Tone and Accent, and Getting the Two Together

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1. Introduction

It is not a particularly controversial claim that
English has an accentual system, though precisely what
such a claim means is certainly open to dispute. If
one works within the framework of metrical theory,
then just how to pick out one characteristic of the
system as making it "accentual" is far from obvious.
I would like to do just that, though: I would like to
pursue the (admittedly somewhat fluid) notion that an
accentual system is one which uses the top row of the
metrical grid to assign tone, and furthermore that the
tone assignment that it accomplishes is autosegmental
in character.

In some earlier papers on Bantu tone systems
(especially Goldsmith (1982, 1984, and the introduc-
tion to Clements and Goldsmith (1984)), work that
developed ideas of James McCawley's (McCawley 1978),
I pursued the idea that tone languages could be
derived (derivationally) from a deeper level at which
the relevant information was not present on a separate
tonal tier. Instead, we posited an "accent",
represented as an asterisk, which was present in the
linear string, rather than being on a separate auto-
segmental tier. It differed from a familiar feature
primarily in that it tended to move around, hopping to
the left or right under various circumstances.

My main goal in this brief paper is not to discuss
English or languages like it, but rather to discuss a
language that has the pedigree and the patrimony of a
thoroughly classical tone language, yet which
apparently assigns its tones through a system of
accent placement that looks surprisingly like the
systems of accent placement that we are familiar with
from the stress languages described in the literature.
This language is Kintandu, from the Kikongo group.
One of the main points that I will try to make is that
the notion of "extrametrical" is involved in the
description of Kintandu, and you can't have an
extrametrical syllable without the notion of metrical
structure being involved. In particular, I will try
to show that the it is the notion "extrametrical" that
is involved and not the closely related notion of

(2) Initial Tone Association Rule (first formulation):

```
        V  ]
        .   word
        .
        .
       (H) ]
```

(3) Clean-up Tone Association Rule

```
      [       V
        stem  :
              .
             (H)
```

I would like to suggest an alternative view of the
analysis presented so far in which it is not **extra-
tonality** which is the crucial variable, but rather
extrametricality. This perspective is motivated by
three points: (i) the observation above that the
"blindness" of tone rules to extratonal syllables is
only partial; rule (5) must be quite aware of their
presence; (ii) the desire to see rules (2) and (3) as
part of a single process, that of assignment of High
tone to a metrically Strong position, a point investi-
gated in several recent papers on KiRundi and Xhosa;
and (iii) the desire to view the assignment of a High
either to the ultima or penult as being parallel to
the assignment of metrically Strong position to one of
the last two syllables.

Point (i) will follow directly if we drop the notion
of extratonality from our analysis, and say rather
that **accent** is assigned to either the ultima or the
penult. Rule (5) will thus apply correctly. Further-
more, rules (2) and (3) can be assimilated to a
general schema for association of High tones to accent
syllables.

What would this general schema be? It has been
suggested in many places in the literature (most fer-
vently, perhaps, by the present writer) that an
"accentual principle" exists which associates an
accented tone -- let us simplify here, and say simply
a High tone -- to an accented vowel. In the case of
Kintandu, however, it makes most sense to say that
there are two levels of accent, primary and secondary.
The first-vowel of the stem always receives secondary
accent, while the primary accent falls either on the
ultimate or penultimate syllable of the stem. In this

being, in a sense, a series of excuses for why this systems is different from Eastern Bantu systems. We need something better than that.

3. Kintandu

Daeleman (1983) presents a sketch of Kintandu, in the KiKingo group, which meets this general description. According to Daeleman, there are four Tone Groups of nouns, and four Tonal Cases in which these nouns can appear. The surface tone of a noun from a given Tone Group varies depending on the Tonal Case that it is realized in. Each noun, that is, can appear in any of four possible tonal forms; which form is used depends on the general syntactic environment, and the environments can be divided into four, which we then call our four Tonal Cases.

