# THE SEMANTICS OF TENSE IN KINYARWANDA*

Robert D. Botne
Chicago, Illinois

Tense is one of those verbal categories relatively unex-
plored in Bantu languages.  In this study the author en-
deavors to differentiate and describe the temporal func-
tions of those verbal prefixes directly or indirectly
relevant to the expression of tense in Kinyarwanda.
These morphemes are shown to constitute diverse semantic
(temporal) systems—labeled vector and segmental—which,
when juxtaposed, determine the particular tense of any
verbal expression.  Of particular significance, the anal-
ysis demonstrates that these morphemes do not, in all
cases, have a unique, absolute meaning or function, but
shift according to the semantic context in which they are
used.

## 1. Introduction

The temporal analysis of a verbal expression must take into account two

complementary phenomena:  tense and aspect.  In Kinyarwanda the category of

TENSE is particularly complex, embracing several semantic systems each of

which characterizes the relationships among events in a different way.  The

expression of tense relations depends both upon the choice of morphemes belong-

ing to these different systems and the combination of morphemes in the verbal

construction.  The analysis of the syntactic and semantic interdependence

among the morphemes of these various temporal systems constitutes the focus of

this article.

The category of tense is not easily analyzed in Kinyarwanda.  The verbal

expression represents a complex unit characterized by the interaction of sev-
eral diverse grammatical categories.  Moreover, these categories are not
clearly distinct, but intersect.  Nevertheless, we can represent the struc-
ture of the verbal expression in the following general terms:

$$\begin{matrix} \text{Concordial} \\ \text{Prefix} \end{matrix} \pm \text{Mode} + \text{Tense} + \begin{matrix} \text{Verbal} \\ \text{Focus} \end{matrix} + \text{RADICAL} \pm \begin{matrix} \text{Radical} \\ \text{Extensions} \end{matrix} + \text{Aspect}^{1}$$

In order to explain the systematic manner in which temporal relations are
marked in Kinyarwanda, it is necessary to examine in detail the ways in which
the categories of MODE, TENSE, and FOCUS interact to produce the observed sur-
face structures and to convey particular temporal links among events.

     Over and above the morphological and syntactic description of the struc-
ture of these verbal categories, the essence of this study is the analysis of
the meaning and function of each temporally associated morpheme.  Before exam-
ining these morphemes individually, though, it is necessary to consider first
the generic role of tense.  Semantically, tense denotes the ordered relation
of an event[2] to an established event of reference.  In relations of the first
order (notably "simplex"[3] tense) this reference event is established by the
speech event (R1).  For second order relations ("complex" tense) the reference
event to which the narrated event is temporally situated is determined by an
event (R2) other than the speech event (R1); this event is, in turn, temporal-
ly linked to the speech event.

     We can distinguish two common types of semantic system that may serve to

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     [1]In this analysis I have been concerned almost exclusively with indicative
constructions, though the claims made here hold for all "moods".  For indica-
tive constructions a negative mark may precede the concordial prefix.  The
category MODE should not be confused with Coupez's [1980] use of the term.
The category proposed here expresses primarily the point of view of the speak-
er towards temporal relations.  The category FOCUS has not been completely ex-
plored, the name being applied here because of similarities with functions il-
lustrated by Givón [1972] and restated in Kimenyi [1980].

     [2]Although I will speak of events throughout, the notions of tense express-
ed here are relevant to states, processes, etc.

     [3]I am using the terms "simplex" and "complex" to refer only to semantic
phenomena, the terms "simple" and "compound" for syntactic phenomena.

express these ordered temporal relations between events.  The first can be designated a "vector" system, the second a "segmental" system.  Both types are manifested in Kinyarwanda and constitute an essential part of the analysis.[4]

A "vector" system is based on the notion of "direction" with respect to the point of reference.  A particular direction may be said to delineate a temporal domain, of which there are four:  that domain anterior to the point of reference, posterior to it, simultaneous with it, or disjunct from it.  The schemas in Figure 1 depict graphically these four potential relationships between an event and the point of reference.  The shaded areas indicate the domain in which the event may be narrated with respect to the reference event (R).

Figure 1.  Potential relations in a vector system

    a.  anterior
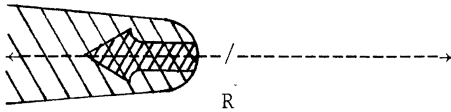


    b.  posterior
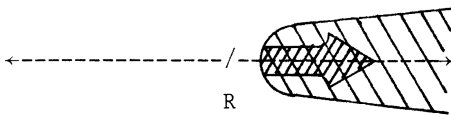


    c.  simultaneous



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[4]See Bull [1960] for a similar discussion of tense.

d.  disjunct



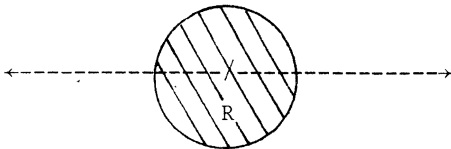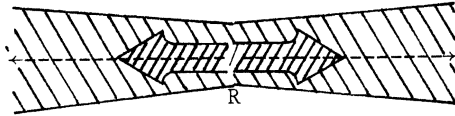A vector system can manifest itself in two ways.  In the first type, each
of the four domains cited above is morphologically marked by a distinct mor-
pheme.  In such an "equipollent" system, each morpheme is attributed a "posi-
tive" meaning, and, consequently, may be considered to be semantically marked.
The second type of vector system is founded on the notion of "privative" se-
mantic opposition.  In contrast to the first type, only one domain is dis-
tinctly marked morphologically.  The remaining three domains are grouped to-
gether under the same morphological marker (possibly null, $\emptyset$ ).  By virtue of
its "positive" meaning, the morphologically distinct domain may be considered
the semantically marked case; the other, which derives its meaning from its
opposition to the marked case, may be considered semantically unmarked.  It is
this second type of vector system that is found in the tense category of Ki-
nyarwanda.

The second type of temporal system mentioned above, a "segmental" system,
is based on the concept of temporal intervals or segments.  These segments are
anchored to a point of reference, but at varying "distances".  In Kinyarwanda
they are invariably anchored to the speech event.  It appears to be the case
that frequently the morphemes marking these temporal segments create an alter-
nating pattern (very regular) from remote past to remote future.  Such a case,
drawn from ChiBemba, is presented in Figure 2.[5]  The tonality of the verbal
expression changes according to the temporal segment in which the speaker has
placed the narrated event.  Thus, for example, the tone will be low ( ` ) when
the narrated event is situated earlier in the day (1a), and high ( ´ ) when it
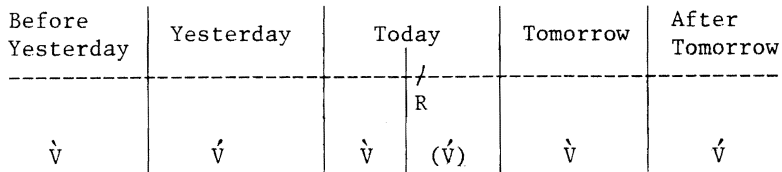is situated on the day preceding the speech event (1b).

(1) a.  ba-à-cílàá-bomb-a          'they were working (earlier in the day)'

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[5]See Botne [1980:appendix] for a more complete and precise analysis; see
Givón [1972] for the original data.

b.   ba-á-léé-bomb-a                    'they were working (yesterday)'

Other morphemes serve to differentiate tonally identical expressions, such as
-ci-  in (la).

