Bare nominals in Wolof

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1 Overview

A. Nominals and determiners in Wolof (Niger-Congo, Senegal; see Torrence 2013; Martinović 2015 and references therein)

- Wolof has a rather rich set of overt determiners (see Tamba et al. 2012).1

1. Plural and singular definite determiners
   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.’

2. Singular indefinite determiner
   Xadi gis-na a-b sàcc. Xadi see-NA.3SG INDEF-CM.SG thief ‘Xadi saw a thief.’

3. Plural indefinite determiner
   Awa jàpp-na a-y sàcc. Awa catch-NA.3SG INDEF-CM.PL thief ‘Awa caught some thieves.’

(1) (2a/32a/33b); glosses adapted for uniformity)

- The determiner contains a class marker (CM; see Babou & Loporcaro 2016) affix.
- The class marker also encodes number information (singular or plural): sàcc ‘thief’ remains constant in (1b) and (1c). Whether the DP it heads is interpreted as singular or plural is correlated with the class marker used, b and y, respectively.

B. Wolof also has bare nominals (BNs).

(2) Gis-na-a nonggo dara senegalee.
   see-NA.1SG student Senegalese
   ‘I saw a Senegalese student.’
   (Speaker commented that this sentence is false if I saw more than one Senegalese student.)
   
   - Definition assumed: BNs are nominals that lack the morphology displayed by their overt counterparts like those in (1).
   - BNs in Wolof lack an overt determiner and the class marker attached to it. Because of the absence of a class marker, there is also no overt number morphology.

C. BNs in Wolof seem to be narrow scope indefinites

- BNs in Wolof can be licensed in an existential construction, which displays definiteness effects:

(3) 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.’
   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 dool b-i. have-NA.3SG dog PREP garden CM.SG-DEF ‘There is a dog in the garden.’ (NOT: There are dogs in the garden.)

- Furthermore, they seem to take narrow scope.2

(4) / Again > 3, 3> again
   b. i. # Mareem married the same dancer several times (e.g. marriage, followed by divorce, followed by another marriage).
      ii. / Mareem has a very specific preference and she has married several, different dancers.

(5) # Faatu adopte-ul xaj. Tur=am mo-y Calki. Faatu adopt-NEG dog name=POSS.3SG MO.3SG-IMPF Calki ‘Faatu did not adopt any dog at all. The dog’s name is Calki.’

1The analysis presented here is different from that in the submitted abstract. This difference is caused by the development of the research in between the time of this presentation and the submission of the abstract.

2Context for the interpretation of (5): Faatu loves dogs, but she could not have any because she had always lived in tiny apartments. She is finally moving to a much bigger place, so she can adopt many dogs now. She goes to a dog shelter and adopts several of the dogs available, except for one. An employee at the dog shelter is happy that Faatu is providing a forever home for some many dogs, but the employee is also sad that this one dog was not adopted.
D. Singular interpretation vs. number neutrality

- Several, unrelated languages have BNs too.

(6)  
   a. **BN in Amharic**
      
      ld3-
      μā̃shāf wāssād-
      ä.
      
      child-DEF book take.PF-3MS
      ‘The child took one or more books.’
      (Kramer 2017: (2))

   b. **BN in Brazilian Portuguese**
      
      Unicórnio tem chifre.
      unicorn has horn
      ‘Unicorns have (an unspecified number of) horns.’
      (Müller 2002: (51))

   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))

   d. **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 (6a)–(6d) 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).

- Conversely, **BNs in Wolof seem to be exclusively singular.** This can be demonstrated by the fact that BNs cannot saturate a collective predicate (7), be the antecedent of plural discourse anaphora or of a reciprocal (see next section).

(7)  
   a. Jangalekat b-i dajeele-na xale ci bayaal
       teacher CM.SG-DEF gather-NA.3SG child PREF park
       ‘The teacher gathered child in the park.’
   (C. Chen, p.c.)

   b. Compare the behavior of BNs in Mandarin with respect to the same properties:

   (8) **Singular or plural discourse anaphora in Mandarin**
       
       Zuotian wo mai le shu. Wo ba ta/tamen dai hui jia
       yesterday I buy ASP book. I BA it/them bring back home
       le. ASP
       ‘Yesterday, I bought one or more books. I brought it/them home.’
       (Rullmann & You 2006: (46b/47b/45b))

   (9) **BN can saturate a collective predicate in Mandarin**
       
       Laoshi zai gongyuan-li jihe-le xuesheng(-men)
       teacher at park-in gather-PERF student(-PL)
       ‘The teacher gathered the students in the park.’
       (C. Chen, p.c.)