Let us describe these facts in a bit more detail. There are four Tone Groups of nouns; we will begin by calling them TG 1, TG 2, TG 3, and TG 4, and every noun falls into one of these four Groups. There are four Tonal Cases, which Daeleman calls I, II, III, and IV. The first of these we may call the "Basic" case, because it is closest to the underlying form (no tones are grammatically inserted or deleted in this Tonal Case); the third we may call "defocused", because the all the tones are Low in this Tonal Case. These eight distinctions interact in the following ways.

Tonal Case I is used for subject or object NPs. When used "predicatively" in the affirmative ("it is an NP"), Tonal case II is used, and Tonal case IV is used for negative predicative uses. Tonal case III is used, according to Daeleman, for "the first unit of a phrase in subject or object function," apparently just for use in the case of an associative construction ("the X of [the] Y").

4. The Basic Tonal Case I.

In the basic Tonal Case I, TG 1 nouns are all Low-toned; we may, therefore, identify TG 1 as the class of underlyingly toneless nouns. TG 2 nouns have a High tone on the penultimate mora. (See Table 1 below. The data there gives whole words, with the noun class prefix separated by hyphen; the tone rules apply to stems, however, not to words).

left. In this case, the trend, we can see, is to map
the High tone to the last vowel, but in TGs 2 and 3
the final syllable is sometimes immune to the tonal
association. Since Kintandu has the hallmarks of an
autosegmental tone language (and, indeed, does use
tone autosegmentally), I will begin by assuming that
this difference between the tonal groups involves
marking certain word-final syllables as extratonal,
and that a rule associating a tone to the "final"
vowel is in order, as written in (2). I will later
come back and try to show that this was the wrong
approach, and that extrametricality is more
appropriate; but for now, that would seem odd, and we
will pursue the more straightforwardly tonal
perspective.

Let us say that TG 2 nouns are those that are
underlyingly or lexically marked with their final
syllables extratonal. We shall furthermore suggest
that all toneless nouns (i.e., TG 1) have this
property as well, redundantly, though the reason is
not yet obvious by any means.

TG 2 nouns have a lexical High tone, and we will have
to get it to associate with the last vowel. This will
be accomplished by the Tone Association Rule 2, whose
initial formulation is given just below. The intent of
this formulation is to assign the rightmost High tone
to the final vowel of the word, where the rule is
blind to a word-final syllable marked extratonal. This
understanding of the formalism would allow rule (2) to
associate a High to a penultimate syllable when the
ultima is extratonal; as I have indicated, though, we
shall consider a quite different interpretation below.
TG 3 nouns have a High tone, which is realized on the
final mora in shorter nouns (those whose stem has one
or two syllables), and on the penult in longer nouns.
This is due, we shall suggest, to a rule assigning
final-extratonality in certain grammatical conditions;
we will call this the "Extratonal Marking Rule", given
in (1). TG 4 nouns have a lexical High tone, and it
is assigned to the final vowel; thus the final vowel
here is not extratonal. Rule (2), it should be clear,
applies after rules (1), since (1) prepares the ground
for it to apply appropriately.

A look at TG 1 suggests that in this Tonal Case, a
High tone is added to the lexical tone of the noun,
since we have already posited TG 1 as being
underlyingly toneless, and a High tone appears here on
the penult. In addition, we see that a "plateau" or
sequence of High tones is formed in TGs 2 and 3 by
what we take to be a general rule specifying that all
syllables are High when surrounded on the surface by
High tones (of which only one can be the lexical one,
given what we have suggested so far). Thus again, this
Tonal Case appears to add a High tone to the lexical
tone of the noun. In TG 4, a High appears on the
first syllable of the stem, and not on the last,
surprisingly; we shall suggest that a High tone is
present on the final vowel in an intermediate stage of
the derivation, and is removed by rule.

We thus posit a grammatical High tone prefix "H" which
is prefixed in Tone Case II (and also Tone Case IV, as
we shall see shortly).

