28(1), 41–72. DOI: <https://doi.org/10.1007/s11049-009-9085-1>.
- Erlewine, Michael Yoshitaka. 2016. Anti-locality and optimality in Kaqchikel Agent Focus. *Natural Language & Linguistic Theory*, 34(2), 429–479. DOI: <https://doi.org/10.1007/s11049-015-9310-z>.
- Fuchs, Zuzanna, & Van der Wal, Jenneke. to appear. The locus of parametric variation in Bantu gender and nominal derivation. *Linguistic Variation*.
- Harbour, Daniel. 2011. Valence and atomic number. *Linguistic Inquiry*, 42(4), 561–594. DOI: https://doi.org/10.1162/LING_a_00061.
- Harizanov, Boris, & Gribanova, Vera. 2019. Whither head movement? *Natural Language & Linguistic Theory*, 37(2), 461–522. DOI: <https://doi.org/10.1007/s11049-018-9420-5>.
- Harley, Heidi, & Ritter, Elizabeth. 2002. Person and number in pronouns: A feature-geometric analysis. *Language*, 78(3), 482–526. DOI: <https://doi.org/10.1353/lan.2002.0158>.
- Harris, Christen. 2015. *Applicative Structure in Wolof*. Ph.D. thesis, The University of Western Ontario. Available at: <https://ir.lib.uwo.ca/etd/3464/>.
- Jenks, Peter. 2018. Articulated definiteness without articles. *Linguistic Inquiry*, 49(3), 501–536. DOI: https://doi.org/10.1162/ling_a_00280.
- Jordanoska, Izabela. 2020. *The pragmatics of sentence final and second position particles in Wolof*. Ph.D. thesis, Universität Wien, Vienna.
- Kalin, Laura. 2017. Dropping the F-bomb: An argument for valued features as derivational time-bombs. *Pages 119–132 of: Proceedings of the 47th annual meeting of the North East Linguistic Society*.
- Kalin, Laura. 2018. Licensing and Differential Object Marking: The View from Neo-Aramaic. *Syntax*, 21(2), 112–159. <https://doi.org/10.1111/synt.12153>.
- Kalin, Laura. 2019. Nominal licensing is driven by valued (phi-) features. *Nordlyd*, 43(1), 15–29. DOI: <https://doi.org/10.7557/12.4186>.
- Keine, Stefan, Wagner, Michael, & Coon, Jessica. 2019. Hierarchy effects in copula constructions. *Canadian Journal of Linguistics/Revue canadienne de linguistique*, 64(4), 617–648. DOI: <https://doi.org/10.1017/cnj.2019.28>.
- Kihm, Alain. 2005. Noun class, gender, and the lexicon-syntax-morphology interfaces. *The Oxford handbook of comparative syntax*, 40, 459–512.
- Kiss, Katalin É. 2012. Patterns of agreement with coordinate noun phrases in Hungarian. *Natural Language & Linguistic Theory*, 30(4), 1027–1060. DOI: <https://doi.org/10.1007/s11049-012-9178-0>.
- Kramer, Ruth. 2009. *Definite markers, phi-features, and agreement: A morphosyntactic investigation of the Amharic DP*. Ph.D. thesis, University of California, Santa Cruz. Available at: <https://search.proquest.com/docview/304861283>.
- Kramer, Ruth. 2015. *The morphosyntax of gender*. Vol. 58. Oxford University Press.
- Kramer, Ruth. 2017. General number nouns in Amharic lack NumP. *Pages 39–54 of: Ostrove, Jason, Kramer, Ruth, & Sabbagh, Joseph (eds), Asking the Right Questions*. Open Ac-

- cess Publications from the University of California, Santa Cruz. Retrieved from: <https://escholarship.org/uc/item/8255v8sc>.
- Landau, Idan. 2007. EPP extensions. *Linguistic Inquiry*, **38**(3), 485–523. <https://doi.org/10.1162/ling.2007.38.3.485>.
- Longenbaugh, Nicholas. 2019. *On expletives and the agreement-movement correlation*. Ph.D. thesis, Massachusetts Institute of Technology. Available at: <http://dspace.mit.edu/handle/1721.1/7582>.
- Martinović, Martina. 2015. *Feature geometry and head-splitting: Evidence from the morphosyntax of the Wolof clausal periphery*. Ph.D. thesis, University of Chicago, Chicago.