   (10) **BN is not incompatible with a reciprocal in Mandarin**
       
       Wo I ba ba? (yixie) xuesheng jieshao gei bici.
       I BA? (some) student introduce to each.other
       ‘I introduced some students to each other.’
       (C. Chen, p.c.)

E. Preview of the analysis

- I will propose that the source of the singular interpretation of unmodified BNs in Wolof is nominal-internal (and not dependent on sentential material, as in Dayal 2011).

- Compared to full nominals (11a), BNs will be proposed to have a truncated structure (11b). Specifically, they include only a NumP above the root.

- Wolof must have both a singular and a plural NumP (because full nominals can be either; see (1)).

- The NumP in BNs could be plural too. But I stipulate that the plural Num – but not the singular Num – must obligatorily lower onto n.

- Because BNs lack an n, the requirement that Num lower onto n cannot be fulfilled. As such, the only convergent derivation is one where Num is singular.

(11)  
   a. **Structure for full nominal**
      
      [DP D [NumP NumSG/NumPL [nP n √ ]]]

   b. **Structure for BN**
      
      [NumP NumSG/*NumPL √ ]

- The correlation between the size of the structure and the number interpretation of a BN will be shown to be consistent with the effects that different modifiers may have on the number interpretation.
2 BNs in Wolof are singular

In this section: data that suggest that BNs in Wolof are singular, according to the properties below. First, we will examine the behavior of full nominals regarding these properties to establish a baseline to compare BNs with.

i. Collective predicate;

ii. Discourse anaphora;

iii. Pronoun in sluicing context;

iv. Reciprocal;

v. Plural reflexive;

vi. ‘How many’ follow-up.

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i. Collective predicate

(12) Dajeele requires a plural object

Jangalekat b-i dajeele-na *a-b xale / a-y
teacher CM.SG-DEF gather-NA.3SG *CM.SG-INDEF child / CM.PL-INDEF
xale ci bayaal b-i.
child PREP park CM.SG-DEF
'The teacher gathered some students in the park.'

(13) Boole requires a plural object

Roxaya boole-na *a-b butééel / a-y
Roxaya put.together-NA.3SG *CM.SG-INDEF bottle / CM.PL-INDEF
buteéel ci waañ w-i.
bottle PREP kitchen CM.SG-DEF
'Roxaya collected some bottles in the kitchen.'

(7) BN in Wolof cannot be the object of dajeele

* Jangalekat b-i dajeele-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.'

(14) BN in Wolof cannot be the object of boole

* Roxaya boole-na butééel 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 be the object of a collective predicate, if an oblique argument is added.

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

Faatu dajeele-na a-b féckkati ak a-b
Faatu gather-NA.3SG CM.PL dancer CONJ INDEF-CM.SG
woykatí.
singer
'Faatu gathered a dancer with a singer.'

• In that case, a BN behaves like a singular full nominal:

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

Faatu dajeele-na féckkati ak (a-b) woykatí.
Faatu gather-NA.3SG dancer CONJ (INDEF-CM.SG) singer
'Faatu gathered a dancer with a singer.'

ii. Discourse anaphora

(17) Discourse anaphora must match number of antecedent

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

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

(18) BN cannot be antecedent of plural discourse anaphora

a. Gis-na-a jangalekat. Maymuna bëgg-na ko see-NA.1SG teacher Maymuna like-NA.3SG OBJ.3SG
'I saw a teacher yesterday. Maymuna admires her.'

see-NA.1SG teacher Maymuna like-NA.3SG OBJ.3PL

iii. Pronoun in sluicing

(19) Full nominal and pronoun in sluicing must match

a. Jangalekat b-i seet-na a-b nonggo darr, waay
teacher CM.SG-DEF visit-NA.3SG CM.SG-INDEF student but
xa-w-ma k-an la / *y-an la.
know-NEG-1SG CM.SG-Q COP.3SG / *CM.PL-Q COP.3SG
'The teacher visited the student, but I do not know which.'
b. Jangalekat b-i seet-na a-y nonggo darra, waay teacher CM.SG-DEF visit-NP-NA.3SG CM.PL-INDEF student but xa-w-ma *k-an la / y-an la. know-NEG-1SG *CM.SG-Q COP.3SG / CM.PL-Q COP.3SG 'The teacher visited the students, but I do not know which.'