We suggest that extratonality marking to the final
vowel is assigned again lexically to TGs 1 and 2, and
by rule (1) to TG 3. TG 4 never has its final vowel
marked extratonal. Even though we do not see a High
tone on the surface, the final vowel is still not
extratonal here in TG 4, whose account we will return
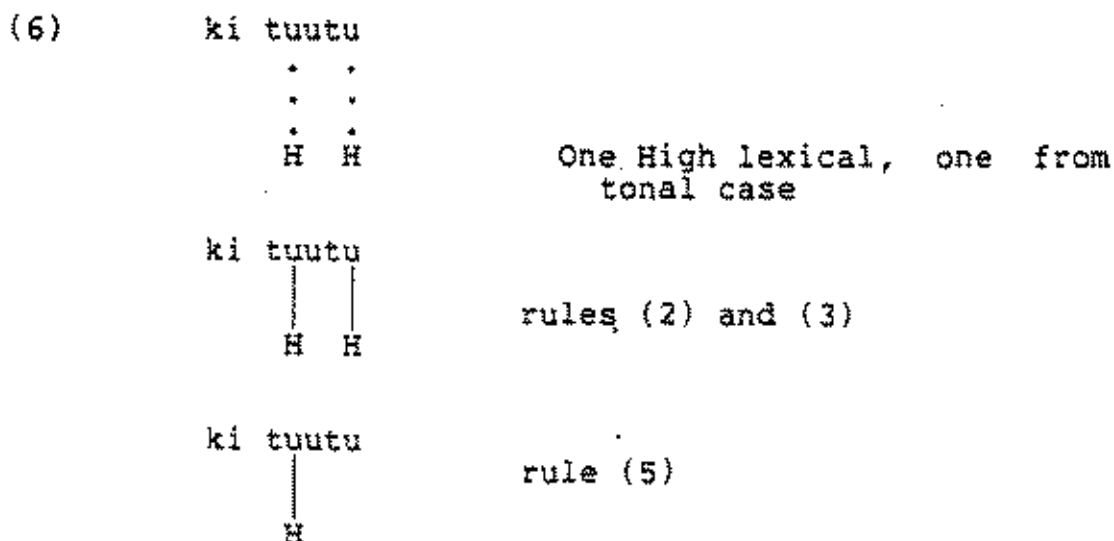to in a moment.

We have already said that the last tone is assigned to
the last (non-extratonal) vowel in the stem, and we
see that any grammatical High tone is assigned to the
first vowel. This second tone association is produced
by rule (3). The relationship between the two tonal
association rules, (2) and (3), will be discussed
further below; for now, we may just say that they are
extrinsically ordered, with (2) before (3), that is,
we associate a High to the last vowel, and only after
that try to associate a left-over High tone to the
first vowel. The condition that the High be floating
(as indicated by the circle around the H in (3))
ensures that it applies only to Highs that have
already not been affected by rule (2).

(5) Final High deletion

```
                V #
                |
    H           H
                 \
                  ↓
                  Ø
```
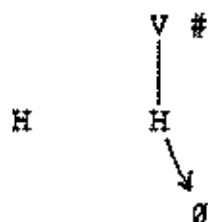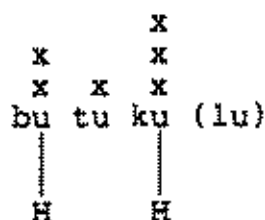
It will be important for us to notice that rule (5),
Final High Deletion, applies only to High tones
associated with the absolutely final syllable. If an
extratonal syllable follows, a penult bearing a High
tone will not lose that tone by rule (5). This
interpretation conflicts with the one suggested above
rule (2), the Initial Tone Association rule, and will
be the basis below for our reinterpretation of what we
have called "extratonality" as being actually
extrametricality.

Given this understanding, ki-túutu is derived as in
(6).

(6)   ki tuutu
             .   .
             .   .
             .   .
             H   H   One High lexical, one from
                                 tonal case

      ki tuutu
         | |
         | |
         | | rules (2) and (3)
         H   H

      ki tuutu
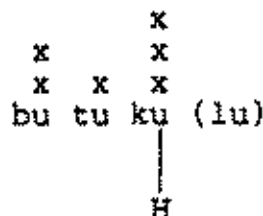 | rule (5)
         |
         H

If we assume, as we have done, that TG 4 nouns have an
underlying H, and that they get a second High in this
tonal case (just as TG 2 and TG 3 nouns do), then rule
(5) is exactly what we need to account for their
derivation, as we see in (7).

