

The structural status of Bora classifiers¹

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I claim that Bora classifiers have the structural status of (bound) nouns, based on facts like the following:

- 1. Some classifiers also occur as independent nouns (possibly with minor phonological differences).*
- 2. Classifiers have the referential properties typical of nouns. Like typical nominals, they denote classes of objects and may refer to a member of the class they denote. They are never used to attribute properties to another referring expression.*
- 3. Classifiers have the distribution typical of nouns: they may be a clausal subject, they may be modified by a relative clause, they may have a prepositional complement, and so forth.*

And classifiers head noun phrases, a claim for which various arguments are given, among them one based on the remarkable similarity between the host-classifier and possessor-possessed constructions.

Introduction

Following Thiesen and Weber [4], I claim here that Bora classifiers are bound nouns, ones with rather general denotations, and that they head noun phrases. Phrases like $at^h\epsilon r\epsilon\epsilon-kpa$ (worthless-⟨slab⟩) ‘worthless plank (table, bench, machete, etc.)’, I claim, have structures like the following:

$$\begin{array}{cc} [NP [Adj \acute{a}t^h\acute{\epsilon}r\acute{\epsilon}\acute{\epsilon}-] & [N -kp\grave{a}] \\ \text{worthless} & \langle\text{slab}\rangle \end{array}$$

This paper contributes to the study of the typology of classifier systems (Senft [3], Aikhenvald [1]) by providing another example of a system in which the classifiers are very noun-like.²

Section 1 gives reasons for believing that classifiers are nouns. Section 2 gives reasons to believe that classifiers head their phrases.

1 Classifiers are nouns

This section presents reasons for believing that classifiers are nouns. They are not typical nouns in that (1) their meanings are generally less specific than those of nouns, and (2) they are bound, being affixed (or cliticized?) to a preceding noun, adjective, or verb. Of course, neither of these characteristics should deter us from recognizing that they are nouns.

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²The important part of the claim I wish to make is not that classifiers ARE nouns—indeed, parts of speech may be epiphenomenal, as suggested by Croft [2]—but that classifiers have many of the formal, distributional and semantic properties typical of nouns.

1.1 Some classifiers are also free nouns

For some classifiers there are corresponding (free) nouns, with perhaps minor differences between the bound and free forms. For example, corresponding to the classifier $-o:\eta$ ⟨jaguar⟩, as in 1a, is the noun $o:\eta$ ‘jaguar, dog’, as in 1b and c:

- (1) a. $ts^h\acute{a}-\acute{o}:\eta$ ‘one (jaguar)’
 b. $\acute{o}:\eta-:\eta^j\acute{e}$ ‘jaguar (SgM)’
 c. $\acute{o}:\eta-m^j\acute{e}$ ‘jaguars (AnPl)’

The classifier $-ha$ ⟨shelter⟩ denotes things having an interior and can serve as a covering, e.g., a house, a pair of pants, a shirt, etc. However, when $ha:$ is used as a noun, it refers to a house, and only to a house. Other examples are:

CLASSIFIER		FREE NOUN	
$\acute{i}-p^j\acute{h}\acute{e}^xk^h\acute{o}$	‘this night’	$p^h\acute{e}^xk^h\acute{o}$	‘night’
$t^h\acute{e}-x^k^h\acute{o}:h\acute{i}$	‘that day’	$k^h\acute{o}:h\acute{i}$	‘day’
$t^h\acute{e}-x^k^h\acute{e}:m\acute{e}$	‘that old man’	$k^h\acute{e}:m\acute{e}$	‘old man’
$ts^h\acute{a}-n\acute{u}^?p\acute{a}$	‘one month’	$n\acute{u}^?p\acute{a}$	‘moon, sun’

The classifier $-m\acute{i}$ ⟨transport⟩ denotes objects that can transport people. Following different modifiers it may refer to canoes, cars, airplanes, and so forth; e.g.:

- (2) $k^h\acute{u}r:h\acute{u}k^p\acute{a}-m\acute{i}$ ‘launch’ (i.e. a boat with an onboard motor)
 fire.burning-⟨transport⟩
 $\acute{i}^x\acute{t}^j\acute{h}\acute{i}-\acute{e}-m\acute{i}$ ‘car, truck’
 upland-per-⟨transport⟩
 $k^h\acute{a}:m\acute{e}-\acute{e}-m\acute{i}$ ‘airplane’
 high-per-⟨transport⟩

The cognate noun $m\acute{i}:-n\acute{e}$ (transport-⟨ \emptyset ⟩) refers to a canoe.