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

Jangalekat b-i seet-na nonggo darra, waay xa-w-ma teacher CM.SG-DEF visit-NP-NA.3SG student but xa-w-ma *k-an la / y-an la. CM.SG-Q COP.3SG / CM.PL-Q COP.3SG 'The teacher visited a student, but I do not know which.'

iv. Reciprocal

(21) **Plural DP as antecedent of reciprocal**

a. Jangalekat b-i wanale-na a-y teacher CM.SG-DEF introduce-NP-NA.3SG CM.PL-INDEF nonggo darra ŋu xam-ante. student 3PL know-RECIPI

'**The teacher introduced some students to each other.**'

b. * Jangalekat b-i wanale-na a-b teacher CM.SG-DEF introduce-NP-NA.3SG CM.SG-INDEF nonggo darra mu xam-ante. student 3SG know-RECIPI

Lit.: 'The teacher introduced a student to each other.'

(22) **BN in Wolof cannot be antecedent of reciprocal**

a. * Jangalekat b-i wanale-na nonggo darra mu xam-ante. teacher CM.SG-DEF introduce-NP-NA.3SG student 3SG know-RECIPI

Lit.: 'The teacher introduced a student to each other.'

b. * Jangalekat b-i wanale-na nonggo darra ŋu xam-ante. teacher CM.SG-DEF introduce-NP-NA.3SG student 3PL know-RECIPI

Lit.: 'The teacher introduced student to each other.'

v. Plural reflexive

3Why a causative construction: because BNs cannot be subjects in Wolof (as in other BN languages), hence why one must embed it for it to be in the right structural position for it to be antecedent.

(23) **Plural DP can be antecedent of reflexive**


'Kadeer washed the children wash themselves.'


'Kadeer made the children wash themselves.'


Lit.: 'Kadeer made the child wash themselves.'

(24) **BN cannot be antecedent of plural reflexive**

* Jangalekat b-i sang-aloo-na nonggo darra seen teacher CM.SG-DEF wash-CAUS-NA.3SG student POSS.3PL bopp. head

Lit.: 'The teacher made student wash themselves.'

• Expectedly though, the BN can be the antecedent of a singular reflexive. As such, (24)'s ill-formedness cannot be caused by the BN's inability to be an antecedent.

(25) **BN can be antecedent of singular reflexive**

Jangalekat b-i sang-aloo-na nonggo darra teacher CM.SG-DEF wash-CAUS-NA.3SG student POSS.3PL head

'Kadeer made some student wash himself/herself.'

vi. 'How many' follow-up

(26) **Plural DP can be followed up by 'how many'**


'Kadeer received some gifts.'

B. őnata neexal la Kadeer jot? how.many gift COP.3SG Kadeer receive

'How many gifts did Kadeer receive?'

(27) **Singular DP cannot be followed up by 'how many'**

A. Kadeer jot-na b-enn neexal. Kadeer receive-NP-NA.3SG one-CM.SG gift

'Kadeer received one gift.'
### 2.1 Interim summary

The data investigated above is summarized in (29). Notice that BNs have the same behavior as that of singular full nominals.

<table>
<thead>
<tr>
<th></th>
<th>Full nominal</th>
<th>BN</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Collective predicate</td>
<td>* ✓ *</td>
</tr>
<tr>
<td>ii.</td>
<td>Discourse anaphora</td>
<td>SG PL SG</td>
</tr>
<tr>
<td>iii.</td>
<td>Pronoun (sluicing)</td>
<td>SG PL SG</td>
</tr>
<tr>
<td>iv.</td>
<td>Reciprocal</td>
<td>* ✓ *</td>
</tr>
<tr>
<td>v.</td>
<td>Plural reflexive</td>
<td>* ✓ *</td>
</tr>
<tr>
<td>vi.</td>
<td>‘How many’ follow-up</td>
<td># ✓ #</td>
</tr>
</tbody>
</table>

We may thus ask the following question:

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

### 3 Adding a modifier: relative clauses vs. plain modifiers

#### 3.1 Relative clause

A. Class morphology and number matching

- In Wolof, a relative clause contains a class marker attached to the relative complementizer u (Torrence 2013).
- The class marker of the relative clause and that of the head of the relative clause must match.

<p>| | | |</p>
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</table>

B. BNs can be modified by either a relative clause with either a singular or a plural class marker.

C. Data: BN modified by a plural relative clause

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<tr>
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<th></th>
<th></th>
</tr>
</thead>
</table>

Lit.: ‘The teacher gathered student who Samba knows in the park.’

We may ask then how they can be able to be modified by a relative clause with a plural class marker (y, (32b)), while their singular full DP counterpart cannot (31b). In fact, the behavior of BNs now resembles that of plural DPs (31b).

- We may ask then if BNs modified by a plural relative clause may behave like full plural DPs in other aspects as well.
- This section: we will go back to the six properties investigated above and see that the answer to this question is positive.
ii. Discourse anaphora

(34) **BN modified by plural RC can be antecedent of plural discourse anaphora**


`I saw a teacher who Roxaya knows. Maymuna admires her.'


