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THE VERB IN AKƆƆSE*

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Akɔɔse has a comparatively complex verb morphology for a Bantu
language. Underlying forms for the different morphemes making
up the verb are proposed, as well as a set of segmental and to-
nal rules necessary to account for the surface forms. The deri-
vation of certain verb forms is discussed. Verbs have three
different forms: the "free form", the "dependent subject form",
and the "dependent non-subject form". The contexts in which
these are used are described. This is followed by an overview
of the grammatical categories (tense, aspect, mood, negation)
present in the verb and the combination of these categories in
individual verb forms. Finally, meanings and usages of all
verb forms are presented.

1. Introduction

   This paper presents a description of the verb structure of Akɔɔse, a Bantu

language (A.15b) [Guthrie 1953] spoken in the Republic of Cameroon. Alterna-

tive names under which the language is known are Nkosi, Kosi, Koose, Bakossi,

and similar variants [Hedinger 1984b:35]. Previous work on the language is

found in Dorsch [1910/11], Angenot et al. [1973], Wamunshiya [1973], Hedinger

[1980, 1981, 1983, 1984a, 1984b], and R. and S. Hedinger [1977].

   To do a surface morphemic analysis is practically impossible because of the

considerable historical fusion of the elements making up the verb forms. In or-

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der to be able to make generalizations as to the shape of the negative, aspect, tense, and other markers, I have chosen a more abstract analysis. Interestingly, by doing this, a verb structure very much like the one established by Meussen for Proto-Bantu emerges.

In section 2, all the elements making up the verb structure are presented. Section 3 contains the set of rules required to derive the surface forms from the underlying forms. In section 4, the derivation of some specific verb forms is discussed. Each verb has two or three different contextually conditioned forms labelled the Independent form (I-form), the Dependent Subject form (DS-form), and the Dependent Non-Subject form (DNS-form). The contexts for these different forms are specified in section 5. Section 6 summarizes the grammatical categories involved in the verb system and section 7 gives details of the meaning and usage of individual verb forms. Appendix 1 presents in summary form the derivation of a complete set of verb forms in all tenses, aspects, etc including the underlying form, the rules necessary for the derivation, and the surface forms. To make the paper as complete as possible, appendix 2 contains a list of more marginal verb forms observed in the language but not included in this description.

2.   The Structure of the Verb in Akɔɔse

Meeussen reconstructs the Proto-Bantu verb structure as consisting of a total of eleven elements or slots: "The verb ... exhibits a clear structure with definable elements occurring in a fixed order" [Meeussen 1967:108]. He uses the following labels for the elements in the different slots:

    1.   Pre-initial
    2.   Initial
    3.   Post-initial
    4.   Formative
    5.   Limitative
    6.1 Infix
    6.2 Radical ⎫
               ⎬ Base
    6.3 Suffix ⎭
    7.   Pre-final
    8.   Final

9.   Post-final

This seems a very long string of elements, especially when considering the verb
in a Bantu language such as Akɔɔse. For most forms, there appears to be on
first inspection simply a prefix, a verb root and a suffix.[1]

(1)   à+pìm+ɛ̀ʔ   'he is throwing away'

(2)   ě+pìm+čɛ   'he didn't throw away'

With some tenses, the suffix seems to be replaced by a prefix:

(3)   à+m̀+pʼm   'he threw away'

However, with a more careful analysis, a structure very much like that proposed
for Proto-Bantu appears. In fact, as will be seen, only the element labelled
by Meeussen as the "infix" (6.1), which is the object prefix in pre-radical po-
sition, is completely absent in Akɔɔse.[2]

     Table 1 gives a summary of the Akɔɔse verb structure. In order to be able
to compare the various elements with Meeussen's material, his terminology and
numbering system has been included in the table (see Table 1 on following page).
In the following sections, the elements in the different positions will be dis-
cussed.

2.1.   <u>The verb stem</u>. Every verb has a stem which consists obligatorily of a
root, the central lexical part, with an optional stem suffix (cf. position 6 in
Table 1). The root and stem will be discussed in turn below.

2.1.1.   <u>The verb root</u>. The verb root has the following generalized structure:

$$C_1 \binom{w}{y} V(V)(C_2)$$

It always begins with a consonant which may be followed by a glide. It is fol-

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[1]Long vowels are indicated by doubling the vowel. High tone = H or ´ , low
tone = L or ` , falling tone = HL or ^ , rising tone = LH or ˇ , falling
from a high to a downstepped high tone = H'H or ᵔ , downstep is indicated by
the apostrophe ' . Nasalization is indicated by the cedilla ɏ .

[2]Perhaps the "Pre-initial" should also be considered absent in Akɔɔse. We
consider replacive tones as being in this position whereas Meeussen [1967:108]
has kú and ka , but he does not seem to assign a slot to his °LH replacive
tones.

Table 1: Akɔɔse verb structure

	1	2	3	4	5	6		7	8	9
Meeussen (1967:108)	Pre-initial	Initial	Post-initial	Forma-tive	Limita-tive	Verbal base		Pre-final	Final	Post-final
						Radical	Suffix			
This paper		Person and concord class prefix	Neg. marker	Tense marker		Verb stem		Aspect marker	Tense marker	
						Verb root	Stem suffix			
Akɔɔse verbal elements	H̥- HĽ-	à- sê- bé- etc.	e- 'NEG'	Ǹ- 'PAST (PERF)' â- 'FUT'	kê- 'already'	pìm 'throw away' pím 'jump on top' etc.	-e -ed -ɛn -ned etc.	-ɛ́? ~ -ɛ̀? 'IMPF' -é 'PERF'	-áa 'PAST (IMPF)'	-ʔɛ́ -H̥ -Ľ̥
See section	2.7	2.2	2.3	2.4	2.6	2.1.1	2.1.2	2.5	2.4	2.8

lowed by a short or long vowel (indicated by the optional second V). It may
have a final consonant C_2 which is limited to the following: b , d , g , m ,
n , ŋ , and l (ŋ is always preceded by a short vowel). These consonants
are not all of equal status and therefore different rules apply to them (cf.
Rules 17-19 and 25-26 in section 3).

    A few sample roots are given in (4):

(4) sú   'return'   dyɛ́   'eat'

       wɔ́g   'wash, rub on'   kwɛ̀l   'cut'

       síi   'grate'   hyɔ́ɔ   'sweep'

       bàam   'cower down'   tyéem 'stand'

    Each root can be classified as being either a high tone or a low tone root
based on the inherent lexical tone:

(5) **High tone**   **Low tone**

      béb   'spoil, be bad'   bèb   'tie'

      hyɛ́   'be warm, hot'   hyɛ̀   'come'

      kál   'reclaim (money, etc.)' kàl   'tell a story'

      lég   'leave'   lèg   'stay behind'

    There are no disyllabic roots. Forms like kùle 'to be sick' are consid-
ered as a stem consisting of the root kùl plus a suffix -e , although kùl
is not attested as a separate form (cf. 2.1.2 below).

2.1.2. <u>Stem suffixes</u>. There are a number of suffixes which occur together with
the root to make up the verb stem. They may be divided into two groups for the
following reasons:

    a.   The meanings of the suffixes of group 1 are easily identified but this
         is not the case with the second group.

    b.   The second group behaves differently morphologically from the suffixes
         of group 1 when put into the IMPERFECT aspect.

(6) Group 1 suffixes

        /__V   elsewhere

    1. -t   -ed   "causative"

    2. -n   -ɛn   "instrumental, accompanitive, reciprocal"

3. -ʔ/-d   -e   "applicative"[3]

1a. à+pém+t+é   'he made (s.body) carry'
     he-carry-CAUS-PERF

2a. à+pém+n+é   'he carried with (s.thing)'
     he-carry-INSTR-PERF

3a. à+pém+ʔ+é   'he carried for (s.body)'
     he-carry-APP-PERF

1b. pém-éd   'make carry (imperative)'

2b. pém-ɛ́n   'carry with (imperative)'

3b. pém-é   'carry for (imperative)'

The "applicative" suffix, 3., shows two variants for the pre-vocalic forms: -ʔ and -d .[4] The -d suffix is used with CVV roots, the -ʔ suffix with C final roots. Compare (7) with example 3a. in (6):

(7) à+síi+d+é   'she grated for'
     she-grate-APP-PERF

(8) Group 2 suffixes

-nɛn	'ʔ'	hàŋnɛn	'be tied with a lot of work'	cf.	hàŋ	'tie by force'
-ned	'ʔ'	bòŋned	'be good for'	cf.	bòŋ	'be good'
-tɛn	'ʔ'	bòmtɛn	'join together'	cf.	bòm	'meet'
-ted	'ʔ'	bébted	'spoil/destroy for'	cf.	béb	'be bad'
-lɛn	'ʔ'	wóglɛn	'listen'	cf.	wóg	'hear, feel'
-led	'ʔ'	čùmled	'smell s.thing'	cf.	čùm	'stink'
-sɛn	'ʔ'	lìŋsɛn	'make angry with'	cf.	lìŋ	'be angry'
-gɛn	'ʔ'	wóŋgɛn	'help'			
-med	'ʔ'	pàamed	'go without knowing the way'			

The last three suffixes are relatively rare. The suffix -gɛn , for example,

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[3]One more suffix -ɛl has been observed, but only in the following two verbs: kwàgɛl 'to bite' and yàgɛl 'to throw'. A meaning cannot, however, be isolated for this suffix.

[4]Cf. Meeussen [1967:92] who reconstructs the Proto-Bantu applicative as -ìd- (cf. Schadeberg [1980:504]).

only occurs after some CVŋ roots. As indicated by the question marks, I have
not been able to assign a constant meaning to these suffixes. However, they
can be isolated as formatives separate from the root on the basis of the fact
that the roots, in many cases, occur also without a suffix.

Verb stems containing a group 2 suffix differ from verb stems with a group
1 suffix in the following way: in the IMPERFECT (IMPF) aspect, the IMPF marker
-ɛ̀? is suffixed to the verb stem containing a group 1 suffix:

(9)   à+pém+?+ɛ̀?   'he is carrying for'
      he-carry-APP-IMPF

On the other hand, if there is a group 2 suffix, the IMPF is marked by a vowel
change in the verb suffix.

(10) à+wóg+làan   'he is listening' (cf. wóg-lɛn)
      he-hear-lɛn-IMPF

See section 2.5.2 for more details.

All the suffixes of group 2 have the structure CVC. The following question
could be raised: are they indivisible units or do they consist of two separate
elements? Meeussen [1967:92] says that "a verbal base can have more than one
suffix...". Re-analysing these forms into two suffixes would have the advantage
of reducing the total number of suffixes but raises a number of problems:

1. -l , -s , -g and -m are not attested apart from in these combina-
    tions.

2. Why would the same suffix occur twice in the same verb stem, e.g. -nɛn
    (= -n + -ɛn , -n and -ɛn being variants of the same suffix)?

3. Why should two different suffixes occur in two different orders, e.g.
    -n+ed and -t+ɛn (-ed and -t being variants of the same suffix)?

4. These combinations of two forms do not appear to have a corresponding
    semantic combination.

5. By allowing for two suffixes in the verb stem, an additional slot would
    be added to the verb structure which Meeussen apparently has not done,
    although he allows for more than one stem suffix.

For the purpose of this paper, these suffixes will be considered as unitary ele-
ments.

All stem suffixes are considered toneless. Under certain conditions, they
take the floating tone of position 9 or a tone is assigned by the copying rule

3 (section 3). Morphologically, all verb stems can be analysed into root plus optional suffix. However, from a semantic point of view, only some stems which are morphologically complex can be said to consist of two parts, cf. (6), examples 1b-3b. This situation can be diagrammed as in (11):

(11)   pém   +   ed   morphological level
          | |
        'carry'   'cause'   semantic level

Other stems cannot be semantically split.

     In (12), the -e suffix has no independent semantic content. The stem as a whole means 'to be sick'.

(12)   kùl + e   morphological level
         \/
       'be sick'   semantic level

     In (13), sùd-ɛn is morphologically complex with a unitary meaning, 'to be sad or downcast' (cf. the root sùd 'to get down from a height').

(13)   sùd + ɛn   morphological level
             \/
       'be sad, downcast'   semantic level

In this latter case illustrated by (12) and (13), we have what Meeussen [1967: 89] seems to refer to as "formal radical" and "formal suffix". In what follows, the distinction between "formal" morphemes and those which can be separated on the basis of form and meaning will not be made because it is irrelevant from the morphological point of view.

2.2. The person and concord class prefixes (subject markers). Each verb has an obligatory person/concord class prefix, except in the singular imperative (cf. position 2 in Table 1). Listed below are all the person and class prefixes of the verb. They are given in three groups based on their inherent tone patterns: high, low, and falling.

High tone prefixes
     bé-   class 2/3rd ps. pl.
     mé-/Ń-   class 3 and 4
     dé-/á-   class 5 and 13

mé-   class 6
é-   class 7 and 10
bé-/éʔ-   class 8, 14 and 19

Low tone prefixes

mè-/Ǹ-   1st ps. sg.
wè-/è-   2nd ps. sg.
à-   class 1/3rd ps. sg.
dè-   1st ps. pl. inclusive
è-   class 9

Falling tone prefixes

sê-   1st ps. pl. exclusive
ɲê-   2nd ps. pl.
mê-   logophoric (sg.) (cf. Hedinger [1984:94, 99])

Some of the prefixes have two forms, for example mé- and Ń- . The ones with the CV shape occur before vowels and syllabic nasals, the other forms elsewhere. Some of the prefixes are shared by several classes, as, for example, é- by class 7 and 10.

The prefixes have been grouped according to their tone patterns for the following reason: in appendix 1, the various verb forms have been illustrated by using one prefix from each tone class, thus giving the verbal tone pattern found with all prefixes of the same tone class.

2.3. The negative marker. When the verb is in the NEGATIVE (NEG), the person/ class prefix is followed by the NEG marker -e (cf. position 3 in Table 1). This marker is underlyingly toneless. To it, under certain circumstances, a tone is assigned by the polarization rule 1 (section 3).

2.4. The tense markers. Tense is marked either by a prefix (cf. position 4 in Table 1) or by a suffix (position 8 in Table 1). There are two past markers. In the IMPF, there is a suffix -áa . It has a H tone which is changed to a L in the NEG (cf. rule 2 in section 3). In the PERFECT (PERF), there is a prefix Ǹ- . FUTURE (FUT) is marked by the prefix â- . For the FUT marker, an underlying $\overset{\frown}{\underset{\circ\circ}{HL}}$ glide is posited to account for the given surface tones.

2.5. The aspect markers. There are two aspect markers which follow the verb
stem (cf. position 7 in Table 1), one for the IMPF, -ɛ? (with either H or L
tone) and one for the PERF, -é . Establishing the tones is a problem. The
PERF marker -é has a H tone in the POSITIVE (POS) and a L tone in the NEG, ex-
actly parallel to the PAST marker -áa . An inherent H tone is therefore posit-
ed for the -é , which is then changed to L by the polarization rule 2 (section
3).

     To establish the tone for the IMPF marker is even more difficult. The fol-
lowing table summarizes the problem:

Table 2: Surface tone on the IMPF marker

		positive	negative
Imperfect	present	-ɛ̀?	-ɛ́?
	past	-ɛ́?	-ɛ̀?
	future	-ɛ́?	-ɛ́?

     In the PRESENT (PRES), the IMPF has a L tone in the POS which changes to a
H tone in the NEG. In the PAST, it has a H tone in the POS which changes to a
L tone in the NEG. In the FUT, it has a H tone in both the POS and NEG. The
solution chosen for this problem is the following: two forms, one with a H
tone, one with a L tone, are set up. The -ɛ̀? marker with a L tone is given
as the underlying form in the PRES tense, the -ɛ́? marker with the H tone in
the other two cases. Then the tone of these markers is polarized by rule 2,
i.e. is changed to the opposite value in forms where the NEG marker e- immedi-
ately precedes the verb stem.

     In (14) the NEG marker immediately precedes the root of the verb and there-
fore the tone on the IMPF marker is polarized.

(14) à + e + pìm + ɛ̀? + ʔɛ́ → ěpìméɛ́   'he is not throwing out'
      he-NEG-throw-IMPF-...

In (15) the NEG marker does not immediately precede the root of the verb; there-
fore, the tone on the IMPF marker remains unchanged.

(15) à + e + â + pìm + ɛ́? + ʔɛ́ → êpìméɛ́   'he will not be throwing out'
      he-NEG-FUT-throw-IMPF-...

(See appendix 1 (A7) and (A67)·for further details of rules applying in these
two examples.)

2.5.1. Archaic forms of the aspect markers. Besides the above forms of both
the IMPF and PERF markers, there are variant forms which occur in about a dozen
verbs with the structure $C\binom{w}{y}\varepsilon$. The IMPF marker with these verbs is -ag
with H or L tone distributed in the same way as indicated above for the -ɛʔ
marker. This -ag marker corresponds to -ag- which Meeussen reconstructed
for the IMPF in Proto-Bantu [1967:110]. In the following Akɔɔse examples, the
IMPF marker is underlined:

(16) àdyɛ́   'to eat'
(17) àdyâg   'he is eating'
(18) àdyágáa   'he was eating'

    The same $C\binom{w}{y}\varepsilon$ verbs have as a PERF marker -edé (the first vowel being
toneless), as in the following example:

(19) à+dyɛ́+edé → àdyédé   'he has eaten'

    Comparing this -edé and the regular form of the PERF marker -é with what
Meeussen [1967:110] reconstructs as a "past" or "perfective" marker *-ɟde , it
is plausible to reconstruct the two as having the same historical source. This
is especially so in light of his remark that "variants, perhaps regional, of
-ɟde may have been such forms as -ɟe , -ɟ , unless these be recent phonic re-
ductions of -ɟde " (p.111). It should be pointed out that in Meeussen's treat-
ment, this marker is in his "final" position whereas in our treatment, we have
interpreted it as a "pre-final" (position 7 in Table 1), to use Meeussen's ter-
minology.

2.5.2. The imperfective marker as a vowel change in the stem suffix. All the
aspect markers shown so far are affixes. There is, however, one exception. In
verb stems with a group 2 (CVC) stem suffix, e.g. bàŋned 'to sew with', the
vowel (e or ɛ) changes to aa in the IMPF.

(20) àbàŋnèd (infinitive) → èbàŋnààd   'she is sewing with'

    This vowel change signalling the presence of the category IMPF can be cap-

tured by a rule like the following (= Rule 24, section 3).

(21) $\begin{Bmatrix} e \\ \varepsilon \end{Bmatrix}$ → àa / [...root+C__C...]$_{IMPF}$

The output of this rule can then be considered as IMPF marker on a par with the
suffixes -ɛ? and -ag .

Comparing the three different forms of the IMPF marker, there is an apparent
resemblance. The suffixes -ɛ? and -ag both have a low vowel plus a post-
palatal stop. Our hypothesis is that -ɛ? developed from -ag (ag → a? → ɛ?)
when root plus -ag formed two syllables, but -ag was retained in those cases
where root plus -ag combined to form one syllable only. Cf. the following two
examples:

(22) àpémè?   'he is carrying'
(23) àkàg   'he is going'

Support for this hypothesis comes from Mboó-Baneka, a related dialect/language
spoken in Nkongsamba, where the IMPF marker in post-nuclear syllables is -à
[Hedinger et al. 1981:44]. Here the vowel quality was retained but the final C
was lost.

(24) àbòlà   'he is doing...'

Another resemblance exists between -ag and the long àa discussed above.
Here too it is tempting to propose a historical relationship. The verb bàŋned
'to sew for' will be used to illustrate the proposed development. The following
structure may be the one historically underlying the present day forms:

(25) *à+bàŋ+n+àg+ed → àbàŋnààd

In (25), the synchronic form results from the loss of the g and a + e fusing
to aa .

Certain facts speak in favour of this hypothesis. First, the Akɔɔse word
páàn 'kitchen knife' has a dialect variant páɣàn which shows the original
presence of a velar consonant in intervocalic position. Further, a + e becom-
ing aa is attested as a synchronic process (cf. rule 22 in section 3). Thus
the two processes necessary to account for the present day form from the pro-
posed original forms are actually attested in the language.

What remains a problem with this hypothesis is the following: in the hypothesized form (25), the -ag is actually introduced into the stem, splitting up the stem suffix -ned (following our analysis) into two stem suffixes -n and -ed which, as we said earlier, has its own problems. It also means that an aspect marker preceded a stem suffix which is otherwise not the case. Aspect markers always follow the verb stem suffix. It again will have to be comparative evidence to tip the balance for or against this hypothesis.

The above hypothesis, if it turns out to be correct, might lead us to place the PERF marker -é in "final" position, i.e. our position 8, for the following reason: the PERF marker, unlike the IMPF marker, is not introduced into the stem suffix but follows it. Compare example (26) with (25) above.

(26) àbàŋnédé   'he sewed with'

This would be evidence to the effect that the PERF and IMPF aspect markers belong to different position classes, which would directly support Meeussen [1967: 110-111] provided the Akɔɔse aspect markers are descendants of Proto-Bantu markers. For the purpose of this paper, I keep the two aspect markers in the same position.

2.6. The "already" marker. Position 5 in Table 1 contains the marker kê- , glossed as "already". This marker occurs in two verb forms. In the PAST PERF NEG, kê- follows the PAST marker Ǹ- :

(27) à+e+Ǹ+kê+N+pém+ʔɛ́ → èŋkêmpéʔmɛ́   'he didn't carry'

(The nasal following the kê- has not been observed elsewhere. It may be a reflex of the PAST marker Ǹ- which in the POS immediately precedes the stem. Significantly, this "intrusive" N is absent in Dorsch's [1910/11:260-267] material on Akɔɔse.) The second verb form which contains kê- is usually translated as "...already...":

(28) à+kê+kɛ̀+ŋ̶ → àkékɛ̌   'he already went'

In (28), kê- clearly means "already". On the other hand, in the PAST PERF NEG, it cannot be said to have the sense of "already". A case could perhaps be made out for saying that kê- synchronically marks NEG in this form. However, kê- is never associated with a NEG verb form except in this case.

There appears to be a resemblance between this marker and a marker recon-
structed by Meeussen for Proto-Bantu. Meeussen [1967:109] has a "limitative"
-ka- (in position 5) for which he has the gloss "inceptive ('already; not
yet')". This reconstructed marker may be the original marker from which the
Akɔɔse kê- has developed. Note that Meeussen [1967:108, 114] also has a NEG
marker ka- . At first, it seems tempting to try to establish a link between
this ka- and the ·kê- in the PAST PERF NEG. However, this appears an unlike-
ly possibility since Meeussen places it in position 1 (his pre-initial) whereas
in Akɔɔse, it is in position 5.

2.7. <u>The elements in position 1</u>. In position 1 of Table 1 a H̥ and a H̥L̥⌢
floating tone are listed. There is no segmental element in this position. Mee-
ussen has kú and ka here but does not set up a separate position/slot for
his °LH replacive tones. The H̥L̥⌢ tone is associated with the FUT NEG verb
forms and replaces the prefix tones (cf. appendix 1 sections 5b and 6b). The H̥
tone replaces the person/class prefix tone in the HORTATIVE (HORT) POS in all
the DNS-forms (cf. section 5) except in the FUT NEG (cf. appendix 1).

In the second INFINITIVE (INF) form the H̥ tone is realised on the prefix
but without totally replacing the inherent tone (note the presence of the down-
step):

(29) H̥+à+wɔ́g → á¹wɔ́g   'to wash'

2.8. <u>The elements in position 9</u>. The elements of the last position to be dis-
cussed are the following, two of them being tonal: -ʔɛ́ , H̥ and L̥ . It seems
that no specific meaning can be assigned to them but we can summarize where each
occurs.

The -ʔɛ́ suffix occurs in all the DNS-forms (cf. appendix 1) of the verb
when POS, except in the PRES PERF and the PAST IMPF. It·also occurs in the I-
form and the DNS-form of the NEG except in the PAST IMPF. Its distribution is
summarized in the following table:

Table 3: <u>The distribution of the -ʔɛ́ suffix</u>

	I-form	DS-FORM	DNS-FORM
POS	−	−	-ʔɛ́[1]
NEG	-ʔɛ́[2]	−	-ʔɛ́[2]

Exceptions: 1. -ʔέ is not present in the positive DNS-form of the (PRES)
                  PERF and PAST IMPF.

             2. -ʔέ is not present in the negative I-form and DNS-form of
                 the PAST IMPF.

The only generalizations which can be made are the following: (a) the -ʔέ
marks the verb in a sentence where a phrase has moved from post-verbal position
to before the verb (cf. 5.1);   (b) the -ʔέ also has something to do with the
NEG in that it is suffixed to the verb in the I-form and the DNS-form when the
verb is NEG, but *not* in the DS-FORM. Again, the exceptions accompanying Table
3 are exceptions to these generalizations. The Ḥ marker is part of the fol-
lowing verb forms and is realised on the last syllable:

a. The I-form (= DS-form) of the PAST PERF POS, FUT PERF POS, FUT IMPF POS,
    (but see 4.8) and the "ALREADY" form.

b. The DS-form of the PAST PERF NEG, FUT PERF NEG, FUT IMPF NEG, (but see
    4.9).

c. The I-form and the DNS-form of the PAST IMPF NEG.

d. The IMP PERF POS.

The marker Ļ is realised on the last syllable of the HORT PERF POS.

3. Derivation of Surface Forms: the Rules

    In section 2, the elements which make up the verb were presented and dis-
cussed. The actual verb forms observed are, however, not simply a juxtaposition
of those elements. There is considerable elision and phonological modification
as the elements are placed side by side. In order to capture these processes, a
number of rules have been proposed which will be discussed below. No attempt
has been made to maximally formalize the rules. They are given in the order in
which they apply to produce the correct result. For some of the rules this order
is strictly necessary. Others could apply in a different order without changing
the result. More about the order of rules will be said in section 4.

Rule 1: Prefix polarization

    $\emptyset$ → - αH / [__] PFX + ROOT [αH

A prefix without inherent tone receives a tone with the opposite value from
the tone on the following root. This rule operates in the vocative phrase where

the vocative marker   a-   takes a tone with the opposite value from the follow-
ing tone:

(30)   a + ŋgɔ̀mɛ́   →   áŋgɔ̀m   'Ngome!'
       voc-Ngome

(31)   a + kɛ́lɛ̀   →   àkɛ́l   'Kele!'

    The same rule also applies when the NEG marker   e-   immediately precedes
the verb root:

(32)   à + e + pìm + ɛ̀ʔ + ʔɛ́   'he is not throwing away'
       he-NEG-throw-IMPF-...

     à + é + pìm + ɛ̀ʔ + ʔɛ́   Prefix polarization

    . . . .   other rules

       ɛ̌pìmɛ́ɛ́   surface form

(33)   bé + e + wɔ́g + ɛ̀ʔ + ʔɛ́   'they are not washing'
       they-NEG-wash-IMPF-...

    bé + è + wɔ́g + ɛ̀ʔ + ʔɛ́   Prefix polarization

    . . . .   other rules

     bé'wɔ́gɛ́ɛ   surface form

Note that this rule assigns a H tone to the NEG marker in (32) which is neces-
sary to account for the rising tone in the final output. In (33), a L tone is
assigned which accounts for the downstep in the output.

Rule 2:   NEG polarization

    αH   →   - αH / [e+stem+___ ...] NEG
                 X

    Condition: X = any element 7 and/or 8

In four verb forms, i.e. the (PRES) IMPF, the (PRES) PERF, the PAST IMPF and the
HORT, the element following the verb stem takes a tone in the NEG opposite to
the one in the POS. Below, two verb forms will be used in both the POS and NEG
to illustrate Rule 2.