The significance of such cases is this: if Bora classifiers are themselves nouns, then it is no surprise that some are also used as independent nouns. Indeed, this is what one might expect.

1.2 Classifiers have the referential properties typical of nouns

Classifiers are like typical nominal elements in denoting classes of objects, that is, ones that, prototypically, can be localized in space and persist over time. For example, $-m\acute{i}$ ⟨transport⟩ denotes the class of objects that can transport people: canoes, cars, airplanes, and so forth.

1. Some classifiers are like pronouns in denoting small, deictically-determined classes singletons; e.g., $-ts^j\acute{e}$ ⟨SgF⟩, $-m\acute{u}t^h\acute{i}$ ⟨DuM⟩, $-m\acute{e}$ ⟨AnPl⟩, and so forth.
2. Some classifiers denote large classes of objects that share one or more properties; e.g., $-i:\eta^j\acute{o}$ ⟨stick⟩ denotes the class of things that are relatively long and slender, roughly cylindrical, and have an orientation (toward one end); $-h\acute{i}$ ⟨disk⟩ denotes the class of things that are disk-like, which includes pills, fields, . . . and even nations.
3. Some classifiers denote classes of objects defined rather narrowly; e.g., $-ts^h\acute{i}$ ⟨child⟩, $-?\acute{e}$ ⟨tree⟩, and $-p\acute{a}$ ⟨box⟩.

No matter whether broad or narrow, whether deictically-determined or not, classifiers are never used to *attribute* their properties to some other referring expression (like adjectives do); they are only used to *refer* to an object that has these properties.

Classifiers may also bind anaphors. For example, in 3 $-m\acute{e}$ ⟨AnPl⟩ binds the anaphor i ‘self’:

- (3) $\acute{i}m\acute{i}t^j\acute{e}-m\acute{e}$ \acute{i} $m\acute{a}^x\acute{t}^j\acute{h}\acute{o}-n\acute{e}$ ‘They want to eat.’
 want-⟨AnPl⟩ self eat-⟨ \emptyset ⟩

1.3 Classifiers have the distribution typical of nouns

Classifiers are affixed (or cliticized?) to a preceding noun, adjective, or verb. We now briefly consider these three distributional possibilities.

Classifiers following nouns. Canonical classifiers normally accompany simple nouns, but Bora classifiers do so only rarely. There are cases like the following three, but they are not common.

First, Bora has a class of nouns that denote a general concept and must be used with a classifier. The classifier picks out a particular aspect of that concept to form a referring expression. For example, *muʔts^hi:ts^hi* denotes a pear apple tree generally, with all its parts (roots, trunk, branches, leaves, fruit, flowers) or related concepts, like a grove of such trees. A classifier is used to refer to one of these:

- (4) a. *muʔts^hi:ts^hi-pà* ‘pear apple fruit’
 b. *muʔts^hi:ts^hi-ʔɛ̃* ‘pear apple tree’
 c. *muʔts^hi:ts^hi-páhù* ‘pear apple grove’

Note that the denotation of such expressions is an object of the type referred to by the classifier. This is evidence that the classifier heads the noun phrase, as discussed further in section 2.1.

Second, multiple classifiers may be used (although such cases are rare):

- (5) a. *muʔts^hi:ts^hi-ʔɛ̃-ʔá:mì* ‘leaf of a pear apple tree’
 pear apple-(tree)-(leaf)
 b. *úmmé-ʔɛ̃-kpà* ‘plank’
 tree-(tree)-(slab)
 c. *úmmé-ʔɛ̃-k^hò* ‘pole’
 tree-(tree)-(pole)

Note that 5a refers to a leaf, 5b to a plank, and 5c to a pole. None refers to a tree. See section 2.3 for further discussion of such cases.