`I saw some teachers who Roxaya knows. Maymuna admires them.'

iii. Pronoun in sluicing context

(35) **BN modified by plural RC can be antecedent of plural sluicing pronoun**


`The teacher visited a writer who Maymuna likes, but I do not know which.'

b. Jangalekat b-i **seet-na bindakat** [ y-u teacher CM.SG-DEF visit-NA.3SG writer [ CM.PL-COMP Maymuna bëgg ], waay xa-w-ma *k-an la / Maymuna like ] but know-NEG-1SG *CM.SG-Q COP.3SG / y-an la. CM.PL-Q COP.3SG

`The teacher visited some writers who Maymuna likes, but I do not know which.'

iv. Reciprocal

(36) **BN modified by plural RC can be antecedent of reciprocal**


Lit.: `The teacher introduced student that Mareem knows to each other.'

vi. 'How many' follow-up

(37) **BN modified by RC targeted by ‘how many’**

A. Mareem jang-a- **tēere** y-u Mariama Ba binda.
Mareem read-NA.3SG book CM.PL-COMP Mariama Ba write
`Mareem read some books that Mariama Ba wrote.'

B. Ñaata tēere y-u Mariama Ba binda la
how.many book CM.PL-COMP Mariama Ba write COP.3SG
Mareem jang-a?
Mareem read
`How many books that Mariama Ba wrote did Mareem read?'

D. Summary

- §2: BNs in Wolof behave as if they were singular.
- This section: this generalization has to be relativized to unmodified BNs only, since BNs modified by a plural RC behave is if they were plural.

E. Next section: we will see that nominal modifiers that do not have the syntax of an RC do not have this effect on the number interpretation of BNs.

### 3.2 Plain nominal modifier

A. Syntax of nominal modifiers

- In Wolof, nominal modifiers usually have the syntax of relative clauses (e.g. tall in (37)).
- Expressions for nationality though occur as plain modifiers (i.e., without the syntax of a relative clause.)
(39) Mareem dajeele-na a-y woykat brezilien.  
Mareem gather-NA.3SG INDEF-CM.PL singer Brazilian  
'Mareem gathered some Brazilian singers.'

B. This section:

i. Collective predicate

(40) * Roxaya dajeele-na féckat brezilien.  
Roxaya gather-NA.3SG dancer Brazilian  
Lit.: ‘Roxaya gathered Brazilian student.’

ii. Discourse anaphora

(41) Gis na-a woykati brezilien. Maymuna bëgg na ko / see NA-1SG dancer Brazilian Maymuna like NA.3SG OBJ.3SG / *leen.  
*OBJ.3PL  
'I saw a Brazilian dancer. Maymuna admires her/*them.'

iii. Pronoun in sluicing context

(42) Jangalekat b-i gis na nonggo darra brezilien, waay teacher CM.SG-DEF see NA.3SG student Brazilian but xa-w-ma ʔk-an la / *y-an la. know-NEG-1SG 1CM.SG-Q COP.3SG / *CM.PL-Q COP.3SG  
'The teacher saw a student, but I do not know which.'

iv. Reciprocal

v. Plural reflexive

vi. ‘How many’ follow-up

▷ Last three properties: missing (hopefully, to be supplied soon). The expectation is the resulting sentences will be ungrammatical/infelicitous.

3.3 Interim summary

The data from §3.1 and §3.2 can be summarized as follows:

(43) BN

<table>
<thead>
<tr>
<th></th>
<th>BN</th>
<th>Plural RC</th>
<th>Plain</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Collective predicate</td>
<td>Ø</td>
<td>✓</td>
<td>*</td>
</tr>
<tr>
<td>ii. Discourse anaphora</td>
<td>SG</td>
<td>PL</td>
<td>SG</td>
</tr>
<tr>
<td>iii. Pronoun (sluicing)</td>
<td>SG</td>
<td>PL</td>
<td>SG</td>
</tr>
<tr>
<td>iv. Reciprocal</td>
<td>*</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>v. Plural reflexive</td>
<td>*</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>vi. ‘How many’ follow-up</td>
<td>#</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

We may thus ask the following questions:

(44) i. Why does an unmodified BN behaves as if it were singular, while a BN modified by a plural relative clause behaves as if it were plural?  
ii. Why does adding a plain (i.e. number-less) nominal modifier not have the same effect?

4 Towards an analysis

4.1 Plausible analyses

A. Could BNs in Wolof be incorporated nouns (Baker 1985)?

- They do seem to display a signature property of incorporated nouns, namely, narrow scope (cf. (4a) and (5)).
- However, a noun incorporation analysis does not seem to be appropriate for Wolof, since the BN is separated from the verb by other morphemes (see e.g. na and a in (2)) and because the BN can be modified (see nominal modifier data in §3.1).