Figure 2.  <u>Segmental system (ChiBemba)</u>

| Before Yesterday | Yesterday | Today | | Tomorrow | After Tomorrow |
|------------------|-----------|-------|---|----------|----------------|
|                  |           |       | R |          |                |
| V̀               | V́        | V̀    | (V́) | V̀     | V́             |

In the following analysis, I will demonstrate how these two types of se-
mantic system, vector and segmental, are integrated in the category TENSE in
Kinyarwanda.

2.   "Simplex" Tense in Kinyarwanda

By "simplex" tense  is to be understood those temporal relations which es-
tablish a particular order between the speech event (primary reference point)
and the narrated event.[6]  In Kinyarwanda these relations are systematically
and obligatorily marked in all verbal constructions.[7]  In this section I will
examine those morphemes which function to express these relations, with a view
towards describing explicitly their semantic range.  As the point of depar-
ture, we can consider first problems associated with the form  -ra- .

There are two morphemes in Kinyarwanda having the form  -ra- .  One of
these two falls under the category MODE and will be considered in conjunction
with the discussion of "complex" tense.  The second is more dynamic in nature,
belonging to either of two categories, TENSE or FOCUS, according to the syn-
tactic/semantic context.  In one sense, as the examples in (2) and (3) indi-

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[6] More precisely, the foregrounded aspect of the narrated event.  See Bot-
ne [1983] for a more detailed discussion of tense, aspect, and event structure
in Kinyarwanda.

[7] This is not completely accurate.  While it is true that all verbal ex-
pressions will have temporal relations marked, when it is a question of a long
narrative text, only the first verbal expression is marked with respect to the
speech event; others are marked with respect to that reference point establish-
ed by the first expression.

cate, this morpheme is associated with the absence of an external complement,[8] and consequently, with focus on the verb as new information. This function of  -ra-  will be noted by the subscript  -ra$_c$- .

(2) a.  à- sòm- à   Imvaho                'he reads Imvaho (habitual action)'
        3s read asp (newspaper title)

    b.  à-rà$_c$-yì-sòm-à                'he reads it (habitual action)'

    c.  à-rà$_c$-sòm-à                  'he reads (habitual action)'

    d.  *à-sòm-à

(3) a.  y- á- sóm- yè  Imvaho           'he read Imvaho (action having taken
        3s ant read asp                  place before today)'

    b.  y-á-rá$_c$-yí-sóm-yè            'he read it (action having taken place
                                         before today)'

    c.  y-á-rá$_c$-sòm-yè              'he read (action having taken place
                                         before today)'

    d.  *y-á-sóm-yè

The second function of this morpheme differs from the first in two re-
spects. Syntactically, it is not associated with complementation; semantical-
ly, it is not associated with verbal focus, but rather denotes a temporal in-
terval extending from (and including) the speech event to the end of the day.
This function of  -ra-  will be noted as  -ra$_s$- .

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[8]Certain complements such as  cyaane  'a lot, much',  neeza  'well, good',
and  koko  'truly, really' do not figure in this correspondence. Note fur-
thermore that with what Coupez calls the "conjunctive mode" there is a differ-
ent correspondence between temporal intervals and syntactic usage of FOCUS
(compare Figure 3, page 242 ) than there is for the indicative. With the con-
junctive, we find the following:

| Before Today | Today Earlier | Today Later | After Today |
|---|---|---|---|
| | | R1 | |
| NO | YES | NO | YES |

That is, there is no syntactic distinction made in the remote past as there is
in the indicative, but there is in the remote future. Thus, although this
syntactic feature differs between indicative and conjunctive, it still main-
tains a temporally based phenomenon.

(4) a. à- ràs- sòm- à  Imvaho     'he is reading Imvaho'
    3s tns  read asp     'he is going to read Imvaho (later in
                    the day)'

   b. à-ràs-yì-sòm-à     'he is reading it'
                    'he is going to read it (later in the
                    day'

   c. à-ràs-sòm-à     'he is reading it'
                    'he is going to read (later in the day)'

Although the functions of $-ra_c-$ and $-ra_s-$ are decidedly different, there exists a common feature between them: both refer events to specific temporal intervals. As noted above, $-ra_s-$ denotes an interval delimited by the speech event and the end of the day. $-ra_c-$ denotes an interval bounded by, but not including, today, i.e. up to but not including the day of the speech event (see examples in (3)).

This functional differentiation noted in $-ra-$ is found again in the use of the morpheme $-a-$ . Like $-ra_c-$ , $-a_c-$ is associated with the absence of an external complement and puts the verb in focus. Furthermore, it denotes a temporal interval extending from the beginning of the day up to, but not including, the speech event. The sentences in (5) illustrate the nature of this morpheme in syntactically appropriate contexts.

(5) a. y- à- sòm- yè  Imvaho     'he read Imvaho (action having taken
    3s ant read asp     place earlier in the day)'

   b. y-à-à$_c$-yì-sòm-yè     'he read it (action having taken place
                    earlier in the day)'

   c. y-à-à$_c$-sòm-yè     'he read (action having taken place ear-
                    lier in the day)'

   d. *y-à-sòm-yè

Just as $-a_c-$ is in complementary distribution with $-ra_c-$ , $-a_s-$ is in complementary distribution with $-ra_s-$ . Like $-ra_s-$ , $-a_s-$ denotes a temporal interval. The lower bound of this interval is delimited by the day of the speech event, but not including it. This may be observed from the examples in (6).

(6) a. à- zà- à$_s$- sòm- à  Imvaho 'he is going to read Imvaho (action to
    3s rm pos tns read asp     take place after today)'

b.  à-zà-à$_s$-yì-sòm-à                    'he is going to read it (action to take
                                           place after today)'

c.  à-zà-à$_s$-sòm-à                       'he is going to read (action to take
                                           place after today)'

The temporal distribution of these forms can be perceived more clearly
by means of the graphic representation in Figure 3.  Recall that the forms an-
terior to the point of reference have as their primary function the marking
of verbal focus.

Figure 3.  <u>Distribution of the forms  -ra-  and  -a-</u>

```
   Before    |        Today        |  After
   Today      |                     |  Today
              |   Earlier |  Later  |
   <----------+-----------+/--------+-------->
              |           |R1
      ra       |    a     |  ra     |   a
        c      |      c   |    s    |     s
```
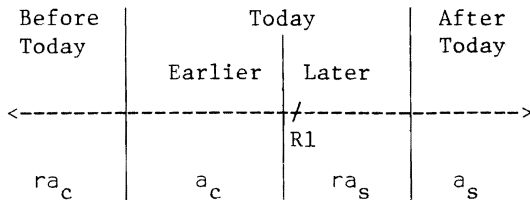
The systematic alternation that we observe in the above schema immediately
suggests a "segmental" semantic structure, even though the primary function of
those forms associated with the past is not temporal in nature.  The problem
we face here is how to explain this functional distinction and how to incor-
porate this difference into a synchronic analysis.

Before considering a solution to this problem, it is necessary to examine
other morphemes relevant to tense and their semantic functions.  There exists
a second morpheme in Kinyarwanda having the form  -a- .  This morpheme oc-
curred in (3) and (5) illustrated earlier.  It functions to express a rela-
tionship of "anteriority to"; in (3) and (5) this relationship is understood
to hold between the narrated event (E) and the speech event.  More specifical-
ly,  -a$_v$-  marks a vector domain, which we can graphically represent as in Fi-
gure 4.