Third, some bound nouns form referring expressions only when combined with a classifier. For example, *uume-*, *ína-* and *míne-* never occur except when followed by a classifier, as in *úmmé-ʔɛ̃* ‘tree’, *ínà-ʔá:mì* ‘leaf’ and *mínè-x^ht^hè* ‘peccary’.

Classifiers following adjectives. A classifier may follow an adjective (and other nominal modifiers, e.g., quantifiers) to form a noun phrases referring to an object of the type denoted by the classifier. For example, consider the noun phrases in 6 having the adjective *mit^{jh}a* ‘big’:

- (6) a. *mit^{jh}a-ʔɛ̃* ‘big tree’
 big-(tree)
 b. *mit^{jh}a-kpà* ‘big plank (bench, table, machete, etc.)’
 big-(slab)
 c. *mit^{jh}a-ʔá:mì* ‘big leaf (paper, book, etc.)’
 big-(leaf)

Classifiers following verbs. A classifiers may follow a verb to indicate the subject of the clause, as in 7:

- (7) *ái:β^jé-ʔá:mì* ‘The leaf (paper, book, etc.) is burning.’
 burn-(leaf)

A classifiers may follow a subordinate verb (indicated by high tone on its first syllable, here represented by S) as the head of a relative clause:

- (8) *ó á^xt^{jh}ùmmí-ʔ [ø_i áí:β^jè]-hà_i* ‘I saw a house that was burning.’
 I see-(t) burn-sIn -(shelter)

With this by way of introduction, let’s consider more specific ways in which classifiers have the distribution typical of nouns.

First, morphologically, classifiers are like nouns in bearing inflection for number and case, as in 9:

- (9) *ts^{jh}émè-mé-ʔhà-k^hè* ‘to the sick people’
 be.ill-(AnPl)-pl-objAn

used as post-verbal subjects³). Given that classifiers are nouns, what is projected from them are noun phrases. What precedes (nonfinite verb, subordinate verb, demonstrative, numeral, quantifier, adjective, etc.) is a modifier.

In the following sections various arguments are presented.

2.1 What gives a noun phrase its character?

The head of a phrase is what gives the phrase its character. Formally, a head's features are shared by the phrase projected from it. For example, assuming that *dog* is [+animate] and *brown* is [+color], the phrase *the brown dog* is [+animate] because its head, *dog*, is [+animate]. It is not [+color] because *brown* is a modifier, not the phrase's head. (The phrase *very brown* is [+color] because its head, *brown*, is [+color].)

For example, $\text{kpà:hak}^{\text{h}}\text{u}$ 'know' is a verb, perhaps bearing features like [+cognitive], these shared with its nonfinite form $\text{kpà}^{\text{b}}\text{:hak}^{\text{h}}\text{u}$ 'knowing'. Suppose this is combined with with $-\text{ʔa:mì}$ (leaf) (leaf, paper, book, etc.), which has features like [+nominal, -verbal, -abstract, -animate]. Which features prevail? Those of the nonfinite verb or those of the classifier? Because $\text{kpà:hák}^{\text{h}}\text{ùr-ʔá:mì}$ means 'book', it is clear that the features of the classifier prevail, not those of the nonfinite verb. This noun phrase would, like its head, be [+nominal, -verbal, -abstract, -animate].

2.2 Ambiguity with $\text{mit}^{\text{h}}\text{a}$ 'many, big'

That the classifier heads the noun phrase is quite clear when we consider $\text{mit}^{\text{h}}\text{a}$, which is ambiguous between 'many [+plural]' and 'big' (unspecified for number). This ambiguity can be seen in 13a:

- (13) a. $\text{mít}^{\text{h}}\text{à-mè}$ 'many men (or male animals)
 many/big-⟨AnPl⟩ or 'big men (or male animals)'
 b. $\text{mít}^{\text{h}}\text{à-pè}$ 'big man (or male animal)
 many/big-⟨SgM⟩ but not *'many man (or male animal)'

13a is ambiguous because the feature [+plural] of the head, the classifier $-\text{mè}$ ⟨AnPl⟩, does not conflict with either meaning of $\text{mit}^{\text{h}}\text{a}$. By contrast, 13b is not ambiguous because the head, the classifier $-\text{pè}$ ⟨SgM⟩, is [−plural], and this can not combine (unify) with the [+plural] of 'many'. The features of the head prevail, so the only meaning is 'big man (or male animal)'.

