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ON "THE SUBJECT CONCORD PREFIX" IN YORUBA

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1. Introduction[1]

Except in a few easily specifiable contexts to be discussed later, a v-type high-tone syllable having the same quality as the last vowel of the immediately preceding item always occurs between the subject NP and the remainder of a Yoruba sentence. Determining the precise form and function of the syllable (henceforth HTS) has long been a problem in Yoruba grammer. Various proposals for solving the problem have been put forward over the years both by indigenous and by foreign scholars of the language, namely, Rowlands [1954], Awobuluyi [1964], Bamgboṣe [1966], Fresco [1970], Oyelaran [1970], and Stahlke [1974]. The present paper critically examines those proposals, and shows that Awobuluyi [1964], which interprets the HTS as a tense marker, is the closest yet to the so far elusive ideal solution to the problem.

The occurrence of the HTS can be exemplified by simple sentences such as the following:[2]

(1) Ọ̀la á lọ
Ọla HTS go
'Ọla went'

(2) Baba á lọ
father HTS go
'Father went.'

(3) Wọn ọ́n lọ
they HTS go
'They went.'

---

[1]The writer is grateful to Dr. O. Oyelaran of the University of Ifẹ, Ile-Ifẹ, Nigeria, and the editors of SAL for their helpful comments on an earlier version of this paper.

[2]Examples are cited in traditional Yoruba orthography, which is almost completely phonemic, and in which the letters p, ṣ, ẹ, ọ, represent /kp, š, ɛ, ɔ/, ´ and ` represent high tone and low tone respectively (mid tone

(4) Ọ̀rọ́ ọ́ wà

word HTS exist

'We have/had some matters to discuss.'

(5) Ọ̀gẹ̀dẹ̀ ẹ́ wǫ́n

banana/plantain HTS be-expensive

'Bananas/plantains are/were expensive.'

(6) Alùpùpù ú wǫ́n

motorcycle HTS be-expensive

'Motorcycles are/were expensive.'

(7) Ayọ̀ ọ́ lọ

Ayọ HTS go

'Ayọ went.'

(8) Dayọ̀ ọ́ lọ

Dayọ HTS go

'Dayọ went.'

(9) Báyọ̀ ọ́ lọ

Bayọ HTS go

'Bayọ went.'

The final syllable of the subject NP in all these examples except the last three is replaceable by the HTS. The rule effecting that replacement can be formulated informally as in

(10) $\left[\begin{matrix} \\ \ldots\ \mathrm{CV}_1\# \\ \mathrm{NP} \end{matrix}\right]_{\mathrm{NP}} - \#\ \acute{\mathrm{V}}_1\ \# \rightarrow \left[\begin{matrix} \\ \ldots\ \acute{\mathrm{C}}\mathrm{V}_1\# \\ \mathrm{NP} \end{matrix}\right]_{\mathrm{NP}}$

1 2 1

where T is any tone (i.e., high, mid, or low),

and 1 #...(C)VCV̀ # or #... CV́CV̀ #.

This rule applies obligatorily in the case of subject NP final syllables with high tone,[3] and optionally in all other cases. The rule thus explains why the following sentence

---

being unmarked), and vowel nasality after non-nasal consonants is indicated by writing the letter n after the vowel involved.

[3] On this, see Bamgboṣe [1966:33].

(11) Délé lọ
Dele HTS go
'Dele went.'

is normally heard only in the form given here, while (1 - 6) for their part can also be heard as

(12) Ọ̀lá lọ
'Ọla went.'
(13) Babá lọ
'Father went.'
(14) Wọ́n lọ
'They went.'
(15) Ọ̀rọ́ wà
'We have/had things to talk about.'
(16) Ọ̀gẹ̀dẹ́ wọ́n
'Bananas/plantains are/were expensive.'
(17) Alùpùpú wọ́n
'Motorcycles are/were expensive.'

2. The HTS as the Pronoun ó

The first attempted solution to the HTS problem, namely, Rowlands [1954:385-6], suggests that the element is in fact the same thing as the third person singular subject "pronoun" ó. But if this were actually the case, it should be possible to have

(18) *Ọ̀la ó lọ
Ọla HTS go
'Ọla went.'
(19) *Baba ó lọ
father HTS go
'Father went.'

alongside (1 - 2). However, to the best of the writer's present knowledge, (18 - 19) are definitely deviant and unacceptable.[4] Hence, the solution

[4] Cf. Oyelaran [1970:129]. Ajolore [1973] says that expressions like (18 - 19) occur in child language, which of course is far from claiming

makes an incorrect prediction about the language.

The solution also leads one to expect that the HTS would behave morphophonemically like the vowel /o/, as it in fact does not do. Thus, there are only two rules of vowel assimilation across a word boundary in the language, namely

(20) $-V_1$ # V_2- → $-V_1$ # V_1-
when V_2 is /ɪ/, and # is a word boundary

(21) $-V_1$ # V_2- → $-V_2$ # V_2-
when V_2 is any one of /a, ẹ, ọ, o, e/, and # is a word boundary.[5]

---

that it occurs in standard adult Yoruba speech.

Rowlands' view might seem at first sight to be borne out by pairs of utterances like the following:

a(i)	Kí Dàda ó lọ	a(ii)	Kí Dàda á lọ
	compl. Dada pronom. go		compl. Dada HTS go
	'That Dada should go.'		'That Dada should go.'
b(i)	Orin àádóòje ó lé máàrún	b(ii)	Orin àádóòje é lé máàrún
	song 130 pronom. be-excess five		song 130 HTS be-excess five
	'Hymn 135.'		'Hymn 135.'

In fact, they offer no support for the view. For one thing, the members of each pair are not variants: those marked (i) are more emphatic than those marked (ii). In addition, (ai), but not (aii), also occurs with the same meaning as

c(i) Kí Dàda kí ó lọ

which would seem to have come by pronominalization from

c(ii) Kí Dàda kí Dàda á lọ
compl. Dada compl. Dada HTS go

The same utterance (ai) also occurs, again with the same meaning, as

c(iii) Kí Dado ó lọ

by rule (21).

It is clear that the vowels involved in (ciii) and (aii) cannot be the same, as there is otherwise no case of the same vowel assimilating both progressively and regressively in precisely the same environment in the language.

Apart from being more emphatic than (bii), as already indicated, (bi) is further differentiated from (bii) by the fact that a brief pause is possible immediately before the pronominalization in it, but not before the HTS in (bii).

[5]For these two rules, see Awobuluyi [1964:71-2], and cf. Bamgboṣe [1966:160].

With its phonemic shape as /ó/, the HTS would definitely not be able to undergo either of these two rules, because the condition for the application of the first is not satisfied and, given /ó/ as an input, the second would only produce phonetically deviant outputs like (22):

(22) *Babo ó lọ

Under these circumstances, it is clear that there is no principled way to account for the morphophonemic behavior of the HTS under the assumption that the element itself is the same thing as the third person singular subject pronoun, which is phonemically /ó/.[6]

Finally, the solution is incomplete, as it says nothing about the function that the HTS performs in Yoruba sentence structure.

3. The HTS as Subject-Predicate Junction Marker

Bamgboṣe [1966:33-4], like Rowlands, attempts only a partial solution of the HTS problem. For while he has some things to say about the element's function, he is silent on what its precise form is. He indicates that the HTS is a subject-predicator junction marker. However, since it is far from self-evident that this is indeed the case, it would have been helpful for readers to be told why it is necessary for the subject-predicator junction to be marked.

This consideration apart, even by Bamgboṣe's own account, the subject-predicator junction marker does not occur in every subject-predicator structure in the language. This being the case, it is difficult to see how the element could really be a subject-predicator junction marker when it can actually be absent from precisely where it must occur by definition.

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[6] Rule (20) has no exceptions at all. This is also true for rule (21), because all those expressions which appear to violate it actually represent cases in which its operation was suspended for semantic reasons. Thus, to cite just one example, the pattern of assimilation observable in
a. a óò lọ → a áà lọ 'We shall go.'
b. ẹ óò lọ → ẹ ẹ́ẹ̀ lọ 'You (pl.) will go.'
needs to take precisely that form to prevent the following otherwise unavoidable mergers from occurring:
c. o óò lọ → o óò lọ 'You (sing.) will go.'
d. a óò lọ ↛ o óò lọ 'We shall go.'
e. ẹ óò lọ ↛ o óò lọ 'You (pl.) will go.'

mo 'I', o 'you' and ó 'he, she, it', all containing the vowel /o/, to be a morphological puzzle which can only be solved if the HTS is assumed to be phonemically /ó/. But, by assigning the HTS the phonemic shape of /ó/, he inadvertently guarantees that his proposal will run into precisely the same morphophonemic problem with noun subject NP's as Rowlands' proposal does. Moreover, the proposal also runs into serious trouble with "pronoun" subject NP's, the only type of subject NP's that Fresco actually considers.

Thus, his phrase structure and transformational rules (p. 65) combined would, for example, produce

(25) Èmi ó ti lọ
I HTS already go

Two alternative terminal outputs are possible from this intermediate string, viz.

(26) Èmi í ti lọ
I HTS already go
'I have already gone.'

(27) Èmí ti lọ
I-HTS already go
'I have already gone.'

Fresco unfortunately gives no indication as to how these two possible terminal outputs would actually be derived from (25). But, left to the only applicable independently motivated rule of vowel assimilation across a word boundary in the language, namely, rule (21), the intermediate string (25) would actually yield the phonetically deviant sentence

(28) *Èmo ó ti lọ

rather than the intended well-formed (26). Similarly, by rule (10), the only applicable independently motivated contraction rule in the language involving the HTS and the final syllable of a subject NP ending on a mid tone (whether the former is a noun or a "pronoun" as in (3)), the string in (25) would yield the phonetically ill-formed

(29) *Èmó ti lọ

Bamgboṣe adds (p. 34) that the subject-predicator junction marker is essential for contrasting different structures in those cases where "formal item exponents" are otherwise identical. E.g.

(23)	Nominal group	Clause
	Aṣọ tuntun	Aṣọ́ tuntun (< Aṣọ ọ́ tuntun)
	cloth new	cloth new HTS
	'A new cloth'	'The cloth is new.'

But he himself cites (ibid) the example of

(24)	Nominal group	Clause
	Ilé tuntun	Ilé tuntun (< Ilé é tuntun)
	house new	house new HTS
	'A new house'	'The house is new.'

where the subject-predicator junction marker, although present, affords no way at all of formally differentiating the formal item exponents involved. As it turns out, the items in (24) are actually differentiated by their functions. The same can be said for the items in (23) and all others like them. Thus, all such structures are invariably differentiated by their functions, but not by the subject-predicator junction marker. The obvious conclusion to be drawn from this is that the latter is not the element that actually contrasts those structures.

Contrasts like those in (23 - 24) are, in the writer's opinion, completely spurious: the elements involved never occur in identical overall environments and even if they occasionally did, by Bamgboṣe's own admission, it would be totally incongruous for an item of such a high frequency of occurrence as the HTS to be of structural relevance only on such rare occasions.

4. The HTS as "Subject Marker"

Oyelaran [1970:135] and Fresco [1970:65] consider the HTS to be a meaningless "subject marker," and therefore propose to introduce it into underlying structures by a transformation. Oyelaran represents it as v́, and Fresco as /ó/.

Fresco considers the fact that the three singular personal "pronouns"

rather than the intended output (27).

Now to consider an actual derivation, Fresco proposes to derive the surface structure sentence

(30) Mo lọ
'I went.'

from

(31) Mi ó lọ
I HTS go

by means of two P-rules. The first such rule (p. 66) would assimilate the vowel of the subject NP mi to that of the HTS, and (31) becomes

(32) Mo ó lọ

The second rule (p. 67) would then delete the HTS from (32) to yield (30).

Fresco's first P-rule is actually the same as rule (21) above. His second rule, however, does not exist in the Yoruba language and ought therefore to be disallowed. The rule claims that the HTS can be dropped under contraction with a preceding subject NP, whereas the data in (1 - 9, 11 - 17) above clearly show that the HTS is never dropped. The rule claims furthermore that when mid tone and high tone are involved in contraction, it is the former that is retained. In fact, it is the latter that is invariably retained in Yoruba.[7]

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[7] On this, see Awobuluyi [1964:67], Bamgboṣe [1966:161-2], Rowlands [1969:32], and Oyelaran [1970:81-2]; cf. rule (10), above.
Bamgboṣe [1966:161] records examples like the following

(i) Ó rí i → Ó ri
he see it 'He found it.'

in which mid tone rather than high tone is retained under contraction. This aberrant behavior, as it turns out, is semantically motivated. For had high tone been retained in (i), as expected, the resultant contracted form, viz ó rí would have been formally indistinguishable from the output of

(ii) Ó rí NP → Ó rí 'He found (unspecified NP).'
He see NP

Under these circumstances, examples like (i) do not constitute real exceptions to the rule governing the behavior of high tone and mid tone

Sequential application of rules (21) and (10), the relevant Yoruba rules of vowel assimilation across a word boundary and of subject NP - HTS contraction, would definitely produce from (31) the phonetically ill-formed

(33) *Mó Iọ

rather than (30).

As indicated earlier, both Oyelaran and Fresco propose to introduce the HTS by transformation. The element, however, normally does not occur overtly in sentences like (30) containing the subject NP's Mo 'I', a 'we', o 'you (sing.)', ẹ 'you (pl.)'. Thus, if it is introduced transformationally (whether as /ó/, according to Fresco, or as ṕ, according to Oyelaran) into the structure underlying sentences like (30), viz (31) or (34),

(34) Mo ṕ Iọ

it would subsequently have to be removed from there by transformation. But as already pointed out about (31), there is no principled way in the language to delete the HTS from such underlying strings without producing phonetically deviant outputs like (33). As a general rule in Yoruba, specific or prescribed tonal adjustments must be carried out simultaneously with the deletion of any one of two contiguous vowel segments belonging to two different words. The prescribed adjustment in the present case calls for the replacement of mid tone by high tone, with the predictable result that (34) would be turned into (33) following the deletion of v.

This would seem to suggest, therefore, that it is at the very least analytically inexpedient to introduce the HTS by transformation. As a matter of fact, such a procedure is not merely inexpedient but unjustifiable; for as will be shown below, the HTS possesses real semantic content and must therefore be introduced lexically like all other similar elements.

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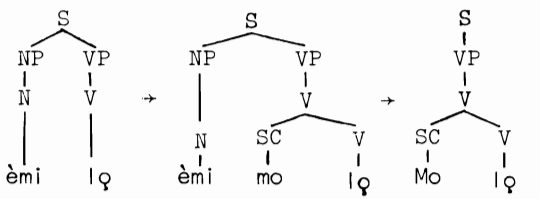
under contraction.

Incidently, Oyalaran [1970:165-6] questions the authenticity of examples like (i), but this writer is inclined to agree with Bamgbọṣe that they occur in the speech of some speakers of Standard Yoruba.

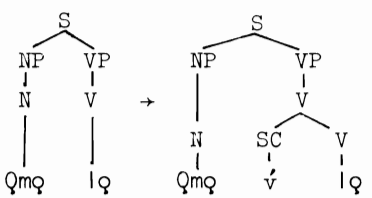
5. The HTS as "Subject Concord Prefix"

Stahlke [1974], motivated by much the same morphological considerations as Fresco, feels that the HTS is a "subject concord (SC) prefix" with the shape ́v between noun subject NP's and verbs, and the shapes mo, o and ó when the first, second, and third person singular "pronoun" subject NP's, respectively, are involved. He provides the following sample derivations (p. 177):

(35) a.



b.



In his own words, "if the subject NP is a personal pronoun, as in (35a), the appropriate SC is attached to the verb and the subject NP is deleted. If, as in (35b), the subject NP is a noun, the SC is simply the high tone whose distribution was illustrated [earlier]. In this case, the subject NP is not deleted" (p. 177).

Notice first of all, however, that according to Stahlke, the deep structure string

(35) a. È̀mi ɪǫ
'I went'

will only yield the surface structure sentence

(36) Mo ɪǫ
'I went.'

But (37) in fact also occurs in the language, and there is no principled

way to generate it alongside (36) within the framework of his analysis.

(37) a. Èmi ́ ị̀ cf. (26), above
I HTS go
'I went.'

b. Èmí ị̀ cf. (27), above
I-HTS go
'I went.'

Secondly, the analysis claims, as can be seen from (35a), that the SC which occurs with the NP èmi 'I' takes the form of Mo. But as (37) clearly shows, this is not the case. The SC that actually occurs with the NP èmi is ́; in which case, (36) in fact could not have come from (35a).

Thirdly, the transformational rule for deleting the NP èmi from the intermediate tree diagram in (35a) has no real parallel in the Yoruba language. This being the case, there would seem to be no compelling reason to suppose that it actually exists in Yoruba grammar. This is all the more so as its sole raison d'être, namely the idea that (36) derives from (35a), is mistaken, as already shown.

Fourthly, if the SC were a prefix on verbs, as suggested, actual prefixation of some of its forms, which consist simply of a vowel with a high tone. However, a well-known Yoruba rule excludes all such words as phonologically deviant,[8] and it is not clear at all how the status of the SC as a prefix can be reconciled with that rule.[9]

Fifthly, Fresco [1970:66] cites data from the Ọ̀bà and Ọ̀wọ̀ dialects of Yoruba, in which the elements Stahlke calls SC occur with their own SC, as follows:

---

[8] On this, see Awobuluyi [1964:29], Bamgboṣe [1966:9], Rowlands [1969: 39], and Oyelaran [1970:76-7].

[9] Stahlke feels that the SC must be a prefix because its vowel harmonizes with that of verbs in some dialects (though not in Standard Yoruba). Such harmonizing combinations of SC and verbs, however, can have several words inserted between them, and they, therefore, cannot constitute words, as Stahlke's formulation implies.

(38)		Ọ̀wọ̀	Ọ̀bà
	1st person singular:	Mò ó	Mù ú
		I SC	I SC
	2nd person singular:	Wò ó	Wò ó
		You SC	You SC

A similar phenomenon occurs in some Igbomina dialects;[10] viz

(39)		Òró/Èsìẹ́	Òkè Ọdẹ
	1st person singular:	Mò ó	Mà á
		I SC	I SC

Even in the standard form of the language, a similar thing occurs, as exemplified in the case of wọn 'they', in (40):

(40) Wọn ọ́n lọ[11]
they SC go
'They went.'

---

[10] Personal observation and Adeoye [1971:59].

[11] Existing publications on the language give the impression that (38) does not occur, as none of them either cites it or otherwise gives any indication at all that it is possible.

However, it actually occurs in this writer's idiolect as well as in some others that he has heard before. Furthermore, as Stahlke [1974:175] rightly notes, the form wọn alternates with wọ́n, as in

a(i)	Wọ́n lọ	a(ii)	Wọn kò lọ	a(iii)	Wọn óò lọ
	'They went.'		'They did not go.'		'They will go.'

This alternation of wọn and wọ́n is not an isolated phenomenon, as Stahlke also rightly points out. Scores of other words participate in it; for example,

b(i)	Ọ̀lá lọ	b(ii)	Ọla kò lọ	b(iii)	Ọla óò lọ
	'Ọla went.'		'Ọla did not go.'		'Ọla will go.'
c(i)	Babá lọ	c(ii)	Baba kò lọ	c(iii)	Baba óò lọ
	'Father went.'		'Father did not go.'		'Father will go.'

Under these circumstances, it is clear that, as Stahlke unfortunately does not point out, the difference between wọ́n and wọn has to be explained in exactly the same way as the one between Ọ̀lá and Ọla, and between Babá and Baba. The difference between the latter two pairs, as may be recalled, was created by rule (10). This being the case, the difference between wọ́n and wọn must similarly be considered as the effect of that same rule. Therefore, (38) exists in Yoruba, for some speakers only as an

Given such data, it is necessary to ask how an element that is said to be a concord prefix could have its own concord prefix. In other words, how are wọn 'they', mo 'I' and wo 'you (sing.)' different from nouns like baba 'father', Ọ̀la 'personal name' when, like the latter, they have their own concord prefixes?

Finally, Stahlke's analysis, like others before it, assumes that the HTS has no meaning. But, in fact, this is not the case, as will be shown presently.

6. The Ideal Solution

The various questions and problems raised in the foregoing paragraphs show, among other things, that any solution to the HTS problem which is to be considered accurate must meet most, if not all, of the following specifications. First, it must account fully for the distribution of the HTS. Second, it must account for the element's morphophonemic behavior without having recourse to rules that lack independent existence in the language. Third, since the HTS forms part of the existing linguistic inventory of the Yoruba language, any would-be solution must necessarily be able to assign it a linguistic function of demonstrable current relevance in that language.[12] Finally, such a solution must be compatible with

---

underlying string, and for others both as an underlying string and as a surface structure utterance.

[12]The impression one gets from Fresco [1970] and Stahlke [1974] is that they analyze the HTS as a subject marker or subject concord prefix in effect for diachronic or comparative linguistic reasons only. Thus, although Stahlke [1974:175, note 6] argues convincingly at great length that the HTS cannot be viewed as a grammatical agreement morpheme in present day Yoruba, he nevertheless analyzes it as a "Subject Concord Prefix" because, as he puts it (p. 176), "several linguists...have claimed that Yoruba, like many other Niger-Congo languages, has a Subject-Verb agreement or concord rule."

Oyelaran [1970:127, 135] calls the HTS a subject marker, as it would seem, for the following two reasons: first, because Case Grammar claims that "the subject of the sentence, when followed immediately in the chain by the verb, is always marked" (p. 127), and second, because the HTS actually "occurs whenever a noun phrase is immediately followed by any element that is a verb" (p. 135). As (62-65) show below, however, Oyelaran's second reason for calling the HTS a subject marker is incorrect, and he is therefore left with only the first reason, whose validity is yet to be demonstrated for Yoruba.

(45) Ó Í lọ

he HTS go

(46) Délé Í lọ

Dele HTS go

rule (20) would operate, giving as its output the strings

(47) Ó ó lọ

he HTS go

(48) Délé é lọ

Dele HTS go

Rule (10) would operate obligatorily on the latter to yield

(49) Ó[13] lọ

'He went.'

(50) Délé lọ

'Dele went.'

