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0. Introduction

Kusaal, the language of the Kusasi, is spoken in northeasternmost Ghana and adjacent Bourkina Fasso (*aka* Upper Volta). There are approximately 122,000 speakers in Ghana and an additional 12,200 in Bourkina Fasso. Kusaal is a Gur (or Voltaic) language, classed in a Central subclass of the Moore-Gurma Group. It is most closely related to e.g. Moshi, Dagbani, Gurensi, Mampruli and Dagari.

The focus of this paper is the categorial status of nominal modifiers in Kusaal. Put simply: does Kusaal have adjectives or not? I present here the data that I have which bear on answering this question and offer a tentative answer in the negative. After a necessarily brief structural sketch, I will present three arguments which suggest that if there are adjectives in Kusaal, then wherever they occur, they are either verbs or nouns. I will then briefly consider how to embed an analysis of this data into X-bar theory.

1. Structural Sketch

Kusaal has a strict SVO word order. It has postnominal modifiers and determiners and prenominal possessor NPs, as illustrated in examples (1-2):

1.a akúgr wá?ad	*Akugr dances*
.b akúgr kád-tɛ̃ bó:g-la	*Akugr is chasing the goat*
.c bó:g-wã kád-tɛ̃ akúgr	*This goat is chasing Akugr*
2.a awín yɛ̃d bó:g	*Awin sees a goat*
.b awín yɛ̃d bó kodr	*Awin sees an old goat*
.c awín kád-tɛ̃ akúgr bó:g-la	*Awin is chasing Akugr's goat*

The verbal morphology is relatively straightforward. There are two aspectual suffixes (**-tɛ̃** 'imperfective' and **-ya** 'perfective') and preverbal auxiliaries which code temporal reference and polarity:

3.a awín wá?ad	*Awin dances*
.b awín wá?adtɛ̃	*Awin is dancing*
.c awín wá?aya	*Awin has danced*
.d awín na wá?	*Awin will dance (neutral)*
.e awín sa na wá?	*Awin will dance (tomorrow)*
.f awín da: na wá?	*Awin will dance (after tomorrow)*
.g awín sa wá?ad	*Awin danced (yesterday)*

.h awín dɛ: wá?ad	*Awin danced (before yesterday)*
.i awín pò wá?ada	*Awin didn't dance*
.j awín ko wá?ada	*Awin won't dance*

Nominal morphology is equally straightforward: nouns are generally overtly marked to show singular and plural number by pairs of suffixes. Which pair of suffixes a given noun takes is largely arbitrary, though there are some semantically-based generalizations. Examples of nominal forms from the major morphological subclasses are given in the chart on the next page.

The parentheses in the Base forms mark the result of a morphological rule of **Stem Truncation** , which neutralizes the contrast between [V], [V:] and [Vi?Vi]. This rule applies to both nouns and verbs when their base forms occur as individual words.

Though this suffixial morphology is familiar "noun class" morphology of west African languages, in Kusaal this classification of the nouns is not reflected in any concord system. The verb does not agree with its object or subject. The third person pronouns in the singular are **o** 's/he' and **dɛ** 'it', and reflect a human/nonhuman contrast rather than the class system suggested by the number morphology. Nor is there any noun phrase-internal concord either.

The forms listed as "long" in the table occur in a limited environment. The last word in a polarity question, certain constituent questions, and negated declaratives occurs in its "long" form. A few examples of this phenomenon, discussed further in England and Ladusaw 1984, must suffice here. Given the syntax of Kusaal, a word of *any* syntactic category could come to be the final word in a sentence, as the examples in (4-10) illustrate. The final word, whatever it is, must appear in its long form.