(2) Gis-na-a nonggo darra senegalee.  
see-NA-1SG student Senegalese  
'I saw a Senegalese student.'

B. Could BNs in Wolof be pseudo-incorporated nouns (Massam 2001; Dayal 2011; Baker 2014; see overview in Levin 2015)?

- BNs in Wolof do display some of the telltale properties of PNI. For instance, there cannot be a low adverb intervening the verb and its affixes and the BN object.

(45) a. Jangalekat b-i jang-na {cikaw} taalif b-i teacher CM.SG-DEF read-NA.3SG {loudly} poem CM.SG-DEF {cikaw}. {loudly}  
The teacher read the poem loudly.'

b. Jangalekat b-i jang-na {*cikaw} taalif {cikaw}. teacher CM.SG-DEF read-NA.3SG {*loudly} poem {loudly}  
'The teacher read a poem loudly.'

- A PNI analysis could thus be applicable.
- But: syntactic PNI analyses often capitalize on the inability of the BN to move (Massam 2001), their consequences to linearization (Baker 2014), or their licensing requirements (Levin 2015; see also van Urk 2019).
• This does not seem sufficient to account for the singular interpretation of Wolof BNs.

C. Singular BNs in Hindi

• This brings us to Dayal’s (2011) semantic analysis of PNI in Hindi.
• Dayal remarks that BNs in Hindi are not number-neutral, but rather singular.
• Dayal proposes that the plural interpretation arises as a byproduct of a pluralational operator that applies at the sentential level and which is introduced by aspect.

(46)

a. anu-ne [3 hours in] kitaab
   Anu-ERG [3 hours in] book
   paRhii. read-PFV
   ‘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 [3 hours in] kitaab
   Anu-ERG [3 hours in] book
   paRh [Daalii] read-PFV
   ‘Anu read a book in three hours’
   = exactly one book.’

c. * anu-ne [3 hours in] kitaab [ikTTa] kar
   Anu-ERG [3 hours in] book collect do
   COMPL.PFV
   Lit.: ‘Anu got done collecting a book in three hours.’

d. anu-ne [3 hours in] kitaabeN [ikTTa] kar
   Anu-ERG [3 hours in] books collect do
   COMPL.PFV
   ‘Anu got done collecting books in three hours.’
   (Dayal 2011: (32); adapted)

• (46a) shows that the number interpretation of the BN kitaab ‘book’ depends on the telicity of the predicate: i. telic (in three hours) → singular; ii. atelic (for three hours) → number neutral
• (46b) eliminates the atelic reading via the addition of a completive particle. Only a singular interpretation is available.
• In (46c), the verb is now a collective predicate. The telic reading is enforced by a completive particle. A BN is disallowed. If it is replaced with a bare plural (46d), the result is well-formed again.

D. Why this analysis may not be applicable to Wolof

• While I do not have exactly the same type of data as (46) (but should!), existing Wolof data suggest that aspect does not play the same role as it does in Hindi.
• Ap faker information remains constant across (7), (33b), and (40) and yet the number interpretation is different.

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

   know] PREP park CM.SG-DEF
   ‘The teacher gathered some students who Samba knows in the park.’

(40) * Roxaya dajeele-na féckat brezilien.
   Roxaya gather-NA.3SG dancer Brazilian
   Lit.: ‘Roxaya gathered Brazilian student.’

• What does vary: presence or absence of modifier and type of modifier.

4.2 Proposal

A. Takeaway from the discussion of plausible analyses

• It seems that, while sentential material does not have an effect on the number interpretation of BNs in Wolof (unlike what happens in Hindi), modifiers do seem to have an effect.
• However, different modifiers have different effects. Plural relative clauses may render a BN plural, but plain modifiers do not.
• Thus, it seems feasible that the source of the number interpretation in Wolof BNs is nominal-internal.

B. Structure proposed for full nominals (linear order ignored), which will be the basis for the structure proposed for BNs:
different morphemes to the root. A case in point would be the fact that the class marker for the class marker would be an instance of contextual allomorphy. That this analysis is on the right track is suggested depends on the specification of the Num head adjacent to noun when it is plural (exponent: 7).

### C. Proposal: class marker is encoded in n°

- Inspired by Embick’s (2015) take on theme vowels in languages like Spanish (based on Oltra Massuet 1999), I assume that the Wolof class marker is represented at the categorizer n.
- Inspired by Torrence’s (2013) take on the class marker that appears on relative clauses (§3.1) as an instance of complementizer agreement, I assume that the class marker that appears in the determiner is an instance of D-n agreement.