(34)   à + pìm + ɛ̀ʔ   →   àpìmɛ̀ʔ   'he is throwing away'
       he-throw-IMPF

(35) à + e + pìm + ὲ? + ?έ   'he is not throwing away'
      he-NEG-throw-IMPF-...

      à + é + pìm + ὲ? + ?έ   Prefix polarization

      à + é + pìm + έ? + ?έ   NEG polarization

      .   .   .   .   other rules

              ěpìmέε   surface form

(36) à + pìm + é   → àpìmé   'he threw away'
      he-throw-PERF

(37) à + e + pìm + é + ?έ   'he did not throw away'
      he-NEG-throw-PERF-...

      à + é + pìm + é + ?έ   Prefix polarization

      à + é + pìm + è + ?έ   NEG polarization

      .   .   .   .   other rules

              ěpìměε   surface form

Note that in both (35) and (37) the aspect marker following the verb stem
changes tones. For other rules applying here, see appendix 1, (A7) and (A19).

Rule 3: <u>Tone copying</u>

  Ø → αH / [___] STEM SFX αH
              X

  Condition: X = CVC

     This rule is needed to account for the fact that CVC stem suffixes, which
have been analysed as toneless, take the same tone as the following element.
Compare the following example:

(38) à + bàŋ + neɟ + é   → àbàŋnédé   'he sewed with'
      he- sew-with   -PERF

Rule 4: <u>H tone replacement</u>

  #H̥ + T + → #Ø + H +   (# = word break)
                                (T = any tone(s))

This rule says that the H tone (in position 1) replaces all the tones on the fol-
lowing morpheme, no trace being left of the tone(s) which have been replaced.
This rule can be observed in the HORT, (39), and in all the DNS-forms, (40), ex-

cept in the FUT NEG.

(39)   H̥ + à + wɔ́g + ɭ̥   → áwɔ̂g   'he should wash (HORT)'
      ...-he-wash-...

(40) H̥ + à + wɔ́g + é   → áwɔ́gé   'he washed (DNS-form)'
      ...-he-wash-PERF

Rule 5: ?-deletion

$$? \rightarrow \emptyset \ / \ \left\{ \begin{array}{c} \underline{}? \\ \overline{CV}\underline{}V \end{array} \right\}$$

Rule 5 consists of two sub-rules, both of which delete glottal stop. Applying
each subrule of Rule 5 to the following examples results in the correct form:

(41) à + e + wɔ́g + ὲ? + ?έ   'he isn't washing'
      he-NEG-wash-IMPF-...

      à + è + wɔ́g + έ? + ?έ   Rules 1 and 2

      à + è + wɔ́g + έ + ?έ   ?-deletion

      à + è + wɔ́g + έ + έ   ?-deletion

      . . . .   other rules

             èwɔ́gέε   surface form

Rule 6: e-lowering

$$e \rightarrow \varepsilon \ / \ \left\{ \begin{array}{c} C\underline{}+a \\ \underline{}\varepsilon \end{array} \right\}$$

Rule 6 consists of two sub-rules. The first is seen in operation before the FUT
marker.

(42) sê + â + pìm + H̥   'we will throw away'
      we-FUT-throw-...

      sὲ̂ + â + pìm + H̥   e-lowering

      . . . . . .   other rules

             sὲ̂pỳm   surface form

The second is seen in the (PRES) PERF NEG after the glottal stop has been delet-
ed.

(43) bé + e + čám + é + ʔɛ́   'they have not cooked'
      they-NEG-cook-PERF-...

      bé + è + čám + è + ɛ́   Rules 1, 2 and 5

      bé + è + čám + ɛ̀ + ɛ́   e-lowering

      . . . .   other rules

            bé'čámɛ̌ɛ   surface form

Rule 7: <u>a-deletion</u>

   a → ∅ / V+____

Rule 7 deletes the vowel a in locative constructions as well as in verb forms
involving the FUT marker.

(44) á̀ + àbàd   'on the cloth'
      LOC-cloth

            ábàd   a-deletion

(45) à + â + pìm + ʮ   'he will throw away'
      he-FUT-throw-...

      à + ˆ + pìm + ʮ   a-deletion

      . . . . .   other rules

            ǎp ̌ɪm   surface form

(46) é + â + dyɛ́ + ʮ   'they (cl. 10) will eat'
      cl.10-FUT-eat-...

      é + ˆ + dyɛ́ + ʮ   a-deletion

      . . . . .   other rules

            é'dyɛ́

(47) sê + â + pìm + ʮ   'we will throw away'
      we-FUT-throw-...

      sɛ̂ + â + pìm + ʮ   e-lowering

      sɛ̂ + ˆ + pìm + ʮ   a-deletion

      . . . . . .   other rules

            sɛ̂p ̌ɪm   surface form

It should be pointed out that the deletion of the vowel here and elsewhere does
not delete the tone of the deleted vowel.

Rule 8: <u>ε-deletion</u>

$$\varepsilon \;\rightarrow\; \emptyset \left\{ \begin{array}{l} / \underline{\quad} aa \\[4pt] / \left\{ \begin{array}{l} \text{əə} \\ \text{ɔɔ} \\ \text{aa} \end{array} \right\} \; \underline{\quad} \end{array} \right\}$$

Rule 8 consists of two sub-rules. In the first case ε deletes before the
PAST IMPF aa after the glottal stop has been deleted:

(48) à + čàn + ɛ́? + áa   'she was buying'
      she-buy-IMPF-past

      à + čàn + ɛ́ + áa   ?-deletion

      à + čàn + ′ + áa   ε-deletion

      . . . . . .   other rules

          àčànáa   surface form

In the second case, ε deletes following long low vowels and əə but not be-
fore non-low vowels (cf. Rule 20 below):

(49) à + kɔ̀ɔ + ɛ̀?   'he hates'
      he-hate-IMPF

      à + kɔ̀ɔ + ?   ε-deletion

          àkɔ̀ɔ?   surface form

Rule 9: <u>V-deletion</u>

$$V \;\rightarrow\; \emptyset \; / \; \underline{\quad} e + \ldots ROOT[$$

Rule 9 deletes the vowel preceding the NEG marker:

(50) à + e + wɔ́g + ɛ̀? + ?ɛ́   'he is not washing'
      he-NEG-wash-IMPF-...

      à + è + wɔ́g + ɛ́ + ɛ́   Rules 1, 2, 5, 5

      ` + è + wɔ́g + ɛ́ + ɛ́   V-deletion

          èwɔ́gɛ́ɛ   surface form

Rule 9 also applies in the locative phrase:

(51) á + èdíb   'at the river'
      LOC-river

      ′ + èdíb   V-deletion

```
    . . .                            other rules
      é'dîb                          surface form
```

Rule 10: N-assimilation

$$N \rightarrow [\alpha place] \ / \ \underline{\quad} \quad \begin{array}{c} C \\ [\alpha place] \end{array}$$

Rule 10 ensures that nasals assimilate to the place of articulation of the fol-
lowing consonant. The following markers undergo this rule: the PAST marker
Ǹ- , the class 3 and 4 prefixes Ń- , and the 1st person singular prefix Ǹ- :

```
(52)  Ǹ + wɔ́g + é              'I have washed'
      I-wash-PERF
      ŋ̀ + wɔ́g + é              N-assimilation
```

Rule 11: N-desyllabification

$$\begin{array}{c} N \\ [+syll] \end{array} \rightarrow [-syll] \ / \ (C)V\underline{\quad}C$$

According to Rule 11, syllabic nasals in the specified context become non-syllab-
ic without, however, deleting the tone carried by the nasal, as is apparent from
the presence of the downstep in examples like (53):

```
(53)  bé + Ǹ + wɔ́g + ꞯ           'they washed'
      they-PAST-wash-...
      bé + ŋ̀ + wɔ́g + ꞯ           N-assimilation
      bé + ŋ ` + wɔ́g + ꞯ         N-desyllabification
      . . . . . .                other rules
              béŋ'wɔ́g            surface form
```

Rule 12: Leftward spreading

$$L \rightarrow L \ H \ / \ [e] \ NEG + [\underline{\quad}] \ STEM + H$$

This rule states that the H tone spreads leftwards onto the L tone stem if it is
immediately preceded by the NEG marker. It has only been found to apply in the
NEG of the (PRES) IMPF and of the HORT and therefore would need to be further
constrained. Its application is somewhat idiosyncratic in that it applies op-
tionally in the I-forms, obligatorily in the DS-forms, but does not apply in the
DNS-forms nor with a H tone person or class prefix.

(54) à + e + pìm + ὲʔ + ʔέ   'he is not throwing away'
      he-NEG-throw-IMPF-...

      ` + é + pìm + έ + έ   Rules 1, 2, 5, 5, 7

      ` + é + pì'm + έ + έ   Leftward spreading

      . .   .   .   other rules

            ɛ̌'pímέɛ   surface form

Rule 13: <u>Downstep</u>

   H L H → H 'H

   Condition: The sequence H L H is realized only on one or two [+syll]
               elements.

     The downstep rule is very commonly observed. It is basically a simplifica-
tion rule in that the sequence H L H, when realized on two (or one) syllable(s)
is only simplified to H 'H via the elimination of the L tone. The result is two
H tones of which the second is slightly lower than the first.

(55) bé + e + wɔ́g + é + ʔέ   'they didn't wash'
      they-NEG-wash-PERF-...

      b' + è + wɔ́g + ὲ + έ   Rules 1, 2, 5, 6, 9

      b' + e ' + wɔ́g + ὲ + έ   Downstep

            bé'wɔ́gὲέ   surface form

Rule 14: <u>H͡L tone replacement</u>

   #H͡L + T + STEM [→   #∅ + HL + STEM [

Rule 14 applies in the FUT NEG forms. It says that the H͡L glide replaces the
tone(s) of the morphemes preceding the stem.

(56) H͡L + à + e + â + wɔ́g + ʔέ   'he will not wash'
      ...-he-NEG-FUT-wash-...

      H͡L + ` + e + ^ + wɔ́g + ʔέ   Rules 7, 9

            ê   + wɔ́g + ʔέ   HL replacement

      . .   .   .   .   .   other rules

            êwɔ́kέ   surface form

Rule 15: <u>Tone raising</u>

   L → H /H $\left\{ \begin{matrix} \# \\ + \end{matrix} \right\}$ __H

   Condition: Each tone is realized on a [+syll] element.

Rule 15, which raises a L to a H tone between two H tones, applies only in three
restricted syntactic environments:

a. In some verb-object sequences:

(57) téd mèndíb   → téd méndíb   'take the water!'
      take water

b. In the associative noun phrase:

(58) àhópè dé èdíb   → àhópè dé édíb   'waterfall'
        ?   AM river

c. In the (PRES) PERF POS and the PAST IMPF POS forms of the verb:

(59) bé + pìm + é   → bépímé   'they have thrown out'
      they-throw-PERF

In (57) and (58), the tone of the noun prefix, and in (59), the tone of the verb
stem becomes H.

Rule 16: Absorption

$$\widehat{T_\alpha T_\beta}\ T\ \rightarrow\ T_\alpha\ T_\beta$$

   (a) $\widehat{LH}$ H → L H
   (b) $\widehat{HL}$ L → H L
   (c) $\widehat{H'H}$ H → H 'H

A contour tone followed by a tone identical to its endpoint loses its contour.
There are three sub-rules, (a) to (c). In (60), the low part of the falling
tone is absorbed by the following L tone.

(60) sê + pìm + é   → sépìmé   'we threw'
      we-throw-PERF

Rule 17: Stop devoicing

$$\begin{bmatrix} b \\ d \\ g \end{bmatrix} + ? \rightarrow \begin{bmatrix} p \\ t \\ k \end{bmatrix}$$

This rule is quite general in that it is observed in different grammatical con-
texts. The following two examples illustrate two verbal contexts in which it
applies:

(61) à + e + â + wóg + ?ɛ́   → êwɔ́kɛ́   'he will not wash'
      he-NEG-FUT-wash-...

(62) à + dìb + ? + ὲ?   → àdìpὲ?   'he is opening'
      he- ‿‿‿‿‿ -APP-IMPF
           open

Rules 18a-c are very closely related as the output of one provides the input of the next.

Rule 18a: ?-metathesis

$$\begin{bmatrix} m \\ n \\ l \end{bmatrix} + ? \rightarrow ? \begin{bmatrix} m \\ n \\ l \end{bmatrix}$$

Rule 18b: ?-assimilation

$$? \begin{bmatrix} m \\ n \\ l \end{bmatrix} \rightarrow \begin{bmatrix} mm \\ nn \\ ll \end{bmatrix}$$

Rule 18c: l-nasalization

ll → nl

Rules 18b and 18c are optional in the sense that the output of all three rules varies with different speakers.

(63) à + kùl + ? + ὲ?   'he is sick'
      he- ‿‿‿‿‿ -APPL-IMPF
           be sick

      à + kù? + l + ὲ? → àkù?lὲ?   ?-metathesis
      à + kùl + l + ὲ? → àkùllὲ?   ?-assimilation
      à + kùn + l + ὲ? → àkùnlὲ?   l-nasalization

Rule 19: ?-to-velar assimilation

   ? → g /ŋ___

(64) à + nàŋ + ? + ὲ?   → ànàŋgὲ?   'he is lying down'
      he- ‿‿‿‿‿ -APPL-IMPF
           lie down

Rule 20: V-shortening

$$\begin{bmatrix} ii \\ uu \\ oo \end{bmatrix} \rightarrow \begin{bmatrix} i \\ u \\ o \end{bmatrix} /\_\_\varepsilon$$

(65) bé + síi + ὲʔ → bésîὲʔ   'they are grating'
      they-grate-IMPF

Rule 21: <u>Diphthong simplification</u>

    oɛ → əə

Rule 21 is optional in the sense that it applies for some speakers to the output of Rule 20.

(66) à + bóo + ὲʔ   'he is breaking'
      he-break-IMPF

      à + bó + ὲʔ   V-shortening

     àbə̂ə̀ʔ   diphthong simplification

Rule 22: <u>e-assimilation</u>

    e → Vx / Vx] ROOT ___   (where Vx are identical)

(67) à + sú + é   → àsúu   'he has returned'
      he-return-PERF

Rule 23: <u>e-deletion</u>

    e → Ø / VV] ROOT ___

Rule 23 applies both in nominal and verbal contexts. Examples (68-69) illustrate two verbal contexts:

(68) à + mìi + é   → àmΥi   'he has swallowed'
      he-swallow-PERF

(69) à + Ǹ + kàa + ed + Ụ → àŋkǎad   'she lined (the pot)'
      she-PAST- ‿‿‿‿ -CAUS-...
             line a pot

Rule 24: <u>Ablaut</u>

$$\begin{Bmatrix} e \\ \varepsilon \end{Bmatrix} \rightarrow \text{aa} \ / \ [... \text{root} + C\_\_\_C...] \ \text{IMPF}$$

Rule 24 has already been discussed and illustrated in 2.5.2.

Rule 25: <u>Alveolar-stop coalescence</u>

    d + t → t

(70)   à + sɛ̀d + t + ɛ̀?   →   àsɛ̀tɛ̀?   'he is asking'
       he-_____ -CAUS-IMPF
              ask

Rules 26a-b are closely associated with each other in that the output of rule
26a is the input of rule 26b.

Rule 26a: ŋ-weakening

$$V\eta + \begin{Bmatrix} e \\ \varepsilon \end{Bmatrix} \rightarrow \gamma\gamma$$

Rule 26a eliminates velar nasals between two V's, the environment where velar
nasals cannot occur.

Rule 26b: V-denasalization

   ɣɣ → VV

Rules 26a and b are examplified in (71), with the output of both (26a) and (26b)
having been observed as surface forms.

(71)   à + láŋ + ɛ̀?   'he is reading'
       he-read-IMPF
       àláá̰?   ŋ-weakening
       àláà?   V-denasalization

    No rule has been set up to take care of cases where two like or two unlike
tones fall on the same syllabic element. In the first case the result phoneti-
cally is one level tone, in the second case, a contour tone. Also, no rules
have been worked out to assign floating tones to a syllabic element. Final
floating tones are "grounded" to the last syllable.

4.   Discussion of Derivations of the Individual Verb Forms

    In section 2 the elements making up the verb have been described. In section
3, the segmental and tone rules were discussed. In this section, the derivation
of various verb forms will be considered in more detail. This will be done by
looking at the forms presented in Appendix 1. In that appendix, the two verbs
(simple stems) pìm 'to throw away' and wɔ́g 'to wash' are given in all the ma-
jor verb forms. By choosing a low tone root and a high tone root as well as a
prefix with L, ĤL and H tones respectively, all possible underlying and surface

tone patterns have been illustrated. Not only the POS forms, but also the NEG
verb forms, have been given. This was done because the category NEG is total-
ly integrated into the verb structure. The NEG marker is present as prefix in
the underlying form but in the surface form, it is completely fused with the
adjacent elements.

Each verb form has two or three contextually dependent forms labelled I,
DS, and DNS. These three contexts will be described in section 5. In the
lefthand column, the underlying forms are laid out. The numbers at the top
of each morpheme stand for the slot or elements presented in Table 1 in sec-
tion 2. In the middle column, the rules necessary to derive the surface forms
are indicated. Fina-ly, in the right hand column, the surface forms of the
verbs are given, i.e. the phonemic forms as actually recorded. It is on the
basis of such forms that all underlying forms have been established.

4.1. The (PRESENT) IMPERFECT POSITIVE. The derivations here are quite tran-
sparent and do not need much comment. Just one comment is needed on (A2) and
(A5) where there is a falling tone on the prefix. There are two alternative
surface tone patterns: in (A2), the application of the absorption rule (Rule
16) is optional; in (A5), the application of the downstep rule (Rule 13) is al-
so optional. For this reason, the rules have been put in brackets in Appendix
1.

To demonstrate how the material in Appendix 1 should be understood, the
full derivation of (C5) is given below:

(C5)   ɦ + sê + wɔ́g + ɛ̀ʔ + ʔɛ́   'we are washing' (DNS-form)
          sé + wɔ́g + ɛ̀ʔ + ʔɛ́   4. H-tone replacement
          sé + wɔ́g + ɛ̀ + ʔɛ́   5. ʔ-deletion
          sé + wɔ́g + ɛ̀ + ɛ́   5. ʔ-deletion
          [séwɔ́gɛ̌ɛ]

4.2. The (PRESENT) IMPERFECT NEGATIVE. First a note on the tone of the NEG
marker. In order to be able to account for the rising tone in the surface form
of (A7), the falling to downstepped H tone in (A8) and the downstep in (A12),
we posited the prefix polarization rule (Rule 1) to assign a H tone to the NEG

marker e- before a L tone root, and to assign a L tone before a H tone root.

The full derivation of (A7) is given below:

(A7)   à + e + pìm + ὲ? + ?έ   'he is not throwing away'

        à + é + pìm + ὲ? + ?έ   1. Prefix polarization

        à + é + pìm + έ? + ?έ   2. NEG polarization

        à + é + pìm + έ + ?έ   5. ·?-deletion

        à + é + pìm + έ + έ   5. ?-deletion

        ` + é + pìm + έ + έ = ĕpìmέε   9. V-deletion

        (` + é + pì'm + έ + έ   12. leftward spreading

        ` + é + 'pím + έ + έ   13. downstep)

        [ĕ'pímέε]

Note that Rules 12 and 13 are optional in (A7) and (A8), obligatory in
(B7) and (B8), but they never apply in (A9), (B9), and (C7) to (C9).

4.3. The (PRESENT) PERFECT POSITIVE. The verb forms subsumed under this head-
ing are again quite transparent. There are only two rules involved. The ab-
sorption rule (Rule 16) is optional in (A14). The raising rule (Rule 15) ap-
plies in (A15) where the L tone of the root becomes H between the two H tones.

In the DNS-forms, Rule 4 replaces the tone of the prefix by the H tone.
Rule 15 replaces the L root tone by a H tone. In (C15) and (C18) Rule 4 is
put in brackets to show that it applies vacuously because the tone on the pre-
fix is already high.

4.4. The PAST IMPERFECT POSITIVE. The question immediately raised here by
the underlying forms posited is why the -έ? suffix has been included, since
it has no manifestation in the surface form. The first, but insufficient, rea-
son is that the category IMPF is always present in the IMPF forms. The second
reason is that the -έ? is clearly present in verbs with CVV roots:

(72) àsíέ?áa   (+ à+síi+έ?+áa)   'she was grating'

Also, some speakers in at least some verbs have it present in their pronuncia-
tion:

(73) àkùnIέ?áa   (+ à+kùI+?+έ?+áa)   'he was sick'

This evidence seems to establish the presence of -ɛ́ʔ sufficiently as part of
the underlying form.

4.5.   The PAST IMPERFECT NEGATIVE. Here both the aspect marker -ɛ́ʔ and the
tense marker -áa have an inherent H tone (cf. the POS) which is changed to L
by Rule 1 to produce the correct surface tone. Cf. the following derivation
of (A46).

(A46) à + e + wɔ́g + ɛ́ʔ + áa + H̥   'he is not washing'
       à + è + wɔ́g + ɛ́ʔ + áa + H̥   1.   Prefix polarization
       à + è + wɔ́g + ɛ̀ʔ + àa + H̥   2.   NEG polarization
       à + è + wɔ́g + ɛ̀ + àa + H̥   5.   ʔ-deletion
       à + è + wɔ́g + ` + àa + H̥   8.   ɛ-deletion
       `  + è + wɔ́g + ` + àa + H̥   9.   V-deletion
       [èwɔ́gǎa]

4.6.   The FUTURE PERFECT and IMPERFECT. The FUT marker â- is given a H̑L̑
glide. This was necessary to account for all the surface tone patterns. Cf.
the following derivation of (A49):

(A49) à + â + pìm + H̥   'he will throw away'
       à + ^ + pìm + H̥   7.   a-deletion
       à + ′ + pìm + H̥   16. Absorption
       [ǎpìm]

4.7.   The FUTURE PERFECT and IMPERFECT NEGATIVE. Note that all the surface
form prefixes have a falling tone. This is accounted for by the H̑L̑ tone in po-
sition 1 plus the tone Rule 14. Below is given a sample derivation of (B56):

(B56) H̑L̑ + sê + e + â + pìm + H̥   'we will not throw away'
       H̑L̑ + sê + e + ^ + pìm + H̥   7.   a-deletion
       H̑L̑ + s^ + e + ^ + pìm + H̥   9.   V-deletion
        s + ê +   + pìm + H̥   14. H̑L̑ replacement
       [sêpìm]

4.8.   The FUTURE IMPERFECT POSITIVE. In the I-form, a final H̥ tone has been
put in brackets. This is to indicate that there is no way of knowing whether
this H̥ tone is really there. The only argument for its presence is one of

analogy. In the FUT PERF, there is clearly a final ʮ where the DNS-form has final -ʔέ in the same position. Since the FUT IMPF has a final -ʔέ in the DNS-form, it would seem plausible that there is a ʮ in the I-form.

4.9.   The FUTURE IMPERFECT NEGATIVE.

Here we have put a ʮ tone in brackets in the DS-form in final position. Again, its presence can be disputed since it can only be established by analogy with the FUT PERF POS.

4.10.   The INFINITIVES. The INFINITIVES (INF) differ from the other verb forms in that the prefix à- is really a noun prefix of class 5 rather than a person or concord class prefix.

5.   The Distribution of the I, DS, and DNS Forms of the Verb

In previous sections, mention has been made of the fact that in each tense/ aspect form of the verb (both positive and negative), there are three variant forms, their occurrence being determined by context. In this section, we will look in more detail at the contexts in which the Independent forms (I-forms). the Dependent Subject forms (DS-forms), and the Dependent non-Subject forms (DNS-forms) occur. It should be pointed out firstly that it is only verbs in the indicative mood which have three distinct forms for each basic tense/as- pect. Secondly, it should be noted that in the POS forms of the verbs, the DS- form is identical with the I-form. In the NEG, however, there are three dis- tinct forms except in the FUT where the DNS-form is identical with the I-form. Cf. Appendix 1 for the formal differences between the three forms of the verbs.

5.1.   The three different grammatical contexts. The DNS-forms are required in two types of context. First, dependent clauses beginning with the following particles require the DNS-forms:

| nêɛ | 'as ...' | dɜ̂ə | 'then ...' |
| ŋgánè | 'as ...' | hêɛ | 'then ...' |

(74)   nêɛ ápédé   á nz̀i, ...   'as he reached the road, ...'
       as he-reach-PERF-(DNS) LOC road,

but, cf. (75), without particle:

(75) àpèdé   á   nzìi   'he reached the road'
     he-reach-PERF-(I) LOC road

Second, clauses in which a phrase has been moved from a position after the
verb to a position before the verb require the DNS-forms. More specifically,
the DNS-forms are required in relative clauses where an element other than the
subject of the relative clause is relativised, as in (76), in constructions
where an element other than the subject is frontshifted for focus, as in (78),
and in content questions ("wh-questions") where the question word is sentence-
initial, as in (80).

(76) ... mɨ́m ḿ'mé ámwá'kɛ́ ...   '... the wine which he is
          wine which he-drink-IMPF-(DNS)   drinking ...'

but cf.:

(77) àmwâg   mɨ́m   'he is drinking wine'
     he-drink-IMPF-(I) wine

(78) é'súbág cê ádyágáa   'it was fufu he was eating'
     fufu   FOC he-eat-IMPF-PAST-(DNS)

but cf. (79) without focus:

(79) àdyágáa   é'súbág   'he was eating fufu'
     he-eat-IMPF-PAST-(I) fufu

(80) nzɛ́ áčèléɛ   'whom will he call?'
     who he-FUT-call-APPL-(DNS)

but cf.:

(81) ăčèlé   mwǎn   'he will call the child'
     he-FUT-call-APPL-(I) child

If the question word or phrase is in a position after the verb, then the
I-form is required.

(82) ăčèlé   nzɛ́
     he-FUT-call-APPL-(I) who   'whom will he call?'

The DS-forms occur in two main contexts. First, clauses beginning with nzé
'if'.

(83) nzé ĕbàgè   wè mɔ̀nɛ́... 'if he has not given you money...'
     if he-NEG-give-PERF-(DS) you money

but cf.:

(84) ĕbàgĕɛ   wɛ̀ mɔ̀nɛ́   'he has not given you money'
      he-NEG-give-PERF-(I) you money

Second, clauses in which the subject is relativised, focussed and wh-questioned
require the DS-forms.

(85) ...mòd   àwĕ ĕ'kúnlɛ̂? ...   'the man who is not sick'
          person who he-NEG-sick-APPL-IMPF-(DS)

but cf.:

(86) mòd   ĕkùnlɛ́ɛ   'the man is not sick'
      person he-NEG-sick-APPL-IMPF-(I)

    Contexts where the I-forms occur can be stated negatively. The I-forms oc-
cur in all contexts other than those specified above for the DS and DNS-forms.
The major context for the I-forms is the independent clause. It is the form
used for the event line in narrative.

6. The Verb and Grammatical Categories
    In order to fully specify the verb forms of Akɔɔse, the necessary grammati-
cal categories are Tense, Aspect, Mood, and Polarity.

6.1. Tense. Tense, which makes reference to time, has three terms: PAST, FU-
TURE, and unmarked tense. Unmarked is sometimes interpreted as PRESENT, depend-
ing on the aspect marker or the inherent lexical meaning of the verb.
    To have only one PAST and one FUT is a rather unusual tense system in a geo-
graphical area where one frequently finds further distinctions in both future
and past tenses. For example, Abega [1976:24] reports three past and three fu-
ture tenses for Ewondo, and Koki Ndombo et al. [1971:59, 61, 79, 101] report at
least two past and two future tenses for Basaá. Both of these languages are
closely related to Akɔɔse and to each other. Anderson [1980:2-3] reports three
past and three future tenses for Ngyembɔɔn-Bamileke, and Tadadjeu [1975] (cf.
Hyman [1980:227-8]) specifies even five past and five future tenses for Dschang-
Bamileke. Both these languages are Grassfields Bantu languages to the north of
Akɔɔse.