Figure 4.  <u>The temporal domain of the morpheme  -a$_v$-</u>
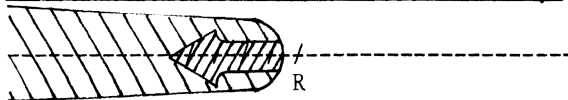


This morpheme represents the semantically marked case in a vector system op-

posing "anterior" to "non-anterior". The semantically unmarked case (morpho-logically null, $-\emptyset_v-$ ) embraces all three of the other domains (posterior, simultaneous, disjunct) and can be said to have meaning only by virtue of its opposition to $-a_v-$ . Consequently, a verbal expression incorporating $-\emptyset_v-$ will have three potential interpretations, the exact interpretation depending upon the semantic context.

Tense in Kinyarwanda is complicated by the fact that it has not just one vector system, but three. In addition to the principal vector system outlined above, there are two parallel sub-systems. The example in (6) illustrates the semantically marked domain in a system that can be characterized as "remote posterior vs. non-remote posterior". That is, the morpheme $-z\acute{a}-$ marks that domain posterior to the *day* of the speech event. For all events non-posterior to the day of the speech event, the verbal expression will incorporate the complement of $-z\acute{a}-$ , that is, $-\emptyset_{za}-$ . This semantic opposition is graphical-ly presented in Figure 5.

Figure 5.  <u>Vector sub-system "remote posterior/non-remote posterior"</u>
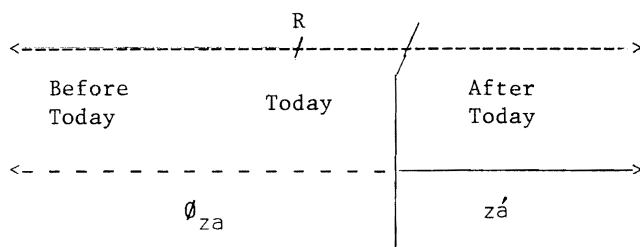


The second, and parallel, sub-system incorporates two tones, HIGH vs. LOW, in semantic opposition. The  H  tone ( ´ ) marks that domain anterior to the *day* of the speech event. Like $-z\acute{a}-$ it represents the semantically marked case. In opposition to this  H  tone we find the  L  tone ( ` ) which sub-sumes in its semantic range all those temporal domains not included in the range of the  H  tone. The following examples illustrate this difference in function.

(7)  yásómyè kiliya gitabo
    /a- a$_v$- $\acute{\emptyset}$-    $\emptyset_{za}$-    $\grave{\emptyset}$-    sòm- lr..e/
     3s ant rm ant nonrm pos focus read asp

    'he read that book (action having taken place before today)'

(8)  yàsòmyè kiliya gitabo

    /a- a$_v$- ∅̀-      ∅$_{za}$-    ∅̀-  sòm- lr..e/
    3s ant nonrm ant nonrm pos focus read asp

    'he read that book (action having taken place earlier in the day)'

(9)  a.  àràsòmà iki gitabo

        /a- ∅$_v$-    ∅̀-      ∅$_{za}$-    ra$_s$- ∅́- sòm- a/
        3s non ant nonrm ant nonrm pos tns  tns read asp

        i)  'he is reading this book (action taking place now)'

        ii) 'he is going to read this book (action to take place later
            in the day)'

    b.  àrákámà inka

        /a- ∅$_v$-    ∅̀-      ∅$_{za}$-    ra$_s$- ∅́- kám- a/
        3s non ant nonrm ant nonrm pos tns  tns milk asp

        i)  'she is milking the cows (action taking place now)'

        ii) 'she is going to milk the cows (action to take place later
            in the day)'

(10) àzààkàmà inka

    /a- ∅$_v$-    ∅̀-    zá-  a$_s$- ∅̀- kám- a/  ·
    3s non ant nonrm ant rm pos tns tns milk asp

    'she is going to milk the cows (action to take place after today)'

Notice that among those examples expressing a "non-remote anterior" rela-
tion (examples (8-10)) only the construction in (9b) does not manifest a low
tone on the "tense" morpheme(s).  This unexpected high tone derives from the
interaction of the lexical high tone on the radical  kám  (while  sòm  has a
L ) with a grammatical high tone from the category FOCUS particular to this
type of construction.  This interaction of tones will be discussed shortly.

    The semantic opposition discussed above between  H  and  L  tones can be
graphically represented in a manner parallel to that sketched for  -zá- .

Figure 6.  Vector sub-system "remote anterior/non-remote anterior"
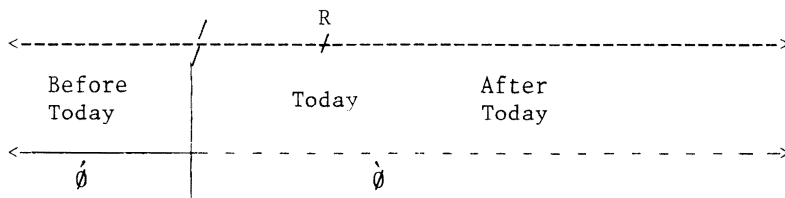
I have referred to tones above as either "lexical" or "grammatical" (floating). They are not, however, inherently different in nature. The morpheme -kám- , for example, includes a high tone as part of its constituent structure in the same sense as the segment [k] . A "floating tone" morpheme, such as -∅́- indicating remote anterior, is quite simply a morpheme lacking segmental constituents in the same way that other morphemes lack tonal constituents.[9]

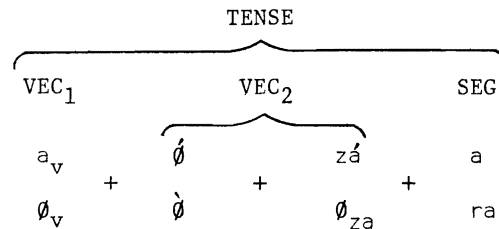We have seen so far four paradigmatic/semantic oppositions: (i) -ra-/ -a- , (ii) $-a_v-/-∅_v-$ , (iii) $-zá-/-∅_{za}-$ , (iv) -∅́-/-∅̀- . These four pairs constitute sub-divisions of the category TENSE. From the morphological arrangements that can be observed in the preceding examples, we can establish the following structural ordering:

Figure 7.  Tense

```
                              TENSE
              ┌─────────────────┴──────────────────┐
         VEC₁                  VEC₂                    SEG
                          ┌──────┴──────┐
          aᵥ           ∅́            zá              a
                 +             +              +
          ∅ᵥ           ∅̀            ∅_za            ra
```

The temporal meaning of a verbal expression derives, for the most part, from the sum of the meanings of the morphemes incorporated in it from these four sub-categories.  However, this analysis still fails to resolve several problems.  We have observed previously the double functions of the morphemes -ra- and -a- which have not been adequately treated above.  Furthermore, there has been no explanation offered of how tones are distributed over segments.  In order to present a satisfactory solution to these problems, it is necessary to consider a second verbal category, that of VERBAL FOCUS.

Consider the five examples below (11-15) which include pronominal complements in syntactically different verbal constructions.

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[9]A different use of tone is found at the syntactic level, in which certain H tones are assigned to the verbal expression as a whole, depending upon its relationship to other elements [Botne, in preparation, a].