Of course, this all depends on recognizing that the classifier is the head of the phrase.

2.3 Multiple classifiers

Consider now the issue of headedness in relation to phrases that have multiple classifiers. Consider example 5a above, (repeated here as 14c):

- (14) a. [$\text{múts}^{\text{h}}\text{í:ts}^{\text{h}}\text{í}$] $-\text{ʔè}$ 'pear apple tree'
 b. [[$\text{múts}^{\text{h}}\text{í:ts}^{\text{h}}\text{í}$] $-\text{ʔè}$] $-\text{ʔá:mì}$ 'leaf of pear apple tree'
 pear apple ⟨tree⟩ ⟨leaf⟩

$\text{múts}^{\text{h}}\text{í:ts}^{\text{h}}\text{í}$ 'pear apple' (the concept of) is not a referring expression. When followed by $-\text{ʔè}$ ⟨tree⟩ it refers to a tree (a pear apple tree). When this in turn is followed by $-\text{ʔa:mì}$ ⟨leaf⟩, it refers to a leaf (the leaf of a pear apple tree). At both levels the expression refers to a thing of the type indicated by the classifier, and this is evidence that the final classifier heads the phrase.

³It might be possible to extend the claim that classifiers are the structural heads of their phrases to post-verbal subjects on an analysis that projects sentences from their inflection. I do not pursue that possibility here.

2.4 Semantic prominence

It is important to understand that heads are not necessarily the *semantically* most significant part of a phrase. For example, consider English *one* in *Give me the big one*. Here *one* makes little semantic contribution to the phrase, but heads the phrases; witness **Give me the big*.

Bora has a similar phenomena with the classifier $-n\epsilon \langle \emptyset \rangle$, which means nothing more than $[-animate]$. It may serve as a semantically empty filler to satisfy the requirement that a phrase have a head. Indeed, generally the expression that $-n\epsilon$ heads would not refer except that its presence as a head makes the expression referential. One such case would be the formation of free possessive pronouns from bound possessive pronouns by the addition of $-n\epsilon \langle \emptyset \rangle$, as discussed in Thiesen and Weber [4].

Another case is that of $mi-n\epsilon$ canoe- $\langle \emptyset \rangle$ ‘canoe’. By itself, the root $mi-$ does not refer to a canoe; it simply attributes the property ‘transportation’. But it refers to a canoe when combined with $-n\epsilon \langle \emptyset \rangle$, which (1) satisfies the structural requirement for a head, and (2) denotes $[-animate]$ objects, thus enabling the phrase to refer. As a culturally-based default, it refers to a canoe. Note: the root ATTRIBUTES; the classifier REFERS (just like English *big* attributes and *one* refers).

2.5 Agreement in numeral phrases

When a numeral phrase is used to quantify a noun, that noun must agree in animacy, gender and number with the numeral phrase, as illustrated in 15:

- (15) $[\acute{i}-n^j\acute{\epsilon}^xk^h\acute{u}r-\acute{\epsilon}-\acute{?}\acute{o}^x\acute{t}^h\acute{i}-t^h\acute{u}r \acute{t}^h\acute{a}-p^h\acute{i}] \acute{o}:\acute{?}\acute{i}-p^j\acute{\epsilon}$ ‘six dogs’
 this-side-per-(hand)-sou one-⟨SgM⟩ dog-⟨SgM⟩

The phrase that means ‘six’ ends with the classifier $-p^h\acute{i}$ ⟨SgM⟩ because ‘six’ is expressed as ‘one (finger) from this hand’, and ‘a finger’ is animate, singular, and masculine. Thus, in 15, contrary to what one might expect, ‘dogs’ is marked as singular and masculine in agreement with the numeral phrase.

This lends further supports for the claim that classifiers head their phrases. What matters are the features of the numeral phrase and the noun, which are precisely the features of the classifiers with which each ends. That is, the classifiers determine the features of their phrases, even though these features do not reflect the semantics of the expressions.