6.2. Aspect. The category of aspect has two terms, PERFECT and IMPERFECT. The
latter is consistently marked by the marker -ɛ? , the former being unmarked.

However, where the unmarked tense intersects with the PERFECT aspect, the mark-
er -é occurs.

6.3. <u>Mood</u>. The category mood has the following three terms: INDICATIVE, HOR-
TATIVE, and IMPERATIVE. HORT and IMP have to be distinguished because in the
2nd person singular there are two distinct forms, one HORT, the other IMP:

(87) dyɛ́   'eat!' (IMP)

      édyɛ̂   'you should eat' (HORT)

6.4. <u>Polarity</u>. This category has the terms POSITIVE and NEGATIVE. Polarity
is included as a category in the description of the verb forms because the NEG
marker is fully integrated into the verb structure, making it impossible to iso-
late a NEG marker as such.

    Table 4 shows how the above categories intersect to yield the POS verb
forms.

Table 4: <u>Combinations of tense, aspect and mood</u>

POSITIVE		ASPECT			
		PERFECT	IMPERFECT		
MOOD	INDICATIVE	Ǹ... ʼ PAST PERF	...ɛ́? , áa PAST IMPF	PAST	TENSE
		...é (PRES) PERF	...ɛ̀? (PRES) IMPF	un- marked	
		â ... ʼ FUT PERF	â ...ɛ̀? FUT IMPF	FUTURE	
	HORTATIVE	ʼ... ˋ HORT PERF	ʼ... ɛ̀? HORT IMPF		
	IMPERATIVE	... ʼ IMP PERF	... ɛ́? IMP IMPF		

Several sets are noteworthy. IMPF is consistently marked by -ε? (For a discussion of variant forms of this marker, see section 2.5). PAST is marked by two different markers in the PERF and IMPF, whereas FUT has the same marker in each case. HORT has a H̥ tone prefix and a L̥ tone suffix. IMP, which has no person prefix, has a H̥ tone suffix. What Table 4 does not show is the fact that all the verbs in the INDICATIVE mood have two or three contextually dependent forms, whereas HORT and IMP mood have only one form (cf. Appendix 1).

Table 5 shows the intersection of categories in the NEG. The markers already known from Table 4 are put in brackets. In this way, the elements which are "added" in the NEG are clearly seen. Note that in each case the NEG marker e- is present. Especially note the kê N which accompanies the PAST marker in the PAST PERF NEG (for a more detailed discussion, see section 2.6). The contrasts which exist in the POS non-INDICATIVE forms between PERF and IMPF, HORT and IMP are neutralized in the NEG. Where there are four forms in the POS (cf. the bottom of Table 4), there is only one form for the NEG (cf. Table 5).

Table 5: Combination of tense, aspect and mood in the negative

NEGATIVE		ASPECT			
		PERFECT	IMPERFECT		
MOOD	INDICATIVE	e(Ǹ),kê N ...(′) PAST PERF NEG	e...(ɛ́?,áa) PAST IMPF NEG	PAST	TENSE
		e... (é) (PRES) PERF NEG	e ... (ɛ̀?) (PRES) IMPF NEG	un- marked	
		^ e (â) ...(′) FUT PERF NEG	^ e (â)...(ɛ́?) FUT IMPF NEG	FUTURE	
	HORTATIVE	e ...(ɛ̀?) HORT/IMP NEG			
	IMPERATIVE				

7. The Meanings and Usages of the Various Verb Forms

In this section we will discuss the meaning and usages we have observed of each verb form presented in Table 4.

7.1. The PAST PERFECT. This verb form refers to an event in the past with no effect in the present.

(88) àŋkɛ̌ á 'Tɔ́mbɛ́l   'he went to Tombel'

Example (88) says that someone went to a certain place and implies that he has come back, or that he is not necessarily there any longer. In discourse, the PAST PERF is used to introduce background material.

7.2. The PAST IMPERFECT. The PAST IMPF refers to an action which was going on in the past or a habitual action in the past. This form is also used in conditional clauses.

(89) nzé àkàgáa á 'Tɔ́mbɛ́l, ...   'if he had gone to Tombel, ...'

7.3. The (PRESENT) PERFECT. With verb stems referring to an action or process, the PERF form of the verb indicates a past event with an effect in the present.

(90) àdyédé   'he has eaten'

Example (90) means that someone has eaten and, by implication, is not now hungry.

    This could be viewed as a recent past, but the focus is more on the effect in the present. This is clear from verbs expressing a state, such as kín 'to be dry':

(91) ékíné   'it is dry'

The (PRES) PERF, therefore, can refer both to the past and to the present, depending on the inherent meaning of the verb stem. This is not surprising since tense (time reference) is not marked in this verb form (accounting for why PRESENT is placed in brackets). In discourse, the PERF is often used to carry along the story line.

7.4. The (PRESENT) IMPERFECT. The word PRESENT is put in brackets here also to show that in this verb form, tense is not marked. It is by implication that this form has a present meaning. It can either refer to an action or process going on in the present,

(92) àdyâg   ndyéd   'he is eating food'
      he-eat-IMPF food

(93) kàké ékíne?   'the cocoa is drying'
      cocoa it-dry-IMPF

or it may refer to habitual action:

(94) àsɔɔmè?   'he hides'
      he-hide-IMPF

which means that it is his habit to hide but he may not be hiding at that moment.

7.5. The FUTURE PERFECT and FUTURE IMPERFECT. These two forms make reference to events in the future, the PERFECT viewing the action or process as a whole, the IMPERFECT viewing the action or process as ongoing or a habitual action. In one construction, the FUT form of the verb is used without a future meaning.

(95) ŋkɔmmé áte mènútè dyôm bòŋ mɛbɛ̌l   ǹsɔ́n
      I-rested   minutes ten   then I-FUT-do work

      'I rested for ten minutes before I started work'

In the construction illustrated by (95), the future form makes explicit the fact that the first action took place *before* the second action which is expressed by the future form of the verb.

7.6. The HORTATIVE and the IMPERATIVE. Both the HORT and the IMP have a PERF and an IMPF form in the POS.

7.6.1. Imperative function. From a purely formal point of view, there is only a 2nd person singular IMP. The form used for the plural IMP is the 2nd person plural of the HORT.

(96) dyɛ́   'eat! (IMP PERF)'
(97) dyág   'continue to eat' (IMP IMPF)'
(98) nyídyɛ̂   'you (pl) eat! (HORT PERF)'
(99) nyídyâg   'you (pl) continue to eat (HORT IMPF)'

     In a command consisting of more than one verb, the first verb is in the IMP PERF, the second verb in the HORT (cf. Schadeberg [1980:507]).

(100) kɛ̌   ébwèŋ   mèndíb → kɛ̌bwèŋ mèndíb
      go-IMP you-fetch-HORT water

      'go and fetch some water!'

In the plural, both verbs are in the HORT form:

(101) nyíkὲ nyíbwὲŋ mὲndíb   'you(pl) go and fetch some water!'

7.6.2. <u>Jussive function</u>. The HORT form in the first person is what is usually
called "jussive", i.e. let me/us do ...:

(102) mbὲl ǹsɔ́n   'let me do the work!'

(103) dékàg   'let's go!'

7.6.3. <u>Hortative function</u>. The HORT form of the verb, in 3rd person plural,
has the function usually called "hortative":

(104) ákàg   'he should go'

(105) békὲ bébwὲŋ mὲndíb   'they should go and carry water'

7.7. <u>HORTATIVE in indirect commands</u>. In addition to the usages of the HORT
discussed above, there is one further important context in which it is found,
viz. in sentences embedded after verbs like hὲd 'to want', láŋ 'to tell'
and hɔ́b 'to say'.

(106) ŋ̀hὲdὲʔ mɛ̌   ákàg   'I want him to go'
       I-want RP(1st ps sg) he-go-HORT

(RP = Reporting particle (cf. Hedinger [1984a:90]))

(107) nyîláŋgé   mὲ bán   ŋ́kàg   'you(pl) told me to go'
       you(pl)-told me RP(pl) I-go-HORT

Appendix 1

1a. (PRESENT) IMPERFECT POSITIVE

I	underlying forms	rules	surface forms
	2 6 7		
(A1)	à+pìm+ɛ̀?		àpìmɛ̀?
(A2)	sê " "	(16)	sêpìmɛ̀?/sépìmɛ̀?
(A3)	bɛ́ " "		bɛ́pìmɛ̀?
(A4)	à+wɔ́g+ɛ̀?		àwɔ́gɛ̀?
(A5)	sê " "	(13)	sêwɔ́gɛ̀?/sé'wɔ́gɛ̀?
(A6)	bɛ́ " "		bɛ́wɔ́gɛ̀?

DS as I above

DNS	1 2 6 7 9				surface
(C1)	ɏ +à+pìm+ɛ̀?+ʔɛ́	4	5	5	ápìmɛ̌ɛ
(C2)	" sê " " "	"	"	"	sépìmɛ̌ɛ
(C3)	" bɛ́ " " "	"	"	"	bɛ́pìmɛ̌ɛ
(C4)	" à+wɔ́g " "	"	"	"	áwɔ́gɛ̌ɛ
(C5)	" sê " " "	"	"	"	séwɔ́gɛ̌ɛ
(C6)	" bɛ́ " " "	"	"	"	bɛ́wɔ́gɛ̌ɛ

1b. (PRESENT) IMPERFECT NEGATIVE

I	underlying forms	rules								surface forms
	2 3 6 7 9									
(A7)	à+e+pìm+ɛ̀?+?ɛ́	1	2	5	5	9	(12	13)		ɛ̆pìmɛ́ɛ/ɛ̆'pímɛ́ɛ
(A8)	sê " " " "	"	"	"	"	"	("	")	13	sɛ̂pìmɛ́ɛ/sɛ̂'pímɛ́ɛ
(A9)	bɛ́ " " " "	"	"	"	"	"				bɛ́pìmɛ́ɛ
(A10)	à " wɔ́g " "	"	"	"	"	"				èwɔ́gɛ́ɛ
(A11)	sê " " " "	"	"	"	"	"				sêwɔ́gɛ́ɛ
(A12)	bɛ́ " " " "	"	"	"	"	"	13			bɛ́'wɔ́gɛ́ɛ

DS	2 3 6 7	rules						surface forms
(B7)	à+e+pìm+ɛ̀?	1	2	9	12	13		ɛ̆'pímɛ́?
(B8)	sê " " "	"	"	"	"	"	13	sɛ̂'pímɛ́?
(B9)	bɛ́ " " "	"	"	"				bɛ́pìmɛ́?
(B10)	à " wɔ́g "	"	"	"				èwɔ́gɛ́?
(B11)	sê " " "	"	"	"				sêwɔ́gɛ́?
(B12)	bɛ́ " " "	"	"	"	13			bɛ́'wɔ́gɛ́?

DNS	1 2 3 6 7 9	rules							surface forms
(C7)	ŋ̍+ à+e+pìm+ɛ̀?+?ɛ́	1	2	4	5	5	9		ɛ́pìmɛ́ɛ
(C8)	" sê " " " "	"	"	"	"	"	"		sɛ́pìmɛ́ɛ
(C9)	" bɛ́ " " " "	"	"	"	"	"	"		bɛ́pìmɛ́ɛ
(C10)	" à " wɔ́g " "	"	"	"	"	"	"	13	ɛ́'wɔ́gɛ́ɛ
(C11)	" sê " " " "	"	"	"	"	"	"	"	sɛ́'wɔ́gɛ́ɛ
(C12)	" bɛ́ " " " "	"	"	"	"	"	"	"	bɛ́'wɔ́gɛ́ɛ

2a.   (PRESENT) PERFECT POSITIVE

I	underlying forms	rules	surface forms
	2 6 7		
(A13)	à+pìm+é		àpìmé
(A14)	sê " "	(16)	sêpìmé/sépìmé
(A15)	bé " "	15	bépímé
(A16)	à+wɔ́g "		àwɔ́gé
(A17)	sê " "		sêwɔ́gé
(A18)	bé " "		béwɔ́gé

DS as I above

DNS	1 2 6 7			surface
(C13)	H̥+ à+pìm+é	4	15	ápìmé
(C14)	" sê " "	"	"	sépímé
(C15)	" bé " "	(")	"	bépímé
(C16)	" à+wɔ́g "	"		áwɔ́gé
(C17)	" sê " "	"		séwɔ́gé
(C18)	" bé " "	(")		béwɔ́gé

2b. (PRESENT) PERFECT NEGATIVE

I	underlying forms	rules							surface forms
	2 3 6 7 9								
(A19)	à+e+pìm+é+ʔέ	1	2	5	6	9			ěpìm̌εε
(A20)	sê " " " "	"	"	"	"	"	13		sépìm̌εε
(A21)	bé " " " "	"	"	"	"	"			bépìm̌εε
(A22)	à " wɔ́g " "	"	"	"	"	"			èwɔ́gěε
(A23)	sê " " " "	"	"	"	"	"			sêwɔ́gěε
(A24)	bé " " " "	"	"	"	"	"	13		bé'wɔ́gěε

DS	2 3 6 7	rules				surface forms
(B19)	à+e+pìm+é	1	2	9		ěpìmè
(B20)	sê " " "	"	"	"	13	sépìmè
(B21)	bé " " "	"	"	"		bépìmè
(B22)	à " wɔ́g "	"	"	"		èwɔ́gè
(B23)	sê " " "	"	"	"		sêwɔ́gè
(B24)	bé " " "	"	"	"	13	bé'wɔ́gè

DNS	1 2 3 6 7 9	rules							surface forms
(C19)	ɰ̵+ à+e+pìm+é+ʔέ	1	2	4	5	6	9		épìm̌εε
(C20)	" sê " " " "	"	"	"	"	"	"		sépìm̌εε
(C21)	" bé " " " "	"	"	"	"	"	"		bépìm̌εε
(C22)	" à " wɔ́g " "	"	"	"	"	"	"	13	é'wɔ́gěε
(C23)	" sê " " " "	"	"	"	"	"	"	"	sé'wɔ́gěε
(C24)	" bé " " " "	"	"	"	"	"	"	"	bé'wɔ́gěε

3a. PAST PERFECT POSITIVE

I	underlying forms	rules			surface forms
	2 4 6 9				
(A25)	à+Ǹ+pìm+ɥ̥	10 11			àmp˥m
(A26)	sê " " "	" "			sêmp˥m
(A27)	bé " " "	" "	16		bémp˥m
(A28)	à " wɔ́g "	" "			àŋwɔ́g
(A29)	sê " " "	" "			sêŋwɔ́g
(A30)	bé " " "	" "	13		béŋ'wɔ́g

DS as I above

DNS	1 2 4 6 9							surface forms
(C25)	ɥ̥+ à+Ǹ+pìm+ʔɛ́	4	10	11	16	18a	(18b)	ámpìʔmɛ́/-pìmmɛ́
(C26)	" sê " " "	"	"	"	"	"	(")	sémpìʔmɛ́/-pìmmɛ́
(C27)	" bé " " "	"	"	"	"	"	(")	bémpìʔmɛ́/-pìmmɛ́
(C28)	" à " wɔ́g "	"	"	"	13	17		áŋ'wɔ́kɛ́
(C29)	" sê " " "	"	"	"	"	"		séŋ'wɔ́kɛ́
(C30)	" bé " " "	"	"	"	"	"		béŋ'wɔ́kɛ́

3b. PAST PERFECT NEGATIVE

I	underlying forms	rules	surface forms
	2 3 4 5 −[1] 6 9		
(A31)	à+e+Ǹ+kê+N+pìm+ʔɛ́	9 10 10 11 18a (18b)	èŋkêmpìʔmɛ́/-pìmmɛ́
(A32)	sê " " " " " "	" " " " " (")	sêŋkêmpìʔmɛ́/-pìmmɛ́
(A33)	bé " " " " " "	" " " " 13 " (")	béŋ'kêmpìʔmɛ́/-pìmmɛ́
(A34)	à " " " " wɔ́g "	" " " " 17	èŋkêŋwɔ́kɛ́
(A35)	sê " " " " " "	" " " " "	sêŋkêŋwɔ́kɛ́
(A36)	bé " " " " " "	" " " " 13 "	béŋ'kêŋwɔ́kɛ́

DS	2 3 4 5 − 6 9		
(B31)	à+e+Ǹ+kê+N+pìm+ʮ	9 10 10 11	èŋkêmpY̌m
(B32)	sê " " " " " "	" " " "	sêŋkêmpY̌m
(B33)	bé " " " " " "	" " " " 13	béŋ'kêmpY̌m
(B34)	à " " " " wɔ́g "	" " " "	èŋkêŋwɔ́g
(B35)	sê " " " " " "	" " " "	sêŋkêŋwɔ́g
(B36)	bé " " " " " "	" " " " 13	béŋ'kêŋwɔ́g

DNS	1 2 3 4 5 − 6 9		
(C31)	ʮ+ à+e+Ǹ+kê+N+pìm+ʔɛ́	4 9 10 10 11 13 18a (18b)	éŋ'kêmpìʔmɛ́/-pìmmɛ́
(C32)	" sê " " " " " "	" " " " " " " (")	séŋ'kêmpìʔmɛ́/-pìmmɛ́
(C33)	" bé " " " " " "	" " " " " " " (")	béŋ'kêmpìʔmɛ́/-pìmmɛ́
(C34)	" à " " " " wɔ́g "	" " " " " " 17	éŋ'kêŋwɔ́kɛ́
(C35)	" sê " " " " " "	" " " " " " "	séŋ'kêŋwɔ́kɛ́
(C36)	" bé " " " " " "	" " " " " " "	béŋ'kêŋwɔ́kɛ́

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[1]I have not assigned a position number to the "intrusive" N. Cf. section 2.6.

4a.   PAST IMPERFECT POSITIVE

I	underlying forms				rules			surface forms
	2	6	7	8				
(A37)	à+pìm+ɛ́ʔ+áa				5	8		àpìmáa
(A38)	sê	"	"	"	"	"	(16)	sêpìmáa/ʃepìmáa
(A39)	bɛ́	"	"	"	"	"	15	bɛ́pímáa
(A40)	à+wɔ́g	"	"		"	"		àwɔ́gáa
(A41)	sê	"	"	"	"	"	(13)	sêwɔ́gáa/sɛ́'wɔ́gáa
(A42)	bɛ́	"	"	"	"	"		bɛ́wɔ́gáa

DS as I above

DNS	1	2	6	7	8	rules				surface
(C37)	ŋ̊+	à+pìm+ɛ́ʔ+áa				4	5	8	15	ápímáa
(C38)	"	sê	"	"	"	"	"	"	"	sépímáa
(C39)	"	bɛ́	"	"	"	"	"	"	"	bɛ́pímáa
(C40)	"	à+wɔ́g	"	"		"	"	"		áwɔ́gáa
(C41)	"	sê	"	"	"	"	"	"		séwɔ́gáa
(C42)	"	bɛ́	"	"	"	"	"	"		bɛ́wɔ́gáa

4b. PAST IMPERFECT NEGATIVE

I

underlying forms	rules	surface forms
2 3 6 7 8 9		
(A43) à+e+pìm+ɛ́?+áa+ŋ̥	1 2 5 8 9	ĕpìmǎa
(A44) sê " " " " "	" " " " " 13	sêpìmǎa
(A45) bɛ́ " " " " "	" " " " "	bépìmǎa
(A46) à " wɔ́g " " "	" " " " "	èwɔ́gǎa
(A47) sê " " " " "	" " " " "	sêwɔ́gǎa
(A48) bɛ́ " " " " "	" " " " " 13	bé'wɔ́gǎa

DS

2 3 6 7 8	rules	surface
(B43) à+e+pìm+ɛ́?+áa	1 2 5 8 9	ĕpìmàa
(B44) sê " " " "	" " " " " 13	sêpìmàa
(B45) bɛ́ " " " "	" " " " "	bépìmàa
(B46) à " wɔ́g " "	" " " " "	èwɔ́gàa
(B47) sê " " " "	" " " " "	sêwɔ́gàa
(B48) bɛ́ " " " "	" " " " " 13	bé'wɔ́gàa

DNS

1 2 3 6 7 8 9	rules	surface
(C43) ŋ̥+ à+e+pìm+ɛ́?+áa+ŋ̥	1 2 4 5 8 9	épìmǎa
(C44) " sê " " " " "	" " " " " "	sépìmǎa
(C45) " bɛ́ " " " " "	" " " " " "	bépìmǎa
(C46) " à " wɔ́g " " "	" " " " " " 13	é'wɔ́gǎa
(C47) " sê " " " " "	" " " " " " " ·	sé'wɔ́gǎa
(C48) " bɛ́ " " " " "	" " " " " " "	bé'wɔ́gǎa

5a.   <u>FUTURE PERFECT POSITIVE</u>

I	<u>underlying forms</u>				<u>rules</u>						<u>surface forms</u>
	2	4	6	9							
(A49)	à+â+pìm+ɥ̥					7		16			ǎpⱢm
(A50)	sê	"	"	"	6	"	13	"			sɛ̂pⱢm
(A51)	bé	"	"	"	"	"		"			bépⱢm
(A52)	à	"	wɔ́g	"		"	"				ǎ'wɔ́g
(A53)	sê	"	"	"	"	"	"	13			sɛ̂'wɔ́g
(A54)	bé	"	"	"	"	"	"				bɛ́'wɔ́g

DS as I above

DNS	1	2	4	6	9						
(C49)	H̥+	à+â+pìm+ʔɛ́				4		7	16	18a	(18b)	ápì ʔmɛ́/-pìmmɛ́
(C50)	"	sê	"	"	"	"	6	"	"	"	(")	sɛ́pì ʔmɛ́/-pìmmɛ́
(C51)	"	bé	"	"	"	"	"	"	"	"	(")	bɛ́pì ʔmɛ́/-pìmmɛ́
(C52)	"	à	"	wɔ́g	"	"		"	13	17		á'wɔ́kɛ́
(C53)	"	sê	"	"	"	"	"	"	"	"		sɛ́'wɔ́kɛ́
(C54)	"	bé	"	"	"	"	"	"	"	"		bɛ́'wɔ́kɛ́

5b. FUTURE PERFECT NEGATIVE

I	underlying forms						rules					surface forms
	1	2	3	4	6	9						
(A55)	H͡L+	à+e+â+pìm+ʔɛ́					7	9	14	18a	(18b)	êpì ʔmɛ́/-pìmmɛ́
(A56)	"	sê	"	"	"	"	"	"	"	"	(")	sêpì ʔmɛ́/-pìmmɛ́
(A57)	"	bɛ́	"	"	"	"	"	"	"	"	(")	bêpì ʔmɛ́/-pìmmɛ́
(A58)	"	à	"	"	wɔ́g	"	"	"	"	17		êwɔ́kɛ́
(A59)	"	sê	"	"	"	"	"	"	"	"		sêwɔ́kɛ́
(A60)	"	bɛ́	"	"	"	"	"	"	"	"		bêwɔ́kɛ́

DS	1	2	3	4	6	9					
(B55)	H͡L+	à+e+â+pìm+ŋ					7	9	14		êpìm
(B56)	"	sê	"	"	"	"	"	"	"		sêpìm
(B57)	"	bɛ́	"	"	"	"	"	"	"		bêpìm
(B58)	"	à	"	"	wɔ́g	"	"	"	"		êwɔ́g
(B59)	"	sê	"	"	"	"	"	"	"		sêwɔ́g
(B60)	"	bɛ́	"	"	"	"	"	"	"		bêwɔ́g

DNS as I above

6a. <u>FUTURE IMPERFECT POSITIVE</u>

I	underlying forms	rules		surface forms
	2 4 6 7 9			
(A61)	à+â+pìm+ɛ́? (+ɏ̥)	7	16	ắpìmɛ́?
(A62)	sê " " " (")	6 " 13 "		sɛ̂pìmɛ́?
(A63)	bɛ́ " " " (")	" " "		bɛ́pìmɛ́?
(A64)	à " wɔ́g " (")	" "		ắ'wɔ́gɛ́?
(A65)	sê·" " " (")	" " " 13		sɛ̂'wɔ́gɛ́?
(A66)	bɛ́ " " " (")	" " "		bɛ́'wɔ́gɛ́?

DS as I above

DNS	1 2 4 6 7 9						surface forms
(C61)	ɏ̥+ à+â+pìm+ɛ́?+?ɛ́	4 5 5		7 16			ápìmɛ́ɛ
(C62)	" sê " " " "	" " "	6 " "				sɛ́pìmɛ́ɛ
(C63)	" bɛ́ " " " "	" " " " " "					bɛ́pìmɛ́ɛ
(C64)	" à " wɔ́g " "	" " "	" "				á'wɔ́gɛ́ɛ
(C65)	" sê " " " "·	" " " " " "					sɛ́'wɔ́gɛ́ɛ
(C66)	" bɛ́ " " " "	" " " " " "					bɛ́'wɔ́gɛ́ɛ

6b. FUTURE IMPERFECT NEGATIVE

I	underlying forms						rules					surface forms
	1	2 3 4	6	7	9							
(A67)	ĤĻ+	à+e+â+pɩ̀m+έ?+?έ					5	5	7	9	14	êpɩ̀mέε
(A68)	"	sê " "	"	"	"		"	"	"	"	"	sêpɩ̀mέε
(A69)	"	bέ " "	"	"	"		"	"	"	"	"	bêpɩ̀mέε
(A70)	"	à " "	wɔ́g	"	"		"	"	"	"	"	êwɔ́gέε
(A71)	"	sê " "	"	"	"		"	"	"	"	"	sêwɔ́gέε
(A72)	"	bέ " "	"	"	"		"	"	"	"	"	bêwɔ́gέε

DS		1	2 3 4	6	7	9		rules			surface forms
(B67)		ĤĻ+	à+e+â+pɩ̀m+έ?(+Ḥ)					7	9	14	êpɩ̀mέ?
(B68)		"	sê " "	"	"	"		"	"	"	sêpɩ̀mέ?
(B69)		"	bέ " "	"	"	"		"	"	"	bêpɩ̀mέ?
(B70)		"	à " "	wɔ́g	"	"		"	"	"	êwɔ́gέ?
(B71)		"	sê " "	"	"	"		"	"	"	sêwɔ́gέ?
(B72)		"	bέ " "	"	"	"		"	"	"	bêwɔ́gέ?

DNS as I above

7. IMPERATIVE PERFECT POSITIVE

	underlying forms	rules	surface forms
	6 9		
(A73)	pìm+ɥ̰		pˈím
(A74)	wɔ́g+ɥ̰		wɔ́g

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8. IMPERATIVE IMPERFECT POSITIVE

	6 7		
(A75)	pìm+ɛ́?		pìmɛ́?
(A76)	wɔ́g+ɛ́?		wɔ́gɛ́?

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9. INFINITIVE 1

	2 6		
(A77)	à+pìm		àpìm
(A78)	à+wɔ́g		àwɔ́g

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10. INFINITIVE 2

	1 2 6		
(A79)	ɥ̰+à+pìm	16	ápìm
(A80)	ɥ̰+à+wɔ́g	13	á'wɔ́g

11. HORTATIVE PERFECT POSITIVE

	underlying forms	rules	surface forms
	1 2 6 9		
(A81)	ʯ+ à+pìm+ʮ	4	ápìm
(A82)	" sê " "	"	sépìm
(A83)	" bé " "	"	bépìm
(A84)	" à+wɔ́g "	"	áwɔ́g
(A85)	" sê " "	"	séwɔ́g
(A86)	" bé " "	"	béwɔ́g

12a. HORTATIVE IMPERFECT POSITIVE

	1 2 6 7		
(A87)	ʯ+ à+pìm+è?	4	ápìmè?
(A88)	" sê " "	"	sépìmè?
(A89)	" bé " "	"	bépìmè?
(A90)	" à+wɔ́g "	"	áwɔ́gè?
(A91)	" sê " "	"	séwɔ́gè?
(A92)	" bé " "	"	béwɔ́gè?