(11)   nààgítémyè

/n- a$_v$- ∅̀-          a$_c$- ki-          ∅́$_c$   tem- ye/
    1s ant nonrm ant focus cl.7 infix focus cut   asp

'I cut it (action having taken place earlier in the day)'

(12)   nàkìmùtèmèyè n'umuhoro

/n- a-  ∅̀-          ki-          mu-          ∅̀$_c$-   tém- e(r)- ye/
    1s ant nonrm ant cl.7 infix cl.1 infix focus cut   ben    asp

'I cut it for him with a bill hook (action having taken place earlier
in the day)'

(13)   nààkímútèmèyè

/n- a$_v$- ∅̀-          a$_c$- ki-          mu-          ∅́$_c$-   tém  e(r)- ye/
    1s ant nonrm ant focus cl.7 infix cl.1 infix focus cut   ben    asp

'I cut it for him (action having taken place earlier in the day)'

(14)   nákímùtèmèyè n'umuhoro

/n- a$_v$- ∅́-   ki-          mu-          ∅̀$_c$-   tém- e(r)- ye/
    1s ant rm ant cl.7 infix cl.1 infix focus cut   ben    asp

'I cut it for him with a bill hook (action having taken place before
today)'

(15)   nárákímútèmèyè

/n- a$_v$- ∅́-   ra$_c$- ki-          mu-          ∅́$_c$-   tém- e(r)- ye/
    1s ant rm ant focus cl.7 infix cl.1 infix focus cut   ben    asp

'I cut it for him (action having taken place before today)'

We can observe in these examples two important phenomena.  Notice, first of
all, that the absence of an external complement (11, 13, 15) is marked not on-
ly by the morphemes -ra$_c$- or -a$_c$-  , but also by a high tone on the pronom-
inal complement.  Secondly, the high tone of the radical -tém- is neutral-
ised when there is an external complement (12, 14).  These observations sug-
gest that the category VERBAL FOCUS comprises three sub-divisions as outlined
in Figure 8.

Figure 8.  Verbal focus

            a                                            ∅́
                +   pronominal        +
            ra              complement(s)                ∅̀
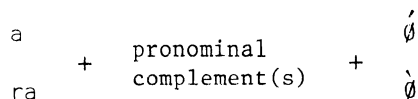
The high (floating) tone correlates with the absence of an external comple-

ment, the low tone with the presence of such complements.  Stated somewhat differently, the  H  tone indicates that the focus is on the verb itself; the L  tone indicates the lack of such focus.

At this point in the analysis, we have seen two verbal categories that affect the temporal interpretation of a verbal expression.  From the separate analyses proposed above, we obtain the following combined syntactic structure of morphological prefixes.

Figure 9. <u>Tense and focus combinations</u>
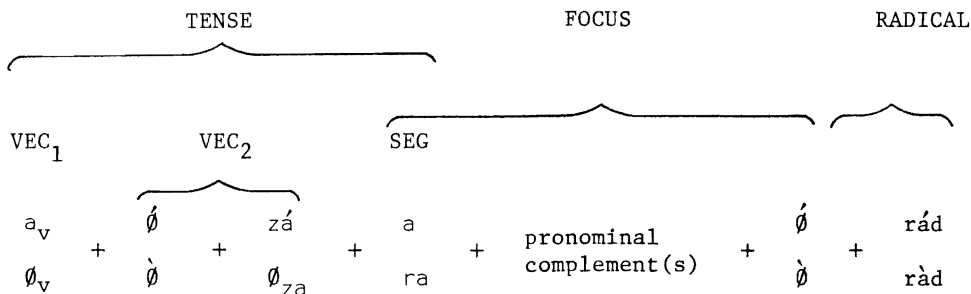


Recall that the morphemes  -ra-  and  -a-  have two distinct semantic functions according to the temporal context:  (i) when correlated with the temporal notion "anterior", the use of these morphemes indicates primarily the absence of an external complement; (ii) when correlated with the temporal notion "non-anterior", they denote distinct temporal intervals.  The dual nature of these morphemes suggests that they shift category and behave as morphemes of a particular category according  to semantic criteria.  The distribution of tones over the verbal expression supports this hypothesis.

The distribution of tones proceeds in a systematic and predictable manner, contrary to the assertions of Kimenyi [1978:303].[10]  Four rules suffice to account for the observed surface phenomena.  These rules are essentially morphophonemic in nature.

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[10]See Coupez [1980] for a description that is morphologically, syntactically and semantically different from this one.

Rule 1:  LOW TONE SHIFT

>    Underlying low tones are displaced, or shifted, onto *all* following
>    morphemes (that include vocalic segmental constituents) belonging to
>    the same verbal category.  Any high tone in the category will be *re-*
>    *placed* by the low tone.

(16)   n + a$_v$- ǿ-        ∅$_{za}$      + mu-      ∅̀$_c$   + tém + lr..e  igití[11]
     1s   ant nonrm ant nonrm pos   cl.1 inf focus    cut    asp    tree

       TENSE                         FOCUS             RAD

nàmùtèmèy'ìgítì

'I cut the tree for him (earlier in the day)'

Notice in (16) that the low tone found in the TENSE category is distributed ov-
er all morphemes in the FOCUS category, and that the low tone of the FOCUS
category replaces the high tone on the radical.

Rule 2:  HIGH TONE SHIFT

>    Underlying high tones are displaced, or shifted, onto all *preceding*
>    morphemes (that include vocalic segmental constituents) belonging to
>    the same verbal category.  Any low tone in the category will be re-
>    placed by the high tone.

(17)   n + a$_v$- ǿ-        ∅$_{za}$      + a$_c$-   ki-     mu-      ∅́$_c$   + tém + lr..e
     1s   ant nonrm ant nonrm pos   focus cl.7 inf cl.1 inf focus    cut    asp

             ↓                     Application of Rule 1

n + a$_v$ + à$_c$-kì-mù + tém + lr..e

             ↓                     Application of Rule 2

n + a$_v$-à$_c$ + kí-mú + tem + lr..e

nààkímútèmèyè

'I cut it for him (earlier in the day)'

Because tones are distributed over all morphemes included in one verbal cate-
gory, a problem arises as to where morphemes of the SEG category are to be
grouped.  As with other aspects of this category, the solution lies in a dy-
namic shifting according to the rule applied and the number of high tones in

---

[11]The discontinuous morpheme  lr..e  is manifested in different ways ac-
cording to the phonological context.  See Botne [1980] for a more detailed
discussion.

the construction.  Thus, for the application of Rule 1 (LOW TONE SHIFT) SEG behaves as though it were part of the FOCUS category.  For the application of Rule 2 (HIGH TONE SHIFT) the category to which SEG will belong depends on the number of moras[12] which will eventually have a high tone in the TENSE category.  If there is an *odd* number of moras which will receive a high tone, SEG will behave as though it were part of FOCUS; if, on the contrary, there is an *even* number of moras which will have a high tone, SEG will behave as though it were part of the TENSE category.

We see in (17) that the morpheme $-a_c-$ behaves as part of the FOCUS category for the application of Rule 1.  With Rule 2, we note that TENSE has an even number of moras that will receive a high tone (in this case zero), and consequently $-a_c-$ behaves as though it belongs to TENSE.  The derivation in (18) illustrates a similar case (though with two moras to carry high tone in the TENSE category), while that in (19) illustrates a case with an odd number of moras in the TENSE category that will receive high tones and in which the morpheme $-ra_c-$ behaves as though it were part of the FOCUS category.