- Martinović, Martina. 2017. Wolof *wh*-movement at the syntax-morphology interface. *Natural Language & Linguistic Theory*, **35**(1), 205–256. DOI: <https://doi.org/10.1007/s11049-016-9335-y>.
- Martinović, Martina. 2019. Interleaving Syntax and Postsyntax: Spellout before Syntactic Movement. *Syntax*. DOI: <https://doi.org/10.1111/synt.12169>.
- Martinović, Martina. 2020. *Reversibility in specificational copular sentences and pseudoclefts*. Available at: <https://ling.auf.net/lingbuzz/003198>.
- Massam, Diane. 2001. Pseudo noun incorporation in Niuean. *Natural Language & Linguistic Theory*, **19**(1), 153–197. DOI: <https://doi.org/10.1023/A:1006465130442>.
- McLaughlin, Fiona. 2004. Is there an adjective class in Wolof. *Adjective classes: A cross-linguistic typology*, **1**, 242–262.
- Müller, Ana. 2002. The semantics of generic quantification in Brazilian Portuguese. *Probus*, **14**(2), 279–298. DOI: <https://doi.org/10.1515/prbs.2002.011>.
- Munn, Alan, & Schmitt, Cristina. 2005. Number and indefinites. *Lingua*, **115**(6), 821–855. DOI: <https://doi.org/10.1016/j.lingua.2004.01.007>.
- Nevins, Andrew. 2011. Multiple agree with clitics: Person complementarity vs. omnivorous number. *Natural Language & Linguistic Theory*, **29**(4), 939–971. DOI: <https://doi.org/10.1007/s11049-011-9150-4>.
- Paul, Ileana. 2016. When bare nouns scope wide. The case of Malagasy. *Natural Language & Linguistic Theory*, **34**(1), 271–305. DOI: <https://doi.org/10.1007/s11049-015-9302-z>.
- Pires de Oliveira, Roberta, & Rothstein, Susan. 2011. Bare singular noun phrases are mass in Brazilian Portuguese. *Lingua*, **121**(15), 2153–2175. DOI: <https://doi.org/10.1016/j.lingua.2011.09.004>.
- [Redacted], Redacted. 2021. *A dependent case analysis of pseudo noun incorporation in Wolof*.
- Rinaldi, Melisa Gisele. 2018. *Bare Singulars and So-Called Bare Singulars*. Ph.D. thesis, Queen Mary University of London. Available at <https://qmro.qmul.ac.uk/xmlui/handle/123456789/56405>.
- Ritter, Elizabeth. 1991. Two functional categories in Modern Hebrew noun phrases. *Pages 37–60 of: Rothstein, Susan (ed), Syntax and Semantics: Perspectives on Phrase Structure: Heads and Licensing*, vol. 25. New York: Academic Press.
- Ritter, Elizabeth. 1992. Cross-linguistic evidence for number phrase. *Canadian Journal of Linguistics/Revue canadienne de linguistique*, **37**(2), 197–218. DOI: <https://doi.org/10.1017/S0008413100021952>.
- Robert, Stéphane. 1991. *Approche énonciative du système verbal: le cas du wolof*. CNRS Editions.
- Rullmann, Hotze, & You, Aili. 2006. General number and the semantics and pragmatics of indefinite bare nouns in Mandarin Chinese. *Pages 175–196 of: von Heusinger, Klaus, & Turner, Ken (eds), Where semantics meets pragmatics*. Amsterdam: Elsevier.
- Schmitt, Cristina, & Munn, Alan. 1999. Against the nominal mapping parameter: Bare nouns in Brazilian Portuguese. *Pages 339–354 of: NELS*, vol. 29.

- Tamba, Khady, Torrence, Harold, & Zimmermann, Malte. 2012. Wolof quantifiers. *Pages 891–939 of*: Keenan, Edward L., & Paperno, Denis (eds), *Handbook of quantifiers in natural language*. Springer. DOI: https://doi.org/10.1007/978-94-007-2681-9_17.
- Torrence, Harold. 2013. *The clause structure of Wolof: insights into the left periphery*. John Benjamins Publishing. DOI: <https://doi.org/10.1075/la.198>.
- Torrence, William Harold. 2005. *On the distribution of complementizers in Wolof*. Ph.D. thesis, University of California, Los Angeles.
- Zribi-Hertz, Anne, & Diagne, Lamine. 2002. Clitic placement after syntax: Evidence from Wolof person and locative markers. *Natural Language & Linguistic Theory*, **20**(4), 823–884. DOI: <https://doi.org/10.1023/A:1020494714861>.