The HTS would be present as /ø/ in deep structures containing any one of the following items in Standard Yoruba:[14]

(51) mo 'I'

o 'You (sing.)'

a 'We'

---

[13]Thus except when a future tense marker is present, this form ó is always a portmanteau morph, simultaneously representing the third person singular subject "pronoun" and the HTS. Incidentally, notice that the HTS is not the only pre-verbal adverb that fuses with subject NP's in the language. The adverb ì, for signifying unaccomplished actions, regularly fuses with "pronoun" subject NP's as in

*Mo ì bá lọ	→ m̀ bá lọ	'I would have gone.'
*O ì bá lọ	→ ò bá lọ	'You (sing.) would have gone.'
*a ì bá lọ	→ à bá lọ	'We would have gone.'
*ẹ ì bá lọ	→ ẹ̀ bá lọ	'You (pl.) would have gone.'
cf. Ọ̀la ì bá lọ	→ Ọ̀la à bá lọ	'Ọla would have gone.'

[14]It is assumed that the entry for the HTS in the lexicon would contain information that would permit the correct allomorph, /ø/, to be selected for such deep structures.

relevant established facts, and, if possible, also shed light on related problems in the language.

7. The HTS as Non-Future Tense Marker

Many of these specifications, as it turns out, are easily met if one assumes, much as in Awobuluyi [1964:78], that the HTS is (1) a pre-verbal adverb which indicates the non-future tense, and (2) morphologically /í/ in most contexts, and /ϕ/ in a few contexts where it is semantically present but physically absent.

On this assumption, the HTS would be present as /í/ in the following deep structure strings:

(41) Ọ̀la í lọ
Ọla HTS go

(42) Baba í lọ
Father HTS go

(43) Wọn í lọ
They HTS go

Rule (20) would convert these into

(41') Ọ̀la á lọ
'Ọla went.'

(42') Baba á lọ
'Father went.'

(43') Wọn ọ́n lọ
'They went.'

and application of rule (10) would turn the latter into (12 - 14).

In the case of the deep structure string

(44) Èmi í ti lọ
I HTS already go

rule (20) would operate vacuously to yield (26). Rule (10) would then turn (26) into (27).

Similarly, in the case of

ẹ 'You (plural)'
kò 'not'
a habitual action (in the past/present)
ì unaccomplished action
dà 'where is?'
ńkọ́ 'where is?'

For example,

(52) Mo ø lọ
I HTS go

(53) Ọ̀la ø kò lọ
Ọla HTS not go

(54) Délé ø ì bá lọ
Dele HTS would-have happen go
'Dele would have gone.'

A convention existing independently in the language[15] would delete the zero symbol from these underlying strings late in their derivation to yield

(55) Mo lọ (cf. 36)
'I went.'

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[15]The convention is needed for

(i) ì bá lọ
would-have happen go
'He, she, it would have gone.'

As its gloss shows, (i) contained a token of the 3rd person singular "pronoun" in deep structure. If the pronoun were represented as /ó/, as in

(ii) ó ì bá lọ

this underlying string would incorrectly be turned into

(iii) *í bá lọ

by a Yoruba rule which requires high tone to be always retained when it is involved in contraction with low tone. (On the rule, see Awobuluyi [1964: 68], Bamgboṣe [1966:9], and Oyelaran [1970:81-2]). But if the pronoun were instead represented as ø, as in

(iv) ø ì bá lọ

the desired output (i) would easily be produced by a convention deleting the symbol ø from (iv).

(56) Ọ̀la kò lọ

'Ọla did not go.'

(57) Délé ì bá lọ

'Dele would have gone.'

8. Discussion

The solution just illustrated is suggested by a number of considerations in the language. First and foremost among them is that of the position in which the HTS actually occurs in Yoruba sentence structure. That position, as it turns out, is the very one in which pre-verbal adverbs[16] occur in the language. This being the case, it has to be assumed that the HTS is itself also a pre-verbal adverb, unless and until there is proof to the contrary.

With only one exception to be discussed later, the time reference in any sentence in which the HTS occurs is invariably non-future, i.e. either present or past. For example,

(58) Ọ̀la á lọ

Ọla HTS go

'Ọla went.'

(59) Ọ̀rọ̀ ọ́ wà

Word HTS exist

'We have/had some matters to discuss.'

Similarly, the time reference in any sentence displaying any one of the pre-verbal adverbs yóò, óò, and á is always future. For example,

(60) Ọ̀la yóò lọ

Ọla future go

'Ọla will go.'

(61) Ayọ̀ á lọ

Ayọ future go

'Ayọ will go.'

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[16] Bamgboṣe [1966:68] calls these same elements verbs, though he agrees with this writer in [1972:40] that their sole function is that of adverbs.

From these two sets of examples it can be seen that there is as much correlation between the HTS and non-future time reference as there is between the adverbs yóò, óò, and á and future time reference. Hence, if the latter adverbs are analyzed on the basis of such a correlation as the markers of the future tense,[17] then the HTS must similarly be analyzed as the marker of the non-future tense.

There appears to be only three tenses in Yoruba, namely, Future, non-Future, and Neutral--a tense without specific time reference.[18] Thus, if the claim that the HTS is the marker of non-Future is correct, any sentence in the language in which neither the HTS nor any Future tense marker occurs should have a Neutral tense meaning, that is, it should have no specific time reference. In this connection, consider the following:

(62) Ẹ̀wọ̀n já ḿ bi ó wù ú
chain break in place which-it please it
'The chain breaks wherever it pleases.'

(63) Eèyàn gbé òkèèrè ní yì
person reside afar possess dignity
'When you don't interact with someone at close quarters, he always seems to have no faults.'

(64) Èjì dín ní ogún (> èjì dín lógún)
two be-missing in twenty
'Eighteen'

(65) Òjì lé igba (> òjì lúgba)
forty be-on-top two-hundred
'Two hundred and forty'

Examples (62-63) contain no tense markers. They occur in ordinary usage as proverbs. Now, since proverbs are normally never time-bound in their import, it might seem to be only natural that (62-63) should lack

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[17] On this, see Ward [1956:88], Delanọ [1965:80-82], Bamgboṣe [1966:90], Awobuluyi [1967:259], and Rowlands [1969:92-94].

[18] The term "Tense" as used here refers, as in Hockett [1958:237], only to the location of events in time.

specific time reference. That is, in other words, it might be thought that the lack of a specific time reference in (62-63) could be explained solely by the fact that those sentences are proverbs and not also by the fact that they contain no tense markers. That this is not so is shown, however, by proverbs like (66), which are in the clear majority in the language:

(66) Ẹṣín kú ó fi ìrù sí ayé (< Ẹṣin ín kú ó fi ìrù sí ayé)
horse-HTS die it put tail to earth[HTS]
'The horse died, leaving its tail behind on earth.[19]

Proverbs like (66) are always morphologically marked for tense. For this reason, they always possess time-bound literal meanings as well as temporally unspecified figurative interpretations. Thus, the actual or figurative meaning of (66) is, according to Delanọ [1970:69], "A man may himself be absent but he has an effective deputy--be it son, relative or friend--to look after his interests." Proverbs like (62-63), by contrast, are never marked for tense, and in consequence possess both literal and figurative meanings with no specific time reference.

Furthermore, because proverbs like (66) are marked for tense, they are easily mistaken for non-proverbs when out of context and given time-bound, literal meanings. This never happens in the case of proverbs like (62-63), however, and it can therefore be seen that the absence of tense markers from such utterances serves fully to guarantee or ensure that they can never be given time-bound interpretations. In other words, (62-63) lack specific time references not only because they are proverbs but also because no tense marker occurs in them.

Examples (64-65) are sentences used for naming numerals. They contain no tense markers, and lack specific time reference. The latter has nothing to do, however, with the fact that those sentences are used for naming, since other sentences exist in the language which are similarly

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[19]Until fairly recently, the horse was a status symbol in Yorubaland. And even today, as Delanọ [1970:69] rightly explains, when it dies, its tail is not buried with it. Rather, it is kept for use "as an ornament and sign of authority by Yoruba kings."

used for naming, but which nevertheless always contain specific time reference. For example, we find the personal name

(67) Ọmọ́ tún dé (< Ọmọ ọ́n tún dé)
child-HTS again arrive
'Our child is back again.'

Sentences like (64-65) contain no tense markers and consequently lack a specific time reference, so that they, like (62-63), may never be misinterpreted as describing specific events or occurrences.[20]

If the semantic interpretation attributed to (62-63) is correct, then such sentences confirm the prediction implicit in the view that the HTS is the marker of the non-Future tense. That being the case, they further strengthen the correlation already noted between the HTS and non-Future tense.

That the HTS is indeed the marker of the non-Future tense can be seen still more clearly from a consideration of the traditional description of that tense in Yoruba grammar. The unanimous view of this tense is that it is morphologically zero in all contexts,[21] while the Future tense is marked by the presence of any one of the adverbs yóò, óò, á, or máa. If this traditional view were correct, any declarative sentence in which no Future marker is present would have a non-Future time reference. But, examples (62-65), as already seen, contain no Future markers and yet lack non-Future time reference.[22] Such examples therefore show that the

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[20]The names of some numerals contain the HTS, as in

ọgọ́ọ̀jọ ọ́ dín méèjì (more usually: méèjì dín lọ́gọ́ọ̀jọ)
160 HTS be-less two two be-less in-160
'One hundred and fifty-eight.'

But all such numerals, unlike those that never contain the HTS, can be mistaken for ordinary descriptions of temporally specified events.

[21]On this, see, e.g. Ward [1956:78-79], Bamgboşe [1966:91], and Awobuluyi [1967:260].

[22]Commands do not normally contain the HTS (because they contain future tense markers in deep structure, with which the HTS is mutually exclusive). For this reason, the possibility has to be considered that (62-65) may be commands. That possibility has been ruled out here,

traditional view of the morphology of the non-Future tense is erroneous: the tense is not morphologically zero in all contexts. Quite the contrary, it is overtly represented, at least in some contexts, by some element which is missing from (62-65).

Now, apart from the Future tense marker, the only other element that should alternatively appear in those sentences but which is actually not there is the HTS. This being the case, the conclusion is completely inescapable that this latter element is indeed the marker of the non-Future tense. That this conclusion is right is shown by the fact that the introduction of the HTS into those sentences predictably gives them a non-Future time reference, as in

(68) Èjì í dín ní ogún
two HTS be-missing in twenty
'Two is/was missing from twenty.'

(69) Ẹ̀wọ̀n ọ́n já ḿ bi ó wù ú
chain HTS break in place which-it please it
'The chain broke exactly where it pleased.'

9. Residual Problems

This proposed solution to the HTS problem is not completely free of problems, however. In particular, it is unable to account for everything about the distribution of the HTS.

As two opposing concepts, the Future tense and the non-Future tense should never cooccur either semantically or morphologically within the same sentence in the language. From the semantic standpoint, this is indeed the case throughout the language: no Yoruba sentence contains Future tense and non-Future tense, and simultaneously refers to future time and non-future time. From the morphological standpoint, by contrast, the above expectation is only partially realized. For although the HTS indeed

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however, because, for one thing, the utterances do not possess imperative meanings, and for another, because they lack the characteristic structure of commands: they possess non-vocative subject NP's, and consequently could not be direct commands. Moreover, they do not contain (jẹ́) kí '(allow) that', and are, therefore, not indirect commands either.

is mutually exclusive with the Future tense markers yóò, óò, and á, as expected, it surprisingly can and does regularly cooccur with the Future tense marker máa, as in

(70) Ayọ́ ọ́ máa lọ
Ayọ HTS Future go
'Ayọ will go.'

The element also occurs, contrary to expectation, in two types of embedded sentences exemplified by

(71) a. Mo fẹ́ kí Dàda á lọ
I want compl. Dada HTS go
'I want Dada to go.'
cf. b. Mo fẹ́ kí Dàda lọ
I want compl. Dada go
'I want Dada to go.'
(72) Bí Dàda á bá wá, a óò rí i
If Dada HTS happen comes, we Future see him
'If Dada comes, we shall see him.'

Since the action denoted by the verb lọ 'to go' in the embedded sentence in (71a) must in the nature of things occur subsequently to the one denoted by fẹ́ 'to want' in the matrix sentence, it can be said that the embedded sentence has a future time reference. In which case, the HTS should not appear there at all, as in (71b).

The protasis sentence in (72) has future time reference, as required, because the apodosis sentence has future time reference also. For this reason, the occurrence of the HTS in that protasis sentence is somewhat contrary to expectation.

Notice that the above three kinds of examples actually illustrate the same phenomenon, namely, the occurrence of the HTS in contexts marked as Future, and in which its meaning is invariably completely suppressed in favor of that of the future tense. The solution to the HTS problem presented in this paper cannot explain why the element can occur as in (70-72) nor why its suggested meaning is invariably suppressed in the presence

of future time reference rather than vice versa. To this extent, the solution definitely falls short of the ideal.[23]

10. Conclusion

An advantage of this solution is that it provides, as no other one has done before, a natural semantic explanation for why the HTS is mutually exclusive of specifically the Future tense markers (except máa) and with them alone. Secondly, it draws attention to, and is in addition fully compatible with, the hitherto overlooked structural and semantic implications of the position in which the HTS actually occurs in sentence structure. Thirdly, it provides what would seem to be the only means of accounting for both the meaning and the strucutre of utterances like (62-65). Fourthly, it represents what would again seem to be the only viable alternative to the traditional but completely erroneous view that the non-Future tense is morphologically zero everywhere in the language. Finally, it is totally cost-free, since, unlike its predecessors, it accounts for the behavior of the HTS under assimilation and contraction without employing any new rule at all. Given all these, it would appear that, on balance, the solution is one on which further work on the HTS problem can profitably be based.

This paper did not set out specifically to disprove the claim that there is a subject concord marker in Yoruba. Nevertheless, it is clear that, by showing that what all the proponents of that view identify as a subject marker is in fact a tense marker, this paper has actually called that view into serious question. The HTS had seemed to the proponents of the view as the most likely, indeed the only, candidate for the

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[23] Notice, however, that the problem involved here is apparently not specific to the Yoruba language. In English, the present tense and progressive aspect markers lose their meanings, exactly as the HTS does, in the context of future time reference, as in

He arrives at 2 p.m. tomorrow.
He is coming to dinner tonight.

Thus, it is clear that the problem is one which must be seen and studied from a much broader perspective than that afforded by the HTS.

suggested post of subject concord marker. But given the various considerations raised above, a new search must now be undertaken for the real candidate for that post. And if current knowledge of the language is anything to go by, such a search is likely to be completely fruitless.

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A NOTE ON THE BASE FORM OF THE HAUSA VERB[1]

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1. Introduction

The traditional wisdom among Hausa scholars regarding the base form of the Hausa verb has recently been challenged by Newman [1973]. The purpose of this paper is to argue that in fact the traditional view is by and large the correct one in this case. In general, Hausa verbs which exhibit an alternation between long and short endings depending on whether a direct object noun follows or not have been regarded to have as their base form the form spoken in isolation--i.e. the form ending in a long vowel. The form ending in a short vowel, which a verb takes when a direct object noun follows, has been regarded as a derived form, resulting from a shortening process triggered by the presence of the direct object noun. For example, in the paradigm of the verb kaamàa 'catch' in (1), kaamàa is taken as the base form, from which kaamà is derived.

(1) naa kaamàa — naa kaamàa shi — naa kaamà Audù
'I caught' — 'I caught him' — 'I caught Audu'

Newman [1973] has adduced an interesting argument against this position. He notes that vowel shortening before the noun object would have to have certain restrictions on it, since certain verb-final long vowels do appear before noun objects, in particular in the following examples:

(2) a. yaa ɗaukoo kaayaa 'he lifted the load'
b. an binciikee màganàa 'one has investigated the matter'
c. mù jaa mootàa 'let's pull the car'
d. zaa tà kiraa ƙawartà 'she will call her friend'

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[1]We are grateful to Russell G. Schuh for helping us to clarify our arguments, and to Paul Newman for criticisms that have led us to modify our presentation. Neither of these colleagues necessarily endorses what we propose.

The shortening rule that might be posited for kaamà in (1) would incorrectly shorten the verbs daukoo, bincìkee, jaa, and kiraa in (2), and so Newman argues that the verbs of (2) have basic long final vowels, while for verbs that fit more neatly into the grade system of Parsons [1960], such as kaamàa in (1), a short final vowel is posited: kaamà. To produce the long vowel when the verb is not followed by a noun object, Newman posits a set of lengthening rules which require a number of separate morphological statements (cf. Newman [1973:311-316]). Although these rules may strike some as overly cumbersome, we will not take issue here with their length or complexity, for certainly, in light of Newman's discussion, not all of them are totally ad hoc. Rather, we will note a few arguments to support the position that the isolation form is the basic form and, as any counteranalysis now must, we will propose an answer to the argument of Newman summarized above.

2. Arguments for the Use of the Isolation Form as the Base Form

The first argument concerns the appropriate form of the verb to serve as the base for the addition of the nominalizing suffix -ˋwaa. (The prefixed low tone of this suffix is a "floating" low tone; the vowel aa itself is high-toned in this suffix.) In the following forms, for all of which Newman has proposed a basic short final vowel, the form to which -ˋwaa is attached is clearly the form containing the long final vowel.

(3)

ISOLATION FORM		NOMINALIZED FORM		NEWMAN'S BASE FORM
kaamàa	'catch'	kaamàawaa	'catching'	kaamà
karàntaa	'read'	karàntáàwaa	'reading'	karàntà
rufèe	'close'	rufèewaa	'closing'	rufè
saidàa (dialectal)	'sell'	saidàawaa	'selling'	saidà

To our knowledge, Hausa morphology admits only two sorts of relationship between a derived word and the form from which it is derived, at least when we consider derivational processes of affixation and partial reduplication. Either the derived word is formed by adding affixes or partial reduplicates to an existing non-derived base form (e.g. bà-Kanòo 'Kano man', from Kanòo 'the city Kano'; kan-kàamaa '(iteratively)

catch', from kaamàa 'catch'), or the derived word is formed by adding affixes or partial reduplicates to a root (e.g. bà-Kan-èe 'Kano man'; faaɗ-àa-ɗaa 'wide (pl.), from faaɗ-ii 'width'). Other possible means of word formation seem to be unattested. In particular, Hausa does not form new words by adding affixes or reduplicates to derived words. For example, the feminine mabiyìyaa 'follower' (= ma-bi-ii-aa) is not formed by adding the feminine ending -aa to the derived masculine mabìyii (= ma-bi-ii) but rather by adding the feminine ending to the intermediate form ma-bì-ìi; this is what accounts for the tones of the endings (cf. Leben [1971] for discussion).

If we adhere to this restriction, how can the nominalized forms in (3) be derived from Newman's base forms? The restriction prevents us from adding -`waa to the isolation form, which is a derived form in Newman's account. Instead, we must add another morphological environment, -`waa, to Newman's lengthening rule. However, while this may work for kaamàawaa (putatively from kaamà-`waa), it will incorrectly lengthen the vowel of the grade 7 ending before -`waa: e.g. gàmuwaa 'meeting' (= gàmu-`waa) would incorrectly be lengthened to *gàmúùwaa. Although Hausa does have a rule shortening uu to u before w, it would also be necessary here to change the falling tone on uu to a high tone on the shortened u. Since, as far as we know, the language does not already have a rule to accomplish this, one must be formulated for this case alone. Alternatively, one might simply restrict the putative lengthening rule before -`waa from applying to the vowel u. In either case, an ad hoc step is taken. For the same reason that Newman sought to avoid ad hoc restrictions on the traditional shortening rule, we reject the possible modifications considered here for saving the lengthening rule, at least as long as we are able to provide an alternative that does not involve ad hoc adjustments.

In the present case, we propose instead that the ending -u never lengthens (since in our account there is no relevant lengthening rule for

verbs[2]), and that the floating low tone of -`waa is consequently unattachable (since Hausa does not permit contour tones to occupy open syllables with short vowels).

For the second argument, let us take note of the fact that Newman's proposed base form is the form a verb takes in a very restricted morphological environment, before a noun direct object; the isolation form is derived from this by a lengthening rule. Some may find no objection to this in principle, while others may view it as quite implausible. But now consider intransitive verbs, which by definition can never appear before a noun object. Within Newman's proposal, it is necessary either to adopt a hypothetical ending for intransitive verbs (i.e. the ending they would take in case they could have appeared before a noun object) or to describe two separate paradigms, wherein intransitive verbs are said to take the isolation form as the base form, while transitive verbs are said to take as the base form, not the isolation form, but the form before a noun object. Newman adopts the first possibility [1973:fn. 18], but we regard both as extremely unlikely.

To visualize the situation better, consider this paradigm:

(4)

	ISOLATION	BEFORE PRO. OBJECT	BEFORE NOUN OBJECT	
TRANS.	karàntaa	karàntaa	karàntà	'read'
INTRANS.	daakàtaa	--	--	'wait'

The first alternative says that the base form of the intransitive daakàtaa 'wait' is unattested *daakàtà. The second alternative says that the base form for 'wait' is indeed its isolation form daakàtaa, but that the base form for 'read' is not its isolation form but rather karàntà. The first option is overly hypothetical in that it assigns a transitive ending to intransitive verbs. The second option makes it an accident that transitives and intransitives have the same ending in their isolation forms: e.g. the -aa in karàntaa results from a lengthening

[2] In our analysis, lengthening operates only before object pronouns: e.g. bìi shi 'follow him!' is lengthened from bi 'follow'; cf. Newman [1973:311-313] for discussion.

rule while the -aa in daakàtaa is present in the base form. But in maintaining that the isolation forms karàntaa and daakàtaa were only accidently similar in their endings, we would be rejecting Parsons' grade system, despite considerable evidence that karàntaa and daakàtaa belong to the same class: they nominalize in the same way (karàntáàwaa, daakàtáàwaa), they take the same imperative ending (kàràntaa! dàakàtaa!), and their tonal structure is the same.

By comparison, our analysis does not force a choice between these two undesirable alternatives, since we posit that, with one modification which we present below, the base form of all verbs is the isolation form.

3. Overcoming an Ad Hoc Restriction on the Shortening Rule

The two arguments presented against Newman's proposal constitute evidence in favor of the proposal that the isolation forms of all Hausa verbs are the base forms in the verb paradigm. To maintain this position, however, we must answer the argument that caused Newman to search for an alternative to the traditional position. The argument involves the apparently ad hoc restriction that would have to be put on the shortening rule to prevent shortening from applying to verbs like daukoo, bincìkee, jaa, and kiraa in (2). We propose that the actual restriction is quite general: verbs whose base forms end in a high-toned long vowel do not undergo shortening before a noun object. Thus, we propose that the shortening rule applies only to verbs ending in a low-toned vowel.