2.6 Affinities with the genitive construction

A host+classifier construction and a genitive construction (possessor+head) are formally and functionally similar. Formally, they have similar tone marking. Functionally, some of the same thematic relations hold between the first and second parts of the construction.

Tonal similarities. Every Bora syllable is spoken with either high or low tone. Any number of high tone syllables may occur one after another. A sequence of two low tones may occur at the end of a tonal word or phrase, but not elsewhere: $*\overset{L}{\sigma} \overset{L}{\sigma}$. We call the prohibition against adjacent low tones except at the end of a word/phras the *LLX constraint. It applies both within a word and across word boundaries within a tonal phrase.

The genitive construction is formed by juxtaposing the possessor and the head (possessed), with a low tone at the boundary between them. We will call this tone the “genitive tone” and represent it as \textcircled{G} .

$$[\text{tonal phrase } NP_{\text{possessor}} \textcircled{G} N_{\text{head}}]$$

The possessor and head form a single tonal phrase within which the *LLX constraint must be respected. When the head is mono- or bisyllabic, the genitive tone docks on the possessor’s final syllable. When the head has more than two syllables, the genitive tone docks on the head’s initial syllable.

The possibilities are charted in Table 1. (The genitive low tone is indicated by a G over the vowel. The possessor and head are separated by $_$.) These are the basic patterns; see Thiesen and Weber [4] for discussion of how lexically-marked tones may perturb these.

Table 1: The basic tone patterns of the genitive construction

		HEAD (POSSESSED)		
		$\sigma\#$	$\sigma\sigma\#$	$\sigma\sigma\sigma(\dots)$
POSSESSOR	$\#\sigma$	$\overset{G}{\sigma}_ \sigma$	$\overset{G}{\sigma}_ \acute{\sigma} \sigma$	$\acute{\sigma}_ \overset{G}{\sigma} \acute{\sigma} \sigma(\dots)$
	$\#\sigma\sigma$	$\acute{\sigma} \overset{G}{\sigma}_ \sigma$	$\acute{\sigma} \overset{G}{\sigma}_ \acute{\sigma} \sigma$	$\acute{\sigma} \acute{\sigma}_ \overset{G}{\sigma} \acute{\sigma} \sigma(\dots)$
	$(\dots)\sigma\sigma\sigma$	$(\dots)\sigma \acute{\sigma} \overset{G}{\sigma}_ \sigma$	$(\dots)\sigma \acute{\sigma} \overset{G}{\sigma}_ \acute{\sigma} \sigma$	$(\dots)\sigma\acute{\sigma} \acute{\sigma}_ \overset{G}{\sigma} \acute{\sigma} \sigma(\dots)$

Now consider the tone of a host followed by a classifier. A low tone \textcircled{C} occurs at the boundary between a classifier and what precedes it. It is docked (with a few exceptions) as in Table 2:

Table 2: The tone patterns of classifiers

		CLASSIFIER		
		$\sigma\#$	$\sigma\sigma\#$	$\sigma\sigma\sigma(\dots)$
HOST	$\#\sigma$	$\overset{C}{\sigma}_ \sigma$	$\acute{\sigma}_ \overset{C}{\sigma} \sigma$	$\acute{\sigma}_ \overset{C}{\sigma} \acute{\sigma} \sigma(\dots)$
	$\#\sigma\sigma$	$\acute{\sigma} \overset{C}{\sigma}_ \sigma$	$\acute{\sigma} \overset{C}{\sigma}_ \acute{\sigma} \sigma$	$\sigma \acute{\sigma}_ \overset{C}{\sigma} \acute{\sigma} \sigma(\dots)$
	$(\dots)\sigma\sigma\sigma$	$(\dots)\sigma \acute{\sigma} \overset{C}{\sigma}_ \sigma$	$(\dots)\sigma \acute{\sigma} \overset{C}{\sigma}_ \acute{\sigma} \sigma$	$(\dots)\sigma \sigma \acute{\sigma}_ \overset{C}{\sigma} \acute{\sigma} \sigma(\dots)$

Monosyllabic classifiers place the low tone on their host's final syllable, as in 16:

- (16) a. $\text{ts}^h\text{í}:\text{kpà}$ 'other plank'
 other-(slab)
 b. $\text{ts}^h\text{ú}:\text{k}^h\text{á}\text{-a}\text{-kpà}$ 'old plank'
 old-(slab)