12b. HORTATIVE NEGATIVE

	2 3 6 7							surface forms
(A93)	à+e+pìm+è?	1	2	9	(12	13)		ěpìmɛ́?/ě'pímɛ́?
(A94)	sê " " "	"	"	"	("	")	13	sêpìmɛ́?/sê'pímɛ́?
(A95)	bé " " "	"	"	"				bépìmɛ́?
(A96)	à " wɔ́g "	"	"	"				èwɔ́gɛ́?
(A97)	sê " " "	"	"	"				sêwɔ́gɛ́?
(A98)	bé " " "	"	"	"			13	bé'wɔ́gɛ́?

13.   "ALREADY" FORM

I	underlying forms	rules	surface forms
	2 5 6 9		
(A99)	à+kê+pìm+ɥ̀	16	àképɣ̀m
(A100)	sê " " "	"	sêképɣ̀m
(A101)	bé " " "	"	béképɣ̀m
(A102)	à " wɔ́g "	13	àké'wɔ́g
(A103)	sê " " "	"	sêké'wɔ́g
(A104)	bé " " "	"	béké'wɔ́g

DS as I above

DNS	1 2 5 6 9				surface
(C99)	ɥ̀+ à+kê+pìm+ʔɛ́	4 16 18a (18b)			áképì ʔmɛ́/-pìmmɛ́
(C100)	" sê " " "	" " " (")			séképì ʔmɛ́/-pìmmɛ́
(C101)	" bé " " "	" " " (")			béképì ʔmɛ́/-pìmmɛ́
(C102)	" à " wɔ́g "	" 13 17			áké'wɔ́kɛ́
(C103)	" sê " " "	" " "			séké'wɔ́kɛ́
(C104)	" bé " " "	" " "			béké'wɔ́kɛ́

Appendix 2

The following less common verb forms have been observed, primarily in texts, but are not included in the description. They are included here for the sake of completeness.

á'pím	'Neutral I'
ápìm	'Neutral II'
àsèpʸm	'Neutral negative'
á'pímmɛ́	'Neutral DNS-form'
ápìmmɛ́	'Consecutive, Repetitive'
àpìmɛ̂ɛ	'Perfect focus' ??
ěpímɛ́ɛ	'He has not yet thrown away' or
	'He has never thrown away'
ěpímé	'As soon as he threw away, ...' ??
ǎpìmmɛ́	' " " " " " " " ' ??
ǎpìmɛ́ɛ	' " " " " " " " ' ??
àkìdépʸm	'He has thrown away'
ákídépìmmɛ́	'He has thrown away (DNS-form)'
àdɛ̂pʸm	'Before he throws away'
ádɛ̀pʸm	'Let him not throw away'

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MOTION IN TSWANA AND ITS CHARACTERISTIC LEXICALIZATION[1]

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Characteristic patterns for the lexicalization of motion in Tswana,
a Southeastern Bantu language, are explored. Examination of con-
straints governing classes of verb roots referring to motion events
reveals two of the typological patterns put forward by Talmy [1984]
for the lexicalization of motion in natural language. The distin-
guishing feature of each pattern lies in the particular semantic
elements incorporated in a main clause verb root. The fact of Mo-
tion and Manner/Cause are incorporated in the verb root when lexi-
calizing complex location-motion events. However, when lexicaliz-
ing complex motion events of a directional nature, as well as both
locational- and directional- motion events of a less complex nature,
the verb root incorporates the fact of Motion and the Path which a
moving object takes.

1. Introduction

In Fillmore [1978] we gain appreciation for the wide variety of semantic di-
mensions along which sets of lexical items may differ in their underlying struc-
tural pattern. Among these dimensions our attention rests on those which have
led to discussion of so-called "characteristic" lexicalization patterns [Ullmann
1957:308]. By one recent account, a characteristic lexicalization pattern is
one which exhibits three important properties [Talmy 1984]. These are that the
pattern be colloquial in style, rather than literary; frequent in occurrence,
rather than seldom used; and pervasive, applicable across the breadth of a se-
lected semantic domain. Investigation of such characteristic patterns within a

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single domain has the potential to reveal language particular constraints gov-
erning the make up of lexical items in addition to constraints of a more uni-
versal nature.

Within this context, a potentially fruitful domain for investigation is
that of motion. In a number of different papers dealing with the lexicon [Gru-
ber 1965, Jackendoff 1976, Talmy 1975], there is reference to the potentially
unique status of the motion domain. In Talmy [1975], for example, the position
taken is that   those semantic structures specifying states or changes of
state are derived from structures which specify motion events, whereas the
converse does not hold. In a certain sense then, motion structures may be more
basic than those of state or change of state. An analysis of how verbs incor-
porate the salient dimensions of a motion event thus seems a natural point from
which to initiate analysis of the characteristic lexicalization patterns of a
language.

1.1. <u>Talmy's analysis of motion events</u>. A recent and evolving contribution to
our perspective on the lexicalization of motion events is found in Talmy [1972,
1975, 1984]. Of particular relevance is his claim that the lexicalization of
motion by natural languages falls into a limited number of types. In the fol-
lowing we utilize this typology to illuminate a system of constraints governing
the behavior of verb root forms in Tswana, a Southeastern Bantu language, and to
show how they reflect, at least for Tswana, two characteristic lexicalization
patterns.

Central to Talmy's perspective is the notion of a motion event, which he de-
fines as one object moving or located with respect to another object. This
event is delineated at the semantic level by a structure consisting of the ele-
ments Figure, Motion, Path, and Ground. At the surface level, these semantic
elements are realized in a limited number of ways, and below we take advantage
of patterns existing in English in order to illustrate and define them.

The notion Figure refers to an object moving or located with respect to
another object, and Ground refers to the object serving as a frame or reference
point with respect to which the Figure moves. In the English sentence, "The
boy moved toward the house," the Figure object is realized by the noun *boy* and
Ground by the noun *house*. Of the remaining two elements, Motion indicates that

reference is being made to a situation containing movement. In our English
sentence this is realized by the verb *moved*. Finally, Path refers to the
course followed or site occupied by the Figure object relative to the Ground;
it is realized by the form *toward*.

The structural unit constituted by the elements Figure, Motion, Path, and
Ground can also serve to delineate a more complex motion event by having ad-
joined to it either of the elements Manner or Cause. These latter elements
specify that an act of motion is carried out in a particular manner or fashion,
or is the result of another causal event respectively. For example, though the
semantic structure of *the boy moved toward the house* is quite similar to that of
the boy ran toward the house, the latter incorporates in the verb *ran* not only
the element of Motion, but the Manner, e.g. *running*, in which that motion is ex-
pressed. One can thus distinguish, as we will below, a basic verb root from one
semantically more complex by reference to whether it incorporates either of the
elements Cause or Manner. Basic verb roots, e.g. *move*, do not incorporate these
elements while complex roots incorporate either, e.g. *run*.

With respect to the linguistic expression of a motion event in Tswana, our
principle task, as outlined by Talmy [1984], becomes one of discovering which
semantic element or elements are incorporated in the surface level verb root.
It is conceivable that a verb root in a given language could typically incorpor-
ate combinations of elements such as Figure+Motion, Motion+Path, Motion+Cause,
Motion+Manner, or Motion+Ground. Based on cross-language analyses within his
framework of constructs, Talmy argues that the lexicalization of a motion event
is limited to only three types. Moreover, each of these types appears in a dif-
ferent language or language family as characteristic [Talmy 1984]. We will il-
lustrate two of these typological patterns below but only mention the third,
since it does not bear on the Tswana data.

1.2. <u>Talmy's typological patterns</u>. The first typological pattern is revealed
by a surface level verb root which expresses motion occurring in various manners
or due to various causes. The defining feature of this type is the incorpora-
tion in the verb root of the fact of motion and either its Cause or Manner, i.e.
Motion+Manner or Motion+Cause. Most branches of Indo-European, except Romance,
as well as Chinese rely on this as their characteristic lexicalization pattern.

For purposes of illustration, the motion events referred to by the English sentences in (1) are offered.

(1) a.   The bottle rolled down the hill.
    b.   The bottle blew down the hill.

Analyzing these sentences within Talmy's theoretical framework, we find that *bottle* specifies the Figure, *hill* the Ground, and *down* the Path, the course which the Figure object's motion follows. The verb *roll* in (1a) incorporates not only the fact that Motion has occurred but that it has occurred in a rolling, as opposed to say a sliding, Manner. In (1b) on the other hand, the verb *blew* incorporates the fact that Motion has occurred and that it is due to a Cause element of the wind blowing, rather than, for example, of the river washing.

We can tease apart the meaning constituents of these verb roots, in the fashion of Talmy, through examination of the respective paraphrase sentences in (2).

(2) a.   The bottle moved down the hill, rolling the while.
    b.   The bottle moved down the hill, from the wind blowing on it.

Decomposing the meaning of the erstwhile main verb in this way reminds us that the verb *roll* incorporates both a Motion constituent (move) and a Manner constituent (rolling), and that *blow* incorporates both Motion (move) and Cause (from wind blowing on it).

In contrast to this typological pattern is one where the surface verb expresses motion along various paths. The defining feature of this type is a verb root which incorporates both the fact of Motion and its Path, i.e. Motion+Path. If Manner or Cause is expressed at the surface level, it is manifested as a dependent clausal constituent, e.g. adverbial, gerundive, or participial clause. According to Talmy [1984], this clausal constituent is stylistically awkward in some languages, with the result that accompanying discourse, rather than syntactic form, is the immediate source of information pertaining to Manner or Cause. The language families which exhibit this second pattern as characteristic include Semitic, Polynesian, and from Indo-European, Romance. Taking Spanish as an example of Romance, we can illustrate the general pattern in the following

sentences,

(3) La botella cruzo   el canal.   (flotando)
     the bottle move-across the canal   floating

     'the bottle floated across the canal'

Here the nominals *botella* and *canal* refer to the Figure and Ground objects re-
spectively, while the verb root *cruzo* incorporates the fact of Motion (move) and
its Path (across). As for the Manner constituent *flotando*, it is shown in pa-
renthesis to highlight the fact that being stylistically awkward, it is deleted
in Spanish. As this example indicates, Talmy's second typological pattern re-
veals a verb root incorporating the fact of Motion and its Path.

   In the third and final lexicalization type, the surface verb expresses a
kind of object or material as moving or located. The defining feature of this
type is that the verb root incorporates the fact of Motion together with the Fi-
gure. Languages manifesting this pattern include the Amerindian languages Atsu-
gewi, of Hockan stock, and Navajo. Since this pattern is not reflected in the
Tswana data, we will do no more than note its existence here.[2]

   Drawing on examples from Talmy [1984] we have seen that lexicalization pat-
terns in the domain of motion fall into one of three types. These types, in
turn, are the result of examining verb root forms for their incorporation of giv-
en semantic elements. For the purpose of review, Table 1 on the following page
schematically represents the two typological patterns most relevant for this
study.

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   [2]The third typological pattern discussed by Talmy [1984] is illustrated by
Atsugewi. In this pattern the fact of Motion and the Figure object are incor-
porated in a main clause verb root. Below we see an example where the morpheme
ca specifies Manner, st'ag' , Figure+Motion, and içt' , Path+Ground.

              w: third person
              ca: from wind blowing on the Figure object
              st'aq': for runny material to move, e.g. guts
              ict': into liquid

   / w------ca-------st'aq'----------------içt'------------a /
             blow   guts move   into creek

      'the guts blew into the creek'

Figure   Motion   Path   Ground   { Manner }
                                              { Cause }

Motion+Manner incorporated in verb root
                    or
Motion+Cause incorporated in verb root

Figure   Motion   Path   Ground   { Manner }
                                              { Cause }

Motion+Path incorporated in verb root
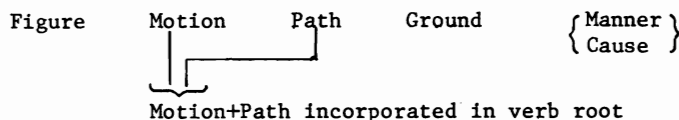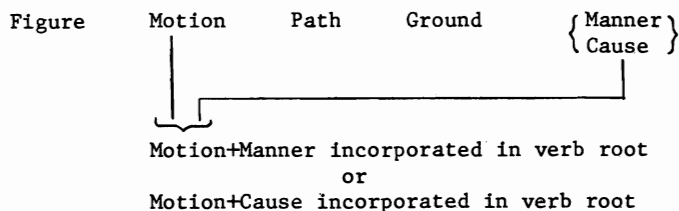
Table I.   Two typological patterns for the lexicalization of motion
           drawn from Talmy [1984].

2.   The Expression of Motion in Tswana

   Before devoting our attention to how particular verb roots are used to ex-
press a motion event in Tswana, we will sketch a general overview.[3] In the
first section to follow our focus is on a set of verb root forms which partici-
pate in structures specifying a complex motion event, that is, they specify
either the Manner or Cause of an event.   These verbs can occur in each of three
categories of distributionally defined motion events, events that will be la-
belled location-confined, location-directed, and, simply, directional. As a mo-
tivation for these categories we offer two constraints: The Applied Extension
Constraint and the Main Clause Constraint.

   The Applied Extension Constraint distinguishes location-confined from loca-
tion-directed motion. For the linguistic expression of location-directed motion,
the applied suffix -ẹl- must occur, while for location-confined motion it must
not. Nonetheless, common ground between these two categories of motion emerges
when viewed from the perspective of lexicalization. Both categories are lexical-
ized by a verb root incorporating Motion+Manner or Motion+Cause.

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   [3]The Tswana examples are here presented in line with the orthographic con-
ventions found in Cole [1962]. The symbols which deviate most from standard
phonetic symbols are g and kg , which represent voiceless velar fricative and
voiceless velar affricate respectively.

The Main Clause Constraint, with respect to this same set of verbs, further suggests that locational motion, i.e. location-confined and location-directed, be distinguished from purely directional motion. This constraint reflects the fact that the verb root forms which occur in the main clause in locational structures, must, in directional structures, occur in a subordinate, participial clause. The verb root which does occur in the main clause in directional structures lexicalizes Motion+Path, with Manner being specified in the participial clause. Thus, for this first set of verb roots, not one, but two of Talmy's lexicalization patterns appear to be characteristic.

In a second section our focus is on a smaller set of verb root forms. They participate, without reference to Manner or Cause specifying elements, in structures specifying a basic as opposed to a complex motion event, and in general, neither of the constraints mentioned above applies. Instead, a form of suppletion occurs which reflects a categorization of motion events into location-directed and directional. These verbs then do not occur in structures specifying location-confined motion. In line with the notion of suppletive forms, the categories of location-directed and directional motion are lexicalized in this verb set by only one typological pattern, the same one in fact witnessed in the main clause of structures expressing complex directional motion. No new pattern is thus encountered, though we discover how one characteristic pattern is employed to lexicalize both location-directed and directional motion.

2.1. <u>Location-confined motion with -tábóg-</u> . To begin, our attention is directed to expressions of motion involving the verb -tábóg- meaning 'to run'. Expressions of location-confined motion with this verb, as with other verbs of its type, show a Figure object in a state of motion confined to a location, a location specified by the Ground object, e.g. *the boy is running on top of the hill*. A representative sample of sentences with -tábóg- is illustrated in Table II on page 64.

The principle typological feature illustrated in Table II is a verb root that incorporates the fact of Motion and its Manner. The remaining semantic constituents of a motion event are specified by individual lexical items. For instance in (II,1), the moving object, the Figure, is specified by mòsîmàné

1. mò-símàné   ó-tábóg-à   fá-gòdímò   gá-thàbà
    CL 1-boy   he-run-IMP   NEARBY-top   LOC-mountain

    'the boy is running on top of the mountain'

2. mò-símàné   ó-tábóg-à   fá-tlàsé   gá-dì-tlhàrè
    CL 1-boy   he-run-IMP   NEARBY-under   LOC-CL 8-tree

    'the boy is running under the trees'

3. mò-símàné   ó-tábóg-à   fá-pèlè   gá-ǹ-tlò
    CL 1-boy   he-run-IMP   NEARBY-front   LOC-CL 9-house

    'the boy is running in front of the house'

4. mò-símàné   ó-tábóg-à   fá-mòrágò̀   gá-ǹ-tlò
    CL 1-boy   he-run-IMP   NEARBY-back   LOC-CL 9-house

    'the boy is running in back of the house'

5. mò-símàné   ó-tábóg-à   fá-gàúfí   gá-ǹ-tlò
    CL 1-boy   he-run-IMP   NEARBY-near   LOC-CL 9-house

    'the boy is running near the house'

6. mò-símàné   ó-tábóg-à   fá-gàré   gá-dì-tlhàrè
    CL 1-boy   he-run-IMP   NEARBY-between   LOC-CL 8-tree

    'the boy is running between the trees'

7. mò-símàné   ó-tábóg-à   fá-ǹtlé̵   gá-kàgò̀
    CL 1-boy   he-run-IMP   NEARBY-outside   LOC-building

    'the boy is running outside the building'

8. mò-símàné   ó-tábóg-à   fá-tèǹg̀   gá-kàgò̀
    CL 1-boy   he-run-IMP   NEARBY-inside   LOC-building

    'the boy is running inside the building'

9. mò-símàné   ó-tábóg-à   màbàpì   lé-kàgò̀
    Cl 1-boy   he-run-IMP   alongside   and-building

    'the boy is running alongside the building'

10. mò-símàné   ó-tábóg-à   lé-mò-rùtí
    CL 1-boy   he-run-IMP   and-CL 1-teacher

    'the boy is running with the teacher'

Table II. location-confined expressions with the verb -tábóg- .

and the background against which this movement is perceived, the Ground, is
specified by thàbà . Specifying one relationship between these two objects is
the verb root -tábóg- , which incorporates the element Motion as well as the
Manner, running, in which that motion is carried out. Last of all, the partic-
ular site, the Path, within which is confined the Figure object's motion, is
specified by the form gòdímò . Thus each surface level constituent realizes
one of the semantic elements defining a motion event except the verb root,
which in the sentences above incorporates the fact of Motion and its Manner.

In passing, it might have been noticed that various prefixes can be ad-
joined to the Path and Ground specifying constituents. In Table III on page
66, for instance, the marker fá- , indicating the relative nearness of the
Ground object to the speaker, is prefixed to the constituent realizing the Path
as is the marker kwá- , indicating a greater distance. Neither of these mark-
ers is obligatory, though the locative marker gá- , or in some instances, the
conjunction marker lé- , is obligatory when adjoined to the Ground constitu-
ent. Additional details concerning these markers can be found in Cole [1955]
and Cole [1962].

2.2. <u>Locational-directed motion with -tábóg- </u>. Consonant with the typologic-
al pattern illustrated by location-confined motion, is that of location-direct-
ed motion. Expressions of location-directed motion reveal a Figure object in a
state of motion directed toward a location specified by the Ground object, e.g.
the boy is running to the top of the hill. A sample of illustrative sentences
constructed with the verb -tábóg- is shown in Table III, page 66.

As one quickly discovers, these sentences are nearly identical in form to
those in Table II. In (III,1) for instance, mòsímàné functions as the Figure
and thàbà as the Ground. The verb root -tábóg- incorporates both the fact
of Motion and its Manner of occurrence, 'running'. And the form gòdímò , at
least on initial inspection, would appear to specify the Path. To this point,
the sentences in Table II and III are identical in form.

Closer inspection, however, reveals a general constraint governing these
expressions. That is, location-directed motion requires that the form -èl-
be suffixed to the verb root. Let us examine the behavior of this form more
carefully. For the sake of discussion, consider the two sentences in (4), with

1. mò-símàné   ó-tábóg-èI-à   kwá-gòdímò   gá-thàbà
   CL 1-boy   he-run-to-IMP   DISTANT-top   LOC-mountain

   'the boy is running to the top of the mountain'

2. mò-símàné   ó-tábóg-èI-à   kwá-tIàsé   gá-thàbà
   CL 1-boy   he-run-to-IMP   DISTANT-under   LOC-mountain

   'the boy is running to the bottom of the mountain'

3. mò-símàné   ó-tábóg-èI-à   fá-pèlè   gá-ǹ-tIò
   CL 1-boy   he-run-to-IMP   NEARBY-front   LOC-CL 9-house

   'the boy is running to the front of the house'

4. mò-símàné   ó-tábóg-èI-à   fá-mòrágò̩   gá-ǹ-tIò
   CL 1-boy   he-run-to-IMP   NEARBY-back   LOC-CL 9-house

   'the boy is running to the back of the house'

5. mò-símàné   ó-tábóg-èI-à   fá-tIù-ǹg
   CL 1-boy   he-run-to-IMP   NEARBY-house-LOC

   'the boy is running to the house'

6. mò-símàné   ó-tábóg-èI-à   mó-tIù-ǹg
   CL 1-boy   he-run-to-IMP   INSIDE-house-LOC

   'the boy is running into the house'

7. mò-símàné   ó-tábóg-èI-à   fá-gàré   gá-Ièsàká
   CL 1-boy   he-run-to-IMP   NEARBY-middle   LOC-CL 5-kraal

   'the boy is running to the middle of the kraal'

8. mò-símàné   ó-tábóg-èI-à   kwá-ǹtIé̩   gá-kàgò̩
   CL 1-boy   he-run-to-IMP   DISTANT-outside LOC-building

   'the boy is running to the outside of the building'

9. mò-símàné   ó-tábóg-èI-à   fá-tè̩ǹg   gá-kàgò̩
   CL 1-boy   he-run-to-IMP   NEARBY-inside   LOC-building

   'the boy is running to the inside of the building'

10. mò-símàné   ó-tábóg-èI-à   mòséjà   gá-nòkà
    CL 1-boy   he-run-to-IMP   other side   LOC-river

    'the boy is running to the other side of the river'

11. mò-símàné   ó-tábóg-èI-à   ǹtIhè̩ǹg   yá-kàgò̩
    CL 1-boy   he-run-to-IMP   in the direction LOC-building

    'the boy is running in the direction of the building'

   <u>Table III</u>. Location-directed expressions with the verb -tábóg- .

the accompanying glosses as indicated.

(4) a. *mòsímàné ó-tábóg-à gòdímò gá-thàbà
         boy   he-run-IMP top   mountain

   'the boy is running to the top of the mountain'

   b. *mòsímàné ó-tábóg-èl-à gòdímò gá-thàbà
       boy   he-run-to-IMP top   mountain

   'the boy is running on top of the mountain'

When the form -èl- is not adjoined to the verb but the accompanying gloss
conveys the notion of "to-ness", as in (4a), the sentence is judged unaccept-
able. Conversely, when the form -èl- is adjoined to the verb, but the gloss
does not convey the notion of "to-ness", the sentence is also judged unaccept-
able. Hence (4b) is starred.

   That the form -el- does indeed convey the general notion of "to-ness" can
be seen by examining (III,5) in the context of the remaining sentences. In
(III,5) only the general directional element 'to' is conveyed, while the re-
maining sentences convey this meaning in addition to a more specific course of
movement, i.e. top, bottom, etc. It appears, therefore, that linguistic ex-
pression of certain motion events, location-directed motion to be specific, re-
quires the suffix -èl- , while expression of another kind of motion event, lo-
cation-confined, does not.

   Previous investigation of Tswana has noted the significance of the marker
-èl- . Cole [1955:199] refers to it as the Applied Extension, further indicat-
ing that it has the general significance of "action carried out... with respect
to some thing or place." The form -èl- and its general meaning are thus rec-
ognized in grammatical descriptions of Tswana. What we wish to highlight,
nonetheless, is its obligatory occurrence with complex motion verbs and its
Path specifying function in expressions of location-directed motion.

   From the preceding analysis a complication arises. Having said that the
form -èl- in the sentences in Table III specifies the Path element, and in-
deed is necessary for grammatical well-formedness, one needs to reanalyze the
constituent previously identified as specifying the Path, i.e. the form gòdímò
in (III,1). This form, and others of similar grammatical standing do appear to
specify the course of the Figure object's movement, which is the defining fea-

ture of a Path constituent, but they seem only to specify further the nature of that course. In light of this, we maintain that expressions of location-directed motion can employ two Path markers, the form -èl- plus one other. Thus, in (III,1) -èl- and gòdímò each constitute Path markers.

Though Path markers other than -èl- are not required for the grammatical expression of location-directed motion, there is no reason to suspect that motion expressing sentences should be confined to only one Path marker. Talmy [1984], for instance, argues that the number of Path markers specified for a single motion event has no obvious limit. He cites in this regard sentence (5), spoken by a parent to a child in a tree house, where four Path markers are specified.

(5) Come right *back down from up* there.

The examples from Tswana are not so extreme. But notice that of the two Path markers which can occur in expressions of location-directed motion, only -èl- is obligatory. In recognition of this obligatory status, we will refer to the form -èl- as a Primary Path marker. Other Path markers, e.g. -pèlè , -gòdímò , -tlàsé , etc., which occur as separate lexical items and which also occur in expressions of location-confined motion, we will designate Secondary Path markers. Thus location-confined motion is expressed only with Path markers identified as Secondary, but location-directed motion is expressed with an obligatory Path marker identified as Primary and with an optional Secondary Path marker.

As we have seen, the principle formal difference between expressions of location-confined and location-directed motion is a constraint governing the distribution of the Primary Path marker, -èl- , it being obligatory with the latter but not with the former. Despite this difference, we have discovered common ground between these two expressions of motion. That is, both manifest a verb root incorporating the fact of Motion and the Manner in which that motion occurs. It is this behavior of the verb -tábóg- and others to follow which leads us to maintain that for Tswana, incorporating Motion+Manner in the verb root is a characteristic lexicalization pattern.

2.3. <u>Directional Motion with -tábóg-</u> . A contrasting lexicalization pattern
is revealed by sentences conveying directional motion. Emphasis here is not on
the movement of the Figure object as directed to the Ground object, as in loca-
tion-directed motion, nor on the Figure object's movement as circumscribed by a
location relative to the Ground object, as in location-confined motion. Rather
the movement of the Figure object is carried out with respect to a variety of
directions other than that conveyed by simple "to-ness". For purposes of il-
lustration and comparison, we will again limit ourselves to expressions involv-
ing the verb -tábóg- , taking the sentences in Table IV on page 70 as a repre-
sentative sample. The question we will ask about these sentences is where
among the surface level morphemes the semantic elements defining a motion event
are distributed.

The sentences in Table IV reveal a significant constraint which should not
escape our notice. Note, therefore, that the clausal position of -tábóg- is
in contrast to the sentences shown in Tables II and III, where it occurred in
the main clause. With reference to (IV,1), the verb -tábóg- occurs in a par-
ticipial structure, one in fact that is not obligatory if the appropriate con-
textual conditions are met. The participial nature of this clause, nonethe-
less, is formally recorded by the subject agreement marker á- , prefixed to
-tábóg- . In a nonparticipial clause, a main clause for example, the agreement
marker employed for a Class 1 noun like mòsímànè would be ó- . (See Cole
[1955] for further discussion). Since -tábóg- does occur in a subordinate
clause, and an optional one at that, the question we need to ask is which ele-
ments of a motion event are lexicalized in the main clause and which in the
subordinate.