(10)

```
                    x
           x        x
           x    x   x
           bu  tu  ku  (lu)
           |        |
           |        |
           H        H
```

With the same grid structure, but only one High tone
(as in the Basic Tonal Case I), then the only
permitted structure is as in (11).

(11)

```
                    x
           x        x
           x    x   x
           bu  tu  ku  (lu)
                    |
                    |
                    H
```

The analysis of the data from Kintandu presented thus
far would reduce, then, to the following points: (i)
a lexically governed extrametricality rule (1); the
general condition on tone-accent relation given in
(9); and the Final High Deletion rule (5), a simple
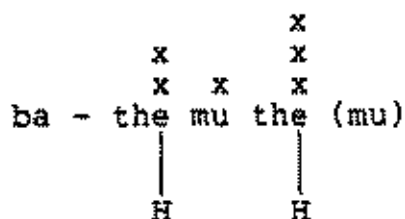tone rule.

9. KiYaka.

The following discussion of KiYaka, a language not too
distantly related to Kintandu, is based on the
material in van den Eynde 1968, as well as a handout
prepared by van den Eynde for a 1984 presentation in
Eisenstadt, Austria.

There are three Tone Groups in KiYaka, and three Tonal
Cases. I shall attempt to make the assignment of
numbers match up with the categorization already given
for Kintandu, though the correspondence is, of course,
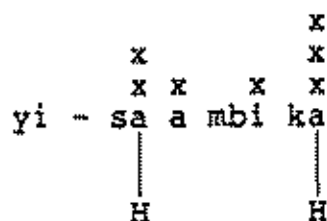far from perfect.

The first Tonal Case is the one that van den Eynde
calls "indeterminate", as in Table 4. [TG 1
corresponds to van den Eynde's Group C; TG 2 to his
Group B, and TG 3 to his Group A].

TGs 2 and 3 are easily derivable given the analysis
set up so far for Kintandu. We will assume the same
accent rules operate in these two classes as are
mentioned in the analysis of example (9)-(11) above
in Section 8. Thus the first and last vowel of the
stem is accented in TG 3, and the first and penult are
accented in TG 2:

(13)   a. TG 2   b. TG 3

```
                 x                                           x
        x        x                                  x        x
        x   x    x                              x   x    x   x
  ba - the mu the (mu)                    yi - sa a mbi ka
           |        |                              |        |
           |        |                              |        |
           H        H                              H        H
```

Tones must be associated as indicated in (13), given
the Tone-Accent Attraction Condition suggested above.
We suggests that the Final High Tone Deletion rule
(5), above, is operative in KiYaka as well as in
Kintandu, thus deleting the second High in 14b (TG 3),
but not in 14a (TG 2).

The only form that needs to be accounted for, then, is
the TG 1 form, in which the grammatically inserted
High tone is assigned not to the final vowel, as it
would be in Kintandu, but is, instead, spread across
the entire stem.

It is not clear to this writer at this point whether
it would be more appropriate to view the spreading of
the High tone as the result of a language-specific
tonal rule (which would be easy to write, in and of
itself), or to view it as a way of maintaining
tone/accent parallelism in special circumstances.
This second, much more speculative, approach would
suggest viewing TG 1 forms as having equal grid
markings on all stem vowels (for the sake of concrete-
ness, let us say all unaccented, as in 15). Then the
modification required in the Tone-Accent Attraction
Condition would be as follows, where the changes are
given in square brackets: "A tone-to-grid structure is
well-formed if and only if there is no tone-bearing
syllable which has an [equal or] lower level of accent
than a toneless syllable. (Thus, if a syllable S has a
tone, all syllables with a greater [or equal] level of
accent than S must also bear a tone)." The change is

Footnotes

References

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