(18)　ba + $a_v$- ∅́-　　　∅$_{za}$　　+ $ra_c$- ki-　　　mu-　　　∅́$_c$　　+ tém + Ir..e[13]
　　　3p　 ant rm ant nonrm pos　 focus cl.7 inf cl.1 inf fócus　 cut　 asp

　　　　　　　　　　　↓　　　　　　 Application of Rule 1 (vacuous)

　　b + $aa_v$-∅́　 $ra_c$-ki-mu-∅́ + tém + Ir..e

　　　　　　　　　　　↓　　　　　　 Application of Rule 2

　　b + áá$_v$-$ra_c$ + kí-mú + tem + Ir..e

　　bááràkímútèmèyè

　　'they cut it for him (before today)'

---

[12]The number of moras is usually the same as the number of syllables, or, in Kinyarwanda the number of morphemes affixed to the verb.  It is necessary to speak of moras here rather than syllables because of examples like (18) in which we find lengthened vowels.

[13]There is a rule in Kinyarwanda for lengthening vowels when consecutive. In this case, the first is deleted.  See Botne [1980].

(19)  n + a$_v$- $\acute{\emptyset}$-    $\emptyset_{za}$     + ra$_c$- ki-    mu-     $\acute{\emptyset}_c$   + tém + Ir..e
      1s   ant rm ant nonrm ant    focus cl.7 inf cl.1 inf focus    cut    asp

                           ↓              Application of Rule 1 (vacuous)

                           ↓              Application of Rule 2

n + a$_v$ + ra$_c$-ki-mu + tem + Ir..e

nárákímútèmèyè

'I cut it for him (before today)'

The third rule, like the second, concerns the number of high tones in the
verbal expression.  All verbal expressions in Kinyarwanda have an even number
of high tones.  Rule 3 assures that after the application of Rules 1 and 2
there will be an even number of high tones.

Rule 3:  HIGH TONE COPYING

>    If in any verbal category there is an odd number of high tones, a
>    high tone is placed on the first mora of the following category.

(20)  n + a$_v$- $\acute{\emptyset}$-    $\emptyset_{za}$     + ki-    mu-    $\grave{\emptyset}_c$   + tém + Ir..e n'umuhoro
      1s   ant rm ant nonrm ant    cl.7 inf cl.1 inf focus    cut    asp    bill hook

                           ↓              Application of Rule 1

n + a$_v$-$\acute{\emptyset}$ + ki-mu + tèm + Ir..e n'umuhoro

                           ↓              Application of Rule 2

n + á$_v$ + ki-mu + tèm + Ir..e n'umuhoro

                           ↓              Application of Rule 3

n + á$_v$ + kí-mu + tèm + Ir..e n'umuhoro

nákímùtèmèyè n'umuhoro

'I cut it for him with the bill hook'

Rule 4:  LOW TONE ASSIGNMENT

>    Each mora that has not been attributed a tone by the preceding rules
>    will be assigned a low tone.

This last rule is necessary to insure that each mora of the expression has a
tone.  In Kinyarwanda, the unmarked, or general, tone is the low tone.  The
high tone is always associated with a unique meaning.  Thus, the presence of
a high tone is significant, while that is not necessarily the case with a low
tone.

The analysis to present has been limited to expressions having an "anterior" meaning. We have noted already that for "non-anterior" relationships the morphemes $-ra_s-$ and $-a_s-$ do not have the syntactic/semantic function of verbal focus. Moreover, I have argued that the "floating" tones of the FOCUS category do not have this function either in this temporal context, but correspond in function to the SEG morphemes, high tone correlating with functions of $-ra_s-$, low tone with $-a_s-$. The following examples (21-23) illustrate how tone is distributed over moras of "present" and "habitual" constructions. Note that the floating tone of the FOCUS category must be a high tone and is not affected by the presence or absence of external complements.

(21)　n  +  Ø~v~-　　Ø̀-　　　Ø~za~　　+ ra~s~- ki-　　mu-　　Ǿ~s~ + tém + ir + a
　　　 1s　 non ant nonrm ant nonrm pos　 tns cl.7 inf cl.1 inf tns　cut　 ben　asp

　　　　　　　　　　↓　　　　　　　Low Tone Shift (R1)

n + rà~s~-kì-mù + tém + ir + a

　　　　　　　　　　↓　　　　　　　High Tone Shift (R2)

n + rá~s~-kí-mú + tem + ir + a

　　　　　　　　　　↓　　　　　　　High Tone Copying (R3)

n + rá~s~-kí-mú + tém + ir + a

　　　　　　　　　　↓　　　　　　　Low Tone Assignment (R4)

n + rá~s~-kí-mú + tém + ìr + à

ndákímútémèrà (n'umuhoro)[14]

'I am $\left\{\begin{array}{l}\text{cutting}\\\text{going to cut}\end{array}\right\}$ it for him (with a bill hook)'

(22)　n + Ø~v~-　　Ø̀-　　　Ø~za~　　+ ra~c~-bi-　　mu-　　Ǿ~c~ + tém + ir　+ a
　　　 1s　 non ant nonrm ant nonrm pos　 foc cl.8 inf cl.1 inf foc　cut　 ben　asp

　　　　　　　　↓　　　　　　　Low Tone Shift (R1)

n + rà~c~-bì-mù + tém + ir + a

　　　　　　　　↓　　　　　　　High Tone Shift (R2)

n + rá~c~-bí-mú + tem + ir + a

　　　　　　　　↓　　　　　　　High Tone Copying (R3)

n + rá~c~-bí-mú + tém + ir + a

---

[14]In Kinyarwanda /r/ is realized as [d] after a nasal.

      ↓      Low Tone Assignment (R4)

n + rá$_c$-bí-mú + tém + ìr + à

ndábímútémèrà

'I cut them for him (habitually)'

(23) n +ø$_v$-  ø̀-   ø$_{za}$  +mu-  ø̀$_c$ + tém + ir + a  ibití
   1s non ant nonrm ant nonrm pos cl.1 inf focus cut ben  asp trees

       ↓      Low Tone Shift (R1)

n + mù + tèm + ir + a ibití

         ↓    Rule 2 (vacuous)

         ↓    Rule 3 (vacuous)

         ↓    Low Tone assignment (R4)

n + mù + tèm + ìr + à ìbítì

mùtèmèr'ìbítì[15]
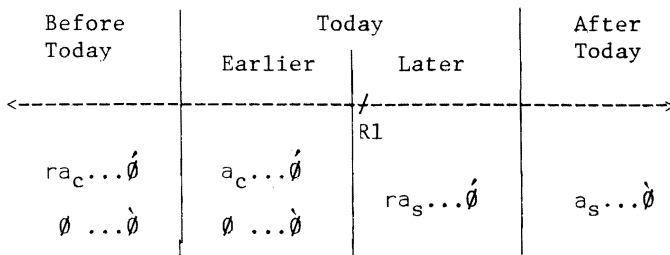
'I cut the trees for him (habitually)'

   The high tone (FOCUS) is semantically parallel to the morpheme  -ra$_s$-  in the temporal context "non-anterior".  Both denote that time interval delimited by the speech event and the end of the day.  Comparable to this correspondence between  H  and  -ra$_s$-  is the correspondence between  -a$_s$-  and  L .  Consider the following example of a "remote future" construction.