When one analyses (IV,1) for example, it is the verb root in the main
clause, -tsw- , which conveys the general notion of movement, indicated by the
gloss 'move', as well as its directional nature, indicated by 'out'. Other
main clause verb roots shown in Table IV differ in meaning from -tsw- primar-
ily by the nature of their incorporated directional element. These verb roots
thus lexicalize both the fact of Motion and the Path which the Figure object
follows. What then does the verb root in the participial clause convey? Giv-
en the semantic elements available in Talmy [1984], the verb root -tábóg- in

1. mò-símàné   ó-tsw-à   mó-tlù-ǹg   á-tábóg-à
   CL 1-boy   he-move out-IMP   INSIDE-house-LOC   he-run-IMP
   'the boy is running out of the house'

2. mò-símàné   ó-rálálèl-à   kgòrò   á-tábóg-à
   CL 1-boy   he-move through-IMP   doorway   he-run-IMP
   'the boy is running through the doorway'

3. mò-símàné   ó-tshél-à   lè-sàká   á-tábóg-à
   CL 1-boy   he-move across-IMP   CL 5-kraal   he-run-IMP
   'the boy is running across the kraal'

4. mò-símàné   ó-pótólòg-à   pètsè   á-tábóg-à
   CL 1-boy   he-move around-IMP   well   he-run-IMP
   'the boy is running around the well'

5. mò-símàné   ó-tlóg-èl-à   ǹ-tlò   á-tábóg-à
   CL 1-boy   he-move away-from-IMP CL 9-house   he-run-IMP
   'the boy is running away from the house'

6. mò-símàné   ó-tlól-à   thàbà-nà   á-tábóg-à
   CL 1-boy   he-move over-IMP   mountain-DIM   he-run-IMP
   'the boy is running over the hill'

7. mò-símàné   ó-pálám-à   thàbà   á-tábóg-à
   CL 1-boy   he-move up-IMP   mountain   he-run-IMP
   'the boy is running up the mountain'

8. mò-símàné   ó-págólòg-à   thàbà   á-tábóg-à
   CL 1-boy   he-move down-IMP   mountain   he-run-IMP
   'the boy is running down the mountain'

<u>Table IV</u>. Directional expressions with the verb -tábóg-

Table IV would appear to convey only the Manner in which the motion event oc-
curred, a 'running' manner. To recapitulate, the verb root in the main clause
specifies the Motion and Path elements of the motion event, and the verb root
in the participial clause specifies only the Manner in which that event is car-
ried out.

Pursuing our analysis further we must recognize that the linear order of the verb roots in sentence (IV,1), for example, is constrained. They cannot be inverted, as in (6) below, and still maintain a level of grammatical acceptability.

(6) *mòsímàné ó-tábóg-à mó-tlùng   á-tswà
     boy   he-run-IMP INSIDE-house he-move out
     'the boy is running out of the house'

Nor is it possible to maintain grammatical acceptability by adjoining the Applied Extension to the verb in either clause, (7) and (8), or by inverting the root forms and adjoining the Applied Extension to the main verb clause, as in (9).

(7) *mòsímàné ó-tswà   mó-tlùng   á-tábóg-èl-à
     boy   he-run out INSIDE-house he-run-to-IMP
     'the boy is running out of the house'

(8) *mòsímàné ó-tábóg-èl-à mó-tlùng   á-tsw-à
     boy   he-run-to-IMP INSIDE-house he-move out-IMP
     'the boy is running out of the house'

(9) *mòsímàné ó-tsw-èl-à   mó-tlùng   á-tábóg-à
     boy   he-move out-to-IMP INSIDE-house he-run-IMP
     'the boy is running out of the house'

This attempted use of the Applied Extension raises another issue. The main clause verbs in Table IV, as a rule, do not adjoin with the Applied Extension -èl- . Thus there is no base form *-ralal- or *-tsh- from which the main verbs in sentences (IV,2) and (IV,3) might be derived. However the verb root in (IV,5) is composed of the root -tlòg- plus the suffix -èl- . Does this square with our previous analysis of the form -èl- ? Though it was used in expressions of motion directed 'to' a location in previously analyzed sentences, the appearance of -èl- in (IV,5) is not consistent with this meaning. The meaning here is motion directed 'from' rather than 'to' the location specified by the Ground object. No other sentence in Table IV refers to motion in a direction 'from' the Ground specifying object independent of other considerations. One might suspect that the verb root -tsw- in (IV,1), referring as it does to motion in a direction 'out' of the Ground object, would accept the Ap-

plied Extension. It does not, however, and this appears due to the fact that
reference is not restricted to motion directed 'from' an object. That is,
-tsw- refers to motion 'from' an enclosed space, i.e. 'out from inside an en-
closure'. In sum, the behavior of the form -èl- is such that it is used in
constructions specifying motion which is directed either 'to' or 'from' a
Ground object. In no way, however, does this behavior detract from the viabil-
ity of the Applied Extension Constraint or from the fact that the verb -tlòg-
patterns as other main clause verb roots in expressions of directional motion
involving the complex motion verb -tábóg- .

   Returning to our main point, we have examined a constraint which in expres-
sions of directional motion requires that verb roots of the type -tábóg- oc-
cur in a subordinate participial clause. In light of this constraint and the
elements of a motion event specified by verb roots occurring in the main clause
of directional motion sentences, we suggest that for Tswana a second lexicali-
zation pattern is characteristic. In this second pattern, the verb root lexi-
calizes the elements Motion+Path. The distribution of this pattern is a com-
plement to the other pattern we claim as characteristic. That is, the lexical-
ization patterns Motion+Manner and Motion+Path are in complementary distribu-
tion with respect to the general distinction between locational and directional
motion. Summarizing to this point, we will maintain that two lexicalization
patterns are characteristic in Tswana, the conflation of Motion+Manner, and the
conflation of Motion+Path.

2.4. <u>Motion expressions with -kíbítl-</u> . The lexicalization patterns just
surveyed are not peculiar to the verb -tábóg- . They are widespread, being
found among at least the Manner specifying verbs shown in Table V on page 73.
Taking the verb -kíbítl- , meaning 'to run with heavy footfall', as a further
example, one finds evidence of both lexicalization patterns claimed to be char-
acteristic. To this end, consider the sentences in Table VI on page 74, where
one finds expressions of location-confined motion. Since the nominals function-
ing as Figure and Ground are carried over from earlier sentences with -tábóg- ,
analysis of these sentences should be relatively straightforward. Accordingly,
in the first example of Table VI, the verb root -kíbítl- specifies the seman-
tic elements Motion+Manner and gòdímò the element Path.

1. gòkíbítlà   :   to run with heavy footfall
2. gògágábà   :   to crawl
3. gògwáṅtà   :   to walk in long strides
4. gòrágògà   :   to bolt
5. gòshápà   :   to swim
6. gòkgókólògà :   to roll
7. gòkǫ́kǫ́rǫ̀gà   :   to walk in a proud fashion
8. gògǫ́gǫ́bà   :   to walk dragging the feet
9. gòtótǫ́bà   :   to walk in a tottering fashion
10. gòkgópógà   :   to walk quickly
11. gòkǫ́kǫ́bà   :   to walk gingerly
12. gòsíà   :   to flee
13. gòsíánà   :   to run
14. gòfófà   :   to fly
15. gòpálámà   :   to ride
16. gòtshàbà   :   to flee
17. gòę̀là   :   to flow

Table V.   Additional Manner specifying verbs.

Similarly lexicalized is location-directed motion, as in Table VII on page 75. Here the elements Motion and Manner are specified in the verb root. Evidence of the Applied Extension Constraint is also observed, since the form -ę̀l- , as the designator of the Primary Path, is obligatorily suffixed to the verb root.

Reflecting an expected difference in lexicalization pattern is the expression of directional motion. As examination of the sentences in Table VIII on page 76 indicates, the different reflexes of the Main Clause constraint are evident. The verb -kíbítl- does not occur in the main clause, occurring only in the subordinate participial clause. The clausal status of this verb is again revealed by the concord marker á- , rather than the ó- which occurs in main clauses. As with our earlier analysis, the semantic elements defining a complex motion event are distributed across both clauses. The verb root in the

1. mò-símàné   ó-kíbítl-à   fá-gòdímò   gá-thàbà
    CL 1-boy   he-run whf-IMP NEARBY-top   LOC-mountain

    'the boy is running with heavy footfall on top of the mountain'

2. mò-símàné   ó-kíbítl-à   fá-tlàsé   gá-dì-tlhàrè
    CL 1-boy   he-run whf-IMP NEARBY-under   LOC-CL 8-tree

    'the boy is running with heavy footfall under the trees'

3. mò-símàné   ó-kíbítl-à   fá-pèlè   gá-ǹ-tlò
    CL 1-boy   he-run whf-IMP NEARBY-front   LOC-CL 9-house

    'the boy is running with heavy footfall in front of the house'

4. mò-símàné   ó-kíbítl-à   fá-mòrágò̀   gá-ǹ-tlò
    CL 1-boy   he-run whf-IMP NEARBY-back   LOC-CL 9-house

    'the boy is running in back of the house'

5. mò-símàné   ó-kíbítl-à   fá-gàúfí   gá-ǹ-tlò
    CL 1-boy   he-run whf-IMP NEARBY-near   LOC-CL 9-house

    'the boy is running with heavy footfall near the house'

Table VI. Location-confined expressions with the verb -kíbítl-

main clause incorporates the fact of Motion and the Path of that Motion. In
the participial clause, the root -kíbítl- specifies the Manner, 'running with
heavy footfall', in which the motion is carried out.

In summary, the linguistic expression of a motion event with the verb
-kíbítl- reflects two characteristic lexicalization patterns: one in which
the main clause verb root incorporates Motion+Manner and another in which it
incorporates Motion+Path. Both of these lexicalization patterns appear to be
characteristic for Tswana.

2.5. Motion Expressions with -góg- . Further support for our contention that
Tswana manifests two characteristic lexicalization patterns is found with anoth-
er set of verbs. These verbs, among which is included -góg- 'pull', are not
examined here as extensively or in as great a number as the Manner verbs in
the previous section. Nonetheless, verbs of the type -góg- reflect the sys-
tem of constraints noted at the outset. Other verbs of this type include
-lẹ́r- 'to bring' and -bẹ́lẹ́g- 'to push'. According to one recent tradition,

1. mò-símàné   ó-kíbítl-è̩l-à   kwá-gòdímò   gá-thàbà
    CL 1-boy   he-run whf-to-IMP   DISTANT-top   LOC-mountain

    'the boy is running with heavy footfall to the top of the mountain'

2. mò-símàné   ó-kíbítl-è̩l-à   kwá-tlàsé   gá-thàbà
    CL 1-boy   he-run whf-to-IMP   DISTANT-under   LOC-mountain

    'the boy is running with heavy footfall to the bottom of the mountain'

3. mò-símàné   ó-kíbítl-è̩l-à   fá-pèlè   gá-ǹ-tlò
    CL 1-boy   he-run whf-to-IMP   NEARBY-front   LOC-CL 9-house

    'the boy is running with heavy footfall to the front of the house'

4. mò-símàné   ó-kíbítl-è̩l-à   fá-mòrágò̩   gá-ǹ-tlò
    CL 1-boy   he-run whf-to-IMP   NEARBY-back   LOC-CL 9-house

    'the boy is running with heavy footfall to the back of the house'

5. mò-símàné   ó-kíbítl-è̩l-à   fá-tlù-ǹg
    CL 1-boy   he-run whf-to-IMP   NEARBY-house-LOC

    'the boy is running with heavy footfall to the house'

6. mò-símàné   ó-kíbítl-è̩l-à   mó-tlù-ǹg
    CL 1-boy   he-run whf-to-IMP   INSIDE-house-LOC

    'the boy is running with heavy footfall into the house'

Table VII. Location-directed expressions with the verb -kíbítl-

these verbs would be analyzed as reflecting a complex underlying structure
wherein two events are causally related [Fillmore 1971:46]. That is, they re-
quire us to specify not only the semantic elements of a basic motion event,
i.e. Figure, Motion, Path, and Ground, but in addition, they require specifica-
tion of the element Cause.

   We direct our attention now to expressions of motion with the verb -góg- .
As with earlier examples, we will focus on which semantic elements are incor-
porated in the verb root of the main clause. We begin with expressions of lo-
cation-confined motion, those in Table IX on page 77.

   We first direct our notice to the fact that -góg- occurs as the verb root
in the main clause. Assuming a certain familiarity with the Talmy framework by
now, we discover that the Figure and Ground objects in (IX,1) are specified by

1. mò-símàné   ó-tsw-à   mó-tlù-hg   á-kíbítl-à
   CL 1-boy   he-move out-IMP   INSIDE-house-LOC   he-run whf-IMP

   'the boy is running with heavy footfall out of the house'

2. mò-símàné   ó-rálálèl-à   kgòrò   á-kíbítl-à
   CL 1-boy   he-move through-IMP   doorway   he-run whf-IMP

   'the boy is running with heavy footfall through the doorway'

3. mò-símàné   ó-tshél-à   lè-sàká   á-kíbítl-à
   CL 1-boy   he-move across-IMP   CL 5-kraal   he-run whf-IMP

   'the boy is running with heavy footfall across the kraal'

4. mò-símàné   ó-pǫ́tólòg-à   pètsè   á-kíbítl-à
   CL 1-boy   he-move around-IMP   well   he-run whf-IMP

   'the boy is running with heavy footfall around the well'

5. mò-símàné   ó-tlóg-èl-à   h-tlò   á-kíbítl-à
   CL 1-boy   he-move away-from-IMP   CL 9-house   he-run whf-IMP

   'the boy is running with heavy footfall away from the house'

6. mò-símàné   ó-tlól-à   thàbà-nà   á-kíbítl-à
   CL 1-boy   he-move over-IMP   mountain-DIM   he-run whf-IMP

   'the boy is running with heavy footfall over the hill'

7. mò-símàné   ó-pálám-à   thàbà   á-kíbítl-à
   CL 1-boy   he-move up-IMP   mountain   he-run whf-IMP

   'the boy is running with heavy footfall up the mountain'

8. mò-símàné   ó-págólòg-à   thàbà   á-kíbítl-à
   CL 1-boy   he-move down-IMP   mountain   he-run whf-IMP

   'the boy is running with heavy footfall down the mountain'

Table VIII. Directional expressions with the verb -kíbítl-

kòlóí and thàbà , respectively. The particular course which the Figure ob-
ject follows with respect to the Ground, the Path, is specified by the form
gòdímò . And most important for our consideration, the fact of Motion and the
causal event leading to that state of motion are incorporated in the main
clause verb root -góg- . Expressions of location confined motion with verbs
of the type -góg- thus incorporate the fact of Motion and its Cause. This

1. mò-símàné   ó-góg-á   kòlóí   fá-gòdímò   gá-thàbà
    CL 1-boy   he-pull-IMP cart   NEARBY-top   LOC-mountain

    'the boy is pulling the cart on top of the mountain'

2. mò-símàné   ó-góg-á   kòlóí   fá-tlàsé   gá-dì-tlhàrè
    CL 1-boy   he-pull-IMP cart   NEARBY-under   LOC-CL 8-tree

    'the boy is pulling the cart under the trees'

3. mò-símàné   ó-góg-á   kòlóí   fá-pèlè   gá-ǹ-tlò
    CL 1-boy   he-pull-IMP cart   NEARBY-front   LOC-CL 9-house

    'the boy is pulling the cart in front of the house'

4. mò-símàné   ó-góg-á   kòlóí   fá-mòrágò   gá-ǹ-tlò
    CL 1-boy   he-pull-IMP cart   NEARBY-back   LOC-CL 9-house

    'the boy is pulling the cart in back of the house'

5. mò-símàné   ó-góg-á   kòlóí   fá-gàúfí   gá-ǹ-tlò
    CL 1-boy   he-pull-IMP cart   NEARBY-near   LOC-CL 9-house

    'the boy is pulling the cart near the house'

Table IX. Location-confined expressions with the verb -góg-

lexicalization pattern, though not identical in constituent make-up to the com-
bination Motion+Manner, is similar in typological structure. That is, both re-
flect the incorporation of the Motion element with some additional element out-
side the structural demarcation of a basic motion event. Therefore, one can
consider Motion+Manner to reflect, along with Motion+Cause, a single lexicali-
zation type. This type, as argued above, appears to be characteristic for
Tswana.

     The lexicalization of Motion+Cause in the verb root is also manifest in ex-
pressions of location-directed motion. A representative sample of such sen-
tences with the verb -góg- is presented in Table X on page 78. When these
sentences are examined and compared to those in Table IX, we discover a largely
similar surface level allocation of the semantic elements delineating a motion
event. The primary difference between the sentences in Tables IX and X, and an
expected difference, is the specification of the Path constituent. It is the
Primary Path marker -èl- , as defined earlier, that is suffixed to the verb

1. mò-símàné   ó-góg-è̩l-á   kò̩ló̩í   kwá-gò̩dímò̩   gá-thàbà
    CL 1-boy   he-pull-too-IMP   cart   DISTANT-top   LOC-mountain

    'the boy is pulling the cart to the top of the mountain'

2. mò-símàné   ó-góg-è̩l-á   kò̩ló̩í   kwá-tlàsé   gá-thàbà
    CL 1-boy   he-pull-to-IMP   cart   DISTANT-bottom   LOC-mountain

    'the boy is pulling the cart to the bottom of the mountain'

3. mò-símàné   ó-góg-è̩l-á   kò̩ló̩í   fá-pèlè   gá-ǹ-tlò
    CL 1-boy   he-pull-to-IMP   cart   NEARBY-front   LOC-CL 9-house

    'the boy is pulling the cart to the front of the house'

4. mò-símàné   ó-góg-è̩l-á   kò̩ló̩í   fá-mòrágò̩   gá-ǹ-tlò
    CL 1-boy   he-pull-to-IMP   cart   NEARBY-back   LOC-CL 9-house

    'the boy is pulling the cart to the back of the house'

5. mò-símàné   ó-góg-è̩l-á   kò̩ló̩í   fá-tlù-ng̀
    CL 1-boy   he-pull-to-IMP   cart   NEARBY-house-LOC

    'the boy is pulling the cart to the house'

6. mò-símàné   ó-góg-è̩l-á   kò̩ló̩í   mó-kàgò̩-hg
    CL 1-boy   he-pull-to-IMP   cart   INSIDE-building-LOC

    'the boy is pulling the cart into the building'

<u>Table X</u>. Location-directed expressions with the verb -góg-

root -góg- in each sentence in Table X but to none of the verbs in Table IX.
In fact the Applied Extension Constraint is just as applicable to Cause verbs
as to Manner verbs: -è̩l- is obligatory in expressions of location-directed
motion but cannot occur in expressions of location-confined motion.

    Though the operation of the Applied Extension Constraint differentiates lo-
cation-directed from location-confined motion with verbs of the type -góg- ,
it is important to realize the essential unity of these categories of motion as
far as lexicalization processes are concerned. That is, both are lexicalized
by incorporating the constituents Motion+Cause in the verb root.

    When our attention is directed to expressions of directional motion with
the verb -góg- , we should find a pattern of lexicalization consistent with
the Main Clause Constraint. Accordingly, the verb -góg- should not occur in

1. mò-símàné ó-tsw-à   mó-lè-sàké-ǹg   á-góg-á   kòlóí
    CL 1-boy   he-move out-IMP   INSIDE-CL 5-kraal-LOC he-pull-IMP cart

    'the boy is pulling the cart out of the kraal'

2. mò-símàné ó-rálálèl-à   kgòrò   á-góg-á   nàmáné
    CL 1-boy   he-move through-IMP   doorway   he-pull-IMP calf

    'the boy is pulling the calf through the doorway'

3. mò-símàné ó-tshél-à   lè-sàká   á-góg-á   nàmáné
    CL 1-boy   he-move across-IMP   CL 5-kraal   he-pull-IMP calf

    'the boy is pulling the calf across the kraal'

4. mò-símàné ó-pótólòg-à   pètsè   á-góg-á   kòlóí
    CL 1-boy   he-move around-IMP   well   he-pull-IMP cart

    'the boy is pulling the cart around the well'

5. mò-símàné ó-tlóg-èl-à   ǹ-tlò   á-góg-á   kòlóí
    CL-1 boy   he-move away-from-IMP   CL 9-house   he-pull-IMP cart

    'the boy is pulling the cart away from the house'

6. mò-símàné ó-tlól-à   thàbà   á-góg-á   kòlóí
    CL 1-boy   he-move over-IMP   mountain   he-pull-IMP cart

    'the boy is pulling the cart over the mountain'

7. mò-símàné ó-pálám-à   thàbà   á-góg-á   kòlóí
    CL 1-boy   he-move up-IMP   mountain   he-pull-IMP cart

    'the boy is pulling the cart up the mountain'

8. mò-símàné ó-págólòg-à   thàbà   á-góg-á   kòlóí
    CL 1-boy   he-move down-IMP   mountain   he-pull-IMP cart

    'the boy is pulling the cart down the mountain'

Table XI. Directional expressions with the verb -góg-

the main clause; rather, it should occur in a participial clause. In addition,
the verb root which does occur in the main clause should lexicalize the ele-
ments Motion+Path, leaving the participial clause verb to specify only the ele-
ment Cause. On examination, the sentences in Table XI above reflect these con-
straints. The verb -góg- in (XI,1), for example, occurs in a participial
clause, marked by the concord prefix á- , and the main clause verb root -tsw-

is one of those which occurred in previous instances of directional motion.
The latter verb, as we have indicated, incorporates Motion+Path, which leaves
the verb root -góg- to specify Cause, i.e. by pushing. Hence, verbs of the
type -góg- appear to support our contention that two lexicalization patterns
are characteristic in Tswana, the lexicalization of Motion+Path, as in Table
XI, and the lexicalization of Motion+Cause, as in Tables IX and X.

3.   The Expression of Basic Motion Events

The final set of verbs under review manifest a more restricted range of
lexicalization patterns than that previously seen. In fact, these verb roots,
with one exception, lexicalize only the elements Motion and Path. To begin we
will consider the verb -tsàmày- 'to walk'. In expressions of location-con-
fined motion with this verb, as in Table XII on page 81, one finds the expected
lexicalization pattern. The Figure and Ground elements are specified, as they
were in previous instances of location-confined motion, by the nominals
mòsímàné and thàbà , respectively, and the Path is specified by the separate
form gòdímò . Consistent with our earlier analysis, the verb root -tsàmày-
incorporates both the fact of Motion and its Manner, 'walking'.

If one now attempts to formulate expressions of location-directed motion
with -tsàmày- , one would expect the resulting sentence to show evidence of
the Applied Extension Constraint, in line with the behavior of other Manner
verbs like -tábóg- and -kíbítí- . Accordingly, the verb root -tsàmày- ,
conflating the elements Motion and Manner, should occur as a main clause verb
root with the suffix -èl- adjoined. No such evidence exists however. There
is no sentence, as in (10) below, where the form -tsàmà-èl-à occurs as the
verb of the main clause.

(10)   *mòsímàné ó-tsámà-èl-à   gòdímò gá-thàbà
        boy   he-walk-to-IMP top   LOC-mountain
        'the boy is walking to the top of the mountain'

Instead, expressions of location-directed motion appropriate to the above gloss
are constructed with another verb.

3.1. Motion expressions with -y- .

A sample range of sentences constructed
with the verb -y- are shown in Table XIII on page 82. As the glosses suggest,

1. mò-símàné   ó-tsámày-à   fá-gòdímò   gá-thàbá
    CL 1-boy   he-walk-IMP   NEARBY-top   LOC-mountain

    'the boy is walking on top of the mountain'

2. mò-símàné   ó-tsámày-à   fá-tlàsé   gá-dì-tlhàrè
    CL 1-boy   he-walk-IMP   NEARBY-under   LOC-CL 8-tree

    'the boy is walking under the trees'

3. mò-símàné   ó-tsámày-à   fá-pèlè   gá-ǹ-tlò
    CL 1-boy   he-walk-IMP   NEARBY-front   LOC-CL 9-house

    'the boy is walking in front of the trees'

4. mò-símàné   ó-tsámày-à   fá-mòrágò̧   gá-ǹ-tlò
    CL 1-boy   he-walk-IMP   NEARBY-back   LOC-CL 9-house

    'the boy is walking in back of the house'

5. mò-símàné   ó-tsámày-à   fá-gàúfí   gá-ǹ-tlò
    ĊL 1-boy   he-walk-IMP   NEARBY-near   LOC-CL 9-house

    'the boy is walking near the nouse'

Table XII. Location-confined expressions with the verb -tsàmày-

the form -y- encompasses the meaning 'walk to' and 'go to'. That is, Tswana
does not appear to recognize a distinction at the lexical level between 'going'
and 'walking' in expressions of location-directed motion, despite its recogni-
tion of 'walking' in expressions of location-confined motion. The verb root
-y- , in fact, can only occur in expressions of location-directed motion, never
in location-confined expressions, or as we will see, directional expressions.
Given the sentences in Table XIII and their meaning, what should strike us as
irregular, especially given our analysis of Manner and Cause verbs, is the ab-
sence of the Applied Extension -ȩ̀l- . In the absence of this marker one would
expect a sentence such as (11a) below to be interpreted as in the gloss (11b)
or (11c). The verb root -y- , nonetheless, cannot be so interpreted.

(11) a.   mòsímàné ó-yà fá-gòdímò gá-thàbà

     b.   *'he is walking on top of the mountain'

     c.   *'he is going on top of the mountain'

1. mò-símàné   ó-y-à   kwá-gòdímò   gá-thàbà
    CL 1-boy   he-go to-IMP   DISTANT-top   LOC-mountain

    'the boy is going to the top of the mountain'

2. mò-símàné   ó-y-à   kwá-tlàsé   gá-thàbà
    CL 1-boy   he-go to-IMP   DISTANT-bottom   LOC-mountain

    'the boy is going to the bottom of the mountain'

3. mò-símàné   ó-y-à   fá-pèlè   gá-ǹ-tlò
    CL 1-boy   he-go to-IMP   NEARBY-front   LOC-CL 9-house

    'the boy is going to the front of the house'

4. mò-símàné   ó-y-à   fá-mòrágò̀   gá-ǹ-tlò
    CL 1-boy   he-go to-IMP   NEARBY-back   LOC-CL 9-house

    'the boy is going to the back of the house'

5. mò-símàné   ó-y-à   fá-tlù-ǹg
    CL 1-boy   he-go to-IMP   NEARBY-house-LOC

    'the boy is going to the house'

Table XIII. Location-directed expressions with the verb -y- .

Returning to Table XIII above, we need to carefully scrutinize (XIII,1) in
order to take stock of where among the surface level constituents the semantic
elements of a motion event are allocated. In line with earlier analyses, the
Figure and Ground objects in (XIII,1) are represented by mòsímàné and thàbà ,
respectively. The Path, at least on initial examination, seems to be represent-
ed by the form gòdímò 'top'. It remains for the verb root -y- to specify
only the fact of Motion.

A dilemma stirs in this interpretation however. First, as shown with ear-
lier expressions of location-directed motion, the form gòdímò was a Secondary
Path marker, i.e. its meaning did not encompass the directional element suggest-
ed by the English gloss 'to'. Second, the verb root -y- does occur, as in
(XIII,5), independent of any secondary Path marker and must itself convey the
directional element glossed in English by 'to'.

One possible solution to this dilemma is to assume that the verb root -y-
is composed of the semantic elements Motion+Path, these being glossed as 'move

1. mò-símàné   ó-tl-à   fá-gòdímò   gá-thàbà
   CL 1-boy   he-come to-IMP   NEARBY-top   LOC-mountain

   'the boy is coming to the top of the mountain'

2. mò-símàné   ó-tl-à   fá-tlàsé   gá-thàbà
   CL 1-boy   he-come to-IMP   NEARBY-bottom   LOC-mountain

   'the boy is coming to the bottom of the mountain'

3. mò-símàné   ó-tl-à   fá-pèlè   gá-ǹ-tlò
   CL 1-boy   he-come to-IMP   NEARBY-front   LOC-CL 9-house

   'the boy is coming to the front of the house'

4. mò-símàné   ó-tl-à   fá-mòrágò̀   gá-ǹ-tlò
   CL 1-boy   he-come to-IMP   NEARBY-back   LOC-CL 9-house

   'the boy is coming to the back of the house'

5. mò-símàné   ó-tl-à   fá-tlù-ǹg
   CL 1-boy   he-come to-IMP   NEARBY-house-LOC

   'the boy is coming to the house'

Table XIV. Location-directed expressions with the verb -tl- .

to'. This hypothesis nonetheless only encounters further difficulty, namely a similar semantic make up must then be ascribed to the verb -tl- . This verb, only occurring in expressions of location-directed motion, has the meaning 'to come'.