The obvious potential counterexamples to this claim are polysyllabic verbs of grades 1 and 4, such as karàntaa and karàncee. These do indeed shorten before a noun object: karàntà, karàncè; note also that the endings have a low tone, while the isolation form ends in a high tone. It is precisely this class of verbs that were argued in Leben [1971] to have basic forms karàntàa, karàncèe, etc. The isolation forms were derived from these by means of a general rule of tone raising, whereby any final long vowel is required to have a high tone if the preceding vowel ends on a low tone:

(5) LOW TONE RAISING

L L # → L H #

[+long] [+long]

This rule, as Newman [1973:fn. 27] notes, functions as a phonotactic rule of Hausa,[3] and it plays a role in Newman's analysis as a "process" rule.[4]

One of the most convincing arguments for the operation of this rule in Hausa involves the very class of verbs under discussion here: polysyllabic verbs of grades 1 and 4. These verbs constitute apparent exceptions to the general rule of tone assignment whereby a pronoun object following a finite verb is assigned a tone opposite to the immediately preceding tone, i.e. opposite to the tone of the verb ending. The regular cases are illustrated by the tone of the pronoun shi in naa kaamàa shi vs. naa sàyee shì. Polysyllabic verbs of grades 1 and 4, however, take object pronouns with the same tone as the tone of the verb ending: naa karàntaa shi, naa karàncee shi. This appearance of exceptionality is resolved by taking the input to the tone assignment rule for object pronouns to be karàntàa shi, karàncèe shi, etc.

Thus, we propose that this class of apparent counterexamples to our analysis is resolved by distinguishing base forms like biyaa, kiraa, and ɗaukoo from base forms like karàntàa and karàncèe: our shortening rule correctly applies only to verbs whose base form ends with a low-toned vowel.

Note that by restricting shortening to low-toned vowels, we automatically explain why shortening does not apply to the Grade 6 ending -oo, since this vowel is always high-toned. In the traditional account of

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[3] We have found only two exceptions to this rule. The first is the adverb hàlàa 'apparently', which Abraham's [1962] dictionary gives as hàláà and equates with hàlaamàa 'possibly'. The second is the noun shèelàa 'announcement', for which Abraham adds the variant shèelaa.

[4] Newman concludes from the fact that (5) is a phonotactic rule that forms like karàntàa are not possible base forms, since they would violate this phonotactic rule. But Newman offers no argument in support of this position, and below in the text we propose an alternative principle for restricting the notion "possible base form" which brings some advantages without weakening phonological theory.

shortening, -oo appeared to be a puzzling exception to the rule.

In order for our proposal to go through, three amplifications must be added to our account. First of all, it may seem that our account presupposes the possibility of extrinsic rule ordering, since the shortening rule, along with the tone assignment rule for pronouns, must apply before the tone raising rule (5). In fact, in Leben [1971], where the distinction between morphophonemic and phonotactic rules was not observed, it was assumed that extrinsic ordering was responsible here. But if we define phonotactic rules as rules governing the pronunciation of surface forms of words, and if we posit that such rules are blind to any morphological information other than what constitutes a word, it will follow that the rules in question here are self-ordering. The rules sensitive to morphological information--e.g. the shortening rule and the tone assignment rule for object pronouns--will apply to the base form, while the tone raising rule (5) will apply at the surface.

The second potential problem that must be addressed involves making our proposal consistent with the constraints that have been put forth on possible lexical representations. In discussing Newman's proposal, we rejected the possibility of hypothetical base forms for intransitive verbs. The proposal we are defending here may seem to be inconsistent with our practice there, since we are proposing base forms which are hypothetical in a sense, too, i.e. the postulated forms karàntàa, karàncèe, etc., are never pronounced this way. To resolve this apparent inconsistency, we propose the following principle: base forms may violate only phonotactic rules. By this principle, base forms like karàntàa and karàncèe are permitted; still, because of the restricted nature of phonotactic rules (they are true at the surface and are insensitive to morphological information), our notion "possible base form" is quite tightly constrained: for example, it rules out the possibility of hypothetical forms like Newman's for intransitives.

As far as we can see, the principle we have put forth does not weaken phonological theory at all. A description of Hausa that restricted possible base forms to occurring surface forms would contain exactly the same rules as our analysis does. What weighs in favor of our analysis is

that we have explained the correlation between the high-toned long vowel of karàntaa and the low-toned short vowel of karàntà; we have accounted for the apparent exceptionality of tone assignment to pronouns following polysyllabic verbs of grades 1 and 4, and we have explained the restriction on shortening in grade 6 in terms of a more general restriction.

The third and final problem we must address concerns forms like bincìkee in (2b). If we posit a basic high-toned ending to account for the fact that this ending is long before the direct object in (2b), we incorrectly predict that a following pronoun would be low-toned; this is false: an bincìkee ta, *an bincìkee tà 'one has investigated it'. If on the other hand, we posit a basic low-toned ending, we predict that this ending will shorten before a noun object. But although the ending may shorten here (yielding an bincìkè màganàa), the unshortened version is also well-formed: an bincìkee màganàa; cf. Parsons [1971:53-54]. This option may exist for all grade 4 verbs. In the cases that we have examined, there is a semantic or stylistic difference associated with the choice between the variants -ee and -e before a noun object. The grade 4 form in general adds a sense of completeness to the root meaning of the verb; the use of the long variant -ee before a noun object seems to accentuate the completeness. For example, yaa buudê bàakii 'he opened his mouth' vs. yaa buudêe baakii 'he held his mouth wide open'. Similarly, yaa saakè shaawaràa 'he changed plans' could be used to describe a slight modification of plans, while yaa saakèe shaawaràa could not; rather, this latter expression would denote a more definite or radical departure from the original plans.

In view of this, we must add to our account of the grade 4 ending -ee the stipulation that the shortening rule before a direct object may be suspended in the case of -ee and that suspension results in an enhancing of the notion of completeness that is part of the semantics of this grade.

This fact, although it complicates our analysis, does not give reason to prefer Newman's analysis over ours. To deal with the -ee vs. -e contrast in direct object position, Newman must either posit two verbs for each grade 4 verb, e.g. bincìkee and bincìkè, or he must make his

lengthening rule optionally apply in grade 4 before a direct object just as we have had to posit optional application of our shortening rule in this environment. In fact, we believe that the present case favors our analysis over Newman's. Our account, which takes the base form to have a long vowel, explains why the only environment in which Hausa makes use of the stylistic or semantic difference involving degree of completeness is before the direct object noun, since this is the only environment in which there is a rule to be suspended. From Newman's viewpoint, on the other hand, it seems odd that this contrast should appear only before a direct object: why didn't Hausa instead suspend the application of the lengthening rule applying to Newman's basic short vowels, thus permitting a contrast between bìnkìkee and bìnkìkè in every environment, including the isolation form and the form preceding a pronoun object? The analysis which we have argued for on entirely independent grounds answers this question.

4. Conclusion

In this paper, we have advanced a number of different types of argument to support the view that the base form of the Hausa verb is in general its isolation form, with the exception of polysyllabic verbs of grades 1 and 4, whose base forms we have argued to yield their isolation forms through the operation of a phonotactic rule. These arguments gather their force from evidence internal to Hausa, without hinging on controversial assumptions about rule ordering or about the nature of lexical representations. Our analysis is consistent with the possibility of extrinsic rule ordering without actually requiring it. Our base forms, if incorporated into an SPE-type lexicon, could be viewed as underlying forms from which other verb forms are derived, but they do not have to be viewed in this way. They can just as readily be incorporated into a more concrete lexicon, of the sort proposed by Vennemann [1974] and by Leben and Robinson [forthcoming], which would contain not only the base forms but also the forms which appear before direct objects. In this case, the function of the shortening rule would simply be to relate the base forms to the pre-object forms without strictly deriving one from the other.

We conclude that internal Hausa evidence argues for base forms that mirror the surface isolation form, save for the raising of a class of final low tones by a general phonotactic rule, and we suggest more generally that there is something to be gained and nothing to be lost by permitting base forms to violate phonotactic rules.

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THE PERFECT STEM IN CHI-MWI:NI AND GLOBAL RULES

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1. Introduction[1]

In this paper we examine in some detail the morphophonemic principles underlying the construction of what Bantu scholars generally refer to as the "perfect stem" in Chi-Mwi:ni, a Bantu language spoken in the city of Brava (the indigenous name of which is Mwi:ni) in Somalia. The alternations observed in the perfective form of the verb in Chi-Mwi:ni are quite complex, and a satisfactory description of these alternations can be shown to require recourse to either "global rules" (the analysis that we prefer) or "transformational rules". Whichever of these alternative descriptions turns out to be correct, the data involved seem clearly to be of some interest to those linguists who are attempting to construct a general theory of the nature of phonological rules. We hope, however, that the data examined here will also be of some interest to specialists in Bantu linguistics by virtue of the fact that Chi-Mwi:ni is a largely undescribed Bantu language. Chi-Mwi:ni has been referred to in the literature as a "dialect" of Swahili,[2] forming the northernmost link of a

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[1]We would like to thank the Center for Advanced Study of the University of Illinois for granting C.W.K. an appointment with the Center for the Fall semester, 1973-74, thus freeing him from teaching duties and making possible the intensive research upon which the present paper is based. We would also like to thank the Research Board of the University of Illinois for providing M.I.A. with a research assistantship for the summer of 1974 which enabled him to devote considerable time to the investigation of Chi-Mwi:ni structure. A slightly different version of this paper first appeared in Kisseberth and Abasheik [1974b].

[2]Chi-Mwi:ni is so described in the two published descriptions of the language available to us: Whiteley [1965] and Goodman [1967]. Neither of these brief studies examines the problems that we will be focusing on in any detail; furthermore, Whiteley's transcription of vowel length is, in certain cases, at variance with ours. It should be pointed out, however, that Whiteley's work on language was apparently of a very brief duration. It is also relevant to note that there are vowel lengthening and vowel shortening rules that operate over "phrases", and thus the shape that a word has in isolation may differ from its shape in a particular

chain of dialects that extends along the East African coast. Whether this label is appropriate is a debatable point, but in any case Chi-Mwi:ni is highly divergent from the more familiar forms of Swahili, and the phonological points that we will be concerned with here have no parallels in standard Swahili. Indeed, Swahili employs a prefix to mark the perfective form of a verb, whereas in Chi-Mwi:ni we will be examining perfect stems that involve the addition of a suffix.

A few limitations on the scope of the present paper should be noted. First of all, there is a large class of verbs where the perfect stem is constructed by means of a change in the quality and/or quantity of the last vowel of the non-perfect stem. Verbs of this type will be dealt with in another paper. Furthermore, not all instances of suffixed perfect stems are analyzed here. We postpone until later the analysis of 1) the construction of a perfect stem from the so-called "applied" or "prepositional" verbal form, and 2) the shape of the perfect stem when a passive verb is involved. The analytical problems offered by these two formations are of considerable complexity and interest, thus meriting separate treatment. The data presented here is based entirely on the speech of Mohammad Imam Abasheikh, a graduate student in the Department of Linguistics of the University of Illinois, and is the result of a collaborative effort between him and the present writer [C.W.K.] that was initiated in June 1973.

2. The Perfect Stem

We take the perfect suffix to be underlyingly -i(:)+- (see below for a discussion of the quantity of the suffixal vowel), where + stands for a liquid that is phonemically distinct from both l and r. Preliminary instrumental investigation suggests that in the articulation of +, the tip of the tongue strikes lightly against a small area to the front of the alveolar ridge without any lateral contact. The area of contact in the case of l, on the other hand, is larger, and there is lateral

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phrasal context. (Cf. Goodman [1967] and Kisseberth and Abasheik [1974a] for some discussion.) The forms of words cited in the present paper are "isolation" forms.

contact. The duration of l is longer than the duration of +. Although phonemically distinct, the contrast between + and l is merged in favor of l in a number of contexts.

Some examples where the perfect suffix shows up with its basic shape phonetically intact are given below in (1):[3]

(1)	jib-i:+-e	'he answered'	cf. ku-ji:b-a	'to answer'
	sif-i:+-e	'he praised'	x-si:f-a	
	+um-i:+-e	'he bit'	ku-+um-a	
	i-vuy-i:+-e	'it leaked'	ku-vu:y-a	
	taraj-i:+-e	'he hoped'	x-taraj-a	
	had-i:+-e	'he said'	ku-had-a	

We have separated the final -e in the above forms from the perfect suffix -i(:)+- and consider it to be a separate morphological element. One motivation for doing so is that this final vowel -e is not a constant feature of perfect forms, whereas -i(:)+- is. For example, the -e is replaced by -a in passive forms and by -o in relative forms. Thus if -ji:b- is passivized, its perfect form will be jib-i:l-a (the shift of + to l is a feature of the passive construction, and is not dealt with here); if -ji:b- is functioning as the main verb of a relative clause, it will have the perfect form jib-i:+-o.

The suffix -i(:)+- undergoes various alternations, as well as conditioning alternations in the preceding stem. We will begin our examination of the formation of the perfect stem by considering changes involving the segmental structure of the perfect suffix itself. The quality of the suffixal vowel is subject to a systematic alternation: it is a high vowel just in case the preceding vowel in the word is i, a, or u (long or short), but a mid vowel if the preceding vowel is e or o

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[3]A description of Chi-Mwi:ni phonetics will not be given here, but a few comments on the transcription employed are in order. t and d represent dental stops, as opposed to alveolar t and d. dh stands for a voiced retroflexed sound that has been borrowed from Somali and is limited (almost universally) to Somali loanwords. (The new Somali orthography employs the symbol "dh" for the sound in question, and we are simply following this orthographic practice.) ch is used for phonetic [č], and sh for [š].

(long or short). In (1) we gave examples where the verb stem has i, a, or u as the last vowel, thus requiring a high vowel in the perfect suffix. In (2) examples are given of stems whose last vowel is e or o, thus requiring the appearance of e rather than i in the suffix.

(2)	tov-e:+-e	'he dipped'	cf.	x-tov-a	'to dip'
	som-e:+-e	'he read'		x-so:m-a	
	gorom-e:+-e	'he roared'		ku-goro:m-a	
	heshm-e:+-e	'he respected'		ku-heshm-a	
	reb-e:+-e	'he stopped'		ku-re:b-a	
	tetem-e:+-e	'he shivered'		x-tetem-a	

We have assumed that the vowel of the perfect suffix is i underlyingly and becomes e when preceded by e or o by virtue of a rule of Vowel Harmony. The alternative to this analysis would be to consider the vowel of the perfect suffix to be e underlyingly, and have it raised to i when preceded by i, a, or u. We have preferred the former solution on the grounds that it is phonetically more plausible that a high vowel should become mid if preceded by a mid vowel than that a mid vowel should become high if preceded by either a high vowel or a low vowel. The proposed rule of Vowel Harmony operates in additional contexts in Chi-Mwi:ni and is not a feature of the language that is peculiar to the perfect stem. We note its operation here simply because its effects are observable in many of the examples cited below.

The + of the perfect suffix undergoes two separate changes. After a stem ending in l, +, or r, it changes to l. Note the examples in (3):

(3)	sul-i:l-e	'he wanted'	cf.	x-su:l-a	'to want'
	komel-e:l-e	'he locked'		x-komel-a	
	owel-e:l-e	'he swam'		k-o:wel-a	
	faði+-i:l-e	'he preferred'		x-faði+-a	
	saji+-i:l-e	'he recorded'		x-saji+-a	
	gulgu+-i:l-e	'he threatened'		ku-gulgu:+-a	
	gir-i:l-e	'he moved'		ku-gu:r-a	
	jasir-i:l-e	'he dared'		ku-ja:sir-a	
	mer-e:l-e	'he turned about'		ku-me:r-a	

This change of ɬ to l after liquid-final stems--call the process Lateralization--also affects the "applied" suffix -iɬ-, which is the only other suffix containing the consonant ɬ. Lateralization must be restricted to ɬ in suffixes, because a root ɬ is permitted to appear after a liquid. Note the following examples:

(4)

ku-ɬa:ɬ-a	'to sleep'
ku-ɬe:ɬ-a	'to be loose'
ɬe:ɬo	'today'
ku-ɬo:ɬ-a	'to take a wife'
li-ɬe	'tall'
ku-la:ɬ-a	'to be sick'

After stems ending in s, z, sh, or ñ, the ɬ of the perfect suffix changes to z, as the data in (5) show.

(5)

kos-e:z-e	'he made a mistake'	cf.	x-kos-a 'to make a mistake'
fiɬis-i:z-e	'he went bankrupt'		x-fiɬis-a
tokos-e:z-e	'he boiled'		x-tokos-a
anz-i:z-e	'he began'		k-a:nz-a
t̲ez-e:z-e	'he played'		x-t̲ez-a
t̲unz-i:z-e	'he looked stealthily'		x-t̲u:nz-a
rash-i:z-e	'he followed'		ku-ra:sh-a
ash-i:z-e	'he lit a fire'		k-a:sh-a
t̲osh-e:z-e	'he thought'		x-t̲osh-a
fañ-i:z-e	'he did'		x-fa:ñ-a
kakañ-i:z-e	'he changed'		x-kakañ-a
tatañ-i:z-e	'he created discord'		x-tatañ-a

This particular change is limited to the ɬ of the perfect suffix; it does not affect the ɬ of the applied suffix, nor does it affect a ɬ in a root. Note the following examples of root ɬ where it is retained after s, z, sh, and ñ:

(6)

x-so:ɬ-a	'to crush grain by pounding'
ku-za:ɬ-a	'to bear (children, e.g.)'
ku-ña:ɬ-a	'to collapse'
shaɬabe:ɬa	'haphazardly'

Two changes in the consonant of the perfect suffix described above are highly regular: so far in our investigation no exceptions to the change of + to l after stems ending in a liquid have been found, and just three or four to the change of + to z after stem-final s, z, sh, and ñ (bariz-i:+-e 'he attended a meeting', jasus-i:+-e 'he spied', asis-i:+-e 'he founded an organization').

3. Mutable and Immutable Consonants

We turn now to changes in the final consonant of stems when they precede the perfect suffix. The consonants of Chi-Mwi:ni may be divided into two categories by virtue of their behavior before the perfect suffix: the Immutable and the Mutable consonants. The members of these two groups are listed below:

(I) The Immutable consonants:
  a. nasal consonants
  b. l, r, (but not +)
  c. voiced stops if not preceded by a nasal
  d. continuant obstruents
  e. "glides"

(II) The Mutable consonants:
  a. voiceless stops
  b. voiced stops if preceded by a nasal
  c. +

As should be clear from our terminology, the Immutable consonants are those which undergo no alternation when they precede -i(:)+-. Immutable consonants are exemplified in full in (7):

(7) a. Immutables of type (a):

som-e:+-e	'he read'	cf. x-so:m-a	'to read'
+im-i:+-e	'he cultivated'	ku-+im-a	
amin-i:+-e	'he believed'	k-a:min-a	
kun-i:+-e	'he scratched'	x-kun-a	
awañ-i:z-e	'he divided'	k-a:wañ-a	
fañ-i:z-e	'he did'	x-fa:ñ-a	

b. Immutables of type (b): cf. (3)

c. Immutables of type (c):

jarib-i:ɬ-e	'he tried'	ku-ja:rib-a 'to try'
dhib-i:ɬ-e	'he bothered'	ku-dhib-a
rud-i:ɬ-e	'he returned'	ku-ru:d-a
dod-e:ɬ-e	'he complained'	ku-do:d-a
ṭaraj-i:ɬ-e	'he hoped'	x-ṭaraj-a
i-jaj-i:ɬ-e	'it itched'	ku-ja:j-a
ṭig-i:ɬ-e	'he castrated'	x-ṭig-a
rag-i:ɬ-e	'he was late'	ku-ra:g-a

d. Immutables of type (d):

gaf-i:ɬ-e	'he made a mistake'	ku-gaf-a 'to make a mistake'
ṭuf-i:ɬ-e	'he spit'	x-ṭuf-a
ṭov-e:ɬ-e	'he dipped'	x-ṭov-a
koð-e:ɬ-e	'he talked'	x-ko:ð-a
kas-i:z-e	'he heard'	x-kas-a
ṭez-e:z-e	'he played'	x-ṭez-a
barsh-i:z-e	'he taught'	ku-barsh-a
dhaxax-i:ɬ-e	'he moved'	ku-dhaxa:x-a

e. Immutables of type (e):

ḍuguw-i:ɬ-e	'he limped'	ku-ḍuguw-a 'to limp'
oɬow-e:ɬ-e	'he got wet'	k-o:ɬow-a
i-vuy-i:ɬ-e	'it trickled'	ku-vu:y-a
tiy-i:ɬ-e	'he feared'	x-tiy-a
sameh-e:ɬ-e	'he forgave'	x-sa:meh-a
xaḍa'-i:ɬ-e	'he cheated s.o.'	xaḍa'-a

The Mutable consonants, on the other hand, are those that undergo a mutation before the perfect suffix -i(:)ɬ-. The result of this mutation is always a coronal continuant obstruent. In the case of the voiceless stops, p, ṭ, and t all change to s, whereas k changes to sh. (It should be pointed out that there are very few stems ending in p, and thus the change of p to s is only marginally attested.) In the case of post-nasal voiced stops, b, ḍ, d, and g all change to z.