### D. Stipulation: [Plural] (though not [singular]) Num must lower onto n.

- As mentioned, number in nouns in only encoded in the class marker. Except for the nouns in (48), where there is initial consonant mutation that is correlated with the number of the noun.

### (48) Consonant mutation in SG/PL pairs (Babou & Loporcaro 2016: (6))

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. mbaam mi</td>
<td>baam yi</td>
<td>‘the donkey/-s’</td>
</tr>
<tr>
<td>b. mbagg mi</td>
<td>wagg yi</td>
<td>‘shoulder/-s’</td>
</tr>
<tr>
<td>c. pepp mi</td>
<td>fepp yi</td>
<td>‘grain/-s’</td>
</tr>
<tr>
<td>d. këf ki</td>
<td>yëf yi</td>
<td>‘thing/-s’</td>
</tr>
<tr>
<td>e. bët bi</td>
<td>gët yi</td>
<td>‘eye/-s’</td>
</tr>
<tr>
<td>f. loxo bi</td>
<td>yoxo yi</td>
<td>‘hand/-s, arm/-s’</td>
</tr>
<tr>
<td>g. waa ji</td>
<td>gaa ni</td>
<td>‘guy/-s’</td>
</tr>
</tbody>
</table>

### E. Structure proposed for BNs

- Assumption: what you see is what you get. All things equal, methodological concerns should prevent one from positing null, purely abstract nodes.
- I will thus try to propose a structure of BNs in Wolof that is based on the structure proposed for full nominals (47), but without projections that do not have morphological support.
- Bare minimum: the root, otherwise we cannot even capture the basic meaning of the BN.

---

4 In principle, we could say that there are as many class features as there are classes. It seems though that we would have to multiply lexical entries for the class marker in the sense that there would have to be one n that combines with e.g. xale when it is singular (exponent: /h/) and another n that combines with the same noun when it is plural (exponent: /y/). Alternatively, we could say that the realization of the class marker depends on the specification of the Num head adjacent to n. In other words, the different realizations of the class marker would be an instance of contextual allomorphy. That this analysis is on the right track is suggested by the fact that the class marker may be exposed in even other different ways depending on the addition of different morphemes to the root. A case in point would be the fact that the class marker for góór ‘man’ is s (not g) when this noun is in the diminutive form:

(i) (n)góór s-i ‘man.DIM.CM.SG-DEF’

(Torrence 2013: (24b); adapted)

By hypothesis, there is a diminutive affix close to the root góór (which can optionally trigger consonant mutation) and this morpheme causes the class {y} (according to the convention mentioned above) to be exposed as /h/.

5 We could in principle posit a morphological boundary between the first mutating consonant and the rest of the word (e.g. mb-aam and b-aam) and analyze the first segment as a number morpheme and the rest of the word as the root. However, such roots do not seem to occur elsewhere in the language.

6 See also Embick (2010) for a similar definition in terms of cycles/phases. See Bobaljik & Harley (2017) for a stricter version of (49).

7 This is inspired by Kramer (2016).
nP: given (i) the proposal above that Wolof class markers are the exponent of the categorizer n and (ii) the ‘what you see is what you get’ assumption, because there is no class marker in BNs, I assume they do not project an nP.

Desideratum: model the singular (not number-neutral) interpretation of BNs in Wolof. Following Ritter (1991); Harbour (2011), I assume that the only interpretable [Number] feature is the one placed in NumP.

- DP may have unvalued $\varphi$-features (Danon 2011; Harbour 2011; Pesetsky 2013; Landau 2016), including [Number].
- These features are, nonetheless, assumed to be purely syntactic (they participate in agreement with DP-external probes); they play no role at LF.

I propose thus that BNs have a NumP projection.

I will remain agnostic as to whether BNs have a silent DP projection (Paul 2016) or if they lack a DP layer altogether (Bošković 2014 and references therein).

- This is a long standing debate in the BN literature, but, as far as I can tell, the presence or absence of such a DP plays no role in the present analysis.
- For convenience, I omit the representation of a DP layer in the diagrams to follow.

We arrive at the following structure:

$(51)$

\[ \text{NumP} \]

\[ \text{Num} \]

$\sqrt{xale}$

F. Previous literature on the syntax of number neutrality (general number)

- Rullmann & You (2006) and Kramer (2017) investigate BNs in Mandarin and Amharic, respectively. In both languages, as mentioned above (see (6c) and (6a)), BNs are number neutral.

- Rullmann & You and Kramer capture this semantic property by proposing that BNs lack NumP. $8$

- Common assumption: entities of type $e$ denote singleton sets (atoms) and their sums (Rullmann & You 2006). 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.

- Because BNs in Wolof are exclusively singular, the same bare syntactic structure will not work.