Consider briefly in Table XIV above a sample set of sentences with the verb -tl- . As we quickly discover, the surface level constituents in these sentences and those in Table XIII are identical except for the verb root. As such our analysis of where at the surface level the semantic elements delineating the referred to motion event are distributed would be similar to that for -y- The principle difficulty of that analysis was our failure to determine where among the surface constituents the Path is specified, in particular the "to-ness" of location-directed motion.

Faced with this new dilemma, one could allow each verb, -y- and -tl- , to incorporate the fact of Motion and its Path. To avoid identity of semantic structure and still account for the different "directed" senses which each con-

veys, away from the speaker and toward the speaker respectively, one could fur-
ther specify either the Motion or Path element. As a plausible solution, we
propose that the Path element of the verb -y- be glossed as 'thither' and
that of -tǀ- as 'hither'. We consider these as specifying, for the respective
verbs, motion which is directed "to a point away from the speaker" and "to a
point near the speaker". By postulating these admittedly complex specifica-
tions of Path, we are able to differentiate between the verbs -y- and -tǀ- ,
while at the same time accounting for the "directional" element of their mean-
ing. In addition, by so specifying the Path for these verbs, we account for
their nonoccurrence with the Path specified by the Applied Extension -èǀ- ,
which, as we saw, means 'to' or 'from'.

As an alternative, one might suggest that 'thither' and 'hither' are reali-
zations of the Manner constituent. However, it is difficult to conceive either
of these as a further specification of the Manner in which a motion event is
carried out. For the present, therefore, we will consider each as a gloss for
the different Paths specified by the verbs -y- and -tǀ- .

Setting aside expressions of location-directed motion, we shift our atten-
tion to directional motion. In expressions of this type, as shown in Table XV
on page 85, one finds the set of verbs which occurred in the main clause of sen-
tences expressing directional motion with -tábóg- and -kíbǀtǀ- . The only
additional verb root found in Table XV is the verb -tsén- meaning 'to move
into'. A further point to notice is that Manner or Cause is not expressed in a
subordinate clause; they are not in fact expressed at all in these sentences,
hence, the status of the verbs in Table XV as basic motion verbs. What is per-
haps most interesting concerning these sentences is the range of the English
glosses which each verb allows. In particular, each verb can be glossed with
'to move', 'to go', 'to walk', and most interestingly, 'to come'. This is a
crucial point. It suggests that each verb root in Table XV refers to a type of
motion which is independent of the Path notions captured by 'thither' and 'hith-
er'. The most neutral gloss is something along the lines of the English 'to
move', which does not specify a Path constituent as part of its meaning.

Beyond these points we want to take note of the larger issue which they
support. These verb roots, as well as -y- and -tǀ- , manifest a single lex-

1. mò-símàné   ó-tsę́n-à   mó-tlù-ǹg
    CL 1-boy   he-move(go, come, walk) into-IMP   INSIDE-house-LOC

    'the boy is moving into the house'

2. mò-símàné   ó-tsw-à   mó-tlù-nǵ
    CL 1-boy   he-move(go, come, walk) out-IMP   INSIDE-house-LOC

    'the boy is moving out of the house'

3. mò-símàné   ó-rálálèl-à   kgòrò
    CL 1-boy   he-move(go, come, walk) through-IMP   doorway

    'the boy is moving through the doorway'

4. mò-símàné   ó-tshél-à   lè-sàká
    CL 1-boy   he-move(go, come, walk) across-IMP   CL 5-kraal

    'the boy is moving across the kraal'

5. mò-símàné   ó-pǫ́tólòg-à   pètsè
    CL 1-boy   he-move(go, come, walk) around-IMP   well

    'the boy is moving around the well'

6. mò-símàné   ó-tlóg-ę̀l-à   ǹ-tlò
    CL 1-boy   he-move(go, come, walk) away-from-IMP   CL 9-house

    'the boy is moving away from the house'

7. mò-símàné   ó-tlól-à   thàbà-nà
    CL 1-boy   he-move(go, come, walk) over-IMP   mountain-DIM

    'the boy is moving over the hill'

8. mò-símàné   ó-pálám-à   thàbà
    CL 1-boy   he-move(go, come, walk) up-IMP   mountain

    'the boy is moving up the mountain'

9. mò-símàné   ó-págólòg-à   thàbà
    CL 1-boy   he-move(go, come, walk) down-IMP   mountain

    'the boy is moving down the mountain'

Table XV. Directional expressions.

icalization pattern. Each incorporates in the verb root the fact of Motion and its Path, a pattern of incorporation we maintain is characteristic for Tswana. In other words each of these verb roots incorporates the meaning 'move' plus

some additional Path specifier, e.g. 'thither', 'out', etc. It is within the confines of this semantic specification that verb roots encoding basic motion events manifest what appears to be a suppletion process.

4.   Summary

Briefly restating our basic position, we have discovered that Tswana verbs of motion manifest two characteristic lexicalization patterns, each a reflection of a typological pattern articulated by Talmy [1984]. In two of three categories of complex motion events, the verb root incorporates the fact of Motion and its Manner/Cause, the Path being expressed either by a form affixed to the verb root in cases of location-directed motion or by a distinct lexical item in cases of location-confined motion. In the other characteristic pattern, the verb root incorporates both the fact of Motion and its Path. This pattern characterizes the lexicalization of all categories of basic motion events and combines, with a Manner/Cause verb in a participial clause, to express the directional category of complex motion events.

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THE ROLE OF MSC'S IN OSHIKWANYAMA LOAN PHONOLOGY*

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This paper takes its data from OshiKwanyama, a Bantu language
spoken in Namibia and Angola; the paper is an investigation of
the phonological incorporation processes at work in the loan-
words of this language. When loanwords are taken into a lan-
guage the degree to which they undergo such phonological modi-
fication varies. There appears to be a hierarchy of such modi-
fications in OshiKwanyama, such that some always apply, others
normally apply, and yet others apply rarely and in special cir-
cumstances. These modifications are often based on, though not
necessarily identical to, the MSC's of the borrowing language.
The modifications appear to work in terms of a hierarchy of ap-
plication. The paper describes several loanword incorporation
processes and delineates the modification hierarchy.

1. Introduction

    This paper explores some aspects of loanword phonology as illustrated by da-

ta from OshiKwanyama, a Western Bantu language spoken in northern Namibia and

southern Angola. The principal European source languages for borrowing in Oshi-

Kwanyama are English, Afrikaans, and German. The paper will investigate the re-

lationship between the morpheme/word structure constraints of OshiKwanyama, on

the one hand, and, on the other, the actual loan incorporation processes which

have modified the shape of OshiKwanyama loanwords.

    The degree to which a loanword is modified can vary considerably: some

loanwords are hardly changed at all and may seem quite "foreign-sounding" to na-

tive speakers of the borrowing language. Other words may be so strongly modi-

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fied that, to the native speaker, their shape is indistinguishable from that of
a native word. Often, the degree to which a loanword is modified seems to de-
pend as much on social, cultural, and historical factors as on purely linguis-
tic ones. Thus, a loanword with few changes may be used by an educated speaker
to show that he or she has a knowledge of the source language; this is particu-
larly true if the source language has prestige of some sort. For example, a na-
tive speaker of English who knows French (or even one who doesn't, but wants to
sound as if he or she does) may give a word like *genre* the pronunciation
[žãɹə] , while a less-educated or less pretentious speaker may use the pronunci-
ation [žɒnə˞] . The degree to which a loanword is modified may also depend on
the age of the loanword. If borrowing from a source language continues for a
considerable period of time, the accumulated number of loanwords and continued
borrowing may eventually influence the phonological system of the borrowing lan-
guage to change, thus resulting in new and different borrowing strategies. For
example, Latvian borrowed words from German for almost eight centuries; the two
words for coffee, *kapija* and *kafija*, were both borrowed from (High) German
Kaffee, but on two different occasions: *kapija* is the older borrowing, *kafija*
is the more recent borrowing and also the standard form of the word. These two
examples illustrate a change in the way in which borrowing takes place: origin-
ally Latvian had no *f* sound—thus, when the word was first borrowed, *f* was re-
placed by the phonetically closest obstruent, which was *p*. Later the weight of
borrowings gradually introduced *f* into the inventory. By the time the word was
borrowed again, *f* was a phoneme of modern Latvian.

My focus in this paper is on loanwords which have been modified, and on the
source of these modification processes. Those loanwords which have not under-
gone any of the modification processes I will discuss are *not* counter-examples;
they are merely loanwords which have not been completely incorporated into the
native lexicon.[2]

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[2]Loanwords which have not been completely incorporated into the native lexi-
con tend to be used by the better-educated OshiKwanyama speakers, in particular,
by younger people who know French and/or English well. These kinds of loanwords
(as opposed to the more completely adapted ones) tend also to be used in urban,
rather than rural, settings.

2. Sound Substitution

Since borrowing and source languages most often do not have the same inven-
tory of sounds, one obvious way in which loanwords are modified is by sound sub-
stitutions. That is, for any source language sound which the borrowing lan-
guage lacks, the phonetically closest sound is substituted. The consonant in-
ventory of OshiKwanyama[3] is shown in (1)—only g is not contrastive.

(1)   p   t   k
                 b   d   g

                          č

                          ɟ

                 f   š   x   h
                 v

          m   n   ɲ   ŋ
                   l

                          y   w

Since OshiKwanyama has no *r* sound, *l* is normally substituted, as shown in (2).

(2) | source language | source word | loanword in OshiKwanyama | |
     | --- | --- | --- | --- |
     | German | [radiyo] | [oladiyo][4] | 'radio' |
     | English | [tayɚ] | [etayela] | 'tire' |
     | Afrikaans | [frax] | [ofulaxa] | 'burden, loan' |

There are some loanwords in which *r* has not been replaced, but they are a tiny
minority and are precisely the kinds of examples I had in mind when I referred
to words which seemed "foreign-sounding" to the native speaker—words which are
not fully incorporated into the native system.

OshiKwanyama also has no *s* sound; both [f] and [š] are phonetically
close to *s*, and either sound can be substituted for *s*, although [š] , being

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[3]The dialect shown is that of Mr. Joseph A. Taukondyo, who comes from the
extreme northern part of Namibia. My sincere thanks to him for the many hours
he worked with me.

[4]The loanword data derive in part from the speech of Mr. Taukondyo and par-
tially from written sources, in particular Tobias and Turvey [1965] and Tönjes
[1910].

another sibilant, seems to be preferred. Some examples are shown in (3). The
last example has two pronunciations, the two forms coming from two different di-
alects, one apparently preferring [š] , the other [f] .

(3)   Eng   [sæk]   [ošako]   'sack'

      Eng   [vɚs]   [oveliša]   'verse'

      Eng   [sɔɹt]   [ofoloto]   'sort'

      Eng   [skuwl]   [ošikola]   'school'
                            [ofikola]

3.   Interaction with MSC's

      Some of the most intriguing modifications in loanwords are in response to
constraints (in the borrowing language) on the occurrence of particular pat-
terns of sounds, that is, to the word and morpheme structure constraints of the
borrowing language.

      One of the major constraints on sounds in Oshikwanyama is the constraint
against closed syllables, i.e. no syllable may end in a consonant. It follows
from this that all OshiKwanyama words must end in a vowel. This last appears
to be the very strongest constraint in the language: · I have found not one sin-
gle loanword which ends in a consonant. Even loanwords which lack most other
signs of incorporation have acquired a final vowel. The examples in (4) are
very "foreign-sounding", yet all of them have final vowels.

(4)   Eng   [ays kɹiym]   [oayskrima]   'ice cream'

      Eng   [bIɹ]   [obira]   'beer'

      Eng   [blækbɔɹd]   [blækbolda]   'blackboard'

      Eng   [sɛrəf]   [šelafi]   'seraph'

      The example words meaning 'ice cream' and 'beer' are foreign-sounding in
large measure because the *r* was not replaced by *1*. 'Blackboard' and 'ice
cream' contain word-internal consonant clusters, and 'seraph' and 'blackboard'
lack noun class prefixes.

      OshiKwanyama has nine noun classes. The canonical form of the nominal mark-
er is an augment or pre-prefix (which is a vowel) followed by a class prefix,
although this shape is not always visible as such on the surface. The noun
class system (slightly simplified) is shown below. The class numbers at the
left, which are the numbers I shall be referring to in what follows, are the

ones assigned by Tönjes [1910] in his grammar; the equivalent Bantu class num-
bers are shown on the right:

1	omu-/ova-	1/2
2	omu-/omi-	3/4
3	e-/oma-	5/6
4	o(N)-/e:(N)-	9/10
5	oši-/oi-	7/14
6	olu-/omalu- (or e:(N)-)	11/6 and 11, (or 10)
7	oku-/oma-	15/6
8	ou-/omau-	14/6 and 14
9	oka-/ou-	12/14

Examples of native words from the five classes with the largest membership are
shown in (5):

(5)		singular	plural	
Cl. 4	o(N)-/e:(N)-	[oši]	[e:ši]	'fish'
		[oɲofi]	[e:ɲofi]	'star'
		[odila]	[e:dila]	'bird'
Cl. 3	e-/oma-	[edina]	[omadina]	'name'
		[ekombo]	[omakombo]	'large goat'
Cl. 5	oši-/oi-	[oši kombo]	[oi kombo]	'goat
		[ošipute]	[oipute]	'wound'
		[oši kwaɲama]		'Kwanyama language'
Cl. 1	omu-/ova-	[omukoŋgo]	[ovakoŋgo]	'hunter'
		[omuloŋgi]	[ovaloŋgi]	'worker'
Cl. 9	oka-/ou-	[okakombo]	[oukombo]	'small goat'
		[okambwa]	[oumbwa]	'puppy'

Loanword assignment to noun classes corresponds closely to the size of the
noun class. That is, class 4 has the largest number of native nouns[5] and is al-
so the class to which most loanwords are assigned. Classes 3 and 5 are next

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[5]Claims about the relative number of nouns in each class are the result of
a count of several hundred nouns. I used the Tobias and Turvey [1965] diction-
ary.

largest and many loanwords are also assigned to these classes, and so forth.
In some cases semantics may also play a role. Class 1 nouns are always human.
Thus, it is not surprising that loanwords referring to human beings are almost
always assigned to class 1, as shown in (6):

(6) Eng   [pəliys]   [omupolifi]   'police constable'[6]

     Eng   [bɪšəp]   [omumbišopa]   'bishop'

     Eng   [ɪŋglɪš]   [ovaeŋgelisa]   'English people'

     Germ   [bas]   [omubafa]   'bass (singer)'

     Loanwords belonging to the five classes with largest membership are shown
in (7).

(7) Eng   [læmp]   [olampa]   'lamp'   Cl. 4

     Eng   [pɛn]   [opena]   'pen'

     Eng   [fɔɹk]   [efoloka]   'fork'   Cl. 3

     Germ   [hawfə]   [ehawfu]   'dune'

     Afr   [ta:fəl]   [ošitafula]   'table'   Cl. 5

     Eng   [gowld]   [ošiŋgolodo]   'gold'

     Eng   [pəliys]   [omupolifi]   'policeman'   Cl. 1

     Eng   [bɪšəp]   [omumbišopa]   'bishop'

     Eng   [powniy]   [okaponi]   'pony'   Cl. 9

     Eng   [spɚ]   [okašipolo]   'spur'

Although noun class prefixes are the morphological marker of a noun, the pres-
ence of this morphological marker in loanwords seems to be somewhat less impor-
tant than the phonological constraint against consonant-final words, since the
former may be ignored but the latter never is.

     An interesting interaction occurs between the phonological constraint
against certain kinds of consonant clusters and the sound substitution process-
es. Native OshiKwanyama words have a constraint against all clusters except

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[6]Note that this word shows evidence of spelling pronunciation, as o is
never pronounced in the source word. It seems likely that a number of words,
such as the words for 'bishop' and 'Christmas', for example, have been created
using the written form of the word. I suspect that many of these were mission-
ary creations.

consonant plus glide and nasal plus voiced stop. This last is a deep structure
constraint, since it can be violated at the surface: as a result of certain
fast speech rules, nasal clusters may be broadened to include nasal plus any
consonant. I will discuss nasal clusters in more detail later in the paper.
First I will examine the treatment of source language clusters which contain
liquids and clusters made up of obstruents. Neither type of cluster is allowed
in OshiKwanyama either by deep or surface constraints.

4. Cluster Simplification

When clusters containing liquids or obstruents occur in OshiKwanyama borrow-
ings, they are almost always eliminated.   A few of the small number of exam-
ples which have not eliminated such clusters are shown in (8):

(8)   Eng   [blækbɔɹd]   [blækbolda]   'blackboard'

      Eng   [ays kɹiym]   [oayskrima]   'ice cream'

The most common method of cluster simplification is to insert a vowel,[7] as in
the first five examples in (9). Occasionally one of the two consonants is de-
leted, particularly if the cluster was word final in the source language, as in
the last three examples in (9).

(9)   Eng   [faɹm]   [ofalama]   'farm'

      Germ   [kartə]   [okalita]   'map'

      Eng   [kɹɪsməs]   [okilišitimiša]   'Christmas'

      Germ   [brot]   [ombolota]   'bread'

      Afr   [spɛlt]   [ošipela]   'pin'

      Eng   [powst]   [opoša]   'post, mail'

      Afr   [kɔmbərs]   [ošikumbafa]   'blanket'

The examples I have provided show that sounds may or may not be substituted
and that clusters may or may not be simplified (but, of course, whether or not

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[7]Most commonly a copy of the vowel of an adjacent syllable is inserted; see
'farm' and 'bread' in (9). However, between sC clusters the vowel inserted
is always i , giving [šiC] . Byarushengo [1976:82] notes a similar use of
the vowel in breaking up clusters in Haya loanwords. He suggests that i is
used because it is the "closest" vowel in the language. However, in the Oshi-
Kwanyama examples I suspect that a better explanation would be that this is the
most "palatal" vowel and, therefore, most appropriate after [š] .

substitution and simplification take place is merely an indication of the de-
gree to which the loanword has been incorporated into the native lexicon). How-
ever, note that while unsimplified clusters of consonant plus r and consonant
plus l may occur (as in (8)), simplified clusters, like those in (9), always
contain the substituted l sound. Thus, while substitution of a native sound
for a foreign sound does not necessarily imply cluster simplification, cluster
simplification does imply sound substitution; consequently, forms such as those
in (10) never occur.

(10)   *[oaysikirima]   *[osikola]

The implication of this is that there must be a hierarchy of loanword incorpora-
tion processes, and sound substitution is previous to—or primary with respect
to—the processes which reflect constraints against consonant clusters.

5. Nasal Clusters

     Finally, I will discuss the processes which modify nasal clusters. Some
treatments of borrowing (see Hyman [1970], for example) have suggested that bor-
rowing languages treat source language words as underlying forms and, therefore,
that it is the synchronic phonological rules of the borrowing language which
modify loanwords. We shall see that this approach is insufficient to handle the
examples about to be duscussed.

     First, look at the distribution of stop consonants in OshiKwanyama, as shown
in (11).

(11)	intervocalically	word initially	after a nasal
p	yes	yes	no
t	yes	yes	no
k	yes	yes	no
b	yes	no	yes
d	yes	yes	yes
g	no	no	yes

In the native system of the language, the voiceless stops are all underlyingly
distinct, since they all contrast in intervocalic position and in initial posi-
tion. The voiced alveolar stop d is also contrastive in these environments;

however, on occasion it will alternate with ǀ . The bilabial b also is con-
trastive intervocalically, but it is never word-initial and sometimes alter-
nates with v . Finally, the voiced velar stop g is most restricted in its
occurrence: it is found only after [ŋ] . None of the voiceless stops occur
after nasals—only voiced stops may occur in this environment. When nasals and
stops come together as a result of morpheme conjunction, the results are illus-
trated in (12): nasal plus p gives m , nasal plus t gives n , and nasal
plus k gives [ŋ] .

(12)	native root	non-nasal precedes		nasal precedes[8]	
	-pat-	[olupati]	'rib'	[e:mati]	'ribs'
	-pot-	[okupota]	'to be rude'	[omote]	'good-for-nothing'
	-tan-	[okatana]	'little calf'	[onana]	'calf'
	-tuŋgwa-	[okatuŋgwa]	'little basket'	[onuŋgwa]	'basket'
	-kak-	[olukaku]	'shoe'	[e:ŋaku]	'shoes'
	-kwat-	[okukwata]	'to take, seize'	[oŋwate]	'prisoner of war'
	-viŋg-	[oluviŋga]	'horn'	[e:mbiŋga]	'horns'
	-vel-	[okuvela]	'to arrive'	[embedi]	'arrival'
	-ly-	[okulya]	'to eat'	[e:ndya]	'food'
	-lum-	[omulumenu]	'human male'	[ondume]	'male' of Cl. 4 nouns

The sequence mb arises from nasal plus v , and nd comes from nasal plus ǀ .
The sequence ŋg arose historically from nasal plus k although no synchronic
alternations now remain.

What, then, occurs in loanwords? If the source language word has an initial
voiced stop, normally the loanword is modified in one of two ways (as illustrat-
ed in (13)): either a homorganic nasal is inserted before the voiced stop, as
in 'bet' and 'gold', or else the word is assigned the nasal-final form of the
class 4 prefix. In the latter case the loanwords will, accordingly, have ini-
tial syllables which resemble native words of this class, such as [ombele]
'knife', [ondudu] 'hill', or [oŋgodi] 'rope'.

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[8]The underlying form of the prefix, in each of these cases, ends in a nasal,
thus, /e:N + pati/ 'ribs', /oN + pote/ 'good-for-nothing', /oN + tana/
'calf', etc.

(13) Eng   [bɛt]   [mbeta]   'bet, gamble' (verb)

      Eng   [gowld]   [ošiŋgolodo]   'gold'

      Germ   [bibɛl]   [ombibela]   'bible'

      Eng   [dæm]   [ondama]   'dam'

      Eng   [dɔŋkiy]   [ondoŋgi]   'donkey'

Source language words which contain clusters of nasal plus voiceless stop
are normally modified as well:

(14) Eng   [stæmp̲]   [sitamba̲]   'stamp' (verb)

      Afr   [pɔmp̲]   [opomba̲]   'pump'

      Eng   [pɹɪnt̲]   [pelenda̲]   'print' (verb)

      Germ   [tɪntə̲]   [otinda̲]   'ink'

      Afr   [trɔŋk̲]   [ondolongo̲]   'prison'

      Eng   [ɪŋk̲]   [oiŋga̲]   'ink'

Note what happens to the (underlined) voiceless stops: they are voiced after
nasals. But note, this modification cannot be the result of applying a synchron-
ic phonological rule. OshiKwanyama has no rule that voices stops after nasals.
Instead the OshiKwanyama rule would *delete* the voiceless stops, as in (12). If
it were the synchronic phonological rule operating here, one would find forms
like *[šitama] or *[oiŋa] , instead of [šitamba] and [oiŋga] . Thus, treat-
ing the source language words as underlying forms predicts an incorrect result;
the actual modification which occurs is the result of an independent loanword in-
corporation process, which is not the same as any synchronic phonological rule.
This loanword incorporation process is derived from the prohibition against na-
sal plus voiceless stop clusters, but since it is a particular positive response
to this negative prohibition, the incorporation process must be considered a dif-
ferent and separate entity from the constraint. The prohibition against nasal
plus voiceless stop could be expressed in a number of different ways, for exam-
ple, vowel insertion between the nasal and the stop; however, the particular
method that OshiKwanyama has chosen (voicing of the stop) is a language-specific
loanword incorporation process. Therefore, it is evident that loanword incorpor-
ation processes need not be identical either to phonological rules or to morpheme
structure constraints.

Note also that, on the surface, nasal plus voiceless stop clusters are, in
fact, allowed in OshiKwanyama. Native words have them as a result of certain
fast speech rules. Thus, 'tree' may be pronounced [omuti] , [omːti] , [omti] ,
or even [onti] in increasingly more casual and faster speech. However, the
loanwords are modified in spite of this. It seems clear that in this case the
loanword incorporation process is derived not from surface structure, as sug-
gested by Shibatani [1973], but as a result of the deep structure constraints.
Additional support for this analysis is provided by an article by Kaye and Ny-
kiel [1979], which points out similar effects of deep phonotactic constraints on
English-source loanwords in Odawa.

Lastly, consider the data in (15).

(15) Afr   [papiːr]   [ombapila]   'paper, letter'
      Eng   [pɪk]   [ombiki]   'pick-axe'
      Afr   [kɛrk]   [oŋgeleka]   'church'
      Germ   [kamel]   [oŋgamelo]   'camel'
      Afr   [trɔŋk]   [ondoloŋgo]   'prison'

Although OshiKwanyama allows voiceless stops in native words to occur both in
stem-initial and word-initial position, nevertheless a small number of loanwords
with initial p , t , or k undergo the modification illustrated above; the
word in each case is assigned the oN-form (rather than the o-form) of the
class 4 prefix, even though initial op , ot , or ok are perfectly allowable
sequences. However, there are no sequences of these sounds in this particular
class of nouns. Thus, it is possible to find words like the adverb [opo]
'here', the pronoun [otwa] 'we', or the noun [okakadona] 'girl' (class 9),
but no such sequences occur in the native nouns of class 4 because of the rule
illustrated in (12), which gives m from nasal plus p , n from nasal plus t ,
and [ŋ] from nasal plus k . However, these initial voiceless stops could
have been retained without inserting a preceding nasal if the words had been as-
signed to class 3 or class 5, both of which allow stem-initial voiceless stops
(see, for example, 'table' in (7)). Furthermore, class 4 has no single, coher-
ent semantic characterization; thus, the loanwords certainly did not have to be
assigned to class 4 because of their meaning.

It would appear that these words were merely assigned to class 4 because this

is the class that most loanwords are assigned to; however, once in class 4, a class-specific constraint against stem-initial voiceless stops gave rise to the use of the ᴏN- form of the prefix. Note that this constraint must be of very low priority because, in fact, the majority of loanwords in this class with stem-initial voiceless stops were not assigned a nasal form of the prefix (see 'pen' in (7)). However, once the ᴏN- prefix form was assigned, the incorporation process illustrated in (14) then came into effect and voiced all of these post-nasal voiceless stops.

6. Conclusion

    Four conclusions obtain from these OshiKwanyama data. First, the evidence shown in section 4 leads to the conclusion that there is a hierarchy of loanword incorporation processes in OshiKwanyama: the constraint against consonant-final words gives rise to the most important loanword incorporation process—the one which adds final vowels to all loanwords. Next the process which substitutes sounds applies, and lastly, the processes which derive from constraints against clusters, such as vowel insertion and consonant deletion, will apply.

    Second, as exemplified in (14), loanword incorporation processes in OshiKwanyama are not necessarily the same as the synchronic phonological rules of the language nor are they identical to the morpheme or word structure constraints; however, the incorporation processes may certainly be (indirectly) derived from these constraints. Note that these conclusions are further supported by my work on borrowing in TshiLuba and Latvian (see Steinbergs [1981, 1982]).

    Third, there are incorporation processes in OshiKwanyama which derive not from the surface structure (as Shibatani [1973] suggests), but rather from the deep structure constraints. This conclusion is further supported by the work of Kaye and Nykiel [1979].