After a monosyllabic host, a bisyllabic classifier bears the low tone on its initial syllable, as in 17:

- (17) $\text{ts}^h\text{í}\text{-}^{\text{C}}\text{á}:\text{mì}$ 'other leaf'
 other-(leaf)

After a polysyllabic host, a bisyllabic classifier places the low tone on the host's final syllable, as in 18:

- (18) $\text{ts}^h\text{ú}:\text{k}^h\text{á}\text{-}^{\text{C}}\text{á}\text{-}^{\text{C}}\text{á}:\text{mì}$ 'old leaf'
 old-(leaf)

Longer classifiers (three or more syllables) bear the low tone on their initial syllable, as in 19:

- (19) $\text{ts}^h\text{ú}:\text{k}^h\text{á}\text{-}^{\text{C}}\text{á}\text{-a}:\text{mâi}$ 'old row'
 old-(row)

A comparison of the docking of the genitive tone \textcircled{C} and the classifier tone \textcircled{C} shows a remarkable similarity; they differ only in one cell, the top middle one. This suggests a tight formal (and possibly historic) relationship between the two constructions.

Functional similarities. The genitive construction is used to express various relationships between (the referents of) the possessor and head, ones typically expressed with genitives, such as ownership (my canoe, his food), kinship and other social relations (my mother, that town's chief), properties (my goodness, my height, his size), and so forth. Among these, two are shared with the host+classifier construction.

First, the possessor may indicate the subject of the head, when the head is a nonfinite verb. The possessor's thematic relation to the head may be—among other possibilities—agent. This is illustrated in 20, where 'he' is the agent of 'teaching'. (In this example the genitive low tone, indicated by G, and the nonfinite low tone, indicated by N, coincide on the head's first syllable.)

- (20) $\text{tí}:\text{p}^j\overset{G}{\acute{\epsilon}} \overset{N}{\text{ú}}\text{kpá}:\text{pò}$ 'his teaching'
 his teach[-finite]

See Thiesen and Weber [4] for further discussion and examples.

Turning to the host+classifier construction, one of the most common uses is for the host to be a finite verb, with the classifier indicating the subject; see, for example, 20 above.

Second, the possessor may be a subordinate clause modifying the head. This is like a relative clause in which the modifying clause is the possessor of a genitive construction, as evidenced by the genitive tonal pattern. Examples follow:

(21) [tì-tsʲè tsʰí:má-βá-tʰùr-né] ʔá^Gxtsʲhótʰà
 that-(SgF) child-have-neg-⟨∅⟩ length.of.time
 ‘during the time she had not given birth’

(22) [kpá^xpʰi:kʰè úr:hé-tʰùr-né] pátʰí^Gxkʰà-hà
 man-objAn arrive-neg-⟨∅⟩ adolescent-(SgF)
 ‘young woman who has not been with a man’

Turning to the host+classifier construction, when the host is an adjective (demonstrative, quantifier,...) or a noun, the relation is one of simple modification.

These formal and functional similarities between the genitive and classifier constructions strongly suggest that the order of the modifier and head should be the same in both constructions. For the genitive construction the order is clearly modifier+head, (just as expected for a head-final language). From this we can conclude that the order for the classifier construction is also modifier+head, so the classifier is the head, and thus heads the noun phrase.

Conclusion

Based on a variety of evidence we conclude that (1) Bora classifiers are nouns, and (2) except for when they follow a finite verb, the host+classifier construction is a noun phrase headed by the classifier.

References

- [1] Aikhenvald, Alexandra. 2000. *Classifiers: A typology of noun categorization devices*. Oxford: Oxford University Press.
- [2] Croft, William. 2001. *Radical construction grammar: Syntactic theory in typological perspective*. Oxford: Oxford University Press.
- [3] Senft, Gunter (editor). 2000 *Systems of Nominal Classification*. Cambridge: Cambridge University Press.
- [4] Thiesen, Wesley and David Weber (forthcoming). *A grammar of Bora*. Publications in Linguistics. Dallas: SIL International and the University of Texas at Arlington.

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