- Adopting the rather common assumptions mentioned above about number, a structure like $(51)$ may gain further traction: it contains a bare minimum of structure; the functional layer that it does contain is able to restrict the number interpretation of the nominal.

8Dayal (2011) also considers this possibility, but eventually dismisses it in the analysis for pseudo-incorporation in Hindi.

G. But: $(51)$ alone is consistent with a singular or plural restriction.

- This overgenerates, as BNs in Wolof are exclusively singular (when unmodified).
- Restriction to the singular interpretation (as desired) will be shown in §4.2.1.

4.2.1 Singular interpretation of unmodified BN

A. Recall: the goal is to explain two facts:

1. BNs in Wolof are singular, even though BNs in other languages are number neutral.

   $(7)$ BN in Wolof cannot be the object of a collective predicate

   * Jangalekat b-i dajeele-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.’

2. The effect of different types of nominal modifiers

   a. If we add a modifier with a plural class marker, the BN behaves as if it were plural. A relative clause is this type of modifier.

   ‘The teacher gathered some students who Samba knows in the park.’

   b. In contrast, if the nominal modifier lacks number morphology, the BN is still singular. Plain adjectives that name nationalities is this type of modifier.

   (40) * Roxaya dajeele-na fécckat brezlilien.
   Roxaya gather-NA.3SG dancer Brazilian
   Lit.: ‘Roxaya gathered Brazilian student.’

B. Derivations

#1 Derivation with plural Num

- Wolof clearly has full nominals that have a plural interpretation (xale y-i ‘the children’) in (1).
Bare nominals in Wolof

Suzana Fong

1. Plural and singular definite determiners

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.’

Assuming that the only interpretable instance of [Number] is in NumP, it must be the case that Wolof has a plural Num. All things equal, this instance of Num should be available for BNs as well.

(52) * NumP

\[\text{Num} \rightarrow \text{xale}/\]

However, under the stipulation that plural Num must lower to n, the derivation that builds (52) fails because this requirement cannot be fulfilled.

2. Derivation with singular Num

(1) also shows that Wolof should have a singular Num available too, which should also be available in building a BN.

(53) NumP

\[\text{Num} \rightarrow \text{xale}/\]

By stipulation, a singular Num does not have a lowering requirement to fulfill. As such, the derivation that builds (53) can converge.

C. Why are unmodified BNs in Wolof interpreted in the singular?

Because this is the only possible convergent derivation.

4.2.2 Adding a nominal modifier

A. Recall: if a plural relative clause is added to the BN, it can have a plural interpretation.

know] PREP park CM.SG-DEF
‘The teacher gathered some students who Samba knows in the park.’

B. Auxiliary assumption: relative clauses require a bigger, more complex nominal structure.

- Common assumption: RCs are adjoined to NP, even in different RC analyses (see overview in Bhatt 2002). Translated into the distributed morphology terms assumed here, this means that relative clauses are adjoined to nP.
- Recall: I propose that BNs in Wolof lack an nP projection due to the lack of a class marker. As such, the presence of a relative clause adjoined to a BN in sentences like (33b), implies the projection of an nP – otherwise, the relative could not have been adjoined.
- The structure for the BN in a sentence like (33b), must thus include an nP in order to accommodate the relative clause.
- As a byproduct of the projection of nP, a plural Num can also be introduced in the derivation, as its lowering requirement can now be fulfilled.

(54) NumP

\[\text{Num} \rightarrow \text{nP} \rightarrow \text{nP}_{k} \rightarrow \text{CP}\]

\[\text{Num} \rightarrow \text{n} \rightarrow \text{y-u Samba xam \_k}\]

\[\text{xale}/\]

C. Why does a plain modifier not have the same effect?

- A way to account for the difference between full relative clauses and plain modifiers would be to assume that the latter do not need a more complex projection to adjoin to a nominal.
- Specifically, a nP projection would not be required for an adjective brezilien ‘Brazilian’ to occur. This would be a reasonable way to proceed, if the analysis above is correct where a relative clause requires the presence of nP to occur.
- The BN in a sentence like (40) can thus be diagramed as in (55).

(40) * Roxaya dajeele-na féecckat brezilien.
Roxaya gather-NA.3SG dancer Brazilian Lit.: ‘Roxaya gathered Brazilian student.’

For visual simplicity, I omit vP in the relative clause, as well as movement to the vP edge. I follow Torrence (2013) in assuming a raising analysis is appropriate for RCs in Wolof.

I assume admittedly loosely that a singular RC does not have the same effect because there has to be some matching requirement between the number property of the RC, which, to recall has a class marker, and that of the head of the RC. Needless ro say, a more detailed analysis is in order.