(24) n +ø$_v$-  ø̀-   zá  + a$_s$- bi-  mu-  ø̀$_s$ + tém + ir + a
   1s non ant nonrm ant rm pos tns cl.8 inf cl.1 inf tns cut ben asp

       ↓      Low Tone Shift (R1)

n + zà + a$_s$-bi-mu + tèm + ir + a

         ↓    Rule 2 (vacuous)

         ↓    Rule 3 (vacuous)

         ↓    Low Tone Assignment (R4)

n + zà-à$_s$ + bì-mù + tèm + ìr + à

nzàààbìmùtèmèrà (n'umuhoro)

'I am going to cut them for him (with a bill hook) (action to take place after today)'

---

 [15]/n/  +  /nasal/ is realized by most speakers as the second nasal, by others as a geminate nasal.

The low tone is maintained whether or not there is an external complement.
Thus, we see here that two morphemes act in concert based on the same seman-
tic criteria for the shift in syntactic/semantic function.  A slight revision
of the schema in Figure 3 captures this relationship of SEG morphemes and FO-
CUS tones (Figure 10).

Figure 10.  <u>Temporal Distribution of the forms  -ra-/-a-  and the tones</u>
            <u>-ǿ-   and  -ø̀-</u>

| Before Today | Today | | After Today |
|---|---|---|---|
| | Earlier | Later | |

$$\longleftarrow\!-\!-\!-\!-\!-\!-\!-\!-\!-\!-\!|-\!-\!-\!-\!-\!-\!-\!-\!-\!-\!|\!\not\!-\!-\!-\!-\!-\!-\!-\!-\!|-\!-\!-\!-\!-\!-\!-\!-\!\longrightarrow$$

R1

$$ra_c...\acute{\emptyset} \qquad a_c...\acute{\emptyset}$$

$$\qquad\qquad ra_s...\acute{\emptyset} \qquad a_s...\grave{\emptyset}$$

$$\emptyset\,...\grave{\emptyset} \qquad\quad \emptyset\,...\grave{\emptyset}$$

I have established in the preceding analysis of simplex tense that Kinyar-
wanda manifests a principal division "anterior/non-anterior" which is supple-
mented by secondary temporal systems.  Furthermore, according to the temporal
domain expressed, certain morphemes ( -ra-/-a-  and  ǿ/ø̀ )  may shift from
one syntactic/semantic function to another.  Having outlined the syntactic/
semantic functions of the major morphemes involved in simplex tense construc-
tions, we can turn now to the problems of complex tense constructions.

### 3.  "Complex" Tense in Kinyarwanda

Complex tense differs from simplex tense in the number of reference events
necessary for interpretation of the verbal expression.  In simplex expressions,
the event is narrated with respect to a single reference event, the speech
event (R1).  In complex expressions, the narrated event is oriented to the
speech event only indirectly, being mediated by a second, intervening refer-
ence event determined from the grammatical context.

Semantically complex expressions can be, from a syntactic perspective,
either simple or compound.  Simple constructions are those that consist of a
single radical and its affixes; compound constructions involve more than one
radical.  I shall consider first those constructions that are syntactically
"simple".  This will involve a discussion of two morphemes of the form  -ka-

and examination of the structure of the MODE category and its link to the
TENSE category.

Based on Whorf's [1956] proposed analysis for Hopi, the category MODE can
be conceived of as that generic category which indicates both the nature of
the connection and the perspective the speaker has of that connection, estab-
lished between the narrated event (E) and a mediating event ($E_m$) or between
events expressed in consecutive propositions. Thus, the morphemes in this
category function to indicate the meaning relationship that is perceived to
hold between one event or proposition and another.

Both of the  -ka-  morphemes fall into this category of MODE (cf. Coupez
[1980:328]).  I will differentiate them here by use of subscripts, hence
-$ka_m$-  and  -$ka_t$- .  The first, designated "subsecutif" by Coupez, can denote
three semantic relations between consecutive events or propositions:  (i) a
relation of *consequence* in which the second event or proposition is narrated
as a consequence or result of the first; (ii) a relation of *sequence* in which
the event in the second clause is chronologically sequent to the first and de-
pendent upon the realization of the first for its own realization; (iii) a
relation of *similarity* in which the second proposition expresses an idea, a
concept, similar to the first.  These three potential functions of  -$ka_m$-  are
illustrated by the examples below:

(25)  ubwo Kangabo yálí átúùyè muli Kenya, yárákòràgà cyaane àKÁbónà
      amafaraanga meenshi.

      'while Kangabo lived in Kenya, he worked a lot and (consequently)
      earned a lot of money'

(26)  amaazi yààshyà, umuteetsi àGÁtúlìrà, àKÁvúgà umutsima.

      'the water is heated, then the cook adds the flour, then she prepares
      the dough (paste)'

(27)  buli muunsi abasore bàràgìrà inka bàGÁhíìngà mu murima

      'every day the young boys tend their cows and cultivate their fields'

The second morpheme,  -$ka_t$- , also includes as part of its semantic range
certain "modal" qualities.  It may introduce into the verbal expression (i)
the notion of contrast (unexpected by the speaker), (ii) an element of sur-
prise on the speaker's part, or (iii) an additional commentary on the preced-

ing proposition.

(28)  yààK̃Áányìbyè nárámùcùùmbìkìyè

'he robbed me, and yet I gave him lodging'

(29)  wààK̃Ábáàyè mweene waabo

'it's no wonder that you are his relative!'

(30)  aherako akora uko yáK̃Ámàzè kuvuga

'then he did (just) as he said he would do'

In addition to the above possibilities, -ka$_t$- also has certain temporal func-
tions. Comparison of the sentences in (31-33) clearly shows the nature of
this function.

(31) a.  ntìbáákòzè          'they did not work (before today)'

 b.  ntìbààkòzè          'they did not work (earlier in the day)'

(32)  ntìbáráákòrà          'they have not worked yet (but their working is
                             still expected)'

(33)  ntìbárááG̃Ákòrà        'they did not work  (as expected)'

In example (31) we find a simple negation of the relation "anterior to"
attributed to the event  -kór- .  In (32) we see that, in addition to negation
of this temporal relation "anterior to", there is also a notion of expectation.
This notion is evident in (32) as well, in which it is relegated to the past.
From a morphological analysis of these expressions, we are led to conclude
that this notion of expectation derives from the presence of the morpheme
-rá$_m$- .

This morpheme  -rá$_m$- , different from the  -ra-  that we have seen pre-
viously, indexes a mediating event ($E_m$).[16]  By this term is meant a "testimon-
ial" event on the basis of which the speaker reports the course of the narrat-

---

[16]The term "mediating event" indicates an event to which the speaker at-
taches some significance with respect to the narrated event. That is, it es-
tablishes some type of semantic link between itself and the narrated event.
Furthermore, it carries the notion that the speaker can in some manner testify
to the occurrence of the mediating event. The event indexed as  $E_m$  is not
necessarily expressed in discourse, but may be understood from context.

ed event (E) (see Jakobson [1963:136]). By use of $-r\acute{a}_m-$ in the examples above, the speaker puts forward a perspective *from* the mediating event *towards* the narrated event. Thus, in (32) and (33) we find expressed the relationship $E_m \rightarrow E$ by virtue of $-r\acute{a}_m-$ ; that is, the speaker is taking a perspective from the mediating event which was instantiated toward the expected event which has not been instantiated. The use of $-ka_t-$ in (33) indicates that the "potential for the instantiation of E" no longer exists, that is, it is anterior to the speech event. In (32), by contrast, the potential for the instantiation of E still exists, that is, it is non-anterior to the speech event. We can propose a null morpheme, $-\emptyset_{ka}-$ , in opposition to $-ka_t-$ which would convey this meaning. In summary form, then we would have the following readings of (32) and (33):