4.a awín wá?ad	*Awin is dancing*
.b awín wá?ada:	*Is Awin dancing?*
5.a awín yɛ̃d bó:g	*Awin sees a goat*
.b awín yɛ̃d bó:ga	*Does Awin see a goat?*
6.a awín yɛ̃d bó kodr	*Awin sees an old goat*
.b awín yɛ̃d bó kodrɛ	*Does Awin see an old goat?*
7.a awín yɛ̃d bó:gwã	*Awin sees this goat*
.b awín yɛ̃d bó:gwã:	*Does Awin see this goat?*
8.a o na yo:m bɛ:wg	*S/he will sing tomorrow*
.b o na yo:m bɛ:gɔ	*Will s/he sing tomorrow?*
9.a o yɛ̃nnɛ̃ bó:g bɛ pɛ?ɛwg	*S/he saw a goat or a sheep*
.b o yɛ̃nnɛ̃ bó:g bɛ pɛ?ɛgɔ	*Did s/he see a goat or a sheep?*
.c *o yɛ̃nnɛ bó:ga bɛ pɛ?ɛgɔ	

Noun Class Morphology

Gloss	Base	Sing.	Plural	Long Sg.	Long Pl.	Class
sheep	pɛ́(ʔɛ)	pɛ́ʔɛwg	pɛ́ʔɛs	pɛ́ʔɛgɔ	pɛ́ʔɛsɛ	og/s
hand	nṹ(ʔũ)	nṹʔũg	nṹʔũs	nṹʔũgɔ	nṹʔũsɛ	
grass	mɔ̃́(:)	mɔ̃́:g	mɔ̃́:s	mɔ̃́:gɔ	mɔ̃́:sɛ	
hawk	sel	selog	selɪs	selogɔ	selɪsɛ	
basket	pɛ̀(:)	pɛ̀:wg	pɛ̀:d	pɛ̀:gɔ	pɛ̀:dɛ	og/d
cloth	fú(:)	fú:g	fú:d	fú:gɔ	fú:dɛ	
animal	kɔ̃́b	kɔ̃́bog	kɔ̃́bad	kɔ̃́bogɔ	kɔ̃́badɛ	
skin	gbán	gbáwŋ	gbána?	gbáwŋɔ	gbánna:	og/a
basket (flat)	pén	pɛwŋ	péna?	pɛŋgɔ	pénna:	
a tree	pṹs	pṹsɪg	pṹsɪs	pṹsɪgɛ	pṹsɪsɛ	g/s
ghost	sɛ́(:)	sɛ́:g	sɛ́:s	sɛ́:gɛ	sɛ́:sɛ	
goat	bó(:)	bó:g	bó:s	bó:gɛ	bó:sɛ	
alligator	ó(:)	ó:g	ó:d	ó:gɛ	ó:dɛ	g/d
jute fibre	pĩ́(:)	pĩ́:g	pĩ́:d	pĩ́:gɛ	pĩ́:dɛ	
Blackb. tree	ã́:d	ã́:dɪg	ã́:da?	ã́:dɪgɛ	ã́:da:	g/a
blackberry	ã́:d	ã́:dɽ	ã́:da?	ã́:dɽɛ	ã́:da:	r/a
yam	bús	búsɽ	búsa?	búsɽɛ	búsa:	
anthill	yɔ̀(:)	yɔ̀:r	yɔ̀ya?	yɔ̀:rɛ	yɔ̀ya:	
gourd	gã́(ʔã)	gã́ʔãr	gã́ʔã?	gã́ʔãrɛ	gã́ʔã:	
egg	gɛl	gɛl	gɛla?	gɛlɛ	gɛla:	Ø/a
calabash	wã́m	wã́m	wã́mã?	wã́mɛ̃	wã́mã:	
monkey	wã:N	wã:ŋ	wã:mɪs	wã:ŋgã	wã:mɪsɛ	N/s
beetle	pɛ̀N	pɛ̀ŋ	pɛ̃́:s	pɛ̀ŋgã	pɛ̃́:sɛ	
a bird	pé(:)	pé:f	pé:s	pé:fɔ	pé:sɛ	f/s

10.a	o po yɛ̃? bó:ga?	*S/he didn't see a goat*
.b	o po yɛ̃? pɛ:go?	*S/he didn't see a basket*
.c	o po yɛ̃? bó:g bɛ nída?	*S/he didn't see a goat or a person*
.d	*o po yɛ̃? bó:ga bɛ nída?	

