Review of *Tone in Mituku*

Daniel M. Albro

March 14, 1996

In *Tone in Mituku: How a floating tone nailed down an intermediate level*, John Goldsmith makes use of data about a floating low tone in the verbal system of the Bantu language Mituku to argue that any theory of phonology, whether derivational or constraint-based, must necessarily have access to at least three levels of representation. These consist of the underlying form, an intermediate level of representation, and the surface representation. If the facts illustrated in this paper cannot in fact be analyzed without recourse to an intermediate level, then the current two-level conception of standard Optimality Theory will have to be amended.

In Mituku, four different tones may appear at the surface: low, high, falling, and rising. Goldsmith shows that the falling and rising tones correspond to underlying low and high tones on separate vowels that have merged. That is, only low and high tones occur in the underlying form. The tones are lexically marked, and are associated with individual morphemes. In the data shown, each morpheme has from zero to two distinguished tones. The language has object, subject, and tense markers with associated tones: subject markers *ba-* with high and *tu-* with low; object marker *-mu-* with low and *-ba-* and *-tu-* with high; and optative marker *-a-* with high tone. The historical past tense marker *-a-* has no tone. The optative and historical past markers merge with the subject markers, which they follow, in order to form a single syllable consisting of the initial consonant of the subject marker followed by "a." The important fact to note here is that this vowel is not long, nor is any other surface vowel in Mituku. Nonetheless, this vowel is capable of holding a contour tone. In Mituku, contour tones only appear on surface vowels corresponding to more than one underlying vowel, *i.e.*, corresponding to vowels formed by coälescence.

The next factor in this story is the existence of a floating low tone preceding the verbal root "kulumanisa." This floating tone emerges as downstep when preceded by a high tone, and, Goldsmith avers, it links to a vowel only when that vowel does not have any tone of its own, either in the underlying form or in a form derived by rule. Given this behavior, Goldsmith argues that surface [bâ kúlumanisa] could not be derived from underlying

```
/ba    a          kulumanisa/
  |    |           |
  H    H    (L)   H
```

by any means other than an intermediate level. The derivation would work as shown in figure 1: "ba" and "a" would first undergo Synizesis to form a single syllable with two dis-

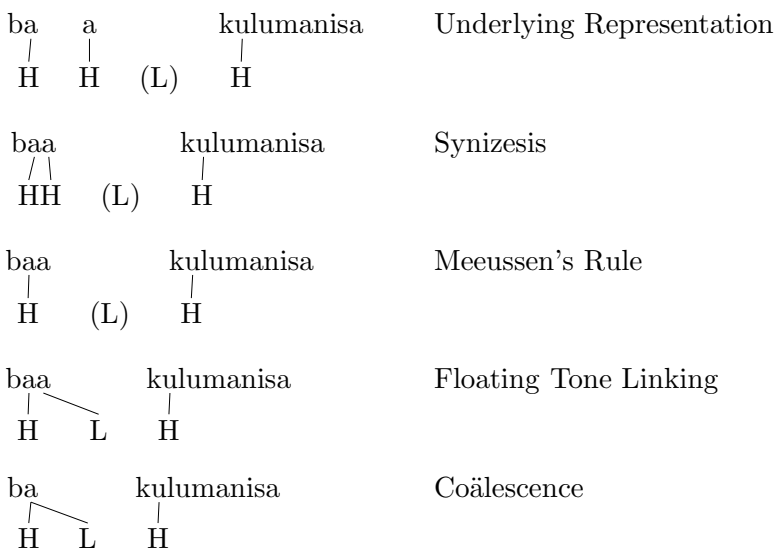

Figure 1: Derivation of [bâ kúlumanisa]

tinct vowels, simultaneously losing the second high tone via Meeussen's rule[1]. Thus, at the intermediate level the "a" vowel would lack tone. The low tone would then combine with the toneless vowel and the vowels would coälesce to form a single surface short vowel with a falling tone. With this derivation, Synizesis and Meeussen's rule might apply simultaneously, but Floating Tone Linking requires an intermediate representation with a toneless vowel. Thus, assuming that the low tone must indeed combine with a toneless vowel, the need for an intermediate level is, as Goldsmith states, "inescapable."

Although we must accept the necessity of an intermediate level given the assumption that the low tone must be analyzed as docking to an unassociated vowel, it may, however, be questioned whether this assumption is itself necessary. It is equally possible, given the data presented in this paper, to say that the low tone connects to a vowel formed on the surface by coälescence, regardless of whether it passed through a toneless stage or not. In other words, there would be a constraint forcing the vowels to coälesce, a constraint forcing the second high tone to not appear on the surface, and a further constraint forcing low tones to dock to surface vowels corresponding to more than one underlying vowel. The last constraint would serve the purpose of maintaining a contrast between underlyingly single vowels and underlyingly double vowels that have coälesced. This analysis might be slightly unorthodox, but it is certainly a possible one. In this alternative analysis, which is perhaps incorrect, but certainly possible within Optimality Theory, there is no need for an intermediate level. The possibility of this analysis means that the article's argument that an intermediate level is "inescapable" does not stand. It may be argued, however,

[1]Meeussen's rule here states that the second of two high tones connected to the same syllable must be not appear on the surface.

that all of the pertinent data was not given, and examples may well appear where a low tone attaches to a toneless vowel that does not also undergo coälescence, and therefore the coälescence analysis does not cover all of the facts. This argument may be countered by simply stating that a low tone may *also* connect to an underlyingly toneless vowel. The coälescence analysis does not preclude other constraints bearing on the matter.

Thus, as interesting as the conclusions drawn by this paper may be, the evidence given in it does not lead inescapably to them. It may very well be that Optimality Theory will indeed need to acquire additional levels in order to explain all of the data of natural language, but other data outside of that given here will be needed to form a convincing argument.