(32')  E anterior to Rl   by $-a_v-$ (negated by nti- )

'$E_m \rightarrow E$'/potential for E extant at Rl by $-\emptyset_{ka}-$

(33')  E anterior to Rl   by $-a_v-$ (negated by nti- )

'$E_m \rightarrow E$'/potential for E non-extant at Rl by $-ka_t-$

In the preceding examples we have noted that the morpheme $-r\acute{a}_m-$ presents the speaker's perspective from the mediating event towards the narrated event. If, rather than $-r\acute{a}_m-$ , the morpheme $-\grave{a}_m-$ is incorporated into the verbal construction, we find the opposite perspective, i.e. *from* the event (E) *towards* the mediating event ($E_m$). The following sentences illustrate this shift in perspective:

(34)  wàakàantùtsè náragúháàyè inka

'you have insulted me, and yet I gave you a cow'

(35)  wàántúkà náragúháàyè inka

'you would insult me, and yet I gave you a cow'

(36)  wààntùkà nibye aliko sinibye

'you could insult me if I had stolen (something), but I haven't'

In these sentences, as with those found in (31-33), we have the proposition "E anterior to Rl" by virtue of the vector morpheme $-a_v-$ , although in the present examples this proposition is not negated. In addition, we have

narrated a perspective from this E to a mediating event, 'give a cow' in (34) and (35), 'steal' in (36). This shift in perspective correlates with the speaker's perception of the event as either "potentially coming to be" ( $-r\acute{a}_m-$ ) or "actually having occurred" ( $-\grave{a}_m-$ ). Thus, in (34) $-ka_t-$ indicates that the event (E) is anterior to R1 and has actually occurred. In (35), the lack of $-ka_t-$ or the occurrence of $-\emptyset_{ka}-$ indicates that the speaker treats the event "insult" as having occurred but at the same time places it after the speech event (or simultaneous with it); that is, he behaves as though the event had already occurred. In (36) the event has occurred, but the speaker indicates that it should only have occurred after a particular mediating event, in this case "steal". If we consider in summary form the interpretation of (36), we have the following:

(36')   E  anterior to  R1    by  $-a_v-$

'$E_m \leftarrow E$' /actual instantiation non-posterior to  R1  by  $-\emptyset_{ka}-$

The understood meaning of this sentence is that the event (E) has occurred, but the speaker indicates that he believes it should have occurred only after the appropriate mediating event.

What is clear from these examples is that the morpheme $-ka_t-$ has both a temporal and a modal function, thus belonging to both the TENSE category and the MODE category. As a temporal morpheme, $-ka_t-$ functions as a vector temporal marker denoting that domain anterior to R1 (similar to $-a_v-$ ). Having established the functions of $-ka_t-$ , we are in a position to complete the structural description of temporal morphemes affixed to the verb. Before presenting this structure, it is necessary to note briefly that the tonality of $-ka_t-$ changes in a significant manner according to context. If it has a low tone, as in (37), it indicates the speaker's belief in the reality of the event. If, on the other hand, it has a high tone, as in (38), it indicates that the speaker questions the reality of the event (hence the notion of incredulity or surprise).

(37)   wàagàkòzè nka Kangabo!
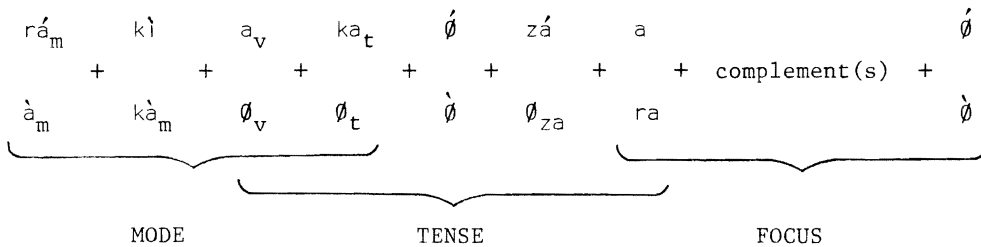
'it is not surprising that you act like Kangabo!'

(38)   wàakábáayè umwaana wa Kangabo, wàakòzè nka we.

'if you are Kangabo's child, why don't you act like him?'
(lit. if you were really Kangabo's child, you would act like him)

Incorporating this information into the analysis, we arrive at the schema in
Figure 11 which shows the relative positions of those morphemes that have been
analyzed here and the verbal categories to which they belong.[17]

Figure 11.  <u>Tense and focus prefixes</u>

$$\text{rá}_m \quad \text{kì} \quad \text{a}_v \quad \text{ka}_t \quad \acute{\emptyset} \quad \text{zá} \quad \text{a} \qquad\qquad\qquad \acute{\emptyset}$$

$$+ \qquad + \qquad + \qquad + \qquad + \qquad + \qquad + \;\; \text{complement(s)} \;\; +$$

$$\grave{\text{a}}_m \quad \text{kà}_m \quad \emptyset_v \quad \emptyset_t \quad \grave{\emptyset} \quad \emptyset_{za} \quad \text{ra} \qquad\qquad\qquad \grave{\emptyset}$$

MODE                          TENSE                          FOCUS

It should be noted here that not all verbal constructions include all three of
these categories.  In particular, the category MODE is limited in distribution
and is not found, for example, in "simple past" constructions such as those in
(31).  We might consider this category as differentiating semantically "auto-
nomous" propositions (non-modal) from semantically "conjoined" propositions
(modal).

Turn now to a consideration of complex tense as expressed in syntactically
compound constructions.  The compound structure consists of a primary verb and
its affixes plus an auxiliary verb and its affixes of MODE, TENSE and ASPECT.
TENSE morphemes function in the same manner in compound structures as that out-
lined previously for simple structures, with one exception.  SEG morphemes do
not occur as affixes on the primary verb because they indicate relations with
respect to R1 (the speech event); in compound constructions, the primary
verb is subordinate to the auxiliary verb, and all tense relations between
event and reference event are with respect to that event indexed by the auxi-
liary event, not the speech event.  The focus of this part, then, will be the

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[17]The H/L tone opposition that is proposed in conjunction with  -ka$_t$-
can be accounted for by proposing that the H/L tonal opposition previously de-
termined in the TENSE category functions in a new way when there are MODE mor-
phemes present.  However, we note that the  H  never occurs on all of the mor-
phemes that precede it in the same category, that is,  -a$_v$-  and  -ka$_t$- , but
on only one of them.  Consider the following example:

  wààkábáàyè umwaana wa Kangabo, wààkòzè nka we

  'if you were really the child of Kangabo, you would act like him'

By the rules proposed in this analysis, we would expect a  H  as well on the
-a-  preceding immediately  -ka- .  I have no explanation at present for this
discrepancy.

role of the auxiliary verb in the interpretation of temporal relations.  The
discussion here will be limited to constructions having the auxiliary verb
-bá- 'be'.