Similarly, ɬ changes to z. Examples:

(8) a. Mutable consonants of type (a):[4]

ɬas-i-ɬ-e	'he swore an oath' cf.	ku-ɬap-a 'to swear an oath'
ɬis-i-ɬ-e	'he paid'	ku-ɬip-a
gi:s-i-ɬ-e	'he pulled'	ku-gi:t-a
kus-i-ɬ-e	'he folded'	x-kut-a
las-i-ɬ-e	'he let go'	ku-lat-a
ɬo:s-e-ɬ-e	'he dreamed'	ku-ɬo:t-a
ɬe:s-e-ɬ-e	'he brought'	ku-ɬe:t-a
pis-i-ɬ-e	'he passed'	x-pit-a
pish-i-ɬ-e	'he cooked'	x-pik-a
tesh-e-ɬ-e	'he laughed'	x-tek-a
shi:sh-i-ɬ-e	'he held'	x-shi:k-a

b. Mutable consonants of type (b):

ɬo:nz-e-ɬ-e	'he begged'	ku-ɬo:mb-a 'to beg'
tu:nz-i-ɬ-e	'he made a hole'	x-tu:mb-a
ya:nz-i-ɬ-e	'he farted'	ku-ya:mb-a
ti:nz-i-ɬ-e	'he cut'	x-ti:nd-a
pe:nz-e-ɬ-e	'he liked'	x-pe:nd-a
so:nz-e-ɬ-e	'he sucked'	x-so:nd-a
po:nz-e-ɬ-e	'he pounded'	x-po:nd-a
shi:nz-i-ɬ-e	'he won'	x-shi:nd-a
ka:nz-i-ɬ-e	'he kneaded'	x-ka:nd-a
fu:nz-i-ɬ-e	'he closed'	x-fu:ŋg-a
kaɬa:nz-i-ɬ-e	'he fried'	x-kaɬa:ŋg-a
te:nz-e-ɬ-e	'he moved away'	x-te:ŋg-a

[4] The mutation of voiceless stops occurs regularly when that stop is preceded by a vowel, as shown by the examples in the text, and also when that stop is preceded by a nasal, as can be seen from examples like nu:nsh-i-ɬ-e 'he smelled' (ku-nu:ŋkʰ-a), ku:ns-i-ɬ-e 'he was in financial difficulty' (x-ku:ntʰ-a), pepe:ns-e-ɬ-e 'he separated the husks from grain' (x-pepe:ntʰ-a). If a non-nasal consonant precedes, however, mutation does not occur. Thus: shart-i:-ɬ-e 'he imposed a condition' (x-shart-a), shirk-i:-ɬ-e 'he claimed divine qualities' (x-shirk-a), isk-i:-ɬ-e 'he shook s.t.' (k-isk-a).

c. Mutable consonants of type (c):

mo:z-e+-e	'he shaved'	ku-mo:+-a	'to shave'
paz-i+-e	'he scraped'	x-pa+-a	
pe:z-e+-e	'he swept'	x-pe:+-a	
kuz-i+-e	'he grew'	x-ku+-a	

(The reader will recall that examples were given in (3) showing that stem-final + , like l and r, causes a change of the + of the perfect suffix to l , cf. faði+-i:l-e 'he preferred'. Stems such as -faði+- must be considered exceptions to the mutation of stem-final + to z. There are in fact a fair number of such exceptions, all loan-words from Arabic or Somali.)

4. Mutation and Global Rules

We will refer to the process whereby stem-final mutable consonants alternate before the perfect suffix as Mutation. The first thing that must be noted about mutation is that the coronal continuant obstruents s, z, and sh which arise from this rule do not condition a change in the + of the perfect suffix, whereas an underlying s, z, sh or ñ causes this + to change to z (cf. (5) above). Within the standard generative approach to phonology, this fact would be accounted for by ordering the rules so that the +-to-z rule is applied prior to Mutation. The derivation of shi:sh-i+-e as opposed to rash-i:z-e is given in (9):

(9)

shi:k-i:+-e	ra:sh-i:+-e	
inapplicable	ra:sh-i:z-e	+-to-z
shi:sh-i:+-e	inapplicable	Mutation
shi:sh-i+-e	rash-i:z-e	other rules

Notice that Mutation potentially feeds the +-to-z rule since it creates new instances of s, z, and sh, all of which potentially condition the change of + to z in the perfect suffix. In the derivations in (9), however, +-to-z applies before Mutation--an instance of a "counter-feeding" order of application of rules.

There are, of course, alternatives to the rule ordering description of these data. If the device of global rules is allowed in phonology

(for some discussion, see Kenstowicz and Kisseberth [1970] and Kisseberth [1973a, b]), we would simply restrict the +-to-z rule so that it applies only after underlying stem-final s, z, sh, and ñ. The +-to-z rule then will not be able to apply in a case like shi:sh-i+-e, since the + of the perfect is not here preceded by a sh that is present in underlying structure. The global rule approach simply places an additional (global) constraint on the +-to-z rule, rather than applying the +-to-z rule in any particular order relative to Mutation. The rule ordering solution and the global rule solution in any case make the same basic claim, which appears to be correct: namely, it is the underlying form of the verb stem that determines the shape of the perfect suffix, not the surface shape.

5. Vowel Length

The reader will have noticed that there is considerable variation in the examples cited with respect to the length of vowels. Chi-Mwi:ni is subject to an extensive set of vowel lengthening and vowel shortening processes, a complete description of which is well beyond the scope of this paper. Goodman [1967] and Kisseberth and Abasheik [1974a] provide a description of some of the main features of these processes. The formation of the perfect stem, however, presents certain problems of vowel length variation that are over and above the general patterns of alternation. In particular, the vowel of the perfect suffix exemplifies a pattern of morphophonemic alternation unattested elsewhere in the language. The remainder of this paper will focus on this unique pattern. (We will not be concerned here with variations in the length of vowels in the verb stem to which the perfect suffix is added--e.g., x-so:m-a 'to read', but som-e:+-e 'he read'--since such variations can be predicted in terms of generally motivated rules, provided that the correct length has been assigned to the vowel of the perfect suffix prior to the application of the general rules.)

What determines whether the vowel of -i(:)+- will be long, as in jib-i:+-e, or short, as in shi:sh-i+-e (note that the verb roots in both cases have an underlying long vowel: /ji:b/ and /shi:k/)?

An examination of the data presented so far reveals a regularity of a fairly obvious sort: in (7), where the verb stem ends in an Immutable consonant underlyingly, the vowel of the perfect suffix is always long, while in (8), where the preceding verb stem ends in a Mutable consonant, the vowel of the perfect suffix is always short. This observation suggests that the length of the vowel of -i(:)+- might be correlated with the nature of the underlying final stem consonant--in particular, correlated with the mutability of that consonant. For example, if we assumed that the vowel of the perfect suffix is underlyingly long, we would have a rule that said: shorten the i: of the perfect suffix after a Mutable consonant (i.e. voiceless stops, voiced stops if after a nasal, +). Alternatively, if we claimed that the vowel is short underlyingly, we would have a rule that said: lengthen the i of the perfect suffix after Immutable consonants (i.e. voiced stops not preceded by a nasal, continuant obstruents, sonorants, glides). Given either of these analyses, what is being claimed is that the length of the vowel of the perfect suffix is determined by the nature of the final consonant of the preceding stem prior to Mutation. Recall that Mutation has the effect of changing a Mutable consonant into s, z, or sh --all of which are themselves in the Immutable class. Thus if it were correct that the length of the perfect suffix correlated with whether the preceding stem ends underlyingly in a Mutable consonant or not, then it would be necessary to apply the rule determining the vowel length of -i(:)+- prior to Mutation (or else appeal to global rules).

There is evidence, however, to show that the length of the vowel of the perfect suffix is not in fact correlated with the contrast between Mutable and Immutable consonants, and thus that the determination of the length cannot be made on the basis of the structure prior to Mutation. This evidence is provided by two types of exceptions to Mutation. The first type involves instances of "negative" exceptions to Mutation, i.e., cases where the rule should apply, but does not. Exceptions of this type are well-documented in many languages. (10) lists many of the negative exceptions to Mutation that we have so far discovered. Most of the exceptions are either loanwords or stems ending in a nasal plus a voiced

stop (in the latter cases, avoidance of homonyms may be involved in some of the cases of exceptional behavior).

(10)	pamb-i:+-e	'he decorated'	(The expected form is pa:nz-i+-e, which does occur, but only as the perfect form of -pa:nd- 'to climb, go up'.)
	imb-i:+-e	'he sang'	(The expected form is inz-i+-e, which does occur as an alternative to imb-i:+-e.)
	ond-e:+-e	'he tasted'	
	goŋg-e:+-e	'he knocked'	
	soŋg-e:+-e	'he moved close'	(The expected form is so:nz-e+-e, which does occur, but only as the perfect form of -so:nd- 'to suck'.)
	teŋg-e:+-e	'he stayed away, avoided'	(The expected form te:nz-e+-e does occur as an alternative form.)
	tap-i:+-e	'he tossed around'	
	xat-i:+-e	'he went without (food, e.g.)'	
	i-θibit-i:+-e	'it was certain'	
	set-e:+-e	'he stamped on'	
	ishtak-i:+-e	'he complained'	
	tadaruk-i:+-e	'he attended to the needs of his guests'	
	jadi+-i:l-e	'he argued pointlessly'	(Cf. (3) above for other examples where stem-final + fails to undergo Mutation.)

Observe that in the above examples, a stem ending in a Mutable consonant fails, exceptionally, to actually mutate. Now, if the length of -i(:)+- were in fact dependent on the contrast Mutable vs. Immutable, then the vowel should have the same length in the examples in (10) as it does in (8); in both cases the vowel is preceded by a Mutable consonant. But whereas the suffixal vowel is short in the examples in (8), it is long in the examples in (10). In other words, the vowel is long after a Mutable consonant when that consonant does not actually mutate, but short after a Mutable consonant when that consonant does in fact mutate.

The second type of exception to Mutation involves "positive" exceptions, i.e., cases where the rule applies, even though the conditions for its application are not fulfilled. Exceptions of this type appear to be much less frequent than simple negative exceptions, but the examples in (11) appear to be strong candidates for such a treatment:

(11)	bish-i+-e	'he hit'	cf.	ku-big-a 'to hit'
	ta:z-i+-e	'he opened it wide'		(alternatively: tag-i:+-e) x-ta:g-a
	laz-i+-e	'he went out'		ku-law-a
	toz-e+-e	'he didn't find'		x-tow-a

The consonants g and w belong (regularly) to the class of Immutables and do not undergo Mutation before the perfect suffix. The roots -big-, -ta:g-, -law-, and -tow- are exceptions in that they do mutate: -big- changes its final consonant to sh, whereas the other three roots change their final consonant to z.

Once again, if it were correct that the length of -i(:)+- is governed by the contrast Mutable vs. Immutable, then the vowel should be long in (11) just as it is long in (7). In both sets of cases the stem ends in an Immutable consonant. But the vowel is short in laz-i+-e, etc., not long as in duguw-i:+-e, even though the roots -law- and -duguw- both end in w. In other words, the vowel of the perfect suffix is short after an Immutable consonant that does in fact mutate, but long after those Immutable consonants that (regularly) do not mutate.

The two classes of exceptions discussed above demonstrate that the structure of the stem prior to Mutation does not determine when the vowel of -i(:)+- is short as opposed to when it is long. The contrast Mutable vs. Immutable is not, in fact, the relevant contrast. It would seem rather that the contrast Mutated vs. Unmutated is the crucial one. The vowel of the perfect suffix is long after an Unmutated consonant, but short after a Mutated consonant. The Unmutated consonants are those Immutable consonants that have (regularly) failed to undergo Mutation and also those Mutable consonants that have (exceptionally) failed to undergo Mutation. The Mutated consonants are those Mutable consonants that have

(regularly) mutated, as well as those Immutable consonants that have (exceptionally) mutated.

6. Global Rule

Let us now consider how we can formulate the above observations into a rule. Assume for the moment that the vowel of the perfect suffix is basically long. We would then want to say: shorten this vowel when it is preceded by a Mutated consonant. How do we identify a "mutated" consonant? We have already seen that this concept is not equatable with the concept underlying the term Mutable. It would seem rather that it is the structure that results from Mutation that determines the length of the vowel of the perfect suffix. However, if one examines just the output of the rule of Mutation, it is not possible to distinguish (phonetically) a Mutated consonant from an Unmutated consonant. The reason that it is not possible has already been pointed out: the consonants s, z, and sh may be either Mutated consonants (in the event that they derive from underlying stops or +) or Unmutated (in the event that they derive from underlying s, z, or sh). The vowel of the perfect suffix is long in kos-e:z-e 'he made a mistake', but short in pis-i+-e 'he passed'; in both cases the stem ends phonetically in s, but in the former case the s is Unmutated (deriving from underlying s) while in the latter case it is Mutated (deriving from underlying t). Thus the post-Mutation structure cannot, by itself, provide sufficient information to distinguish Unmutated from Mutated consonants.

The reader may have noted that kos-e:z-e and pis-i+-e differ not just in the length of the vowel of the perfect suffix, but also in the quality of the consonant of that suffix: z in kos-e:z-e, but + in pis-i+-e. Could that not have something to do with the length of the preceding vowel? Recall that this difference in the shape of the consonant of the perfect suffix is due to the fact that +-to-z rule does not apply after a stem-final s, z, or sh resulting from Mutation. In kos-e:z-e, the verb stem ends underlyingly in s, and thus the + of the perfect changes to z as required by the +-to-z rule. In pis-i+-e, on the other hand, the stem ends in t underlyingly, and the +-to-z rule does not affect the + of the perfect suffix. Given our analysis,

then, the fact that the suffix in kos-e:z-e has a long vowel followed by z, whereas pis-i+-e has a short vowel followed by +, is simply the consequence of the fact that both the rule assigning the appropriate vowel length to -i(:)+-, as well as the rule whereby + changes to z depend crucially on the contrast between Mutated and Unmutated consonants. There is good evidence in support of the contention that there is no direct connection between the length of the vowel and the change of + to z. For one thing, there are many cases where a perfect suffix has + preceded by a long vowel: e.g., som-e:+-e, jib-i:+-e, had-i:+-e, etc. Such examples demonstrate that an + in the perfect suffix does not generally require that a short vowel precede. Secondly, there is evidence, from exceptions again, to support the claim that the appearance of + vs. z in the perfect suffix is in no way directly correlated with the length of the preceding vowel. Recall that there are a few exceptions to the +-to-z rule: bariz-i:+-e, jasus-i:+-e, asis-i:+-e. Notice that the fact that + appears in these examples rather than z has no effect whatsoever on the length of the preceding vowel, which is long (just as it would be if the + had undergone the +-to-z rule). The suffixal vowel is long in examples like bariz-i:+-e simply because the preceding stem ends in an Unmutated consonant.

We have now shown that the structure that exists prior to Mutation cannot provide the relevant information to determine the length of -i(:)+-, and that the structure that exists after Mutation cannot provide the necessary information either. Within the standard approach to generative phonology, only one move is left: put Mutation and the assignment of vowel length into one rule, that is, formulate one transformational rule that simultaneously mutates a final consonant before the perfect suffix and also shortens the following vowel. Given such an analysis, if Mutation applies, then shortening of the following vowel will also occur; if Mutation does not apply, then neither will the shortening of the vowel of the perfect suffix. Thus the connection between a Mutated consonant and a following short vowel would be captured.

It should be noted that this transformational analysis requires that the vowel of -i(:)+- be underlyingly long. If the vowel were basically

short, it would have to be lengthened after Unmutated consonants, but there is no way to link a change in vowel length to the lack of a change in the preceding consonant by means of a transformational rule. Transformational rules simply allow two structural changes to be welded together into one. The transformational analysis also requires that there be one Mutation rule to which the vowel length adjustment can be attached. Thus there must be one rule that (a) mutates voiceless stops after both vowels and nasals, (b) mutates voiced stops just when they are after nasals, and (c) mutates +, but not l or r. Furthermore, that same rule must account for the "positive exceptions" in (11), such as toz-e+-e from underlying /tow-i:+-e/. If all of these changes in the final consonants of stems before the perfect suffix were not incorporated into one rule, it would be necessary to repeat the length adjustment as part of each rule that would carry out the various mutations. Thus if the transformational analysis is the correct one, we have strong evidence that what we have been referring to as Mutation should be formalized as a single rule.

There is an alternative to the transformational analysis which would make use of a global rule. The principle would be simply: the vowel of the perfect suffix is short after a Mutated consonant (i.e., a consonant that has been derived by Mutation), and long otherwise. This formulation of the rule assumes that there is one rule of Mutation. If there are in fact two or more separate rules of Mutation, then we would have to revise our characterization of "Mutated" consonant to mean a consonant derived by means of any rule that alters a stem-final consonant preceding the perfect suffix. The global rule approach allows a rule to consider the derivational history of a given structure, and thus allow a Mutated consonant to be distinguished from an Unmutated consonant.

Recall that the +-to-z rule likewise must distinguish between Mutated and Unmutated consonants (since the perfect suffix changes its + to z after Unmutated s, z, sh, and ñ). In that case it was possible to make this distinction by ordering the +-to-z rule prior to Mutation. Global rules provided an alternative to this use of ordering. Now we see that the length of the vowel of the perfect suffix is also determined by

a contrast between Mutated and Unmutated, but a rule ordering solution to this problem is not available. There is, we believe, a significant parallelism between the two cases: a phonetic feature in the perfect suffix (occurrence of z as opposed to +, occurrence of a long as opposed to a short vowel) is being employed in such a way as to maintain a contrast that would otherwise be neutralized in the perfect stem. That is, the rule of Mutation neutralizes several phonological oppositions: p, t, t and s are all realized as s before the perfect suffix; k and sh are both realized as sh; + and z are both realized as z; and mb, nd, nd, ŋg, and nz are all realized as nz. This neutralization, while very extensive, is partially offset by the fact that the perfect suffix will have a different phonological shape when a preceding s, z, or sh is derived via Mutation rather than being underlying. The interaction between the +-to-z rule and Mutation helps to preserve underlying phonological contrasts, as does the interaction between the assignment of length to -i(:)+- and Mutation. Given the parallelism between the two cases, we prefer to describe the interactions between +-to-z and Mutation on the one hand and between length adjustment and Mutation on the other, in parallel fashion. Global rules allow a parallel description, rule ordering does not.

We have not shown that a global rule must be used rather than a transformational rule in accounting for the length of the vowel of the perfect suffix. Either approach is possible, since both allow one phonological change to be tied directly to another phonological change. The data in this paper seem to establish clearly that two phonological changes may in fact be inseparably linked so that one of the changes occurs only if the other also occurs. The proper description of such linkages is still uncertain, but the existence of a need for an appropriate descriptive device has been supported.

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ANIMATE CONCORD IN NORTHEAST COASTAL BANTU: ITS LINGUISTIC AND SOCIAL IMPLICATIONS AS A CASE OF GRAMMATICAL CONVERGENCE.[1]

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1. Multilingualism and Convergence in NECB

Of immediate interest to this study is linguistic convergence toward ANIMATE CONCORD in the languages of Northeast Coastal Bantu.[2] In exploring this phenomenon discussion will be presented in the following order.

First, the grammatical process of ANIMATE CONCORD (AC) is discussed as a syntactic phenomenon, distinguished from related processes such as CLASS CONCORD (CC) and NOUN CLASS SHIFT, and put into historical perspective as an innovation in the NECB area. In the second section the methodology used in investigating AC is presented. In modern sociolinguistic and dialectological studies the methods of obtaining linguistic data are considered to be part of the data themselves, since the conditions under which linguistic data are elicited have been observed to affect the linguistic behavior of producers of the data (cf. Shuy [1973] and Pop [1950] for discussions of the importance of methodology in sociolinguistic and dialectological studies). This is illustrated for some of the speakers discussed in the third section, with respect to AC. The ensuing discussion of AC supports the notion that AC is an ongoing, semantically motivated syntactic innovation in NECB, developing in both a syntactically and geographically coherent pattern. It is also proposed that there is an early, possibly pre-natal, stage in the dialectal development of AC in which AC is overtly rejected as a property of the dialect for reasons of

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[2]The identification of an NECB group follows the classification of Hinnebusch [1973] for the most part.

a social rather than linguistic nature, but the use of AC is revealed in less introspective linguistic behavior. Finally, it is proposed that there is a stage in which AC and CC may vary within a dialect without either being considered "foreign" or "incorrect", and that at this stage certain contrasts in usage, which are elicitable from speakers, are parasitic on the loss of a social distinction between the two conflicting processes of concord, and have little or nothing to do with the further development of AC due to their limited utility.

Viewed as a whole, this study supports the sociolinguistic notion that investigating linguistic phenomena without reference to the contexts in which they occur leads to an incomplete and potentially confusing account of what linguistic processes entail. At this initial point, let us consider the general context in which the linguistic convergence is taking place.

Multilingualism and multiculturalism is a salient feature of the coast of Kenya and Northern Tanzania (the area associated with NECB). As a result of strong and long-established patterns of local ethnic identity in the midst of this multiculturalism, the coastal people exhibit a high degree of "language consciousness". Restricting our focus of attention to the Bantu-speaking people of the coast, language consciousness is evident in the readiness with which speakers exemplify differences between their own local languages (or dialects) and those of their neighbors, drawing on a reservoir of linguistic folklore deeply embedded in the individual and general cultures of the area.[3] Concerning the Miji Kenda languages of the Kenyan coast, Sedlak [1975:67] observes:

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[3]These differences go far beyond reporting of lexical peculiarities distinguishing local and neighboring communities to include phonological and even syntactic differences. Some of the reported differences are somewhat subtle and minute to outsiders, e.g. among the native Swahili dialects of Northern Kenya, speakers of Amu (the Swahili of Lamu) and speakers of Bajun (language of the adjacent Bajun islands) like to call attention to their differential pronunciations of the word for 'water': mayi and mai, respectively. Thus the presence or absence of a palatal glide preceding a high front vowel can be the subject of overt social comment.

> With regard to interintelligibility among the Miji Kenda dialects, my own observations of cross-ethnic communication indicate that intelligibility is high. Members of these groups claimed a lesser degree of interintelligibility than their language behavior indicated.

Yet, despite the readiness of coastal Bantu speakers to emphasize the differences among their own and neighboring dialects, similarities among these languages are overwhelming both as a result of shared ancestry and linguistic convergence.

1.1. Animate Concord in relation to Class Concord. AC is variable in the NECB area as a whole. It is not coextensive with the area. In some languages like Swahili and Bondei, it is firmly established whereas in other languages, e.g. the Miji Kenda languages directly north of Bondei along the coast, various degrees of integration of AC into the grammar of those languages is exhibited. As one travels inland from the coast in any area AC becomes rarer until it ceases to be found at all. The continuum from "full" AC to no AC applies both to specific speech communities and to linguistic environments in Bantu constructions. I will be able to report with less certainty on how it relates to different styles of speech for reasons which will be discussed in the section on methodology (Sec 2 ff.).

Where AC is not found in relevant syntactic environments, CLASS CONCORD (CC) is the rule. It is the purpose of this section to distinguish these two types of concord. To begin with, it is a well-known fact about Bantu languages that the grammatical process of CC is found universally, whether or not AC is also a part of their grammatical descriptions. In considering how CC fits into Bantu grammar, we may begin by observing that it is determined by the nature of the Bantu noun (N), as commonly agreed by Bantuists.

It is a well-known feature of Bantu languages that they have a rich formal system of noun classification dependent primarily on the CLASS PREFIX (CP) appended to the N, and secondarily by the concord induced on modifiers and coreferential pronominal elements. Borrowing from Kiparsky's [1972] terminology which emphasizes surface characteristics of grammar, I distinguish transparent and opaque N's, with respect to N classification.