The long form of a word is generally formed from consonant-final short forms by the addition of a low vowel ([a], [ɔ] or [ɛ]). Which vowel is added cannot be predicted phonologically. The long forms of nouns are determined by the noun class of the noun. Consonant-final verb forms have their long form determined by their aspectual suffix. Vowel-final forms simply lengthen the vowel. The source of this curious alternation is historical: apparently Kusaal has reduced the nominal class suffixes of Gur by first lowering and then deleting the final vowels. This deletion seems to have been blocked sentence-finally in these constructions, giving rise to this curious hybrid of an inflectional process and cliticization.

Describing the base form of the noun leads us directly to the matter at hand: are the modifiers of nouns to be considered adjectives? To consider this question we turn to an examination of the NP-internal syntax of Kusaal.

2. NP Internal Syntax

The category Determiner is optional in the Kusaal noun phrase: a bare noun will be read as indefinite:

11.a	awín gottɛ̃ bó:g	*Awin is watching a goat*
.b	awín gottɛ̃ bó:s	*Awin is watching some goats*

There are two enclitic definite determiners: **-la** 'distal' and **-wã** 'proximal'. These determiners attach to the final word of the head of the nominal phrase and show no indication of number:

12.a	awín gottɛ̃ bó:g-la	*Awin is watching the goat*
.b	awín gottɛ̃ bó:s-la	*Awin is watching the goats*
.c	awín gottɛ̃ bóg-wã	*Awin is watching this goat*
.d	awín gottɛ̃ bós-wã	*Awin is watching these goats*

Numerals and other quantifiers appear phrase-finally. The presence or absence of a definite article distinguishes partitive and simple noun phrases, respectively.

13.a	bó:s-ayi kadtɛ̃ akugr	*Two goats are chasing Akugr*
.b	bó:s-la ayi kadtɛ̃ akugr	*Two of the goats are chasing Akugr*
.c	bó:s-wã wosa kadtɛ̃ akugr	*All of these goats are chasing Akugr*

The important thing to note about these determiners is that in each case the noun retains its number marking. This is not the case with other forms of modification:

14.a	bó kãŋgã kad akugr	*This goat (not that one) chased Akugr*
.b	bó bãmmã kad akugr	*These goats (not those) chased Akugr*
.c	bó kãn kad akugr	*That (point) goat chased Akugr*
.d	bó bãn kad akugr	*Those (point) goats chased Akugr*

Here the noun **bó:g/bó:s** appears in its base form: the stem to which the usual number suffixes are added, shortened by the stem truncation rule which neutralizes vowel length in stems. Note that though there is no indication of number on the noun, the noun phrase as a whole is marked. These demonstratives have different forms (morphologically similar to third person pronouns) for singular and plural. They are not members of the same category as **-la** and **-wa**, as they may cooccur.

When nouns are modified by the forms which I will call "putative adjectives", the same truncation of the noun occurs:

15.a	pɛ kodr	'an old sheep', 'an old basket'
.b	pɛ koda?	'old sheep', 'old baskets'
.c	bo kodr	'an old goat'
.d	bó koda?	'old goats'
16.a	pɛ bɛdr	'a big sheep', 'a big basket'
.b	pɛ bɛda?	'big sheep', 'big baskets'
.c	bó bɛdr	'a big goat'
.d	bó bɛda?	'big goats'

In these cases, the number is marked on the last element of the NP, not on the presumed head noun. There are two points to notice here. First note that the loss of number marking and truncation of long vowels leads to homonymous stems in many cases. Hence the alternative glosses in these examples. The word **pɛ?ɛwg** 'sheep' (high) and **pɛ:wg** 'basket' (low) both have the stem **pɛ** (though they differ in tone). The former is a noun of the **og/s** class while the latter is of the **og/d** class. The word **bó:g** 'goat' is of the **g/s** class. The putative adjectives **kodr/koda?** 'old' and **bɛdr/bɛda?** 'big' do not alter their forms to indicate the class of the noun modified. The second point to note is the ending on the putative adjectives: the **r/a** alternation is the mark of one of the major noun classes.