The use of the auxiliary verb  -bá-  indicates that an event in addition
to the speech event has been indexed as a reference point.  It is with respect
to this reference event (R2) that the narrated event (in Kinyarwanda) is tem-
porally oriented.  This reference event is directly related to the speech
event (R1).  Consider the following examples:

(39)  jyà kwíítègùùrà          'go (and) get ready'
(40)  bà úgíìyè kwíítègùùrà     'in the meantime, go (and) get ready'

In (39) we note a simple imperative command.  However, in (40), in addition to
the command, there is the notion of waiting for some other event to occur.
This interpretation derives from the relations specified between the narrated
event  -gíìyè (kwíítègùùrà)  and the reference event indexed by  bà  (which
cannot be identified out of context).  The relation of  -gíìyè  to  bà  is ex-
pressed by the underlying low tone (TENSE) and completive aspect (marked by
-ye  on surface).[18]  This relationship can be visualized as follows:

Figure 12.  Complex temporal ordering with  -ba
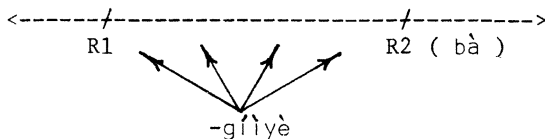


The narrated event  -gíìyè  may occur at any time after the speech event (R1)
and before the secondary reference event (R2) which will take place at some
time in the near future.

It is necessary to emphasize here that auxiliary  -bá-  *does not* "carry
the *temporal* modality" of the primary verb (cf. Kimenyi [1973:69]); rather,

---

[18]Completive aspect marks the completion of the nuclear phase of an event,
though the final coda phase may be in progress at the specified point.  By nu-
clear phase is meant that phase of the event that is characteristic of the ac-
tivity of that event.  See Botne [1983] for a discussion with respect to Ki-
nyarwanda; see Freed [1980] for a discussion of English and a general theoret-
ical framework.

there are in these compound constructions two sets of temporal relations: those between (R2) and (R1) ("indexical" relations) and those between (E) and (R2) ("cardinal" relations). Furthermore, the compound construction does not indicate "un état durable pendant lequel peut survenir un événement" [Coupez 1980:420], but more precisely, a temporal interval delimited by the speech event and the instantiation of the secondary reference event. The narrated event may or may not occur during this interval depending upon the nature of the tense relations expressed. The following examples lend support to these claims:

(41)  úzé kùgàrùkà nimugorooba, ndábá nábòònyè amafaraanga yawe
      'come back this evening; I will have obtained your money'

(42)  amahoro Ndeju, nzààbá nkúbwììrà icyo náábìtèkèrèjèhò ni nkùbònà[19]
      'peace Ndeju, I will tell you what I think when I see you'

(43)  ...kaandí nímùtáámbònà nzààbá náàpfùùyè uwo nuunsi[20]
      '...and therefore, if you do not see me, I will be dead already
      that day'

(44)  bavuga ko iyo wishe igikeri itwiite ùbà úzáàkìbyààrà
      'they say that when you kill a toad while you are pregnant,
      you will give birth to one'

In these four examples we find three different relationships expressed between the secondary reference event (R2) indexed by  -bá-  and the speech event (R1). In (41) it is situated later in the day ( $/n + \emptyset + ra_s + \emptyset_s + bá + a/$ ); in (42) and (43) it is situated after the day of the speech event ( $/n + \emptyset + zá + a_s + \emptyset_s + bá + a/$ ); in (44) it is disjunct with respect to R1 ( $/u + \emptyset + bá + a/$ ).[21] The narrated event is subsequently interpreted with respect to this indexed reference event. Notice that it can be anterior to the R2 (41 and 43),

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[19]Drawn from *Ntuzakundi Intati* by Nsabimana Seruhuga.

[20]Drawn from *Indyohesha-birayi* by Alexis Kagame.

[21]For "past tense" constructions we find comparable constructions, but the use of  -bá-  as an auxiliary verb is almost completely replaced by the defective form  -|ì . Nevertheless, there is an important distinction between them that merits further research.

simultaneous (42), or posterior (44). Consequently, we must conclude that compound constructions incorporating auxiliary -bá- determine two sets of temporal relations in which three events are linked, i.e. the speech event, the reference event, and the narrated event.

In sum, we have seen in the analysis of complex tense that there is invariably a second reference event to which the narrated event is directly linked. This secondary reference event may be of two types: (1) as a mediating event, it introduces the speaker's perspective of the narrated event; (2) as a secondary referencing event, it establishes a second axis of orientation. In the first case, the relationship is marked by morphological affixes, in the second by auxiliary verbs such as -bá- .

## 4. Conclusion

I have tried to demonstrate in this study of the verbal category TENSE in Kinyarwanda that tense relationships are not derived from one unique, monolithic, absolute semantic structure. Rather, they depend upon the connections and intersections of various semantic domains whose morphological reflexes are dynamic in nature, shifting meaning in a marked manner as we move among these domains. Previous analyses of verbal expressions have arrived at impasses because they have tacitly assumed a static, homogeneous nature for individual morphemes and for the temporal system. The present analysis has shown that such an approach is untenable, that we must search for models that are more flexible and dynamic in scope.

Several aspects of the analysis raise questions relevant to more general considerations in linguistics and merit comment here. First, the analysis presented in this study demonstrates that tone need not be considered as simply a phonetic, syntactic, or lexical phenomenon. In Kinyarwanda tones have the same phonological status as other segments, but are distributed over verbal structures according to morphological/semantic criteria. In addition, we find further support for the notion of "floating" tones which may, in themselves, be considered to constitute morphemes. These tones, designated perhaps as "morphophonemic" tones, can be contrasted with "syntactic" tones which link two or more verbal expressions.[22] The first type establish the "quali-

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[22]See Botne [in preparation, a] for an analysis of syntactic tones.

ties" a speaker perceives *in* an event (or state, etc.), the second the type
of relationship that holds between events (or states, etc.).

A second salient characteristic of this analysis is the tripartite func-
tion of the paradigmatic opposition  -ra-/-a-  . We saw initially that a ma-
jor function of these morphemes is verbal focus in which they intersect the
semantic domain of the morphemic opposition H/L tones.  This function was
shown to hold only for "anterior" constructions, a broader range of meaning,
segmental temporal divisions, being applicable to all autonomous (modal) con-
structions.  For those "non-anterior" constructions we saw that the  -ra-/-a-
opposition corresponded exactly to a H/L opposition.  Finally, we saw that
-rá-/-à-  (tones now constituents of the morpheme itself) are associated with
a "modal" distinction which itself is indirectly related to temporal relations.
The remarkable reappearance of this same opposition again and again would ap-
pear to be a striking example of the syntactic/semantic evolution of a morphe-
mic paradigm.  Naturally this observation raises questions:  Why should such a
change take place?  How does the semantic structure contribute to, or bring
about, such syntactic change, or vice versa?  Further consideration of similar
cases could present us with new understanding of linguistic change.

A third aspect of the analysis, secondary reference events, raises inter-
esting questions for the study of discourse.  I have shown for Kinyarwanda
that the auxiliary verb  -bá-  indexes a secondary reference event.  The pri-
mary, or cardinal, relationship of an event is interpreted with respect to
this point.  In Botne [1981; in preparation, b], I have argued for a similar
semantic function of the modal *will*.  What may be of potentially more interest
than their pure temporal functions is the manner in which they function to
"tie together" narrative texts.  Do all languages have similar mechanisms for
indexing these "secondary points of reference"?  What other mechanisms are
there?

This study represents an attempt to map a specific semantic terrain that
Whorf might have considered "primitive physics of time".  As with all studies
exploring semantic domains from a novel point of view, this one raises as many
questions as it resolves.  If nothing else, this approach may suggest new
lines of inquiry that may contribute to a more profound understanding of the
semantic structures underlying our expression of temporal relations.

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