Transparent N's exhibit an unambiguous CP, while opaque N's exhibit an ambiguous CP or no CP making it not obvious from the shape of the N itself what class it belongs to.[4]

(1) Class Concord

Token Construction: CP-le (CP-) N, ni-li-OM-ona

that/ those — N/, N's — I-Past-it/ them — -see

'That/those N(s), I saw it/them.'

Transparent Controlling N		Class	
a.	Li-le ji-we, ni-li-li-ona (5 / CP / 5)	5	'...stone...'
b.	Ya-le ma-we, ni-li-ya-ona (6 / CP / 6)	6	'...stones...'
c.	Ki-le ki-su, ni-li-ki-ona (7 / CP / 7)	7	'...knife...'
d.	Vi-le vi-su, ni-li-vi-ona (8 / CP / 8)	8	'...knives...'
Opaque Controlling N			
e.	Li-le shina, ni-li-li-ona (5 / 5)	5	'...root...'
f.	Ki-le chombo, ni-li-ki-ona (7 / 7)	7	'...tool...'
g.	I-le chupa, ni-li-i-ona (9 / 9)	9	'...bottle...'

[4] In the examples given in (1), the characteristics of CC are illustrated for the token construction of left topicalization. The number below the concordial element follows the traditional Bantu practice of identifying N Class according to reflexes of the classes reconstructed and indexed by Meinhof [1948] for "Ur-Bantu" (hypothetical parent Bantu language.) The number following each example is the class assigned to the "controlling" N which induces concord. The controlling N, CP (if transparent) and the concordial elements are underlined. In all the cases in (1) it is observed that there is no conflict between the class of the controlling N and that of the concordial element. However, the difference between opaque N's and the transparent N's is that the opaque N's do not have an unambiguous CP and their class is deduced from the concord they induce. The examples are from Standard Swahili (also representative of Tanzanian urban Swahili in this case), but are intended to be typical of Bantu languages in general.

h. Zi-le chupa, ni-li-zi-ona — 10 — '...bottles...'
10 10

i. I-le ngoma, ni-li-i-ona — 9 — '...drum/dance...'
9 9

j. Zi-le ngoma, ni-li-zi-ona — 10 — '...drums/dances...'
10 10

All examples in (1) above show strict CC. There is no conflict between the class of the controlling N and the concord induced. For transparent N's, it is sufficient to observe the N alone in order to identify its class, because of the transparent CP, and consequently the appropriate form of concord. For the opaque N's there is some degree of indeterminacy of class if only the N is observed, e.g. classes 9 and 10 forming singular/plural pairs for N's as in (1g) through (1j) are not distinguished for number. Since class opacity is the result of specific processes of phonological reduction which have obscured the surface form of the CP in these cases, there are limits to the indeterminacy.[5]

Classes 1 and 2 are of special interest. N's of these classes are marked with reflexes of the Proto-Bantu CP's *MO (Cl. 1) and *BA (Cl.2). A much observed feature of these classes is that they are restricted to HUMANS (although humans also occur in other classes). Swahili has two celebrated exceptions:

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[5]See Hinnebusch [1973] for a fuller description of the processes that have led to the opacity of the CP in Swahili and other NECB languages. With regard to (1f) and (1g) above, it is usually the case that N's beginning with ch-, if from historic *ky- are assigned to class 7. The class 9 noun chupa 'bottle' is from historic *n-č... Because of the opacity of chupa, many lower class second-language speakers of Swahili in Dar es Salaam have metanalysed this word as if the initial affricate were the palatalized version of the CP of class 7 as in (1f) above; ch-ombo 'tool': ch-upa 'bottle'. This metanalysis is revealed by the plural vy-upa, where vi- is the class 8 CP associated with the class 7 singular CP as in (1d) above. This metanalysis is in contrast to the natively acceptable plural class 10 as in (1h) above, and is frowned upon by native speakers of Swahili in the area as well as second language Swahili speakers who have adopted the native speaker norms. It is interesting to note that this indicates a tendency for Bantu speakers (which include most of the second language speakers of Swahili in Dar es Salaam) to interpret an N as having a CP, if possible.

(2) m-/wa-nyama 'animal(s)' m-/wa-dudu 'insect(s)'
1 2 1 2

Significantly, both these exceptions are ANIMATE. N's referring to animates, including humans, are found in most N classes in Swahili and other Bantu languages (NECB or not), animals being heavily concentrated in classes 9/10. The N's of classes 1 and 2 are transparent in NECB, as in most Bantu languages. On the other hand, the N's of classes 9 and 10 are opaque for the singular/plular distinction as (1g) to (1j) illustrate above.

AC is a well-known feature of Swahili by which animates, whether transparent or opaque for N class membership, induce the concord associated with classes 1 and 2. The examples below contrast CC with AC for animates.

(3) Concord with Animates

CC:	a.	Yu-le m-toto, ni-li-mw-ona 1 CP 1	1	'That child, I saw him.'
	b.	Wa-le wa-toto, ni-li-wa-ona 2 CP 2	2	'...children...'
AC:	c.	Yu-le ki-boko, ni-li-mw-ona 1 CP 1	7	'...hippo...'
	d.	m-jusi CP	3	'...lizard...'
	e.	simba	9	'...lion...'
	f.	jogoo	5	'...rooster...'
	c'.	Wa-le vi-boko, ni-li-wa-ona 2 CP 2	8	'...hippos...'
	d'.	mi-jusi CP	4	'...lizards...'
	e'.	simba	10	'...lions...'
	f'.	ma-jogoo CP	6	'...roosters...'

In (3c) through (3f') there is conflict between the class of the controlling N and the concord induced. The concord does not change with the class, but only with whether the controlling N is singular or plural. It is apparent that concord is induced on the basis of the semantic feature ANIMATE of the controlling N, regardless of the N class membership of that N.

However, this is not yet quite an accurate characterization of what is going on.

Analysts of Swahili have been careful to note that augmentative and diminutive animates follow the typical Bantu rule of CC (e.g. Ashton [1944:295ff.]; Polome [1967:141ff.]). The augmentatives and diminutives are formed from N's of any class by a regular and productive derivational process described in detail for Swahili by Gregersen [1967:17-20]. Augmentatives begin with CP's for classes 5/6 (according to number), diminutives with those for classes 7/8. With animate N's derived in this way, concord is of the CC type rather than the AC type.

(4) Animate Concord (N underived)

a. Yu-le nyoka, ni-li-mw-ona (1 / 1) 9 'That snake, I saw it.'

b. Wa-le nyoka, ni-li-wa-ona (2 / 2) 10 '...snakes...'

Class Concord (Animate N derived)

Augmentative

c. Li-le j-oka, ni-li-li-ona (5 / CP / 5) 5 '...giant snake...'

d. Ya-le ma-j-oka, ni-li-**ya**-ona (6 / CP / 6) 6 '...giant snakes...'

Diminutive

e. Ki-le ki-j-oka, ni-li-ki-ona (7 / 7) 7 '...tiny snake...'

f. Vi-le vi-j-oka, ni-li-vi-ona (8 / 8 / 8) 8 '...tiny snakes...'

Gregersen further points out that where non-derived animates are already in the above classes, minimal pairs may be obtained (p. 19), e.g.

(5) Animate Concord (N underived)

a. Yu-le ki-pofu, ni-li-mw-ona (1 / CP / 1) 7 '...blind man...'

Class Concord (N derived)

b. Ki-le ki-pofu, ni-li-ki-ona (7 / CP / 7) 7 '...tiny blind man...'[6]

[6] The diminutives might also have the force of endearment or derogation

I conclude from the data represented in (4) and (5) above that AC comes into effect if the N class of the controlling N is felt to be arbitrary,[7] rather than semantically motivated. In the case of N class assignment by some regular and productive derivational process, such as the formation of diminutives and augmentatives, there is a strong semantic motivation for N Class assignment; consequently, the strictly formal process of CC operates.

For animates, and only for animates, if there is no transparent semantic motivation for class assignment, the semantic import of the N itself is the basis for concord. This brings AC in conflict with CC, and as such, it is a radical departure from typical and historical Bantu grammar. Thus, although the semantic class ANIMATE is far from unexpected in natural languages,[8] it has no effect on concord in most Bantu languages. However, for Swahili and other languages in the Swahili-speaking area to be discussed presently, where the controlling N is animate, concord has been semanticized. By semanticization of concord, I mean that it has come to be conditioned by the meaning rather than the formal class of the controlling N.

This process of semanticization of concord is reminiscent of the semanticization of gender toward "natural gender" in English, while assignment of N's to "masculine, feminine and neuter" genders are only very

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as in many other languages, e.g. English, Spanish, Yiddish, Slavic; hence, in (5) possible glosses are 'that poor little old blind man' or 'that damned little blind man.'

[7]Appropriately, arbitrary noun class assignment is a lexical matter, rather than derived by a rule of grammar. It is likely that there are a number of other derivational processes for N class assignment which are semantically transparent to Swahili speakers, e.g. forming the names of trees from fruits borne by them, effected by prefixing the CP's of classes 3/4 to N's referring to the fruits: embe (5) 'mango' mw-embe (3) 'mango-tree', etc. Various non-human nominalizations of verbs are more problematic in terms of productivity and transparency of semantic motivation (cf. Kunene [1974] on Zulu). These processes will not be discussed further here since they are not relevant to AC.

[8]AC is noted in non-Bantu Temne (West Atlantic) spoken in Sierra Leone, according to Wilson [1961:13-14].

weakly semantically motivated in most Indo-European languages including earlier forms of English. Considering that the semanticization of gender in English was accompanied by the loss of transparency of the formal gender class (unstressed suffixes) via the phonological "erosion" of gender class markers on English N's, it is noteworthy that the opacity of the CP for some N classes in Swahili and other NECB languages is irrelevant to AC. Classes 1 and 2, which are used for AC, are historically associated with transparently marked N's.

1.2. AC as distinct from Indeterminate Gender and N Class Shift. In order to highlight the distinctiveness of AC, it may be contrasted with certain other processes showing a similar semantic motivation, but of wide-spread occurence in Bantu, as discussed in Givón [1970]. These two processes in which concord is assigned on a semantic basis are:

1. Indeterminate Gender Resolution
2. N Class Shift

Neither of these involve the conflict of concord and the class of the controlling N characteristic of AC.

Indeterminate gender arises when conjoined N's of different classes collectively induce concord. In LuGanda, if conjoined N's are all human, the concord of class 2 is induced. N's of class 2 are exclusively human plurals, as mentioned above (with the Swahili exceptions). However, it is noteworthy that non-human animates do not also induce class 2 concord when N's of different classes are conjoined, but rather exhibit non-semantically motivated class 8 concord typical of any conjunction involving non-humans. This contrast is exemplified below from Givón's LuGanda examples (which have a much wider application to Bantu languages).

(6) Indeterminate Gender Resolution for Humans (Semantically Motivated)

a. O-mu-kazi, e-s-sajja ne o-lu-ana ba-a-lab-wa.
1 5 11 2

woman fat-man and thin-child they-Past-see-Pass

'The woman, the fat man and the thin child were seen.'

for Non-Humans (Not Semantically Motivated)

b. E-n-te, o-mu-su, e-ki-be ne e-ly-ato bi-a-lab-wa
   9 3 7 5 8

cow wild-cat jackal and canoe they-Past-see-Pass

'The cow, the wild cat, the jackal and the canoe were seen.'

(Givón [1970:11])

Gender or class of the conjoined N's is totally indeterminate in the above examples. Therefore, concord conflict cannot arise.[9]

N Class Shift is a historical process by which N's change their class, as registered in their CP, with semantic motivation. Givón proposes a process of shift of N's referring to humans to classes 1/2 from classes 9/10 to account for the following (near-)doublets in ChiBemba.

(7) N Class Shift (9/10 > 1/2) for Humans

1/2		9/10	
umu-kashi	'wife'	in-kashi	'sister (of male)'
umu-a-ume	'man, male'	in-dume	'brother (of female)'
umu-loshi	'sorcerer'	in-doshi	'sorcerer'
umu-pashi	'spirit'	im-pashi	'spirit, spirit shrine'
umu-puupu	'thief'	im-puupu	'thief'

Let us note that only HUMANS are involved in this particular N class shift. This seems quite natural since classes 1/2 are exclusively human in most Bantu languages. However, note that in the following two sentences

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[9] Givón also notes that non-third person personal pronouns (i.e. pronouns referring to interlocutors involved in a speech act) induce 1/2 concord, regardless of the N to which the pronouns refer. Here, however, it seems that the controlling N is the pronoun itself rather than the N to which it refers. Considering that the interlocutory pronouns are of classes 1 and 2 to begin with, although they are not formally marked so, this again is not a case of concord conflict, e.g. in the following sentence from LuGanda (non-NECB) given by Givón, the pronoun is considered to be class 2, as suggested in that paper, despite its reference to the class 10 N ente 'cows':

E-n-te z-a-gamba: tu-li ba-luungi...
10 10 2 2

cows they-Past-say: we-be good...

'The cows said: we are good...'

(Givón [1970:10])

from Luguru (the majority language of Morogoro in close contact with the Swahili-speaking coast in Tanzania) N Class Shift to classes 1/2 involves non-human animates.

(8) N Class Shift (9/10 > 1/2) for Animates in Luguru

a. Yu-mbwa w-a-ke a-f-ire
1 1 1

dog it-of-him it-die-Perf (where mbwa 'dog' is 9/10)

'His dog is dead.'

b. Gula a-mene wa-kulu
2 2

buy goats big (where mene 'goat' is 9/10)

'Buy big goats.'

In these cases, N's from classes 9/10 have shifted to classes 1/2; therefore, CC is not violated. If the concords remain 1/2 but the N's had been kept in their original classes, then the result would be AC. However, in the examples in (8), it appears that the violation of CC is avoided by shifting the class of the controlling N.

One might want to argue about the Luguru case that it represents a futher generalization from N class shift of the type exemplified in example (7) above for ChiBemba, i.e. that there has been a further generalization of N Class Shift toward classes 1/2 from HUMAN to ANIMATE. However, in examining the facts of AC in NECB more generally, it will appear more likely that this N Class Shift in Luguru is an avoidance of the violation of CC under the influence of the spread of AC from coastal areas where AC is well established. For the moment, it's worth mentioning that in southern coastal Tanzania, extending down into Mozambique, AC is commonly used in the singular in some areas, while N Class Shift to Class 2 is used in the plural. Makonde (Mawia dialect of Northern Mozambique) illustrates this point in (9) below:

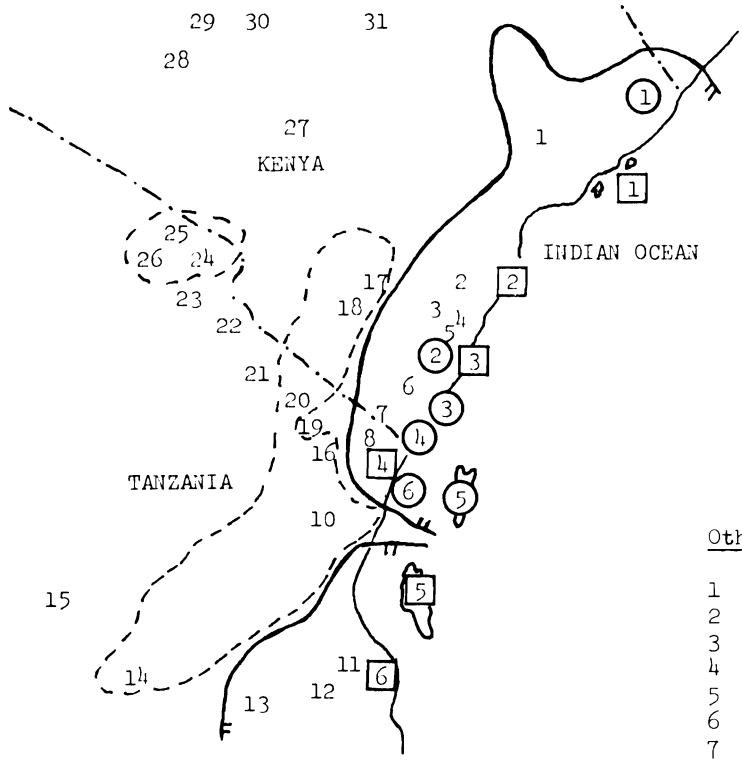
(9) Makonde (Mawia)

a. AC with singular animate

Naβanga w-a-ke a-ndi-wa 9 'His dog is dead.'
1 1

dog it-of-him it-Past-die

Map 1: Animate Concord in Northeast Bantu



Numerical References

Urban Swahili		Rural Swahili	
1	Lamu	1	Bajuni
2	Malindi	2	Jomvu
3	Mombasa	3	ChiFundi
4	Tanga	4	Vumba
5	Zanzibar	5	Pemba
6	Dar es Salaam	6	Mtang'ata

Other NE Bantu

1	Pokomo	11	Zaramo	21	Gweno
2	Giriama	12	Kami	22	Rombo
3	Kambe	13	Luguru	23	Bosho
4	Chonyi	14	Kaguru	24	Vunjo
5	Rabai	15	Gogo	25	Machame
6	Duruma	16	Sambaa	26	Siha
7	Digo	17	Sagala	27	Kamba
8	Segeju	18	Dabida	28	Gikuyu
9	Bondei	19	S. Pare	29	Embu
10	Zigua	20	N. Pare	30	Meru
		31	Tharaka		

Legend:

AC used and accepted ——

"Marginal" AC – – – –

[n] Urban Swahili speech communities

(n) Rural Swahili speech communities

b. N Shift to Class 2 with plural animates

βa-ng'ombe	a-βa (ni)	β-a-ngu	10 'These cows are mine.'
2	2	2	
cows	these (are)	them-of-me	

A significant passage in Krapf's [1850] description of the Swahili spoken in the Mombasa area in the 1840's indicates that in Swahili itself, many second-language speakers from other Bantu-speaking communities, engaged in N Class Shift for the plural rather than violate CC under pressure of AC in native Swahili.

> Common people, or slaves may sometimes be heard using a prefix in Nouns which have none in the plural--exg. **gnombe** (i.e. ng'ombe 'cow' class 9: BW) pl. wagnombe (i.e. wa-ng'ombe cf. (9b) above where the class 2 CP is prefixed to the class 10 N 'cows': BW). But this is improper language. In like manner slaves use the plural-prefix in the word mbusi (i.e. mbuzi 'goat' class 9: BW)--saying "wabusi" (i.e. wa-buzi, again the class 2 prefix: BW). The learner must not imitate this language. (Krapf [1850:34])

The majority of these slaves (e.g. the Wa-Nyasa, cf. Bennett [1968] are believed to have come from Bantu-speaking non-coastal areas where the plural of class 9 words such as ng'ombe 'cow' is class 10 zi-ng'ombe (or another reflex of PB *di-n-gombe). It would seem that the class 10 (pre-)CP is replaced by the class 2 CP wa under the influence of class 2 AC in Swahili.[10]

1.3 AC and the Domain of NECB. Map 1 shows the extent of AC in coastal Kenya and Northern Tanzania. It is noticeable that Zigua breaks the continuity of the coastal isogloss, separating the area into a Northern and Southern AC area. Possibly this discontinuity is the result of incomplete data, since coastal Zigua was not sampled in the research upon which this work is based. The largest Zigua-speaking community, Handeni, is considerably further inland and is only marginal with respect to AC. However, further south, Kami and Luguru, which are also somewhat removed from the coast do show AC. "Marginality" with respect to AC will be discussed later

[10]Not observed or reported for any current Swahili dialects.

Since there is no room here to justify the sub-grouping of NECB in detail on the number of shared features, the following divisions or "clusters" can be viewed as a matter of convenience for subsequent discussion (cf. Hinnebusch [1973:252ff.]).

Within NECB, the Kenyan languages are distinguished from the Tanzanian languages. Among the Kenyan languages, Pokomo is distinguished from the Miji Kenda languages, further sub-divided into North and South.

A. Kenyan NECB

I. Pokomo. This is the northernmost of the non-Swahili Kenyan coastal languages. Its most outstanding current phonological distinction from other NECB languages is the lenition of *p to [Φ]. Within Pokomo, a significant split is between dialects which reflect earlier Bantu *d as [l] and those which reflect the same as [y]. Both types of dialects are represented in this study (e.g. Ndura--y: Kumbi--l below).

II. Miji Kenda (MK). These languages are in contact with Pokomo to the North and extend into the Tanga region of Northern Tanzania in the South, where they are in contact with Bondei and Sambaa.

a. Northern MK. This includes i. Giriama, the most widely spoken of the MK languages, along with the more localized languages: ii. Chonyi iii. Rabai iv. Kambe v. Jibana vi. Kauma vii. Ribe. The first four of these will be discussed in following sections. A convenient feature for distinguishing Northern MK from Southern MK is the word for 'dog': kuro in the North, dia in the South.

b. Southern MK. This includes i. Digo, the most widespread of the southern MK languages, and ii. Duruma. Also included is the dialect of Segeju spoken in Kirui, Tanga. Although Segeju is not normally considered part of MK for social reasons, the Segeju to be discussed herein is extremely similar to Digo, differing in a few phonological points such as having a palatal reflex of earlier Bantu *c and *j, rather than the apicals ts and dz, shared in common by all the other MK languages, and a few lexical and syntactic points irrelevant to further discussion here.

B. Tanzanian NECB

I. North Coastal Tanzanian (NC TANZ). This includes Bondei, Sambaa and Zigua which share a number of features and are considered to form a group by native speakers (no doubt on social grounds, but also from the point of view of shared similarities as opposed to surrounding languages). Bondei is the prime example of an AC language in this group.

II. Mid Coastal Tanzanian (MC TANZ). This includes Zaramo, Kami, Luguru and Nhwele, all of which show some use of AC at present. More interior languages which might have close affinities to either II. or I. here do not exhibit AC.

For purposes of comparison, some reference will also be made to non-NECB languages. These languages do not exhibit AC in any obvious way.

Swahili, as discussed in the next section, is also an NECB language, but has not been put in the above classification. Native Swahili speech communities are distributed all along the area of AC from Northern Kenya to Mozambique. This is one strong indication that Swahili is most responsible for the spread of AC, if not for the original innovation.

1.4 The Special Position of Swahili in NECB. In this study Swahili occupies a special position for a number of reasons. First, AC is highly developed in most Swahili speech communities, particularly urban ones. AC is solidly established in these speech communities to the exclusion of CC in the environments discussed above. It appears to have spread to other coterritorial languages where it is, for the most part, less established.[11]

[11]The initial spread of AC among the various urban Swahili speech communities was probably accomplished by sea, rather than land. The urban Swahili communities have long played an important maritime role in trade in the East African area of the Indian Ocean. There is still a great deal of contact among the communities through commerce by dhow, although land connections are playing an increasingly important role since contact with Western European powers and consequent technological development. Urban Swahili shows its unity in Kenya and Northeastern Tanzania by its unique resistance to the lenition of earlier Bantu *p, distinguishing it from other NECB languages. This last remark is based on a personal communication with Tom Hinnebusch.