The first group of determiners mentioned, **-la, wã**, and the numerals and quantifiers may appear as expected at the end of the NPs in (15) and (16). The demonstratives **kãŋŋã**, **bãmmã**, etc. occur after these putative adjectives, and their effect on them is exactly what the adjectives have on the nouns:

17.a	pɛ kɔd kãŋŋã	*'this old sheep/basket'*
.b	pɛ kɔd bãmmã	*'these old sheep/baskets'*
.c	bo bɛd kãn	*'that big goat'*
.d	bó bɛd bãn	*'those big goats'*

The loss of the number marking on all but the rightmost noun, putative adjective or demonstrative is obligatory. Indication of number does not, however, necessarily disappear from the head noun. The noun 'man', for example, does not show number by suffixation but rather has two morphologically unanalyzed forms: **dau** (singular) and **dap** (plural) as shown in (18). When modified by a demonstrative or a putative adjective, the form does not alter as shown in (19) and (20). This is not generally true of human nouns, as (21) indicates.

18.a	dau-la	*the man*
.b	dap-la	*the men*
19.a	dau kãŋŋã	*this man*
.b	dap bãmmã	*these men*
20.a	dau giŋ	*a short man*
.b	dap gimɪs	*short men*
21.a	puaʔ-la	*the woman*
.b	puab-la	*the women*
.c	puaʔ vɛ̃liŋ	*a beautiful woman*
.d	puaʔ vɛ̃lis	*beautiful women*

3. Predicative Putative Adjectives

Let us assume that the forms **vɛ̃liŋ** and **giŋ** are adjectives in these noun phrases, being used attributively, and then ask how they may be used predicatively. It turns out that the question of how one says *the woman is beautiful* has two answers:

22.a	puaʔ-la vɛ̃l	*the woman is beautiful*
.b	puaʔ-la anɛ̃ vɛ̃liŋŋã	*the woman is beautiful*
.c	puap-la vɛ̃l	*the women are beautiful*
.d	puap-la anɛ̃ vɛ̃lisɛ	*the women are beautiful*

23.a	dau-la gim	*the man is short*
.b	dau-la anɛ̃ gingã	*the man is short*
.c	dap-la gim	*the men are short*
.d	dap-la anɛ̃ gimisɛ	*the men are short*

The form **anɛ̃** in the (b) and (d) examples is a copula verb which may also link subject NPs and predicate nominals:

24.a	awín anɛ̃ pua?	*Awin is a woman*
.b	awín anɛ̃ dau	*Awin is a man*
.c	awín nɛ̃ akugr anɛ̃ dap	*Awin and Akugr are men*

What are the forms **vɛ̃l** and **gig**? They are verbs: the verb-form of the putative adjectives. I can adduce three arguments from my limited data that support the analysis of the forms in these sentences as verbs. These arguments do nothing to disallow an analysis of the other forms as nouns. Hence the suggestion that if there are adjectives in Kusaal, they are always either nouns or verbs. I shall henceforth refer to the forms like **vɛ̃l** and **gig** as V-form adjectives, and the **vɛ̃lingã** and **gimisɛ** as N-form adjectives.