    Finally, as exemplified in (15), OshiKwanyama has a loanword incorporation process that derives from a constraint which does not even hold across the phonology of the language, but which is specific only to a particular class of nouns.

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ON THE HIGH NON-EXPANDED VOWELS IN YORUBOID*

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A current debate going on among Yoruba linguists is the exist-
ence and phonological status of the high non-expanded vowels.
Indeed while Igala, Iṣekiri and many Yoruba dialects exhibit a
seven-vowel system, other Yoruba dialects exhibit a nine-vowel
system (including ι and ɔ), both types showing however in-
teresting vowel co-occurrence restrictions. Given this situ-
ation, some scholars argue that proto-Yoruba and proto-Yoru-
boid had a nine-vowel system with cross-height vowel harmony,
while others claim that they had a seven-vowel system. The
present paper reviews both positions and suggests another al-
ternative; in particular it shows how cross-height vowel har-
mony came about in Yoruboid.

1. Introduction

1.1. The Yoruboid language complex. In this paper the term Yoruboid is used to

refer to a compact language complex including Yoruba, Iṣekiri, and Igala. Ac-

cording to Hoffmann [1976] as amended by Williamson [1982, 1983], the Yoruboid

complex is a major branch of the Yoruboid-Akokoid unit of the Benue-Congo divi-

sion of the Volta-Congo languages. It is a member of the so-called (old) Kwa

languages [Greenberg 1963] but not of the (new) Kwa [Stewart, to appear]. In

terms of actual genetic relationship, Yoruba, Iṣekiri, and Igala (with their

more or less long tradition of writing) are not, strictly speaking, three sister

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per read at the fourth annual conference of the Linguistic Association of Ni-
geria (University of Benin, July 20-23, 1983). I am indebted to many col-
leagues who commented on it, particularly Ben Elugbe, Kay Williamson, and Qla-
sope Oyelaran. As it is, the paper is based on data discussed in Oyelaran
[1973] and Akinkugbe [1978], data which are not supplied here. I am, of
course, fully responsible for any interpretation as well as any deficiency.
All proper nouns (glossonyms and anthroponyms) are spelt in the standard Yoru-
ba orthography, but without tone markings, while a modified I.A.I alphabet is
used elsewhere.

languages. According to Akinkugbe [1976:16], a more accurate picture can be de-
picted by the following diagram:

PROTO-YORUBOID

PROTO-YORUBA-IṢẸKIRI

PROTO-YORUBA   Iṣẹkiri/SEY

CY   NEY   SWY   NWY   SEY   Iṣẹkiri   Igala
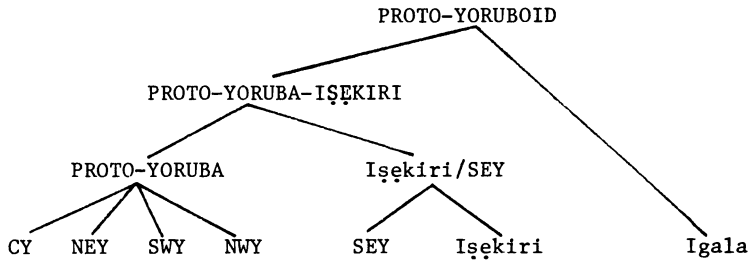
Yoruboid family tree [Akinkugbe 1976:16]

Note that, according to Akinkugbe [1976:3-8], CY [Central Yoruba] consists of
the Ifẹ, Ijẹṣa, and Ekiti dialects; NEY [North-eastern Yoruba] comprises the di-
alects of Yagba, Gbẹdẹ, Ijumu, Ikiri, etc.; SWY [South-western Yoruba] includes
Tsabẹ with Ketu and Ifẹ (Togo) dialects; NWY [North-western Yoruba] is made up
of Ọyọ, Ẹgba (Abẹokuta, Ilaro, etc.), and Ọsun (Oṣogbo, Ogbomọṣọ, Ẹdẹ, etc.)
areas; whereas SEY [South-eastern Yoruba] comprises Ondo, Ọwọ, Ijẹbu, and dia-
lects spoken in and around Okitipupa (Ikalẹ, Ilajẹ, Ijọ-Apọi, etc.).

1.2. The problem. Studies in Yoruboid dialectology have revealed some interest-
ing vowel co-occurrence restrictions which some authors, e.g. George [1973], in-
terpret as relics of certain earlier vowel harmony rules. Another interesting
element of comparative Yoruboid studies is that some present-day Yoruba dialects,
e.g. Ijẹṣa, Irun, Ifaki, and Ekiti, exhibit a nine-vowel system (if tones and na-
sality are not taken into consideration) and display cross-height vowel harmony.
Other Yoruba dialects, e.g. Ikalẹ, Ilajẹ, Tsabẹ, Ukarẹ, 'Standard' Yoruba [SY],
etc., as well as Iṣẹkiri and Igala exhibit some vowel co-occurrence restrictions,
but have a seven-vowel system (if tones and nasality are not taken into consider-
ation). This situation has led to two conflicting positions as to the vowel sys-
tem of proto-Yoruba and proto-Yoruboid. On the one hand, Oyelaran [1973, 1977],
among others, claims that proto-Yoruba (and presumably proto-Yoruboid) did not
have a nine-vowel system, nor the classic cross-height vowel harmony. On the
other hand, Akinkugbe [1978], among others, argues that proto-Yoruba and proto-
Yoruboid had them.

1.3. <u>Expanded and equivalents</u>. Thus the problem centers on the existence and phonological status of ι ĩ o õ , i.e. the high non-expanded vowels, also referred to as the [-ATR] or [-tense] or [+covered] high vowels[1] in proto-Yoruboid as well as in the so-called nine-vowel present-day Yoruba dialects. The purpose of this paper is to make a contribution to the debate by reviewing past positions and suggesting an alternative hypothesis, taking full advantage of the nasal vowels.

2. Background Information

    We shall present successively oral vowels, nasal vowels, patterns of vowel co-occurrence restrictions, and the cross-dialectal correspondence series.

2.1. <u>Oral vowels</u>. As far as oral vowels are concerned, Yoruboid dialects are divided into two typological groups, viz. the seven-vowel dialects and the nine-vowel dialects.

(a) The Yoruboid dialects having a seven-vowel system include Iṣẹkiri, Igala and many Yoruba dialects, e.g. Ikalẹ, Ilajẹ, Ijọ-Apọi, Tsabẹ, Ukarẹ, Yagba, Gbẹdẹ, Ijumu, Ikiri, etc. The system is made up of i e ɛ a ɔ o u .

(b) The Yoruboid dialects having a nine-vowel system are found among Yoruba dialects only, viz. Ijẹṣa, Irun, Ekiti, Ifaki. The system is made up of i ι e ɛ a ɔ o ọ u .

2.2. <u>Nasal vowels</u>. In respect of nasal vowels, the system varies from one dialect to another.

(a) Yoruba dialects such as Ijẹṣa, Irun, Ekiti, and Ifaki have the following six-vowel system: ĩ ῖ (ɛ̃) ɔ̃ õ ũ . Note that this group includes all the so-called nine-vowel dialects and that some of them do not have ɛ̃ .

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[1]We do not intend to discuss in this article the adequacy or otherwise of the feature labels adopted by different Yoruba scholars to refer to these vowels, especially [expanded] [Lindau 1978; Akinkugbe 1978], [tense] [Courteney 1968; Fresco 1970; Oyelaran 1973]; [advanced tongue root] [Oyelaran 1977; Stewart 1983]; and [covered]. We have given preference to [expanded] simply because it seems the latest. In any case, it is useful to know how these labels correspond to one another.

(b) Iṣẹkiri and Yoruba dialects such as Ikalẹ, Ilajẹ, Ijọ-Apọi, etc., have the
     following five-vowel system: ĩ ẽ ã ɔ̃ ũ .

(c) Yoruba dialects such as Tsabẹ, Ukarẹ, SY, etc., have the following four-
     vowel system: ĩ ẽ ɔ̃ ũ .

(d) Yoruba dialects such as Yagba, Gbẹdẹ, Ijumu, Ikiri, etc., have the follow-
     ing three-vowel system: ĩ ɔ̃ ũ .

(e) Present-day Igala has no nasal vowels.[2]

   Note that none of the Yoruboid dialects described so far is shown to have
ẽ or õ .

2.3. <u>Vowel co-occurrence restrictions</u>. Although we take into consideration,
for the purpose of presenting the vowel harmony grades, both oral and nasal vow-
els, our reference to dialect types is based on oral vowels only. Thus we talk
of seven vowel and nine-vowel dialects.

(a) In the seven-vowel dialects, vowels fall into two sets:
     set 1   i ĩ e a (ã) o u ũ
     set 2   i ĩ ε (ε̃) a (ã) ɔ ɔ̃ u ũ

     Thus, to mention oral vowels only, i a u are neutral in that they be-
     long to both sets; however, a as a stem vowel takes a set 2 vowel as pre-
     fix. Note also that in Igala there are a few VCV nouns showing co-occur-
     rence between o and ε .

(b) In the nine-vowel dialects, vowels fall into two sets:

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[2]Armstrong [1965, personal communication] reports the occurrence of one na-
sal vowel in Igala, viz. ũ (which he alternatively notes as ũⁿ). It occurs
in a small but quite important group of morphemes, most of which have Yoruba
cognates that also have ũ , e.g., έũ 'thing' and ùjéũ 'food'. It seems
that synchronically this Igala ũ is better analysed as a syllabic nasal ŋ̩
or a NV structure. Note, moreover, that Igala does exhibit nasalised vowels,
but only after a nasal consonant; and because of this restriction, its nasal-
ized vowels are treated as underlying oral vowels (see data in Akinkugbe [1978],
as reinterpreted by me).

set 1   i ĩ e a o u ũ
set 2   ι ῖ ε (ε̃) a (ã) ɔ ɔ̃ ο õ

Thus, to comment on oral vowels, only a is neutral in that it belongs to
both sets. Note that in the nine-vowel dialects, ι and o never occur
in stem-final position (*a fortiori* in word-final position) whereas ῖ and
õ may occur in such a position. Hence ῖ and õ are considered as "au-
tonomous" phonemes whereas ι and o are not.

2.4. <u>Vowel correspondences in Yoruboid stems</u>. A decisive factor in our present
discussion is the systematic vowel correspondence series that one finds across.
Yoruboid dialects. For more consistency, we shall restrict ourselves to stems
for two reasons: (i) in the prefix and other non-final positions, vowels are
often subject to various phonological rules; (ii) vowels in the prefix position
usually constitute a sub-set of the vowels occurring in stems. The correspond-
ence series (in Table 1 on the next page) are taken from Akinkugbe [1978]; how-
ever, instead of her reconstructions, we simply identify the columns as 1a...7a
(for oral vowels) and 1b...7b (for nasals). Note that for the nasal set, Akin-
kugbe [1978] has two additional columns in which one finds vowel sequences in
proto-Yoruba and proto-Yoruboid (rows excluded by us from the table). Similar-
ly, for the oral set, she has two additional columns in which one finds *ι and
*o in proto-Yoruba and proto-Yoruboid without reflexes in any of the present-
day dialects (with which our own table deals). We set aside these four columns
and concentrate on the fourteen columns presented in Table 1.

3. <u>The Controversy: Seven vs. Nine Vowels in Proto-Yoruba and Proto-Yoruboid</u>
     Given the background information just presented, we can now approach the
controversy, highlighting the arguments advanced by each camp and making prelim-
inary evaluation of them as we proceed.

3.1. <u>Main arguments for a nine-vowel system</u>. Five main arguments have been put
forward to defend the thesis that proto-Yoruboid had a nine (oral) vowel system
(including *ι and *o) with the classic cross-height vowel harmony. A sixth
one, provided by Adetugbọ [1967], would put an end to the controversy as it
shows that some Central Yoruba dialects do have oral phonemic ι and o occur-
ring in stem-final position; unfortunately his data have not been confirmed and

Table 1:   <u>Vowel correspondences in Yoruboid stems</u> [Akinkugbe 1978]

| | ORAL VOWELS | | | | | | | NASAL VOWELS | | | | | | |
	1a	2a	3a	4a	5a	6a	7a	1b	2b	3b	4b	5b	6b	7b
Igala	i	e	ɛ	a	ɔ	o	u	i	ɛ	ɛ	a	ɔ	ɔ	u
Isẹkiri	i	e	ɛ	a	ɔ	o	u	ĩ	ɛ̃	ɛ̃	ã	ɔ̃	ɔ̃	ũ
Ikalẹ	i	e	ɛ	a	ɔ	o	u	ĩ	ɛ̃	ɛ̃	ã	ɔ̃	ɔ̃	ũ
Ilajẹ	i	e	ɛ	a	ɔ	o	u	ĩ	ɛ̃	ɛ̃,ɛ	ã	ɔ̃	ɔ̃	ũ
Ijọ-Apọi	i	e	ɛ	a	ɔ	o	u	ĩ	ɛ̃	ɛ̃,ɛ	ã	ɔ̃	ɔ̃	ũ
Gbẹdẹ	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ	ɛ,ĩ	ɔ̃	ɔ̃,ũ	ũ,ɔ̃	ũ
Ijumu	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ	ɛ,ĩ	ɔ̃	ɔ̃,ũ	ũ,ɔ̃	ũ
Ikiri	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ	ɛ,ĩ	ɔ̃	ɔ̃,ũ	ũ,ɔ̃	ũ
Yagba	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ,ɛ̃	ɛ,ĩ	ɔ̃	ɔ̃,ũ	ũ,ɔ̃	ũ
Ukarẹ	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ,ɛ	ɛ̃,ɛ,ĩ	ɔ̃	ɔ̃,ũ	ũ	ũ
SY	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ	ɛ,ĩ	ɔ̃	ɔ̃,ũ	ũ	ũ
Tsabẹ	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ,ɛ̃	ɛ,ĩ	ɔ̃	ɔ̃,ũ	ɔ̃,ũ,ã	ũ
Ifẹ(Togo)	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ,ɛ̃	ɛ̃,ɛ	ã,ɔ̃	ã(?)	ɔ̃,ũ,ã	ũ
Ijẹsa	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ	ɛ,ĩ	ɔ̃	ɔ̃,ũ	õ	ũ
Irun	i	e	ɛ	a	ɔ	o	u	ĩ	ĩ,ɛ̃	ɛ,ĩ	ɔ̃	ɔ̃,ũ	õ,ũ	ũ

are therefore ignored in this paper.

Argument 1: Bamgboṣe [1967] argues that a dialect with nine vowels is more complex than one with seven; therefore, the former should be more archaic than the latter. He then concludes that proto-Yoruba (and presumably proto-Yoruboid) had *ɪ and *ɔ . However, it is now generally admitted that complexity is not measured in terms of inventories of sounds, but in terms of how generalised the observed patterns within a language/dialect are and the number, nature and power of the rules required to account for them [Fromkin 1971]. In this regard, the so-called nine-vowel dialects, with their generalised vowel harmony rule (see below, section 4.4), are less complex than the so-called seven-vowel dialects of Yoruboid.

Argument 2: The major argument advanced by Akinkugbe [1978] is as follows:

because */ĩ/ and */õ/ have to be postulated for proto-Yoruba and proto-Yoru-
boid (on the basis of columns 2b and 6b of Table 1 on facing page), then one
should assume that their oral counterparts */ι/ and */o/ also existed at
those stages of the language complex, because nasal vowels usually constitute a
sub-set of the oral vowels. It is pertinent to observe that the postulation of
the nasals, */ĩ/ and */õ/ , is not unquestionable and that it is not, in any
case, the only plausible hypothesis in respect of columns 2b and 6b. If one
thinks of alternatives, then the argument becomes invalidated.

Argument 3: Stewart [1983] claims that the most likely source of ɛ̃,ɔ̃ :
ĩ,õ : ĩ,ũ (columns 2b and 6b of Table 1) is *ĩ,*õ because ι,o are highly
marked, and consequently both of the sound changes posited, namely *ι,*o > e,o
and *ι,*o > i,u are highly plausible phonetically. This argument is only ir-
resistible on the surface. Its basic defect is that from a correspondence ser-
ies involving nasal vowels, Stewart [1983] switches over to oral vowels to advo-
cate phonetic plausibility for rules which, evidently, do not affect oral vowels.
At a theoretical level, it might also be possible to think that ι,o can be
seen as the intermediary stage in a development *e,*o > ι,o > i,u as Guthrie
[1967] does.

Argument 4: To give more weight to argument 2, Akinkugbe [1978] also in-
vokes the fact (?) that so many present-day (old) "Kwa" languages operate an
eight, nine, or even ten vowel system; she adds that Stewart [1971] has even sug-
gested that the latest common ancestor of the (old) "Kwa" languages probably op-
erated a ten-vowel system. This argument takes for granted that the existence
of ι and o must be a *genetic* characteristic of the "Kwa" languages, which
need not be the case. It also takes for granted proto-Volta-Congo reconstruc-
tion (arrived at without Yoruboid) and now tries to "mould" proto-Yoruboid to
conform to it, instead of looking for substantive comparative data, the *prima*
facie condition of any conclusion having genetic implication or interpretation.
This argument is therefore weak, to say the least.

Argument 5: Akinkugbe [1978] also advances that the fact that the present-
day nine-vowel dialects of Yoruboid have phonemic ĩ and õ without (clearly)
phonemic ι and o is an indication of a transition stage from a clear nine-

vowel system to a seven-vowel system by reduction. This argument does not car-
ry much weight because in the process of historical change, one normally ex-
pects the nasal vowels (marked as they are according to Chomsky and Halle
[1968]) to disappear before their oral counterparts.

3.2. Main arguments for a seven-vowel system. Three main arguments have been
put forward to defend the thesis that proto-Yoruboid had a seven (oral) vowel
system.

Argument 1: The most crucial of the arguments, as emphatically stated by
Oyelaran [1973], 1977], is that present-day Yoruboid (in fact, Yoruba) dialects
with ɩ and ɔ do not have them in stem-final position and so these vowels
could as well be interpreted as conditioned variants of /i/ and /u/ (when
the stem-final vowel is non-expanded). Akinkugbe [1978], a champion of the nine-
vowel system interpretation, has no serious objection against this synchronic
analysis.[3] There is, however, the fact that ɩ̃ and õ are attested in stem-
final position and contrast with ĩ and ũ on the one hand, and ɔ̃ (and ɛ̃)
on the other. Now Oyelaran's [1973, 1977] interpretation of these ɩ̃,õ as de-
riving from *ɛ̃,*ɔ̃ is not satisfactory in that, even if the diachronic raising
rule were attested, it simply states the origin of present-day ɩ̃ and õ but
does not deny their phonemicity.[4] We shall come back to it below.

Argument 2: Another argument used by both Fresco [1970] and Oyelaran [1973,
1977] is that the present-day nine-vowel dialects have innovated ɩ,ɩ̃,ɔ,õ by
greatly simplifying the vowel co-occurrence restrictions, i.e. extending the fea-

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[3]Her position on this issue is as follows:

> In terms of phonetic analysis, one may want to regard ɩ and ɔ as allo-
> phones of /i/ and /u/ respectively... The above phonemic analysis is,
> however, rejected on the following grounds. Since vowels, by the universal
> markedness convention, are marked for nasalisation (Chomsky and Halle
> [1968]), a system which has underlying nasal vowels without their non-nasal
> counterparts is counter-intuitive. (p.76)

Note that Oyelaran [1973] and the present writer (see below) use the same argu-
ment of markedness to invalidate the phonemicity of ɩ̃ and õ .

[4]The raising rule mentioned here is stated as P-B by Oyelaran [1973:165;
1977:7] as follows:

ture specification [-expanded] which was restricted to, and redundant with, the
feature specification [+low][5] to high vowels also (in Oyelaran's specification
reproduced below, Table 2a). Akinkugbe [1978] agrees basically that the Ijẹṣa-
type nine-vowel system is less complex than the seven-vowel system, but argues
that the crucial point is the process that has brought about the complexity. We
do not see, however, how she has proved the process that has brought about the
complexity; rather we see the issue of the direction of change as a crucial one,
as long as one can explain or point out the motivation, as we shall attempt be-
low.

    Argument 3: In his 1977 paper, trying to explain how the nine-vowel system
came about in Yoruboid, Oyelaran states that the nine-vowel dialects are mainly
eastern dialects which have maintained contact with the Edoid languages and
Igbirra (clearly attested cases of nine-vowel or ten-vowel languages/dialects
with cross-height vowel harmony) for millenia; it is certainly through this con-
tact that the feature [expanded] has been "acquired". This explanation is quite
acceptable. In fact, Stewart, who once wrote that "it can never be shown that
the member with the harmony acquired it, and it can nearly always be shown that
the member without the harmony lost it" [1976:8], now admits that "it is cer-

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        P-B: Nasal vowel raising

$$\begin{bmatrix} +\text{syl} \\ +\text{low} \\ +\text{nas} \\ \left\{\begin{matrix} +\text{back} \\ +\text{front} \end{matrix}\right\} \end{bmatrix} \rightarrow [+\text{high}]$$

He comments thus: "P-B has been shown to recapitulate a *historical change* in
the language... In short the so-called phonemes ĩ and õ result from *changes*
recounted by P-B. Hence they have no oral counterparts" [Oyelaran 1973:179] (my
emphasis, H.C.). Unfortunately, by talking of underlying forms instead of proto-
forms, Oyelaran [1973, 1977] seems to suggest that P-B is a synchronic rule, but
he does not justify it.

    [5]In the seven (oral) vowel system, Oyelaran [1973] specifies /ɛ a ɔ/ as
[+low] and admits that, according to Stewart [1969, 1971], "all three vowels a
ɛ ɔ are inherently non-advanced tongue root" [1973:160]. This implies that all
other vowels, viz. /i e o u/ are [-low] and [+expanded]. See below, Tables 2a
and 2b.

tainly wrong to exclude the possibility that some Kwa languages might some day
be shown to have acquired CHVH [cross-height vowel harmony]" [1983:33].

In all, it seems as if the seven (oral) vowel system thesis is more accept-
able than the nine (oral) vowel system thesis. We shall now go on to prove this
with our own interpretation of the data at hand.

4. In Search of a More Acceptable Hypothesis

4.1. Another look at the vowel correspondence series. Let us consider more
carefully the vowel correspondence series presented in Table 1 (section 2.4
above). When one applies all known criteria to the oral set, one cannot but
postulate /*i *e *ɛ *a *ɔ *o *u/ for columns 1a, 2a, 3a, 4a, 5a, 6a and 7a re-
spectively, as Akinkugbe [1978] has done. For the nasal set, Akinkugbe's [1978]
reconstruction of */ĩ/ and */ũ/ for columns 1b and 7b is unquestionable.
For columns 3b and 5b, we agree with her reconstructing */ɛ̃/ and */ɔ̃/ re-
spectively: dialects showing ɛ and ɔ have denasalised the proto-Yuboid
vowels whereas those showing ĩ and ũ have raised the proto-Yuboid vowels,
through mergers. For columns 4b, Akinkugbe [1978] reconstructs understandably
*/ã/ ; Igala has denasalised the proto-Yuboid vowel whereas those dialects
showing ɔ̃ have rounded and backed the proto-Yuboid vowel. The columns that
interest us most here are 2b and 6b. While Akinkugbe [1978] reconstructs them
as */ɪ̃/ and */õ/ respectively, our surmise is that reconstructing them as
*/ẽ/ and */õ/ is more plausible.

4.2. Justifying our */ẽ/ and */õ/ . Having accepted */ɛ̃/ and */ɔ̃/ as
the sources of columns 3b and 5b, and */ĩ/ and */ũ/ as those of columns 1b
and 7b, it is no longer tenable to trace columns 2b and 6b to either */ɛ̃/ and
*/ɔ̃/ or */ĩ/ and */ũ/ . By postulating */ɪ̃/ and */õ/ for columns 2b and
6b, Akinkugbe [1978] assumes that the proto-phonemes must have been retained un-
changed by at least one present-day dialect such as Ijẹsa. She admits, however,
that there is no (direct) evidence for reconstructing oral */ɪ/ and */o/ ,
and she should logically arrive at a proto-Yuboid vowel system made up of sev-
en oral vowels and seven nasal vowels as follows:

/*i *e *ɛ *a *ɔ *o *u/
/*ĩ *ɪ̃ *ɛ̃ *ã *ɔ̃ *õ *ũ/ .

Note the doubly curious imbalance shown by this system in that (i) */e/ and */o/ are without nasal counterparts whereas */ĩ/ and */õ/ are without oral counterparts and (ii) the nasal vowels do not constitute a sub-set of the oral vowels. One obvious way out is to postulate the sources of columns 2b and 6b as */ẽ/ and */õ/ respectively. We thus have a symmetric vowel system for proto-Yoruboid as follows:

$$/^*\text{i} \quad ^*\text{e} \quad ^*\text{ɛ} \quad ^*\text{a} \quad ^*\text{ɔ} \quad ^*\text{o} \quad ^*\text{u}/$$
$$/^*\text{ĩ} \quad ^*\text{ẽ} \quad ^*\text{ɛ̃} \quad ^*\text{ã} \quad ^*\text{ɔ̃} \quad ^*\text{õ} \quad ^*\text{ũ}/ \ .$$

In addition to the symmetry argument, nothing prevents the occurrence of /ẽ/ and /õ/ . These vowels are attested in other West African languages such as Basila, Giseda, Lelemi, Adele, Likpe, Santrokofi, Akpafu, Avatime, Nyangbo, Bowili, Ahlo, Kebu, and Animere, all belonging to the Central Togo (old Togo Remnant) languages as described by Heine [1968]; and Uvwie [Umukoro 1968], Agbon [Kelly 1969], and Epie [Thomas and Williamson 1967] of the Edoid complex; and Ịka [Elugbe 1969], Ọhụhụ [Green and Igwe 1963], Ọgba [Olori, n.d.], and Ikwerre [Williamson 1970] of the Igboid complex.[6] Moreover, if one admits that nasal vowels derive diachronically from *CVN and *CNV structures (see Hyman [1972] and Williamson [1973]), it becomes clear that nothing will prevent /e/ and /o/ from occurring in the V position of these structures [Capo 1983]. If one admits our reconstruction, then the diachronic rules to be posited to account for the reflexes are perfectly plausible. The dialects showing ɛ̃ and ɔ̃ have simply lowered */ẽ/ and */õ/ (in terms of the matrix of Table 2a below) through mergers; those showing ĩ and ũ have simply raised */ẽ/ and */õ/ through mergers; those showing ĩ and õ have retained proto-Yoruboid */ẽ/ and */õ/ as we shall show in section 4.3 below.

Now the reason why */ẽ/ and */õ/ have shifted in most dialects is that the lowering of the velum accompanying nasalisation would have both a physical effect on tongue position and an acoustic effect on the vowel sound itself; thus,

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[6]The reference to other West African languages here has no genetic implication. We are simply arguing that no segment structure condition (or morpheme structure condition) prevents the occurrence of ẽ and õ , contrary to a claim made by Hyman [1972].

ẽ and õ are rather unstable. This leads us to the argument of markedness. As already noted, Stewart [1983] states that ɩ and ɔ are more marked than e and o . If an indirect way of measuring markedness is the relative frequency of the segments in the languages of the world, this statement cannot be disputed. By the same argument, however, we are in a position to say that, as far as nasal vowels are concerned, ɩ̃ and õ̃ are less marked than ẽ and õ . Going through the vowel inventories of languages/dialects presented by Williamson [1973], some nine and ten (oral) vowel languages/dialects such as Grebo [Innes 1967], Akan [Schachter and Fromkin 1968], Baoulé (Vogler as cited by Hyman 1972]) have ɩ̃ and õ̃ without ẽ and õ ; others such as Epie [Thomas and Williamson 1967], Ịka [Elugbe 1969], Ọhụhụ [Green and Igwe 1963], Kalaḅari, Nembe, and Kolokụma [Williamson 1969] have both ɩ̃,õ̃ and ẽ,õ ; whereas only Basila [Heine 1968] has ẽ,õ but not ɩ̃,õ̃ .