There are other compelling reasons for distinguishing Swahili from other NECB languages.

Swahili is a commonly used lingua franca in the coastal area, as well as futher inland. All of the speakers in this paper have a high degree of competence in Swahili, although most of them are identifiable as non-native speakers on the basis of their spoken Swahili. As (at least) bilinguals these speakers are not atypical of coastal males as a whole.

Swahili is one of the best documented and intensively studied languages of Bantu-speaking Africa. We have access to more information about Swahili, both synchronically and historically (due to a long literate tradition in Swahili using Arabic script) than to any other language in NECB, by far.

Most classifications of NECB languages are non-committal with respect to Swahili (e.g. Doke [1967], Sutton [1968], Hinnebusch [1973]). Polome [1967:29] suggests tentatively that Swahili may be most closely related to MK, particularly Giriama. This suggestion would have Swahili classified historically with Kenyan NECB.

Although there is no agreement among scholars on the origin of Swahili, it seems likely from historical evidence of a social nature that Swahili is more closely related to the languages of coastal Kenya than those of coastal Tanzania. Swahili is normally considered to be a Bantu language which developed on its own when Persian and Southern Arabians settled on the coast and intermarried with the original Bantu inhabitants of the area. The identity of these original Bantu speakers is unknown. It is agreed that the language spoken by them was essentially unchanged syntactically. If we date the origin of Swahili with the emergence of a speech community of mixed Bantu and southwest Asian origin, it is most likely that Swahili first emerged in northernmost Kenya and possibly Somalia. It should be most closely related to other NECB languages of similar geographical origin. Once Swahili emerged as the language of a distinct speech community (or set of speech communities), it developed on its own in various ways. Its closest relatives are Somalian Bantu languages such as CiMwi:ni (the language of the Barawas of Brava, coastal Somalia), classified as a dialect of Swahili by Whitely [1969], but considered a distinct language by

both Barawas and Swahili-speaking peoples. It is not mutually intelligible with either Swahili or Bajuni.)

The oldest available texts of Swahili show variation between AC and CC, suggesting that the innovation or diffusion of AC to Swahili is not of much earlier date. For example, the following verses from the Herekali, dated at around 1740 by Knappert [1967:165, 167] exhibit variation between AC and CC:

(10) Class Concord

Farasi zi-li ku-pita zi-si watu, zi-kemata 10
10 10 10

horse they-be Inf-pass they-Neg people, they-neigh

'Horses went by without riders, neighing.'

Animate Concord

Farasi w-a-kwe w-a zita a-mu-wen-e-po ku-tela 9
1 1 1

horse it-of-him it-of-war it-him-see-Perf-when Inf-fight

'His war horse when it saw him fighting...'

At present, in coastal urban native Swahili speech communities, AC is obligatory in the positions where CC is manifest in (10) above.

A vestige of CC remains in two environments in urban Swahili, both involving the attributive possessive construction:

1. N's of classes 9/10 and 5/6 (accounting for the majority of human N's outside of classes 1/2) referring to HUMANS show CC in the possessive, e.g.

(11) Rafiki y-angu a-me-fika 9 'My friend has arrived.'
9 1

friend he-of-me he-Perf.-arrive

Rafiki z-a-ngu wa-me-fika 10 'My friends have arrived.'[12]
10 2

friend them-of-me they-Perf.-arrive

[12]Examples like ma-rafiki z-angu 'my friends' in which the class 6 CP is prefixed to the N but class 10 concord for the possessive is used indicate a more recent development of making the plural transparent for class 9/10 humans. This is a further deviation from strict CC.

2. Plural N's, referring to NON-HUMAN ANIMATES of class 10 exhibit CC, while the singulars exhibit AC.

(12) Ng'ombe w-a-ngu a-me-fika 9 'My cow has arrived.'
1 1

cow it-of-me it-Perf-arrive

Ng'ombe z-a-ngu wa-me-fika 10 'My cows have arrived.'
10 2

cow them-of-me they-Perf-arrive

Two principles of resistance to linguistic change can be suggested by way of explaining the conservatism of the attributive possessive in the vestigial retention of CC:

A. Resistance to change in frequently used constructions

B. Resistance to change where important semantic contrasts would be levelled as a result.

These principles are tendencies observed in some cases rather than infallible rules with the power to predict the evolution of a language, as shall be seen in comparison with other NECB languages.

Principle A is appealing for HUMANS because most kinship terms are of classes 5/6 and 9/10. They are likely to occur more frequently in discourse than most other human N's. Most importantly, when they do occur in discourse they are most likely to appear in possessive constructions, indicating whose kin is being referred to.[13]

Principle B is appealing to the extent that the singular/plural distinction can be considered important for NP's in Bantu languages. Most classes, as seen above, are transparently paired into singular/plural pairs. Class 9/10 N's, heavily loaded with kinship terms and animals, are opaque for number-marking, as first mentioned in Sec. 1.1 above. With CC, the number distinction is transparent with all concordial elements for classes

[13]The most central and commonly used kinship terms, e.g. baba 'father', mama 'mother', dada 'older sister', kaka 'older brother' most frequently appear without a concordial element at all. This deletion has a phonological basis which applies to glides (y, w, h) in various environments, but especially in between two low vowels (a___a); e.g. baba y-a-ngu 9 'my father' becomes baba-(a)-ngu, etc.

9/10 as (11) and other examples above illustrate. On the other hand, on the surface of Swahili, the possessive concords for AC (i.e. classes 1/2) are identical in shape, e.g.

(13) Singular m-toto w-a-ngu (1) 1 'my child'

Plural wa-toto w-a-ngu (2) 2 'my children'

With the number-opaque classes 9/10, AC in the attributive possessive would result in ambiguity for number (cf. the controlling N's of (12)).

Finally, in considering the distinction between CC with humans and non-human animates, such that CC only applies to plural non-human animates, while it applies to humans regardless of number, it does not seem too far-fetched to me to suggest that principle A is also working: animals are more likely to be mentioned with a plural possessive than a singular, particularly the herd-animals such as ng'ombe 'cow' and mbuzi 'goat'. In this context, it is noteworthy to refer back to (9) where, in Makonde, N class shift applies to plural animals, but not to singulars.

This section closes with a summary of AC as it applies to Swahili.

I. AC applies to animate N's regardless of N class membership if that N class membership is not semantically motivated by a fully productive derivational rule.

II. In attributive possessive constructions, where the controlling N is the "possessed", CC rather than AC applies to animate N's if:

a. The N refers to a human and is of the classes 5/6 or 9/10.

b. The N refers to a plural animal of the class pair 9/10.

Rule I applies to all NECB languages which exhibit AC. Rule II does not apply obligatorily in many NECB speech communities.

While the facts of I and II are described in all basic descriptions of Swahili grammar,[14] they have not been explicitly attended to in descriptions of other NECB languages. The following section presents the

[14] To my knowledge II. was first noted for the "polite" dialect of Zanzibar City by Steere [1870:92].

methodology used to ascertain to what extent AC is found in the grammars of other NECB languages, a problem magnified and enhanced by Swahili-native language bilingualism of NECB speakers.

2. The Methodology Used in This Study

The approach taken in this study necessitates an explication of the methods used for eliciting the data on which the conclusions to be reached are founded. Of ultimate interest to this study is the change and variation which is continually evolving in the everyday language of the speech communities of the East African Coast. However, this particular study is forced to fall short of being able to base conclusions on actual everyday speech for several reasons.

First, it was not possible in the time period of research upon which this report is based, to randomly sample members of various speech communities represented in this work. In the majority of cases, time and space dictated that speakers be interviewed outside of their speech communities. Therefore, there is an element of doubt as to how representative the speakers chosen, on the basis of availability rather than random sampling, are of their speech communities as a whole. For example, most speakers of Kenyan NECB were interviewed in Mombasa, where they were out-of-towners who spent variable degrees of time away from their native speech communities. In most cases, however, they were far from isolated from other members of their speech communities. That is, they were in contact with other speakers from their home-"towns". In addition, in most cases, speakers reported making periodic trips back home, the frequency of which depended on the distance to their homes from their place of employment (e.g. the distance from Dar es Salaam or Mombasa), and the financial resources available to them for making the trips. It cannot be said in any of these cases that the speakers were isolated from other members of their communities, but still they cannot be placed with certainty in the social structure of their own communities. Considering this limitation, it must also be noted that these speakers represent an ever-increasing tendency of members of rural African speech communities, especially adolescent to middle-aged males, to be drawn away from home for

long periods to seek employment in the rapidly growing urban centers of East Africa. Therefore, on their own they represent an increasingly important segment of the populations of Kenya and Tanzania with repercussions both for the target urban areas and their home areas.

Another way in which this study falls short of basing its conclusions on actual speech behavior in everyday situations is that very little of the material on such behavior is available. The reason for this is that I did not have the resources, particularly the receptive competence in most of these languages to allow me to analyze fluent natural speech.[15] For the most part, inferences about everyday language behavior are based herein on behavior of a more indirect type. The most important types of behavior to this study are two:

1. Judgments of acceptability and/or familiarity.
2. The translation task.

2.1. Judgments of acceptability and/or familiarity. Judgments of acceptability are native speaker judgments of the possibility (but not probability) of the speaker saying a particular sentence using a particular grammatical construction in his language. Such judgments are elicited directly by suggesting a particular sentence to a native speaker and asking him if he might actually use it under appropriate circumstances. With judgments of familiarity, the issue is extended to his reported recognition of the possibility of use by some other members of his community, in the event that he does not report the usuage for his own speech. The difference between the two can be appreciated by observing that one Giriama adolescent reported that he would use AC himself, but that Giriamas living in more remote areas, for whom he had great respect, would use only CC. (Discussed more fully in 3.2).

The responses to requests for judgments of acceptability do not necessarily correspond to actual speech behavior, but rather uncover a set of rules which are accepted by speakers as being part of their language.

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[15] For this reason, folktales and personal narratives recounted by the speakers in their languages do not form a part of this study.

This set of rules is overt and accessible to the speaker insofar as he is able to make judgments about sentences being part of his language or not. However, they need not be identical and coextensive with the set of rules which he uses in everyday speech. Empirical language studies have indicated that the linguist must be aware of rules which are regularly used by speakers but not accessible to their introspections (e.g. Labov [1972], Wald [1973:esp. Chapter 4]). If this is true for essentially monolingual communities such as those in the cited works, it must be more of an issue for multilingual communities in which speakers defer to their elders as to authority on "correct" speech, as is the case for East Africans in general.

Where there is a conflict of rules used in everyday speech and rules used in "correct" ("real", "authentic" etc.) speech (available to speaker introspection and opinion), will the speaker report using both?[16] In approaching everyday speech, any form of elicitation which distracts the speakers' attention from the actual grammatical point being investigated serves to encourage the use of rules of actual speech. The most practical approximation of everyday speech used in this study, starting with no initial knowledge of the languages being investigated, was the translation task. This is discussed below.

2.2 The translation task. All speakers surveyed were at least functionally bilingual in their own language and Swahili. It appears that most coastal Bantu speakers know some form of Swahili due to contact with speakers of other languages, not necessarily native speakers of Swahili themselves. In some cases, speakers had been to school where they were exposed to Standard Swahili. Knowledge of Swahili itself does not make any of the speakers interviewed unusual for their speech communities. Particularly, in the MK area, contact with native Swahili speakers has been long standing. MK speakers, when asked "do you know if/do you

[16] The problem of self-report is discussed for certain urban English-speaking speech communities by Labov [1966] (New York City) and Trudgill [1972] (Norwich, England), where the discrepancy between self-report and actual speech behavior is interpreted in terms of social forces acting on speakers to shape their responses.

think that there are any members of your community who do not understand Swahili?" replied negatively. This indicates at least that these speakers expect other members of their community to understand Swahili. In my own experience, I found no cases in coastal speech communities of speakers who could not understand Swahili, although in rare cases their productive competence appeared low and they preferred to answer me in their own language.

The entire translation task (TT) consisted of two forms, a word list (WL) and a grammatical searching form (GS), both administered verbally to the speakers by myself. The WL consisted of a set of words, many of which were of historical interest in exploring the evolution of phonological diversity in the area. These words provided a basic lexicon for the GS part of the task. The words of the WL recurred in a set of sentences which explored various syntactic constructions. With the aid of a few paradigms for tense and pronominal inflection of the verb, in addition to the WL, it was possible for me to extrapolate the grammatical constructions used by speakers, even without prior knowledge of the particular languages (dialects). This is not only because of the organization of the TT, but also because of the great degree of similarity in grammatical structure of the languages.

The stimulus sentences of the TT were given in Swahili to be translated upon hearing into the native language of the speaker. The sentences relevant to AC are given in Sec. 2.3 below.

2.3 AC and the translation task. The TT has seven sentences relevant to AC. These are given in (14) below. Their syntactic significance will be discussed in Sec. 3.1 below. The numbers preceding the sentences refer to their ordering among the sentences of the original TT, reflecting the order in which they were encountered by the speakers. It can be appreciated that by the time of the following sentences, the speakers were well accustomed to the TT. Any hesitation noted (discussed below) can be reasonably safely attributed to the nature of the stimulus sentence rather than unfamiliarity with the task.

(14) 20. Ha-wa ni ng'ombe w-a-ngu. 10
2 2

these are cow them-of-me

'These are my cows.'

21. Ng'ombe ha-wa ni w-a-ngu. 10
2 2

cow these are them-of-me

'These cows are mine.'

29. Kama a-ki-lala, ng'ombe z-a-ke wa-ta-toroka. 10
10 2

if he-Cond-lie down, cow them-of-him they-Fut-escape

'If he falls asleep, his cows will run away.'

32. Nunua mbuzi wa-kubwa. 10
2

buy goat big

'Buy big goats.'

33. U-si-nunu-e mbuzi wa-dogo. 10
2

you-Neg-buy-subjn goat little

'Don't buy small goats.'

41. Mtu amba-ye mbwa w-a-ke a-me-ku-fa a-na-sikitika. 9
1 1

man Rel-he dog it-of-him it-Perf-Inf-die he-Pres/Perf-be sad

'The person whose dog died/is dead is sad.'

42. Mtu amba-ye watu wa-baya wa-li-ua mbwa w-a-ke a-me-kasirika. 9
1

man Rel-he people bad they-Past-kill dog it-of-him he-Perf-be angry

'The person whose dog bad people killed is angry.'[17]

In all the seven sentences above provide 11 opportunities for AC to apply (those underlined). The Swahili stimuli sentences exhibit AC in 10 out of the 11 cases, the exception being the possessive concord in sentence 29 (discussed in 3.1 below).

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[17] If the English-speaking reader would prefer the gloss 'The person whose dog was killed by bad people...' passivizing the relative clause, even stronger preferences for passivization were indicated by some of the respondents, as discussed below in this section.

Since the stimulus sentences suggest AC to the speakers, it is important to ask whether the grammar of the stimulus affects the grammar of the response to the extent that "unnatural" translations are rendered. A translation would be unnatural if it deviated from whatever might actually be said in spontaneous speech (for the consideration of errors and self-corrections see 3.2 below). The geographic distribution of the responses to the TT suggest that this is hardly likely. This will be attended to in reviewing those responses. However, at this point a few more general observations can be made with respect to the question of possible "unnaturalness" in reactions to the TT.

Because of the similarity in syntax of the languages involved, straight morpheme-for-morpheme translation is almost always possible. Morpheme-for-morpheme translation may reflect either actual use according to the speaker's grammar in spontaneous speech or the grammar of the Swahili stimulus. A priori there is no certain way to distinguish these two motives. Therefore, it is of great interest when the response deviates from the stimulus in some way other than simple morpheme-for-morpheme replacement. The rarest deviation was the speaker protesting a sentence, insisting that the Swahili stimulus could not be translated into his language but had to be replaced with a construction that the speaker felt had a different Swahili re-translation, e.g. the sentence:

(15) Ni-li-ku-wa ni-ki-mw-uliza kitu ch-a maana wa-li-po-ni-katiza.
I-Past-Inf-be I-Cond-him-ask thing it-of meaning they-Past-when-me-cut off
'I was asking him something important when they interrupted me.'

was protested by a Southern Pare speaker who insisted that the sentence be changed in Swahili so that the underlined li-po (Past-when) be replaced by ka, equivalent to changing the English translation from when to and then.[18] In such cases the speaker was encouraged to translate as he saw fit, with the expectation that in free translation the speaker would at least avoid what he could not say in spontaneous speech. Such protests, rare as they

[18] In point of fact, when and then clauses are usually not distinguished in Pare, and also in a contiguous area extending to rural coastal Swahili communities of Tanga and Vanga. The reasons for this go beyond this paper.

were, were confined to sentences involving complex syntax and were never overt in response to any of the AC sentences of (14).

A more common response can be labelled covert protest. In this case, the speaker did not comment on the Swahili stimulus sentence, but restructured it keeping the grammatical relations intact, but changing the syntax. This again was in response to complex syntax (other responses to such sentences being hesitation, stammering or requesting a repetition of the sentence). It affected both sentences 41 and 42 (Example (14)), for several speakers, by effecting passivization of the relative clause, so that the coreferential NP came into subject position closer to the antecedent NP. This is particularly striking for sentence 41 whose English translation above does not seem "awkward" or infelicitous. However, as the behavior of a Rabai speaker below exemplifies, the possessed N 'dog' was sometimes taken out of subject position, a prepositional extension (PREP) was suffixed to the verb, and the verb was passivized.

(16) Rabai (Buni)

41. Mut^{h}u y-e-dz-e-f-ere-wa ni kuro-we yu-tsikirw-e.
    person he-Rel-Near Past-Rel-die-PREP-PASS by dog-his he-be sad-Pf
    lit. 'The person who was died on by his dog is sad.'
42. Uya mut^{h}u a-ri-o-ulag-ir-wa kuro-we ni at^{h}u a-i yu-na gani.
    that person he-Past-Rel-kill-PREP-PASS dog-his by people bad he-with sorrow
    lit. 'The man who was killed on his dog by bad people is sad.'
    i.e. 'The man who had his dog killed on him by bad people is sad.'

As such "covert protests" operate on sentence 41 (Example (16)) they reduce the opportunities for AC by one, removing the non-human animate noun mbwa 'dog' to a position from which it cannot induce AC in the verb.

In some cases, where I suspected an unnatural or inaccurate translation on the part of the speaker, I asked for a repeat, expecting that a repeat away from the direction of the Swahili stimulus might reveal the effect of that stimulus in the initial response. Although I occasionally applied requests for a repeat to some of the AC sentences (particularly sentences 41 and 42, Example (14)), when the speaker's initial response

exhibited AC, the repeat never provoked a change to CC. Therefore, this tactic, which had to be used sparingly in view of the length of the entire TT, was not applied systematically for the AC sentences for most languages.

While requests for a repeat did not reveal anything about AC in any of the languages, self-corrections from AC to CC were observed for several speakers. Various motives for self-correction can be proposed. This is of such interest and importance that it will be discussed more fully in Sec. 3.2. An example of self-correction is the following by a Sambaa speaking adolescent.

(17) 29. Kama a-ki-gona, ng'ombe w-a-kwe--w-a-kwe--ng'ombe ř-a-kwe
2 2 10

ne-ři-ng'ok-e.
10

if he-Cond-sleep, cow them-of-him--them-of-him--cow them-of-him
Fut-they-run away-sbjn
'If he sleeps, his cows--his--his cows will run away.'

In the above sentence the possessive is stammered twice with AC and then corrected to CC. Instances of self-correction from AC to CC make it all the more significant that requests for repeats do not effect the change from AC to CC. It seems that speakers recognize for themselves in encountering AC sentences, whether an AC response is appropriate or not.

If a speaker self-corrected from AC to CC, his response was counted as a CC response. This self-correction reveals an awareness of conflict between AC and CC. Whether this conflict is between Swahili and the native language, or within the native language itself is the question of convergence of grammars that is being approached in this paper.

2.4 Sources and handling of data. All translation tasks were recorded.[19] In addition exchanges requiring speakers' responses to proposed sentences relevant to AC and introspective judgments of acceptability and distinction between AC and CC were recorded. However, there is also introspective data from speakers who were not recorded on tape but only in the form of written notes. They are supplementary to this study, which is

[19] A Nagra IV-D tape-recorder and a Sennhuie M-14 lavelie mike were used.

primarily concerned with the behavior of speakers who underwent the TT.

All sentences were transcribed in broad phonetics without editing self-corrections, repeats, etc. and were then coded onto translation-processing charts which include the language, name, age and place of childhood of the subject as well as the tape number, date and place of the interview. Coding includes self-corrections and accepted alternative translations suggested by the interviewer or a by-stander.

Chart I below displays the major social characteristics of the NECB speakers represented in this study. All these speakers are males, bilingual in Swahili and the native language. In some cases the speakers are at least trilingual. The two speakers asterisked are not responding in their native languages. Their native languages are indicated in parentheses following their childhood locations.

CHART I

Language	Place of Childhood	Age	IV Location
1. Bondei	Muheza	21	Dar es Salaam
2. Chonyi	Kaloleni	16	Mombasa
3. Digo	Likoni	16	Mombasa
4. Digo	Ukunda	16	Mombasa
5. Digo	Mwabungo	25	Mwabungo
6. Duruma	Mwachanda	24	Mombasa
7. Giriama	Mariakani	15	Mombasa
8. *Giriama	Kilifi (Chonyi)	20	Malindi
9. Kaguru	Kilosa	25	Dar es Salaam
10. Kambe	Pangani	19	Mombasa
11. Kami	Morogoro	20	Dar es Salaam
12. Luguru	Dar es Salaam	18	Dar es Salaam
13. Pokomo	Ndura	20	Lamu
14. Pokomo	Kumbi	20	Lamu
15. Pokomo	Asu	19	Lamu
16. Rabai	Buni	40	Kaloleni
17. Sambaa	Lushoto	18	Mombasa
18. Sambaa	Lushoto	25	Mombasa
19. Segeju	Kirui	20	Vanga
20. *Zigua	Kilosa (=9.)	25	Dar es Salaam

In addition to the twenty speakers listed above are a large number of speakers who gave introspective judgments of sentences involving AC and CC in the thirteen languages listed above, but were not recorded for the TT.