9I am grateful to an anonymous LAGB 2019 reviewer for this suggestion.
The absence of a plural reading is reduced to the same reason why unmodified BNs are exclusively singular: a plural NumP is in principle available in the language, but the derivation crashes because the plural Num cannot have its lowering requirement satisfied.

\[ \text{NumP} \]
\[ \text{Num} \]
\[ \sqrt{\text{XALE}} \]
\[ \sqrt{\text{aP}} \]
\[ \text{/brezilien/} \]

- The absence of a plural reading is reduced to the same reason why unmodified BNs are exclusively singular: a plural NumP is in principle available in the language, but the derivation crashes because the plural Num cannot have its lowering requirement satisfied.

\[ \text{NumP} \]
\[ \text{Num} \]
\[ \text{[PL]} \]
\[ \sqrt{\text{XALE}} \]
\[ \sqrt{\text{aP}} \]
\[ \text{/brezilien/} \]

**D. Prediction**

- Crucial ingredient in the analysis: the proposal that RCs and plain modifiers attach at different levels of the nominal structure, thus requiring different amounts of structure to be projected.
- RCs require an NP, while plain modifiers require a smaller, simpler structure, being attachable to the root.
- Common assumption: the nominal spine has a hierarchical structure, with the NP above the root.
- Prediction:\(^{12}\)
  - There can be an RC outside a plain modifier, since the former adjoins to a layer (NP) that includes the layer where the latter is adjoined to (the root).
  - Conversely, the reverse order should not be possible, since the RC at NP should “close off” the domain where the plain modifier was supposed to be adjoined to.
- The prediction is borne out by facts:

\[ \text{a. Gis-na-a nongo darra [RC b-u Samba xam] see-NA-1SG student [CM.SG-COMP Samba know] brezilien.} \]
\[ \text{Brazilian} \]
\[ \text{Int.: ‘I saw a Brazilian student who Samba knows.’} \]

\[ \text{b. * Gis-na-a nongo darra [RC b-u Samba xam] } \]
\[ \text{see-NA-1SG student [CM.SG-COMP Samba know] brezilien.} \]
\[ \text{Brazilian} \]
\[ \text{Int.: ‘I saw a Brazilian student who Samba knows.’} \]

- If the meaning expressed by the plain modifier is expressed by an RC, any order is acceptable:

\[ \text{(58) a. Gis-na-a nongo darra [RC b-u Samba xam] [RC see-NA-1SG student [CM.SG-COMP Samba know] b-u dëkk Brezil] be.from Brazil] ‘I saw a Brazilian student who Samba knows.’} \]
\[ \text{b. Gis-na-a nongo darra [RC b-u dëkk Brezil] [RC see-NA-1SG student [CM.SG-COMP be.from Brazil] b-u Samba xam] ‘I saw a Brazilian student who Samba knows.’} \]

**5 Concluding remarks**

The goal was to answer two questions:

\[ \text{(30) How can we account for the exclusively singular interpretation (and not number neutral) interpretation of BNs in Wolof?} \]

- While both a singular and plural NumP are available in Wolof, only the former leads to a convergent derivation. This is caused by the stipulation that the plural Num must lower onto n, combined with the assumption that BNs lack an NP.

\[ \text{(44) i. Why does an unmodified BN behaves as if it were singular, while a BN modified by a plural relative clause behaves as if it were plural?} \]
\[ \text{ii. Why does adding a plain (i.e. number-less) nominal modifier not have the same effect?} \]

- The licensing of a relative clause implies the addition of an NP, which in turn, allows a plural Num to satisfy its lowering requirement.
- Plain modifiers in turn do no require a more complex nominal structure. In particular, NP is not projected, so the plural Num cannot satisfy its requirement, just as in unmodified BNs.

\(^{12}\)This discussion is inspired by Pesetsky (2013) and Ouwayda (2017).
Future work:

- It is imperative that I try to reproduce Hindi data like (46), which is the empirical basis for Dayal’s (2011) proposal.

- As mentioned, BNs in Wolof could be an instance of pseudo-noun-incorporation. It seems desirable to come up with an analysis that accounts for both its singular interpretation and syntactic licensing.

A couple of points to improve:

- It is crucial in the analysis is that BNs lack an nP. However, a common assumption in distributed morphology is that a categorizer is necessary for the category-free roots.

- Another crucial proposal: requirement of plural Num to lower onto n. While the consonant mutation data in (48) could be consistent with the lowering analysis, one would want more robust reason to base a proposal on.

References


Botković, Željko. 2014. Now I’m a phase, now I’m not a phase: On the variability of phases with extraction and ellipsis. Linguistic Inquiry, 45(1), 7-29. DOI: https://doi.org/10.1162/LING_a_00148.