Morphological Criteria

All N-form adjectives show number marking by pairs of suffixes which are possible noun suffix pairs:

25.a	**r/a class:**	tɛta?ar/tɛta:	'tall'
		ma?asr̩/ma?asa	'green, tender'
.b	**og/a class:**	bo:log/bo:la	'soft'
.c	**ø/a class:**	piɪl/piɪla	'white'
		to:l/to:la	'hot'
.d	**og/d class:**	we:wg/we:d	'red'
.e	**g/s class:**	bã:lig/bãlis	'slim'
.f	**f/s class:**	fĩ:f/fĩ:s	'small'

The forms listed in (25) all have endings like some other nouns do. These are the forms used post-nominally as attributive adjectives. The forms like **vɛ̃lingã** which are used after the copula **anɛ̃** are all forms which look like the long forms of some noun. (Generally it is the long form of the expected class, though in a few cases about which I

can say nothing intelligent here, it is the long form expected for some other class.) Hence on morphological criteria N-form adjectives pattern with nouns.

N-form adjectives are subject to the same suffix deletion rule that nouns undergo when a demonstrative is added. When used after **amɛ̃** they show agreement in number just as predicate nominals do. V-form adjectives, on the other hand, are invariant in number just as verbs are. I have no instances in my data of a clear V-form adjective occuring with the suffixial morphology of verbs, but this would, in any case, be only the two aspectual suffixes. One would, on independent grounds, not expect the imperfective suffix to be compatible with these presumably stative verbs, but it is predicted that the perfective **-ya** should be compatible with adjectives given the right context.

On simple morphological tests, then, these adjectives seem to be able to look like either verbs or nouns, and their behavior seems consistent with their in fact *being* verbs or nouns.

Coordination

Kusaal presents us with an apparently elegant diagnostic for the category of the head of a phrase. Conjoined constituents take one of two coordinators, **nɛ̃** or **ka**, depending upon the category of their head, **nɛ̃** being used for conjoining noun-headed phrases and **ka** for verb headed phrases. The expected distribution of these items is borne out by the data in (26):

26.a akugr nɛ̃ awín kad bo:g la — *Akugr and Awin chase the goat*
.b akugr kad bo:gla nɛ̃ pɛʔɛwgla — *Akugr chases the goat and the sheep*
.c *akugr k' awín kad bó:gla
.d *akugr kad bó:gla ka pɛʔɛwgla
.e dau nɛ̃ puaʔ la kad bo:g la — *the man and woman chase the goat*

27.a akugr gosɪd bí:g-la ka dogɪd mũĩ — *Akugr watches the child and cooks rice*
.b * akugr gosɪd bí:g-la nɛ̃ dogɪd mũĩ

28.a akugr waʔam ka bãl — *Akugr is tall and thin*
.b *akugr waʔam nɛ̃ bãl
.c akugr a bãliga ka a giŋŋã — *Akugr is thin and short*
.d *akugr a bãliga nɛ̃ a giŋŋã
.e akugr a bãliga nɛ̃ giŋŋã
.f *akugr a bãliga ka giŋŋã

The data that I have shows that, though the coordinator need not always be present in all cases of coordination, when it is present, its form is always determined by this rule. The examples in (28) show that N-form adjectives are coordinated with the noun coordinator, while the V-form adjectives are coordinated with the verb coordinator.

The specifier sed

The intensifier **sed** 'really' can only be used to intensify verbs. V-form adjectives may be intensified with **sed**, but N-form adjectives may not. (They may sometimes be reduplicated for intensification.)

29.a	o sed zɔd	*he is really running*
.b	o sed gim	*he is really short*
.c	*o anɛ̃ sed ginjã	
30.a	o sed vɛ̃l	*she is really beautiful*
.b	*o anɛ̃ sed vɛ̃linjã	
.c	o anɛ̃ vɛ̃la vɛ̃la	*she is really beautiful*

4. Does Kusaal have Adjectives?

It is possible that N-form adjectives are simply derived from V-form adjectives (or vice-versa). This is suggested by the forms adduced here which have a full paradigm of six forms: verb, N-form base, N-form singular short, N-form singular long, N-form plural short, and N-form plural long. Of the twenty-three potential adjectives in my corpus, thirteen have a full paradigm. The form of these adjectivals does not indicate clearly whether a putative derivation process should be considered to proceed from V-forms to N-forms: the V-form adjectives are either identical to the N-form stems or the stem plus a final **-m**. Equivalently, the N-form adjectives could be derived by stripping the V-form adjective of its final **-m** (if any) and adding some nominal number suffix pair.