In addition to this data there are grammatical descriptions of varying degrees of detail and quality for some of the above languages. Reference will be made to these works where appropriate. Most of the grammatical descriptions are at least six decades old and primarily of historical interest in ascertaining whether a change has recently taken place in the language or not. These descriptions must be used with caution in considering their accuracy since they represent older speakers, are often non-specific as to community and even native speaker status of the speaker(s), and the methodology for obtaining the data is usually not clear.

3. Overview of AC in NECB and Adjacent Areas

When all occurences of the use of AC in the TT are compared with all opportunities for the occurence of AC for the sample of NECB speakers listed above in Chart I, the following averages obtain.

TABLE I

Percentage of AC Response for NECB

Unweighted Average	Speakers	Weighted Average	S's
0.60	20	0.58	176

In Table I and subsequent tables, the unweighted average is the average of the individual averages for each speaker. Hence in Table I, the average 0.60 is the AC response average for the twenty speakers. The weighted average is the average response for the total number of opportunities to use AC regardless of the number of speakers. Thus, in Table I AC is displayed as used 0.58 of the time (out of a possible 1.00) for a total of 176 opportunities (i.e. AC was used 102 times). Either average shows great variability in the use of AC in NECB.

The significance of the variability of AC in NECB is immediately obvious when compared with responses to the TT for non-coastal regions of Northeast Bantu as demonstrated in Table 2 below.

TABLE 2

Percentage of AC Response for Non-Coastal Northeast Bantu[20]

	Unweighted Average	Speakers	Weighted Average	S's
Kenya Int (K-INT)	0.01	8	0.01	75
Northern Tanz Int	0.04	11	0.04	98
Southern Tanz Int	0.00	3	0.00	24

This extreme quantitative difference indicates that AC is coastal in its distribution. We will see that penetration into the interior of Kenya and Northern Tanzania depends on distance from the coast.

Within NECB AC responses are not evenly distributed within all languages. Table 3 shows a further break-down of NECB, revealing that Northern Kenya (Pokomo) and MC TANZ show the greatest tendency for AC response.

TABLE 3

Percentage of AC Response for NECB Clusters

	Unweighted Average	Speakers	Weighted Average	S's
Pokomo	1.00	3	1.00	16
Northern MK	0.53	5	0.66	50
Southern MK	0.53	5	0.52	48
NC TANZ	0.37	4	0.39	36
MC TANZ	0.70	3	0.69	26

The area in between Pokomo and MC shows a diminished effect of AC. If the Tanzanian clusters are further broken down into component languages, it can be seen that it is the most immediately coastal languages of these groups that exhibit the highest percentage of AC. The languages further inland, while still nominally NE Coastal B, in comparison to even more interior languages, cause a reduction in the overall percentages.

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[20]The K-INT Sample: Sagala (Teri), Dabida (Undanyi), Meru (Mwimbi), Luhya (Bukusu), Gikuyu (Kabeche), Gikuyu (Nyeri), Kamba (Kitui), Kamba (Machakos).

The Northern Tanz Int Sample: Siha, Rombo, Machame, Vunjo, Bosho, Haya (Rubafu), Northern Pare (Taveta to DSM), Pare (Samia), Southern Pare (Ndungu), Isanzu (Singida).

The Southern Tanz Int Sample: Kinga, Nyakyusa, Tumbuka (actually a Malawian language just south of Tanzania).

TABLE 4

Percentage of AC Response for Individual Tanzanian NECB Languages

	Percentage AC	Actual Number
NC TANZ		
Bondei	1.00	10/10
Sambaa (17)*	0.17	1/11
Sambaa (18)*	0.09	1/6
Zigua	0.22	2/9
MC TANZ		
Kami	1.00	6/6
Luguru	0.89	10/11
Kaguru	0.22	2/9

(*Numbers refer to identification on Chart I above.)

Within the MC TANZ cluster, the Kami speaker felt that his language was closer to coastal Zaramo, which is an AC language according to the introspective reports of Zaramo speakers, than to Luguru. The Luguru examples which have been counted as AC here are actually cases of N Class shift. Only Luguru, of all the languages which have figured in the tables within NECB and without, exhibits N Class shift. Therefore, it has been included here in opposition to the non-NECB languages of the Kenyan and Tanzanian interiors, since none of these languages exhibits N Class shift. These data support the contention in 1.2 above that N Class shift is a reaction to AC, in order to preserve CC, since N Class shift does not intervene between AC and non-AC in Kenya and Northern Tanzania.

Within NC TANZ, Bondei is the prime example of an AC language. It is obligatorily AC in all environments according to the speaker's introspective judgments. He rejected the suggested sentences using CC, claiming they were "Swahili". AC was already firmly established in Bondei in the late nineteenth century. All possible examples in Woodward's 1882 grammar of Bondei exhibit AC, e.g.

(18) mbuzi yu-/w-a-kwe 9/10
(1 2)
goat it/them-of-him
'his goat/s' (Woodward [1882:34], adapted)

Sambaa, closely related to Bondei by all accounts, including the judgment of native speakers of either language, shows only a slight influence of AC. Roehl's description of 1911 shows strict CC for animates in all examples given, e.g.

(19) Nyoka i-za-kula. 9
9
snake it-Perf-grow
'The snake is big.'
ng'ombe m-bili 10
10
cow two
'two cows' (Roehl [1911:73])

Conflicting data occurs in Steere [1867], where AC is invariably shown for Sambaa, as if it were Bondei. However, in the preface Steere indicates that his informant was not a native Sambaa speaker, illustrating the importance of revealing sources.

> My own collections were obtained in the first place from a native of one of the coast villages, who was well acquainted with the Shambala country and language. They were revised by another man, a Zegula by birth, who made scarcely any substantial alteration. (Steere [1867], Underlining mine--BW)

The Zigua examples of Table 4 were given by a native speaker of Kaguru, an MC language with only "marginal" use of AC. Although Table 4 shows identical percentages for Zigua and Kaguru, the task was done in each language on a separate day, Kaguru first. The Kaguru speaker learned Zigua as a young adolescent at school in the Zigua speech community of Handeni among Zigua friends. His Zigua matches the anonymously written grammar of Zigua, representing inland Zigua (see Bibl.), which does not exhibit AC.

Returning to coastal Kenya, displayed on Table 3 above, the MK languages show a variability that cannot be so easily resolved according to language or speaker. This variability is indicative of an ongoing process of the integration of AC into the grammars of those languages, in the context of NECB. Table 5 below represents the AC responses for the individual MK languages.

TABLE 5

Percentage of AC Response for the Individual MK L's

	Percentage AC	Actual Number
Northern MK		
*Giriama	0.33	3/9
Giriama	0.45	5/11
Chonyi	0.91	10/11
Kambe	0.73	8/11
Rabai	0.25	2/8
Southern MK		
Duruma	0.55	5/9
Digo (Mwa.)	0.40	4/10
Digo (Lik.)	0.36	4/11
Digo (Uk.)	0.75	6/8
Segeju	0.60	6/10

(*Native Chonyi speaker.)

3.1 Syntactic constraints on AC in NECB. It was mentioned in Sec. 1.3 that in Swahili AC is not obligatory for attributive possessives. Elsewhere AC is obligatory in most urban dialects, and probably in the Standard Swahili language.[21] For example, in (20) below AC is preferred to CC universally among native Swahili speakers. It is obligatory in most forms of urban Swahili.

(20) [Mbuzi ha-$\underset{2}{wa}$]$_{NP}$ ni $\underset{2}{w}$-a-ngu/ ?? $\underset{10}{z}$-a-ngu. 'These goats are mine.'
goats these are them-of-me/ them-of-me

Comparison with other NECB languages indicates that AC is more favored when it is not in the same NP as the controlling N, as exemplified in (20) above.[22] For example, in the less highly developed AC language Kami

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[21] "Probably," in the absence of any decisive authority; a final answer depends on investigation of the standard literature, particularly governmental and academic publications.

[22] The role of syntactic distance from the controlling N in violations of strict CC is seen independently of the NECB phenomenon in Kimbundu (Northern Angola), where CC is judged obligatory for demonstratives and adjectives, but AC is acceptable for verbal inflections with human, but

(MC TANZ), AC is variable in attributive constructions, as in (21) below, but obligatory for the predicate verb, as in (22) below, according to introspective judgments of the Kami speaker.

(21) Variable with ADJ in NP.

Ka-ronda ng'ombe dz-a-ngu n-hulu/wa-kulu 10
10 10 2
he-like cows them-of-me big/big

'He likes my big cows.'

(22) Obligatory with Pred Vb, outside of NP.

[Mbudzi dz-a-ngu]$_{NP}$ 10 wa-/ *dzi-gomba [ng'ombe dz-a-ko]$_{NP}$ 10
10 2 *10 10
goat them-of-me they-/ *they-attack cow them-of-you

'My goats attacked your cows.'

Sentence (22) shows the rejection of CC even though CC immediately preceded in the NP on the previous word.

This is particularly significant because there is a strong tendency observed in NECB for concord, either AC or CC, to apply across-the-board, i.e. in most languages there is a tendency to continue with concord initially chosen in a sentence. Speakers' responses to (14)-29 provide valuable evidence for this point. It is the only stimulus sentence with "split" concord, AC and CC in the same sentence:

(14) 29. Kama a-ki-lala, [ng'ombe z-a-ke]$_{NP}$ wa-ta-toroka 10
10 2
if he-Cond-sleep [cow them-of-him] they-Fut-run away

'If he falls asleep, his cattle will run away.'

Fourteen of the fifteen speakers who responded to this sentence, applied concord across-the-board. The one exception, the native Chonyi speaker, was the only MK speaker to fail to apply CC across-the-board. As Table 5 above shows, the Chonyi speaker has the highest percentage of AC response among the MK (0.91). The Chonyi speaker was also alone among the

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not other animate, controlling N's, e.g.

Ki-lumba ki/*u-na ki/u-a-mw-iza. 'That girl is coming.'
girl (7) that (7/*) she (7/1)-be-in-come

(data from Jao da Costa, a speaker of the Mbaka dialect).

MK respondents in overtly preferring AC to CC in (14)-29, when asked for an evaluation. Other Chonyi speakers interviewed also expressed a preference for AC. Thus, with respect to the integration of AC into the native grammar, Chonyi is the most highly developed of the MK languages.

Outside of MK, all the coastal NECB languages are more developed in the direction of AC than Chonyi. For (14)-29, AC was applied across-the-board to the north of MK by the two Pokomo speakers who responded. However, in intuitive judgments they allowed CC as a possibility.[23]

Further discrimination among the NECB languages for syntactic development comes from responses to (14)-20, repeated below.

(14) 20. [Ha-wa]$_{NP}$ ni ng'ombe w-a-ngu. 'These are my cows.'
2 2
[these] are cows them-of-me

This is the first of the AC stimuli. Syntactically it is of interest because it presents a concordial element before and outside of the NP of the controlling N. This sentence strongly favored AC. There are two opportunities for concord, before and after the controlling N. Most NECB speakers applied AC to both. Table 6 illustrates that there was a syntactic effect for a few speakers who shifted from AC before the controlling N, to CC following it.

TABLE 6

NECB Responses to (14)-20

	AC before N	AC after N
Pokomo	2/2	2/2
North MK	3/5	2/5
South MK	5/5	5/5
NC TANZ	3/3	2/3
MC TANZ	3/3	2/3

As seen in Table 6, only two of the eighteen respondents to this sentence responded with CC before the NP of the controlling N. These two are both Northern MK, the Rabai speaker (an older speaker) and the Giriama

[23] With the implication that if the preceding possessive in the NP takes AC then AC is also obligatory for the verb in Pokomo.

speaker (a native speaker of Chonyi discussed further below). The Giriama, Sambaa and Luguru speakers shifted to AC after the controlling N, although the stimulus had AC.

The behavior of all speakers suggests that the position before and outside the NP of the controlling N is the position most susceptible to AC. It is apparent from Table 6 that North MK is less tolerant to AC than South MK.

Considering the results of the TT and the introspective judgments of NECB speakers, as discussed above. The following distinctions can be made with regard to degree of integration of AC into the grammars of various NECB languages (at least as exhibited by the speakers sampled, forming a geographically coherent pattern).

I. Total integration: obligatoriness of AC (in Bondei).

II. Obligatoriness outside of the possessive within the NP of the controlling N (in urban Swahili).

III. Obligatoriness outside of the NP of the controlling N (in Kami).

IV. Acceptance of AC and CC, but preference for AC over CC in all contexts (in Chonyi).

V. General rejection of AC, but tolerance of the use of AC before and outside of the NP of the controlling N (as in Sambaa and Zigua).

Possibly there are stages missing within this scheme of the syntactic integration of AC into NECB grammar. On the other hand, there may be a limit to the amount of syntactic detail which constrains AC, centering around the controlling N. AC appears most easily and becomes established most firmly outside of the NP of the controlling N. The controlling NP, then, is more resistant to the encroachment of AC than pronominal concord at a distance.

In the following subsection a connection will be made between self-corrections on the TT and the incipient development of AC in a language.

3.2 The systematicity of AC self-corrections. In section 2.3 above reference was first made to self-corrections with respect to sentence (14)-29 in Sambaa. The example is repeated below for convenience.

(14) 29. A-ki-gona, ng'ombe w-a-kwe--w-a-kwe--ng'ombe z-a-kwe
2 2 10
ne-ri-ng'ok-e. 10
10
'If he falls asleep, his cows--his--his cows will run away.'

The Sambaa sentence proceeds from the beginning to mark the attributive possessive with AC. The speaker hesitates and then repeats the attributive possessive with AC. He hesitates again, and then repeats the entire controlling NP this time using CC. Having done this he proceeds directly to the verb where CC is used this time without hesitation.

A number of factors are involved in determining the "meaning" of this and similar self-corrections by other speakers. Before proceeding directly to a discussion of AC self-corrections, let us consider the nature of self-corrections in general.

They occur in spontaneous speech as well as in non-spontaneous speech, like that of the TT. Labov [1966] formulates a number of "editing' rules by which self-corrections that occur in natural speech (in English) are described. The significance of the editing rules is that they attempt to capture what a speaker must know in order to understand a sentence with a self-correction in it.

Self-corrections are interesting in that they indicate what a speaker, at a level of less than maximum attention paid to speech, rejects in speaking his language (less attention than in making introspective judgments, for example). Informally, what is rejected is usually thought of as a "mistake", and is usually dismissed as irrelevant to linguistic description, or, more importantly, to what a speaker of a language reveals by his behavior about his language. However, some investigators have argued that many mistakes or "speech errors" are systematic in their nature and reveal properties of human language and specific structures or systems of organization within languages, e.g. Fromkin [1971] argues that the types of phonological errors speakers of English make provide evidence for some level of linguistic organization in which the phonological segment exists, whereas this is far from obvious in examining acoustic records of spoken language.

For spontaneous speech, the motivation for various self-corrections has not been fully explored. In Fromkin's work on speech errors, self-corrections (if made) were motivated by correcting the violation of a lexical (but not a phonological) rule. However, socially motivated self-corrections have also been observed. For example, in English self-correction from multiple to standard negation under certain circumstances,

(23) I didn't tell nob--anybody.
Mult NEG Single NEG

Especially because of socially motivated self-correction, it is not sound to consider a priori that what is edited out in a self-correction is necessarily "ungrammatical", at least where "grammatical" includes what in other situations is said on some systematic basis which shows up in frequent usuage without attending self-correction; for example, multiple negatives in many varieties of English.

Considering self-corrections involving AC in the responses to the TT, it is not established for certain that the speakers regularly use CC to the exclusion of AC in speaking the languages represented.

The two most striking facts about the AC self-corrections are:

1. Self-corrections involving AC always proceed from AC to CC, i.e. they are uni-directional.
2. This self-correction is geographically confined to speakers from the NECB coast and adjacent Kenya and Northern Tanzania.

Concerning the first point, it must be noted that AC is prominent in the stimulus sentences. Therefore, corrections from AC to CC is favored.[24]

Therefore, the second point is of great importance in establishing that AC self-correction is not merely a random artifact of the TT with no interesting relation to the native languages of the speakers. Below Table 7 displays the number of languages with AC self-corrections occurring at least once for the major clusters.

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[24] In fact, it is likely for many Bantu-speaking non-native speakers of Swahili that self-corrections from CC to AC sometimes occur in spontaneous speech.

TABLE 7

Number of Languages with AC Self-Correction for Major Clusters

Cluster	Number	Percentage	Average Unweighted AC Response*
Kenyan NECB	2/13	0.15	0.62 (114)
Tanz NECB	1/7	0.14	0.52 (62)
K Int	2/8	0.25	0.01 (75)
North Tanz Int	4/10	0.40	0.04 (98)
South Tanz Int	0/3	0.00	0.00 (24)

*Number of opportunities for AC in ( ).

From Table 7 it can be observed that self-correction is rare in all areas.

Considering NECB first, note that non-corrected AC responses are high. In point of fact, all NECB speakers also used AC without self-correction. All these speakers reported some use of AC among themselves and their peers in introspective judgments. This includes the three out of twenty NECB speakers who self-corrected: two speakers of Giriama and the younger Sambaa speaker cited for (17)-29 at the beginning of this section.

For the three speakers, estimation of the "correctness" of AC in their languages varied. For example, the native Giriama speaker reported that he and other Giriama speakers from Mariakani often use AC. However, Mariakani is a multilingual settlement, though largely restricted to MK languages. The speaker felt that speakers who lived in exclusively Giriama-speaking settlements (rural) used only CC. In offering this information, he expressed the social importance of CC for Giriama speech communities. These judgments were common among Giriama speakers from other areas as well, e.g. Kaloleni, Kilifi, Malindi, Ramada. His self-correction then seems to be motivated by the desire to represent the Giriama which he feels is most "authentic", and which appears to be most "archaic" with respect to AC.

The non-native Giriama speaker, a native Chonyi speaker, is interesting to note since he too showed awareness of the Giriama norm for AC. Chonyi, as discussed above, is the most highly developed for AC of the MK languages. The Chonyi speaker self-corrected only once, on the initial sentence.

(14) 20. A-wa ni ng'ombe z-a--zi-z-o ni ng'ombe z-a-ngu. 10
2 10 10 10 10
these are cows them-of--these are cows them-of-me
'These are my cows.'
Giriama (Chonyi speaker)

His correction looks like it was influenced by his use of CC in the possessive, since he proceeds that far before self-correcting. From that point on, he never self-corrected again, although he applied AC to the last three AC sentences, as did the native Giriama speaker. He undertook the task in the presence of a friend of his, a native Giriama speaker from Ramada, who agreed with his translations.

By way of contrast, the native Giriama speaker from Mariakani self-corrected the first two sentences, in the first, i.e. (14)-20, only for the possessive modifier, already seen to be syntactically conservative in the retention of CC in many NECB languages.

(14) 20. A-a ni ng'ombe a-a-ngu--ng'ombe z-a-ngu. 10
2 2 10
these are cows them-of-me--cows them-of-me
'These are my cows--my cows.'
Giriama (Mariakani)

He also used uncorrected AC more often than the non-native speaker. Thus, the CC norm is stronger for the non-native speaker than for the native speaker. Given that Chonyi speakers prefer AC to CC in their own language, the Chonyi speaker appears particularly sensitive to this difference between Chonyi and Giriama, outdoing the native Giriama speaker in awareness and avoidance of AC.[25]

The only other NECB speaker to self-correct, the younger Sambaa speaker, self-corrected only in the sentence cited above. However, he used uncorrected AC in (28)-33. In this he was seconded by a peer from his hometown in Lushoto.

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[25]This is a sign of hypercorrection by which learners of a new linguistic feature overgeneralize and stereotype its usage when compared with speakers more accustomed to the feature (cf. Labov [1966b]).

Since all three NECB self-correctors report the use of AC in their native languages and also used uncorrected AC in the TT, it stands to reason that the self-corrections were socially motivated, rather than motivated by the constraints of the actual grammars used by the speakers. However, these self-corrections do indicate that CC is overtly preferred by the speakers.

Bearing this in mind, it is striking that the two K INT languages showing AC self-correction are those closest (geographically as well as structurally) to NECB, viz. Sagala and Dabida. Although these languages differ in a number of details, they share much in common and have often been classified as a "single" language under the rubric of Taita. The Sagala speaker also used AC in one sentence without correction (see following section), while the Dabida speaker did not.

Speakers of the other six K INT languages represented, converted the AC stimulus to CC without hesitation (no self-correction necessary). Since Sagala and Dabida intervene between NECB where AC is strongest and the more remote K INT languages where AC is not accepted or responded to at all, these two languages show a tolerance for AC even though the speakers do not judge AC as a property of their native grammars.

This covert tolerance for AC is also found in adjacent North Tanzanian Interior languages. Northern Pare (but not Southern), adjacent to Sambaa to the east and Dabida to the north, also showed self-correction in (14)-20, as did the Chagga dialects of Vunjo, Machame and Siha (but not Rombo or Marangu) west of Pare. In Northern Pare and Machame uncorrected AC was also used in (14)-32.

I will close this section with the suggestion that the "meaning" of self-corrections be taken more seriously than it has been in the past as linguistic data, especially in multilingual communities. The evidence of this section strongly suggests that there is covert tolerance of AC, manifest in the susceptability of speakers to the AC stimulus. This covert tolerance is indicative of a possible "pre-natal" stage in the integration of AC into the grammars of those languages. At this stage AC is increasingly heard in neighboring communities (to the east) but is not overtly accepted into the speech community under consideration in overt judgments.

3.3. Fleeting contrast between AC and CC. In preceding sections it has been shown that all NECB languages are affected to some degree by AC. The range is from marginal with self-correction and rare uncorrected usage as in the non-coastal Northern Tanzanian-Kenyan border area, to full acceptance of AC in all syntactic environments with the overt rejection of CC, as in Bondei.

Historically the trend appears to be greater development toward AC, both areally and syntactically, starting with the initial AC innovation somewhere along the East African coastline or adjacent islands (e.g. Zanzibar). Intermediate languages have exhibited variable use of AC both socially (as in labelling AC as Chonyi as opposed to Giriama above) and syntactically (Sec. 3.1).

In this section it will be proposed that in some intermediate languages, particularly the MK, there are unstable contrasts which are to some extent parasitic on the stage of development of AC in the languages. Such contrasts will be called "fleeting" contrasts: "fleeting" because they have a minimal effect on the choice between AC and CC. They are problematic with respect to influence on the further development of AC in NECB languages.

The sentences of the TT relevant to the notion of "fleeting" contrast are (14)-32 and 33. Note that the stimulus sentence (Swahili) obligatorily uses AC for the modifying ADJ. The following Sagala response, from outside NECB, shows the use of AC in one sentence but not in the other. This is apparently random use of AC with modifying ADJ's.