4.3. <u>Another interpretation of the nine-vowel dialects</u>. As said above, in the so-called nine-vowel dialects of Yoruboid, ɩ̃ and õ̃ are autonomous phonemes because they occur in stem-final position and as such may contrast with ĩ and ũ as well as ɔ̃ (and ɛ̃). However, at the level of underlying representation, we would like to treat them as phonetic realisations of /ẽ/ and /õ/ for the same reasons as those advanced for proto-Yoruboid. Now the question is why /ẽ/ and /õ/ should be realised as [ɩ̃] and [õ̃] . We have already pointed out the unstable nature of [ẽ] and [õ] . For this reason, in most cases /ẽ/ and /õ/ are realised as [ɛ̃] and [ɔ̃] by a synchronic lowering rule, or sometimes as [ĩ] and [ũ] by a synchronic raising rule (see Williamson [1973]; Capo [1983, to appear]. Where the lowering rule applies, the contrast between /ẽ/ and /ɛ̃/ on the one hand and /õ/ and /ɔ̃/ on the other is lost. Similarly, where the raising rule applies, the contrast between /ẽ/ and /ĩ/ on the one hand and /õ/ and /ũ/ on the other is lost. Now suppose that a language/dialect does not lose the three-term contrast /ɛ̃/∿/ẽ/∿/ĩ/ and /ɔ̃/∿/õ/∿/ũ/ , and yet, its speakers are faced with the unstable nature of [ẽ] and [õ] ; then they may realise /ẽ/ and /õ/ as [ɩ̃] and [õ̃] since, as we think, [ẽ,õ] are more complex/marked than [ɩ̃,õ̃] . This is how, internally and spontaneously, ɩ̃,õ̃ could have emerged in the so-called nine-vowel dialects of Yoruboid in stem-final position without ɩ,ɔ (their oral counterparts) also emerging. We thus

hold the view that synchronically, present-day Yoruboid dialects having [ĩ,õ] as stem-final vowels at the phonetic level, actually have /ẽ,õ/ at the level of underlying representation.

4.4. On the acquisition of cross-height vowel harmony. We have seen that most present-day Yoruboid dialects have a seven (oral) vowel system. We have also argued that this seven (oral) vowel system must be traced back to proto-Yoruboid. This system is fully specified by the following matrix (Table 2a) argued for by Oyelaran [1973:159-60].

Table 2a: **Matrix specifying the Yoruboid oral vowels** [Oyelaran 1973:159]

	i	e	ɛ	a	ɔ	o	u
high	+	−	−	−	−	−	+
low	−	−	+	+	+	−	−
front	+	+	+	−	−	−	−
back	−	−	−	−	+	+	+

One could add two other features, viz. [rounded] and [expanded] to those in Table 2a, but they are redundant in that they do not play unique roles. Indeed [αrounded] ↔ [αback], and [αexpanded] ↔ [−αlow] as one can see in Table 2b.

Table 2b: **Feature specification of the vowels of the seven-vowel Yoruboid dialects, including redundant features** [Capo]

	i	e	ɛ	a	ɔ	o	u
front	+	+	+	−	−	−	−
back	−	−	−	−	+	+	+
rounded	−	−	−	−	+	+	+
high	+	−	−	−	−	−	+
low	−	−	+	+	+	−	−
expanded	+	+	−	−	−	+	+

One could also use a different specification, such as the one used by Fresco [1970] and Courtenay [1968]; in that system [expanded] and [rounded] are no longer superfluous, as can be seen in Table 3 on the next page.

Table 3:   <u>Feature specification of oral vowels of the seven-vowel Yoruboid</u>
           <u>dialects based on Fresco's [1970] matrix</u>

	i	e	ɛ	a	ɔ	o	u
high	+	−	−	−	−	−	+
low	−	−	−	+	−	−	−
back	−	−	−	+	+	+	+
rounded	−	−	−	−	+	+	+
expanded	+	+	−	−	−	+	+

(We assume, of course, that the nasal counterparts differ only in respect of the
feature of nasality.)

As observed above (section 2.3), these seven vowel dialects operate some
vowel co-occurrence restrictions. In particular, the pairs [e,o] and [ɛ,ɔ]
are mutually exclusive, whereas [i,u,a] are neutral. The restriction can be
accounted for by a vowel harmony rule which is assimilatory in nature.[7] Using
Oyelaran's [1973] matrix of Table 2a, this rule can be stated as SPR_{1a}.

$$SPR_{1a}: \quad \begin{bmatrix} +syl \\ -high \\ -low \end{bmatrix} \rightarrow [+low]/\_\_X \begin{bmatrix} +syl \\ +low \end{bmatrix}$$

Using the matrix of Table 2b, we can replace [low] with [expanded], and SPR_{1a} can
be re-written as SPR_{1b}.

$$SPR_{1b}: \quad \begin{bmatrix} +syl \\ -high \\ +exp \end{bmatrix} \rightarrow [-exp]/\_\_X \begin{bmatrix} +syl \\ -exp \end{bmatrix}$$

(Note that SPR_{1b} will also be the version based on Table 3.)

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[7]It is actually my view that we are not dealing with proper vowel harmony
rule(s), but with assimilation rule(s) except that the vowels involved may be
separated by a consonant. Most Yoruba scholars agree that the type of "vowel
harmony" discussed here operates regressively. In this regard, Fresco [1970:23]
states that underlying vowel prefixes are necessarily /i u e o a/ (note that
Yoruba has no suffixes); since the "harmony" can be stem-internal, I would like
to suggest that only the same vowels (and their nasal counterparts) also occur in
stem non-final position, while all the seven vowels of the language (and their
nasal counterparts) may occur in stem final position. This hypothesis, which can
only be understood in a non-autosegmental approach as used throughout this paper,
explains the formulation of the rule(s).

Since SPR_{1a} is exactly the same as SPR_{1b}, we can see that harmony based on [expanded] is already at work, except that it is co-terminous with vowel height here, restricted as it is to [-high] vowels.

We have shown above (section 4.3) how [expanded] starts playing a unique role when some dialects like Ijẹṣa, Irun, Ifaki, and Ekiti realise their /ẽ/ and /õ/ as [ɪ̃] and [õ] through a synchronic (raising) rule now stated as SPR_2.

SPR_2:
$$\begin{bmatrix} +\text{syl} \\ -\text{high} \\ -\text{low} \\ +\text{nas} \\ (+\text{exp}) \end{bmatrix} \rightarrow \begin{bmatrix} -\text{exp} \\ +\text{high} \end{bmatrix}$$

With the innovation of SPR_2 specific to the so-called nine-vowel dialects, [expanded] becomes pertinent in that, without it, [ɪ̃] and [õ] cannot be uniquely specified. In fact, at the systematic phonetic level, we now have high as well as non-high expanded and non-expanded vowels. With the addition of the two vowels [ɪ̃] and [õ] , the so-called nine-vowel dialects generalise the proto-Yoruboid vowel harmony rule (retained by the so-called seven-vowel dialects) SPR_{1b} to read SPR_3.

SPR_3: $[+\text{syl}] \rightarrow [-\text{exp}]/\_X \begin{bmatrix} +\text{syl} \\ -\text{exp} \end{bmatrix}$

In view of the fact that, apart from /a/ , all vowel prefixes in Yoruboid are underlyingly [+expanded], i.e. /i e u o/ (see footnote 7), we now expect in that position [i e u o a] on the one hand and [ɪ ɛ ɤ ɔ a] on the other (and eventually in the stem non-final position also their nasal counterparts).

It is necessary, at this juncture, to state emphatically that the vowel harmony rules are phonological rules, in fact assimilation rules. In the nine-vowel dialects in particular, SPR_3 is crucially ordered after SPR_2. This way, we can argue that the cross-height vowel harmony shown by Ijẹṣa, Ifaki, Irun, and Ekiti might have been acquired "spontaneously", the prolonged contact with Edoid and Igbirra languages being only a catalyst. This hypothesis also indicates that the vowel harmony rule SPR_3 may change anytime from now to a morpheme structure condition while SPR_2 becomes a diachronic rule. At this time it would not be strange to see some Yoruboid dialects developing underlying ɪ and o in

stem-final position (perhaps through "borrowing"). These properly established
nine (oral) vowel dialects will definitely confirm that a nine vowel dialect/
language may derive from a seven-vowel proto-language. That could have possib-
ly been the case with the unconfirmed data reported by Adetugbọ [1967] in re-
spect of some Central Yoruba dialects.

5. Concluding Remarks

    An attempt has been made to show that

(i) proto-Yoruboid had a fourteen-vowel system made up of seven oral vowels and
    their nasal counterparts,

      /*i *e *ɛ *a *ɔ *o *u/ and
      /*ĩ *ẽ *ɛ̃ *ã *ɔ̃ *õ *ũ/ ;

(ii) the so-called nine-vowel Yoruboid dialects have in fact seven underlying
     vowels, /i e ɛ a ɔ o u/ ;

(iii) in the same dialects, the stem final ɪ̃ and õ are phonetic realisations
      of /ẽ/ and /õ/ ;

(iv) in the same dialects, the non-final ɪ , (ɪ̃) , ʊ , (ʊ̃) , ɛ , ɔ are predict-
     able variants of /i (ĩ) u (ũ) e o/ through a cross-height vowel harmony
     rule developed "spontaneously" or perhaps "acquired" from the neighbouring
     Edoid and Igbirra languages.

    The implications of the present hypothesis as well as the problems it raises
are yet to be fully explored.

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PUBLICATIONS RECEIVED

Makonnen Argaw. *Matériaux pour l'étude de la prononciation traditionnelle du guèze.* Paris: Editions Recherche sur les Civilisations, 1984. Pp. 312. no price listed.

The introductory sections describe the methods and conditions under which Gə'əz, the traditional liturgical language of Ethiopia is taught, as well as ecclesiatical titles one can attain in the study of the language. The major part of the book is in three sections: biblical and other liturgical texts, proper names from the lexicon of Dillmann, and tables of verb forms, pronouns, derived nouns and numerals. The texts present the Ethiopian script with Romanized transliteration on the facing pages. The other materials also have both transliterations. The transliterations are based on recordings made from the pronunciation of several Ethiopian savants. There is an index of the words from the texts in traditional Ethiopian alphabetical order. The book concludes with French translation of the texts.

Y. Cadiou (ed.). *Le kinyarwanda.* Paris: Bibliothèque de l'Information Grammaticale, 1, rue Victor-Cousin, 75005 Paris. Pp. 160. FF140.

Six papers by A. Coupez, Y. Cadiou, L. Nkusi, S. Bizimana, Fr. Jouannet, F.X. Bangamwabo, and G. Mbodimana. [Translated from the book notices]: The authors' objective is to lay out a certain number of mechanisms tied to Kinyarwanda syntax and morphology ... . Their concern has been to bring out the specificity of Kinyarwanda, underlining the originality in solutions to problems that every language must face and to show that under an often complex semiology relatively simple and coherent systems are operating.

Nicholas Faraclas. *A Grammar of Obolo.* Studies in African Grammatical systems, No. 1. Bloomington, IN: Indiana University Linguistics Club, 1984. Pp. 122. $7.30.

Obolo is a Tano-Congo language, spoken in Nigeria in the southeastern corner of the Niger Delta. This grammar is intended in part for use by educated speakers of Obolo and hence avoids technical language and formalism. It is, however, fully tone marked. The sections are Introduction, The Sound System of Obolo, Nouns and Noun Phrases in Obolo, and Verbs and Verb Phrases. The grammar includes the main features of phonology and morphology, and the final chapter discusses basic syntactic patterns, but complex syntactic issues are not raised.

Mary McIntosh. *Fulfulde Syntax and Verbal Morphology.* London, Melbourne, Boston, & Henley: Routledge & Kegan Paul PLC, 1984. Pp. ix, 292. $29.95.

[From the back cover description]: Basing her study on evidence from the
Kaceccereere dialect of Southern Zaria in Northern Nigeria, Mary McIntosh
reveals some of the principles that underlie Fulfulde (or Fula) verbal
morphology. By discussing morphological issues, she establishes certain
new categories and principles for Fulfulde. The book contrasts the struc-
ture of Fulfulde sentences with and without a verb and then considers the
morphology of the verbal complex—that is, the verbal root and its depen-
dants. A hierarchy of suffixes is established in order to account for
the subtle variations in verbal morphology; and the different ways of re-
alising semantic-syntactic properties are categorised and exemplified.
Finally, sentences with a topic are syntactically and morphologically con-
trasted with those containing a focussed constituent.

Robert Nicolaï. *Préliminaires à une étude sur l'origine du songhay (matériaux,
problématique et hypothèses).* Marburger Studien zur Afrika- und Asien-
kunde, Serie A:Afrika, Band 37. Berlin: Dietrich Reimer, 1984. Pp. vi,
163. no price listed.

This study takes up the issue of the genetic relations of Songhai—wheth-
er, according to Greenberg, it is a member of the Nilo-Saharan family, or,
following the earlier hypothesis of Delafosse, it is related to the Mande
languages. Some 700+ lexical comparisons and various morphological com-
parisons with Saharan and Mande languages show that no clear picture
emerges. The final hypothesis is that present day Songhay, being as uni-
form as it is over its entire extent and given what is known of its use
as a trade language, may be the modern descendant of a creole. At this
time, given the conflicting picture of lexical and morphological data, we
cannot say with certainty what the genetic affinity of the pre-creole an-
cestor might have been.

Derek Nurse and Thomas Spear. *The Swahili: Reconstructing the History of an
African Society, 800-1500.* Philadelphia: University of Pennsylvania
Press, 1984. Pp. 152, 8 maps, 11 line drawings. $20.00 cloth, $11.95
paper.

[From the publication notice]: The assumption stemming from numerous pre-
vious studies is that the Swahili represent an alien Arab-Muslim culture
divorced from the cultures of their Bantu-speaking African neighbors.
The authors argue that the Swahili are an African people, born of that
continent and raised on it. Their culture is thus a dynamic synthesis of
African and Arabian ideas within an African historical and cultural con-
text.

Alhaji Shehu Shagari. *Nigeria: ein Lehrgedicht.* [Translated by Herrmann
Jungraithmayr]. Stuttgart: Institut für Auslandsbeziehungen, 1984. Pp.
80. no price listed.

A translation into German of the former Nigerian president's didactic
poem about Nigeria. Shagari wrote this poem while a schoolteacher in
Sokoto as a way to stimulate interest among students in Nigeria as a na-
tion. Jungraithmayr provides an introduction with background information

on the poem and notes on words, names, etc. unfamiliar to the European setting.

Publications of Verlag J.J. Augustin

Ludwig Gerhardt. *Beiträge zur Kenntnis der Sprachen des nigerianischen Plateaus.* Afrikanistische Forschungen, Band IX. Glückstadt: Augustin, 1983. Pp. 246, two separate maps. no price listed.

A comparative work on the "Plateau Branch" of the Benue-Congo languages. It is based mainly on the author's field research, but also includes data from previous research. An Introduction provides background on classification and previous research. The comparative sections are Phonology, the Nominal System (both noun classes and lexical roots), and Verbal Stem Extensions (*Erweiterungen*). A concluding chapter provides a reconstruction of 109 proto-Plateau lexical roots and comparisons with reconstructed roots for more distant branches in Niger-Congo, a reconstruction of the noun class system, and a reconstruction of verbal extensions.

Ekkehard Wolff. *A Grammar of the Lamang Language (Gwàɗ Lamaŋ).* Afrikanistische Forschungen, Band X. Glückstadt: Augustin, 1983. Pp. 272. no price listed.

A descriptive grammar of Lamang, a Central Chadic language spoken on the border between northeastern Nigeria and northern Cameroon. The Phonology section concentrates particularly on analysis of the vowel system, with extensive analysis of tones as well. The Morphology section discusses personal pronouns, nouns, verbs, qualitatives, and expressives. Particularly detailed (approximately a third of the entire grammar) is the description of the verbal system, which encompasses about 15 extensions and 15 "aktionsarten", the latter organized by Wolff in a hierarchical structure by mood and aspect. The final section covers syntax, including both noun phrase and simple sentence syntax as well as complex sentences, questions, focus, topicalization, and conjunction.

Publications of ILCAA

Eldridge Mohammadou. *Le royaume du wandala ou mandara au XIXe siècle.* African Languages and Ethnography, XIV. Tokyo: Institute for the Study of Languages and Cultures of Asia and Africa, 1982. Pp. xvi, 333, 3 maps, 70 pages of reproductions of Arabic manuscripts. no price listed.

This is a presentation of and commentary on four 19th century manuscripts from the Wandala, a Central Chadic speaking people of northern Cameroon. The volume includes reproductions of the original manuscripts. Following an introduction on field methodology and previous work, there are four main sections: French translations of the manuscripts with notes, presentation of oral tradition from living Wandala elders, bibliography and appendix of title lists, and the Arabic manuscripts themselves.

Eldridge Mohammadou. *Peuples et royaumes du foumbina*. African Languages and
     Ethnography, XVII. Tokyo: Institute for the Study of Languages and Cul-
     tures of Asia and Africa, 1983. Pp. 307, 14 maps. no price listed.

> A reconstruction of the history of the peoples of "Foumbina", the name
> given by the Fulɓe to the peoples of the basin of the upper Benue in
> northern Cameroon. The book synthesizes oral tradition with other facts
> to reconstruct pre-nineteenth century history of these peoples, i.e.
> their history before Fulɓe hegemony.

Aki'o Nakano. *A Vocabulary of Beni Amer Dialect of Tigré*. African Languages
     and Ethnography, XVI. Tokyo: Institute for the Study of Languages and
     Cultures of Asia and Africa, 1982. Pp. vi, 159. no price listed.

> A semantically classified vocabulary list of the Beni Amer dialect of
> Tigre, spoken in the frontier region of the Red Sea between Ethiopia and
> Sudan. There is an English alphabetical index to the Tigre word list.

Publications of SELAF

J. Delheure. *Aɣraw n Yiwalen: Tumẓabt T-Tfransist, Dictionnaire Mozabite-
     Français*. Etudes Ethno-Linguistiques Maghreb-Sahara, Université de
     Provence. Paris: SELAF, 1984. Pp. xxvi, 319. no price listed.

> [From the résumé]: This dictionary is intended first of all for the peo-
> ples of the Mzab and also for other Berber-speaking peoples of the Magh-
> reb, as well as for specialists in the Berber language and for linguists
> in the field of Hamito-Semitic languages. Practically speaking, it is
> the first dictionary to appear of this particular variant of the Berber
> language of the Mzab. It includes much more than the vocabularies so far
> published, which already date from a great many years. It is presented
> according to the modern method which uses classification by the roots of
> words. This new contribution to the inventory of the Berber language
> will also be of interest to the historians of Ibadhism and to those who
> study the ancient culture which vitalized this region in the past, a past
> which is still little known.

Francis Jouannet. *Phonologie du kifuliru*. Bibliothèque de la SELAF, 94.
     Paris: SELAF, 1984. Pp. 75, 3 maps. FF78,30.

> [From the publication notice]: The Bafuliru (bàfùlìrú) live in the
> Uvira zone of South Kivu, a province in Eastern Zaire in the Great Lake
> region. The Bafuliru speak Kifuliru (kìfùlìrú). The variety studied
> here is that of Lemera, a village in the North-East of the Uvira zone.
> Guthrie classified this language as D64 and Lolemi in the group J (J54)
> which comprises a number of languages of zones D and E of Guthrie's clas-
> sification. The phonological analysis follows the principles of A. Mar-
> tinet. An argumentation in several chapters precedes setting of syllabic
> structure. The first chapter presents the distribution of consonant ele-
> ments and the second a paradigmatic analysis of them as distinctive units.

Chapter III which deals with vowel units is not structured in the same
way, the distributional analysis of vowels is not so complex as to re-
quire a whole chapter. Chapter IV deals with prosody in which it is
proved that the numerous phonetic pitches may be reduced to two distinc-
tive tones.

Francis Jouannet. *Le français au Rwanda: enquête lexicale*. Sociolinguistique:
systèmes de langues et interactions sociales et culturelles, 2. Paris:
GERLA-SELAF, 1984. Pp. 232. FF110,00.

[From the publication notice]: Rwanda's sociolinguistic background and
the place occupied by French in this nation which is on the extreme ori-
ental fringes of the francophone area in Africa is quite original.
French which was introduced by the Belgians is related to the nationally
spoken language Kinyarwanda in a very particular way due to a situation
exceptional for Africa: Rwanda (with Burundi) is the only francophone
African country in which only one mother tongue is spoken by the entire
population. In his introduction the author recalls the historical set-
ting of the social organisation which has conditionned and permitted the
use of a French vocabulary in this part of the African continent. A
practical, alphabetically listed glossary with analysis of those French
lexical items spoken in Rwanda shows a school level knowledge of French.
Norms acquired in school persist in the French commonly spoken in this
country and check any possibilities of lexical creation. The lexical de-
viation (less than a thousand) from standard French is similar to that
found in any regionally spoken French in France.

Marie-Françoise Rombi. *Le shimaore (Ile de mahotte, Comores). Première ap-
proche d'un parler de la langue comorienne*. Langues et Cultures Afri-
caines, 3. Paris: SELAF, 1983. Pp. 265, 2 maps. no price listed.

[From the résumé]: Shimaore, a Bantu language of Mayote Island, makes up
together with Nzuanese a dialect subset of Comorian, quite separate from
the Ngazidja-Mwali subset. Generally considered (Guthrie, passim) as
part of G 40 "Swahili" group, Comorian can be clearly distinguished from
"Standard" Kiswahili (based upon Zanzibar's Kiunguja), with which it
shares an important Arabic lexicon; there is, however, no intercommunica-
tion. Both at the phonemic and the morpho-syntaxic levels (verbals and
dependent nominals) Shimaore tends to evidence traits reminiscent of
some continental Bantu languages (from Mozambique especially) as well as
of the Northern dialects of Zone G. This work attempts a description of
Shimaore drawing its inspiration from the methods of Guthrie's school as
revised and adapted at the Bantu seminar of INALCO. The grammatical de-
scription is illustrated by two folktales translated and commented in
close co-operation with informants from Mayote and Mozambique.

Publications from Undena

James P. Allen. *The Inflection of the Verb in the Pyramid Texts*. Bibliotheca
    Aegyptia, Vol. 2. Malibu: Undena Publications, 1984. Pp. xxxii, 768.
    no price listed.

    [From the résumé]: As a grammatical feature, inflection is most signifi-
    cant in the earlier, synthetic phases of ancient Egyptian. The present
    study focusses on the Pyramid Texts, as representative of the earliest
    well-documented phase of the language. For the verb, the study of in-
    flection is the identification of written forms, in the different verb-
    classes, that have the same grammatical value. To that end, the verbs
    of the Pyramid Texts are here grouped into classes by root (Appendix 1:
    §§724-56), and all occurrences of their written forms within these
    classes are collected (Appendix 2: §§757-840). Part I of the text (§§13-
    211) provides the catalogue of morphologically significant forms within
    each class; Part 2 (§§212-723) identifies the inflected forms of the
    verbs and describes their conjugation, on the basis of syntactic environ-
    ments. A major result of this study is the identification of a synthetic
    future tense within the suffix-conjugation; this tense also lies at the
    base of the suffix participle, and is the probable origin of the negativ-
    al complement. The description of the verb that emerges here supports
    the synthetic origin of the Egyptian verbal system, and provides a base
    against which the development from Old to Middle Egyptian can be measured
    more accurately.

Alan S. Kaye. *A Dictionary of Nigerian Arabic*. Bibliotheca Afroasiatica, Vol.
    1. Malibu: Undena Publications, 1982. Pp. xvi, 92. no price listed.

    [From the résumé]: *A Dictionary of Nigerian Arabic* (English-Nigerian
    Arabic) provides material on the present state of Nigerian Arabic studies
    and gives evidence of a dialect change in a diachronic span of nearly 50
    years. This particular dialect reflects the confluence of Eastern and
    Western Arabic (Lake Chad to Kano). The dictionary lists approximately
    6000 lexemes with some illustrative sentences, many of which are found in
    the author's unpublished texts in the language. *A Dictionary of Nigerian
    Arabic* is geared to be of use to the specialist in comparative Arabic
    dialectology and to the general linguist interested in Afroasiatic data
    from a synchronic point of view as well as to the Africanist dealing with
    linguistic diffusion and borrowing.

Shlomo Raz. *Tigre Grammar and Texts*. Afroasiatic Dialects, Vol. 4. Malibu:
    Undena Publications, 1983. Pp. viii, 148. $19.75.

    [From the résumé]: The present grammar comprises two parts: the first
    part consists of a concise descriptive grammar of the Mansa dialect of
    the Tigre language; the second part contains a selection of new Tigre
    texts. The motivation for the present work is the state of research of
    the Tigre language; practically none of the grammatical works of the ear-
    lier period of Tigre studies are of descriptive value to the student of

Tigre, some of them being linguistic curiosities of primarily historical value, while others were written by people who lacked skill or qualification for the task.

David P. Silverman. *Interrogative constructions with JN and JN-JW in Old and Middle Egyptian*. Bibliotheca Aegyptia, Vol. 1. Malibu: Undena Publications, 1980. Pp. vi, 144. no price listed.

This book is "an examination of the syntax of ancient Egyptian questions introduced by jn and jn-jw , and the examples for the most part, are from Old, Middle, and early part of the New Kingdom. Since information from the later stages of the languages bears some relationship to earlier material, a discussion of questions from these periods is included in the Appendix" (Preface, p. iii). Descriptive chapters on the constructions in question are followed by a chapter with "Conclusions concerning Jn and Jn-Jw " and "The interpretations of questions as conditions", an appendix with diachronic interpretations, an index of citations, and a bibliography.

Periodicals

JOLAN [Journal of the Linguistic Association of Nigeria].

"JOLAN is the journal of the Linguistic Association of Nigeria (LAN). LAN is the largest national linguistic body in Africa, with over two hundred members. It was founded in 1980 to reflect the high level of interest and professionalism of linguistics in Nigeria, and the journal was developed to serve LAN's two constituencies: scholars of Nigerian languages as well as the international community of linguists."

For subscription information from outside Africa, write to Publications Officer, African Studies Center, Boston University, 270 Bay State Road, Boston, MA 02215, USA.

Bulletin de l'Institut d'Etudes et de Recherches Interethniques et Interculturelles (IDERIC), No. 1, Juin 1984. (IDERIC, Université de Nice, 33, Boulevard de la madeleine, 06000 Nice, FRANCE.)

Summary of research in progress, meetings and seminars, and publications of the members of IDERIC.

The Nigerian Language Teacher. Federal Ministry of Education, National Language Centre, P.M.B. 12573, Lagos, Nigeria.

The Nigerian Language Teacher contains a news section which reports on past and coming events. The Centre welcomes news reports of both coming and past events, including information on workshops, seminars, curriculum development projects, programs on orthographies and terminology of any Nigerian language and language/cultural activities.

Swahili Language and Society: Notes, News, No. 1, 1984. (Institute für Afrikanistik der Universität Wien, Doblhoffgasse 5/9, A-1010 Vienna, AUSTRIA.)

[From the introductory editorial]: This news-letter is meant to keep in touch all those who are interested in Swahili as communication; as a language with a function in a society. That society is changing historically and demographically, and the language is changing with it. This news-letter will contain anything that the readers want it to contain, unless it starts to get too big, when we may have to prune it. It will be as good as the material we receive from you, the readers. So send us your news, personal and professional, and we will pass it on. Send us your views, too, and we will publish or note them.

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