The remaining ten potential adjectives occur as either a full N-form paradigm with no V-forms, or else simply as verbs. These forms tend to be paired up by elicitation of translations, but are not, I think, morphologically related. Hence **tɛta?ar** 'big' has only N-forms. Attempts to put some form of this adjective in a verbal context elicited **zuɛya**, which turns out to be an enchoative meaning 'become big' or 'grow up'. The verb **pɔ:d** 'small' has no N-forms. Attempts to put this verb after the copula **anɛ̃** elicited:

30. ʔo mɔr pɔ:dɩm *he has smallness*

by a nominalization process which turned the verb into a mass noun. Whatever derivational relation exists between the N-forms and V-forms of full paradigm adjectives is clearly not one which is creatively applicable.

The situation as I have laid it out is probably familiar to those acquainted with west African languages. Welmers 1973, in a chapter titled "Adjectives and Unadjectives" devoted to warning us from leaping thoughtlessly from 'nominal modifier' to 'adjective' discusses the case of another Gur language, Suppire, in which similar facts obtain. There, attributive adjectivals take nominal morphology and trigger the loss of the morphology on the modified noun. The NP thus formed in Suppire, however, can be argued, presumably in virtue of its concord system, to be of the class of the adjective, not that of the presumed head noun. Welmers concludes (p. 264) "the data strongly suggest that the forms in question are nominal, and that they combine with the stems of other nouns to form a type of compound noun, the class of which is the modifier rather than the head." As in Kusaal, the inability to establish a regular morphological relation between such forms and verb forms clouds the derivational position. On the basis of the data that I have, I must arrive at essentially the same conclusion as Welmers: (p. 267) "It would require more data and analysis to define the status of qualificatives satisfactorily in terms of the total structure of the languages, but it is clear that one must be most suspicious in respect to a class of "adjectives".

5. Kusaal "Adjectives" and X-bar syntax

I conclude here with a brief consideration of the data discussed here within X-bar theory. X-bar theory is a cluster of assumptions about phrase structure. Most important in this matter are the assumptions that lexical categories are to be treated in terms of a feature system and that phrasal categories are projections of those categories. The argument for this position in syntax is parallel to that for the interpretation of phonological segments as bundles of features. To interpret categories as co-equal pigeonholes in the lexicon prohibits the capturing of cross-categorial generalizations, or rather, makes all cross categorial generalizations equally natural. The claim of X-bar theory is that rules generalize across certain 'natural classes' of categories. Interpreting categories as feature bundles allows certain rules to be formulated compactly and others to be not so easily formulated. Motivation for such feature systems is to be drawn from a study of which classes of categories are treated as natural classes by the syntactic rules of languages.

Kusaal's "adjectives" find no straightforward treatment as a major category within an X-bar analysis. All of the syntactic rules that I have found treat V-form adjectives and verbs identically, suggesting that there is no major categorial distinction between them. The rules that I have discussed here likewise treat N-form adjectives and nouns identically. Even should a rule be found which did distinguish between the two, it would be reasonable to question the justification for considering the distinction to be one between major categories rather than as between subcategories within the major categories of nouns.

On this view, the question of whether Kusaal, or any language, has adjectives or not is a question about the distinctions drawn by its syntactic rules. The categories of the lexicon are as much a projection of the rules of the language as vice versa.

Footnotes

*The analysis presented here is the result of joint work with Nora C. England of The University of Iowa and is based on data from one native speaker of the Bawku, Ghana, dialect. I am grateful for comments from Geoff Pullum and the participants at the January meeting of the Northern California African Linguistics Association. This research has been supported by research grants from the University of California, Santa Cruz, and the University of Iowa. I gratefully acknowledge the support of the Syntax Research Center of UCSC and University House of the University of Iowa.

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