(14) Sagala (Teri) 32. Ula mbuzi wa-baha. (2) 10 'Buy big goats.'
buy goat big
U-so-ul-e mbuzi n-jace. (10) 10 'Don't buy small goats.'
you-Neg-buy-sbjn goat small

This same behavior recurs among the Northern MK speakers. The following examples of shifting concord illustrate the randomness of the effect of the Swahili stimulus AC on the Northern MK response.

(14)	Giriama (Mariakani)	AC	32.	Gula mbuzi a-bomu. (2)	10
	Kambe (Pangani)	CC	32.	Gula mbuzi -bomu. (10)	10
				'Buy big goats.'	
	Giriama (M)	CC	33.	U-si-gul-e mbuzi t^hite. (10)	10
	Kambe (P)	AC	33.	U-si-gul-e mbuzi a-tite (2)	10
				'Don't buy small goats.'	

The speakers' overt judgments involved the "authenticity" of CC in their languages. As mentioned above, the Giriama speaker considered AC to be un-"authentic". On the other hand, the Kambe speaker explained that although he sometimes uses AC, it is "Giriama". These judgments are social. They are of limited value in determining to what extent AC has penetrated into the language of everyday life.

The Rabai speaker, lowest in AC use of all the MK speakers, used AC in adjectival position. The reason hinges on the opacity for singular/plural of class 9/10 N's and the concord on ADJ's. Out of context, the CC responses above could also be examples of class 9, i.e. the singular, e.g. 'Buy a big goat.' The Rabai pointed this out for his language. He claimed that he uses AC with plural ADJ's of words like mbuzi (9/10) to mark plurality. Although he rejected the use of AC with singulars or CC with plural animates of these classes, he reported that Rabai speakers might violate this semantically based distinction because of their contact with speakers of other MK languages such as Chonyi and Giriama. He was not alone among MK speakers in pointing out how AC makes marking of the plural for classes 9/10 transparent.

While the Likoni Digo speaker was performing the TT, he was criticized by an older Tiwi Digo speaker (a stranger to him) for using CC in ex. (14)-32 as follows:

(14)	Digo (Likoni)	32.	Gula mbuzi k^hulu. (10)	10
			'Buy big goats.'	

The Tiwi speaker said that this sounded like a singular and that the plural should induce AC.

(14) Digo (Tiwi) 32. Gula mbuzi a-kulu. 10
2
'But big goats.'

The Likoni speaker did not accept this distinction for his own speech and that of the Digos he knew from Likoni. He appeared to be previously unaware that any Digo speaker preferred AC.

The other two Digo speakers who undertook the TT used either only AC for the pair of sentences (Ukunda agreeing with Tiwi) or only CC (Mwabungu agreeing with Likoni). This widespread disagreement about the preferability of AC for the plural attributive ADJ among MK speakers, along with the confusion in assigning AC to one or another of the sister languages of MK, indicates that distinguishing the singular from the plural for animates is not a strong motivation for choice between AC and CC. I am not suggesting that this potential communicative function of AC plays no role whatsoever in the choice between AC and CC, but that its role is minimal in the integration of AC into the grammars of the MK languages. Assuming that languages in which AC is more developed than in most of the MK area, such as Bondei, Swahili, Kami and Chonyi, have passed through a stage similar to that undergone by the MK language at present, there must be further motivation for AC beyond giving overt expression to the singular/plural distinction, no doubt usually clear in context in actual discourse and not troubling to interior Northeast Bantu speakers.[26]

A much more obvious example of fleeting contrast as parasitic on the variability of AC at an intermediate stage of development involves an intuitive judgment question about distinguishing AC and CC for the attributive DEM(onstrative), in which CC or AC both provide transparent plural marking. The Segeju speaker explained the distinction as follows:

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[26] Even within MK, AC has become obligatory with some lexical items. For example, the word for 'dog' kuro (Class 5) obligatorily induces AC in all Northern MK languages. However, in Southern MK, the equivalent (non-cognate) item di-a (Class 5) takes CC obligatorily for the speakers mentioned above. (Southern MK dia is cognate with Swahili ji-bwa used by many native Swahili speakers as equivalent of Tanzanian Swahili mbwa, but with AC when underived from the augmentative: personal communication from Sarah Mirza, UCLA.

Suppose I have two groups of cows. Then I can say to you
A-no ni ng'ombe a-a-ngu (These are my cows: uses AC) and
Hizi n-z-a-ngu pia (These are mine, too: uses CC).

This explanation was encountered in other parts of the MK area also. For example, several Jomvu speakers gave the same explanation in the following context.[27] First I asked them about the possibility of saying:

(24) Ha-wa ni ng'ombe z-a-ngu. 10 'These are my cows.'
2 10

where the CC of the possessive modifier is acceptable (but not preferred) in urban Swahili, as discussed above. This was rejected and corrected to:

(25) Ha-wa ni ng'ombe w-a-ngu. 10
2 2

extending AC to the possessive modifier. I then asked if

(26) Ng'ombe z-a-ngu. 10
10

was unacceptable (haifai: it is not suitable), abstracting the NP from a sentential context. To this the response was:

(27) Zi-le ni ng'ombe z-a-ngu. 10 'Those...'
10 10

indicating that CC is acceptable if it is distributed across the board (unlike urban Swahili). Finally I asked whether there was a difference between

(28) Ng'ombe wa/zi -le 10 'Those cows'
2/10

contrasting AC and CC for the attributive demonstrative. Here the answer was, as in Segeju, that this could be used to distinguish two herds of cattle (kupambanua mafungo mawili).

Are these responses to be included in a grammatical description of

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[27] Jomvu is a rural Swahili-speaking area on the outskirts of Mombasa. The Swahili of Jomvu shares a number of characteristics with the MK languages, not shared with urban Mombasan Swahili, e.g. the use of k^ha- instead of ha- as a preverbal negative marker and the use of ni instead of na as an agentive preposition with passives, cf. Lambert [1958]. Several Jomvu speakers demonstrated their ability to speak and understand the Northern MK language Rabai.

Jomvu or Segeju, indicating a "slight" semantic distinction between the use of AC and CC? It seems clear to me that such a description would be inappropriate and misleading, and that responses contrasting AC and CC in such contexts are nothing more than ad hoc exploitations of the variable use of either AC or CC in these languages. Unlike other MK speakers discussed above, the Jomvu and Segeju speakers do not label either of these concords as "foreign", but rather accept both as properties of their own language and speech. When asked to distinguish the two they come up with a "fleeting" contrast, unaware either of the past situation that has given rise to the variation or of the future situation which is likely to resolve the variation in favor of AC given the dynamics of AC in the NECB area as a whole.

4. Conclusions

To summarize the findings of this study: AC is an innovation originating in the coastal area of NECB and spreading further inland, primarily through the agency of Swahili bilingualism. It involves the extension of the use of the concords for classes 1/2 (*mo/*ba), historically associated with nouns of those classes referring to humans, to nouns referring to animates, regardless of lexical class assignment.

AC is firmly established in urban Swahili, with the exception of attributive possessive concords for which it alternates with CC. In Bondei it has become obligatory even in these positions. In many coastal languages AC and CC alternate in most positions. Languages such as Kami illustrate that AC first establishes itself in positions outside the NP of the controlling N, such a position being most susceptible to violations of the historical Bantu pattern of strict CC.

At the earliest stage of development speakers may deny that they use AC in their language, but their susceptibility to it is revealed in translation from Swahili either with or without accompanying self-correction. This susceptibility is convincingly demonstrated in that the unreflecting use of AC occurs only in areas bordering those areas where AC is more firmly established. As AC progresses to a state where speakers are aware of its alternation with CC in their own speech and the speech of other

members of their community, they may assign it to another dialect or language known by them, e.g. Giriama speakers labelling it as Swahili, while Kambe speakers label it as Giriama. When speakers lose awareness of its historically foreign origin but retain its alternation with CC, they may rationalize fleeting contrasts between AC and CC under the influence of an investigator's questioning, as illustrated for Segeju and Jomvu Swahili. Finally, no doubt due to the transparent semantic basis for the use of AC, it completely replaces CC in virtually all environments, as in urban Swahili and Bondei, the most frequently used constructions most closely bound to the controlling N, viz. the possessive modifier, being the last holdout to the innovation.

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ON THE CORRELATION OF TONE AND VOWEL HEIGHT IN HAUSA: A REPLY TO NEWMAN

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1. Introduction

The existence of tone/vowel height correlation can be proved or rejected only on the basis of satisfactory data and correct analysis. The correlation exists if it is prevalent, regardless of exceptions. I agree with Postal's statement that "there is no contradiction whatever between utilizing the search for regularity as a method and accepting that this regularity has its limitations" [Postal 1968:276]. In my study on the tone/vowel height correlation I was searching for regularities, and I have reported them [Pilszczikowa-Chodak 1972].

Newman's paper "The non-correlation of tone and vowel height in Hausa" [1975] is an attempt to reject the correlation on the basis of exceptions and "unexplained counter-examples". However, as it will be shown below, a) exceptions are not so numerous as claimed by Newman, and those found do not contradict the existence of tone/vowel height correlation. As a matter of fact, I was aware of and mentioned most of the exceptions listed by Newman in my paper [1972:418-9]; b) "counter-examples" are either possible to explain or cannot be regarded as pertaining to the discussion. In order to keep the record straight, I will examine Newman's argument point by point.

2. The Verb[1]

Newman begins his debate by introducing the table which shows that, out of six grades in which the verb ends in a vowel, tone and vowel height are correlated in three grades. However, this table is misleading since it does not include two very important forms: so-called Forms B and C of Grade 2 (compare with the table in Parsons [1960:36]. To consider verbs

[1]The feature of vowel height will be indicated by lower case [high] while tone will be indicated by upper case [Hi]. Long vowels will be distinguished from short ones by doubling the letter. Throughout this reply the symbols ´ and ` are used to designate high and low tones respectively. Brg. stands for Bargery [1934], Ar. for Arabic, f. for feminine, m. for masculine, Kts. for Katsina Hausa, Sk. for Sokoto Hausa.

only in Form A, that is, as they occur when not followed by an object, creates an incomplete picture. While all other grades listed by Newman have the same final vowel in all environments, the most widely used grade 2, shown in the table with the final -aa, a transitive grade, does not appear with this final vowel when followed by an object. Instead, it ends in Hi tone -ee before a pronominal object, and in Hi tone -i before a nominal object. If included in the table these two forms would be presented as follows:

(1)

	Example	Final vowel	Final Tone	T/VH Correlation
Grade 2 Form B	sàyée 'buy'	-ee	Hi	Yes
Grade 2 Form C	sàyí 'buy'	-i	Hi	Yes

In disputing Newman's computation, I will begin by pointing out that in two forms of grade 2 described above, tone and vowel height are correlated. These two forms should be included in the table. Furthermore, if we were to consider grades 2 and 3 as sub-members of a single grade ("the grade 3 as the intransitive counterpart of grade 2") as Newman proposed in his earlier paper [1973:303], we would have one less "no". Although in his table Newman marks grade 4 with "no", he agrees with my explanation that grade 4 utilizes the tone pattern of grade 1.

Thus one can conclude that the tone/vowel height correlation takes place in verbs ending in Lo tone -aa (grade 1), Hi tone -ee (grade 2, Form B), Hi tone -i (grade 2, Form C), Hi tone -oo (grade 6), and Hi tone -u (grade 7).

Newman tells us that verb tone in Hausa is determined by morphological factors [1975:208], and that tone in Hausa is predictable (p. 212). I quite agree with that. Tone on the final vowel marking above-mentioned verbal forms (grades) and on the final (and often penultimate) vowel marking regular noun plurals in Hausa is determined by the height of this vowel. Tone and vowel height are correlated. Hence tone is predictable in terms of morphological/grammatical categories and in relation to vowel height.

The whole attempt to consider object pronouns "as further evidence of

the non-dependence of tone on vowel height" (p. 209) is misleading. It overlooks the object pronoun rule which states: "the tone of the object pronoun is contrasted not only with the quality of the verb final vowel, but, at the same time, with the tone" [Pilszczikowa 1972:413]. It is assumed that object pronouns behave as a set. The tone on the object pronoun is conditioned by the height of the final syllable of the verb.[2]

On page 208 Newman lists very common disyllabic verbs ending in the high vowels /i/ and /u/ and low tone. He notes that these verbs are not included within the framework of Parsons' grade system. And I should say with good reason. They are irregular with regard to their final vowel and their tone pattern. These are exceptions and they exist side by side with the regular transitive and intransitive forms. Compare the following verbs: táashì 'get up' exists side by side with the transitive form tàashí 'lift, raise'; fáaɗì 'fall down, into' has the same tone pattern as the regular intransitive form fáaɗà 'fall into'; mútù 'die' has the same tone pattern as mácè 'die'; gúdù 'run from' has the same tone pattern as the regular transitive form gúdà 'fasten to the place', 'run to'.

I consider the Hi-Lo i- verbs (and also Lo-Hi intransitive tàfí 'to go') to be of grade 2 origin. These verbs ceased to function as transitive verbs. However, their final vowel remained unchanged. The form tàfí also preserved its tone pattern. The meaning of some irregular forms is close to those of grade 2 verbs discussed in Pilszczikowa [1969]. Compare, for example, tàfí intransitive 'to go', and táashì intransitive 'to get up, to go away' with the transitive grade 2 Form C verbs such as dòoshí 'to set out for', dìngí (Kts.) 'to go straight to'.

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[2] In footnote number 2, Newman [1975:209] maintains that my statement that there is no difference between the tone pattern of bisyllabic verbs with their object pronouns and trisyllabic verbs without an object is correct only in the case of grade 2 verbs. This is not correct. I would like to point out that one of the examples given by Newman is a grade 1 verb, compare: hánàa-tá 'prevent her' Hi-Lo-Hi (bisyllabic grade 1 verb plus object pronoun) tonally corresponds to káràntáa 'read' Hi-Lo-Hi (trisyllabic grade 1 verb). It is also true in the case of grade 4 verbs. It holds in cases of all transitive forms with the tonal contrast in the pattern.

All these are "movement" verbs. What happened to táashì probably can happen or is even happening to some other "movement" verbs operating grade 2 at present. It is noteworthy that in Pilszczikowa [1969] there are examples of the usage of grade 2 Form C verbs with the extensions characteristic of intransitive forms. Such examples are reported to be found in the Western dialect of Hausa. Compare: yáa kùsàncí gà bírní 'he came near the town' [Pilszczikowa 1969:32] with súkà tàfí gà bírní 'they went to the town' [Schön 1906:20]. The form kùsàncí is a transitive verb, tàfí on the other hand, is an irregular intransitive verb. Both are used before prepositions. Táashì 'to get up' and fáadì 'to fall down' are two out of few i verbs with Hi-Lo tone pattern as opposed to over 800 regular i verbs with (Lo-)Hi tone pattern (see Pilszczikowa 1969:12]). Thus, i- and u- verbs with Hi-Lo tone pattern are certainly exceptions.

3. Noun Plurals

3.1. "Falling tone plurals" and "Internal-a plurals". "Falling tone plurals" and "Internal-a plurals" in my opinion are subgroups of a larger class of nouns with bicontrastive Hi-Lo-Hi tone pattern in the plural. Welmers [1973:238] also classifies them together. He considers this class of noun plurals to be unproductive at present (p. 234).

This large class of nouns with the exception of "falling" and "internal-a" plurals does obey the tone/vowel height correlation rule in the plural, e.g. ƙásáa 'country', pl. ƙásàashée. It looks to me that there is enough evidence showing that nouns with [-low, ± round] vowel in the first and/or final syllable and with the Hi-Lo tone pattern in the singular have a tendency to acquire the vowels -aa or -uu in the plural instead of the regular final vowel -ee, e.g., zóobèe 'ring', pl. zóbbáa; gúnkìi 'idol', pl. gúmàakáa; kúnciì 'cheek', pl. kúmàatúu.

It is noteworthy that in some cases plurals with a final high tone -aa co-exist with plurals ending in high tone regular -ee, e.g.,

(2)

súurìi	'lrg. termite hill'	súrràa	súuràayée	pl.	(Brg. 963)
gárkèe	'herd of cattle'	gáràakáa	gáràakée	pl.	(Brg. 368)
kúrmìi	'forest'	kúràamée	kúràaméa	pl.	(Brg. 653)
			kúràamúu		

The list of such nouns is quite long. Thus, I consider "falling tone" and "internal-a" plurals to be segmentally conditioned subgroups of a plural class which does obey the tone/vowel height correlation rule.

3.2. Hi-Hi final-a plurals.[3] Consider the following nouns and their plurals:

(3)	mǐjì	'male, husband'	pl. mázáa, mázàizái, mázàajée
	'árnèe	'pagan'	pl. 'árnáa
	màatáa/màcèe	'woman, wife'	pl. máatáa, máatàayée
	ɗáa	'son'	pl. 'yáa'yáa, 'yáa'yàa'yée
	'yáa	'daughter'	pl. " "
	ɗǐiyáa Sk. Kts.	"	pl. ɗǐiyáa

All nouns listed above have a Hi-Hi tone pattern either as the only plural pattern or as one of a few possible plural patterns. Newman is right here. It seems to be a small archaic class that violates not only the tone/vowel height correlation, but also gender and plural formation regularities. For example, feminine nouns have the same final vowel -aa both in the singular and in the plural. The final -aa marks both feminine and masculine nouns in the plural. Usually feminine nouns take the [+high] vowel -ii or -uu in the plural, while masculine nouns take [+low] -aa or the diphthong -ai. These all are kinship terms or personal nouns. Kinship terms form a special class in some languages (see Welmers [1973: 226]). This kind of noun plural was mentioned by me in Sec. 3.2.2 as exceptional [Pilszczikowa-Chodak 1972:48].

3.3. Derived noun forms. In my 1972 paper I do not discuss "derived noun forms" which Newman [1975:212] presents in (d), (e), (f). The reason is that derived nouns of various types in which singular and plural forms are systematic and "simple nouns" fall into different categories on formal grounds and obey different rules. Derived nouns all have a set structural

[3]Newman's examples such as ƙúdáa (= Sokoto dialect ƙújèe), masculine and collective noun 'fly, flies', pl. ƙúdàajée; gǐdáa, m. 'home, compound', pl. gǐdàajée, do not pertain here. They both have a meaning with collective connotation in the singular and take a bicontrastive tone pattern in the plural.

pattern and their "group-meaning" is also predictable. Consequently, they should be analysed separately. For example, "adjectival nouns" are derived from simple nouns by reduplication and gemination and have the same final vowel for feminine, masculine and plural forms. Their final -aa has nothing to do with a gender-number differentiation, e.g. ƙàƙƙárfáa m./f. 'strong one', pl. ƙárfàafáa·

"Agential nouns" are formed by prefixes and suffixes contrasted tonally with the base from which they are derived. They have Hi-Lo-Hi or Hi-Lo-Lo-Hi tone pattern. If the base is bisyllabic, their tone pattern is Hi-Lo-Hi, as in màròoƙíì 'beggar', pl. màròoƙáa; however, if it is trisyllabic, their tone pattern is Hi-Lo-Lo-Hi as in má'àikàcíì 'worker', pl. má'àikàtáa. Their tone pattern has nothing to do with number differentiation. The Hi-Lo-Lo-Hi tone pattern of agential plurals is not a possible tone pattern of any simple noun plural.

Derived nouns listed by Newman [1975:212] in (d), (e) and (f) do not follow rules for simple nouns; they are not the data upon which one can base rules for simple nouns. Derived nouns are irrelevant for the discussion of tone/vowel height correlation in Hausa.

4. Conclusion

As said above, "numerous exceptions" are not so numerous (verbs: táashì, gúdù, fáadì, mútù and Hi-Hi final -aa plurals). "Unexplained counter-examples" either could be explained ("falling tone" and "internal-a" plurals are segmentally conditioned subgroups of the regular group which obey tone/vowel height correlation) or cannot be regarded as pertaining to the discussion. "Derived nouns" obey different rules as compared with "simple nouns" and are irrelevant for this discussion. Therefore Newman's argument does not present evidence against the tone/vowel height correlation in Hausa.

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MUNDANG: Supp. 5.127-130 (Hagège)

NIGER-CONGO: Supp. 5.205-216 (Maddieson)

NUPE: 4.131 (Williamson)

NYAKYUSA: 4.27 (Schadeberg)

NYANJA: 5.122-125 (Givón)

NYANKORE: 4.240-267 (Wald)

NYIHA: 4.245 (Wald)

OMOTIC: Supp. 5.81-93 (Fleming)

PAPIAMENTO: Supp. 5.67-72 (DeBose)

POKOMO: 6.267-314 (Wald)

RABAI: 6.267-314 (Wald)

RWANDA: 6.193-199 (Givón)

SAGALA: 5.48-50 (Ponelis)

SAMBAA: 6.267-314 (Wald)

SEGEJU: 6.267-314 (Wald)

SEMITIC: Supp. 5.81-86 (Fleming)

SHONA: 5.30-52 (Ponelis), 5.147-169 (Hyman and Hawkinson) Supp. 5. 176-181 (Hombert)

SWAHILI: 4.4. (Voorhoeve), 4.123 (Williamson), 4.193 (Hyman), Supp. 5. 153-154 (Bokamba), 6.65-75 (Sedlak), 6.249-265 (Kisseberth and Abasheik)

SWAZI: 5.51-52 (Ponelis)

TOGO: 4.131 (Williamson)

TSONGA: 4.49-70 (Johnston)

TUPURI: Supp. 5.130-133 (Hagège)

TWI: 4.270-279 (Lord)

URO: 123-124 (Williamson)

XHOSA: 5.223-240 (Aoki)

YORUBA: 4.87-112 (Awobuluyi), 4.123-24 (Williamson), 4.155-182 (Oyelaran), 4.207-218 (Bamgboşe) 4.275-291 (Lord), 5.171-203 (Stahlke), Supp. 5.35-47 (Banjo), Supp. 5.174-181 (Hombert), Supp. 5.185-193 (La Velle), Supp. 5.195 203 (Lord), Supp. 5.205-216 (Maddieson), Supp. 5.233-252 (Oke), Supp. 5.280-282, 260 (Schachter), Supp. 5.271-277 (Stahlke), 6.215-238 (Awobuluyi)

ZIGUA: 6.267-314 (Wald)

ZULU: 5.48-52 (Ponelis), 6.171-183 (Kunene), 6.199-204 (Givón)