Where in the Grammar do Bantu Grammatical Tones get Generated and Linked?

Bantu tone languages generally exhibit both lexical and grammatical tones. These grammatical tones, often referred to as a "Melodic Tones" in the literature, are often one of several morphological exponents expressing some constellation of inflectional features (Odden & Bickmore 2014). For instance, in Cilungu, a Zambian Bantu language, some tense/aspect/mood/polarity (TAMP) combinations trigger a grammatical High tone on the second mora of the stem, often in combination with various segmental affixes. Such is true of the Recent Past. Other TAMPs, such as the Potential, trigger a High tone on the stem-final vowel, while yet others, such as the Far Past, trigger a High tone on the second and all subsequent TBUs of the stem. And some TAMPs, such as the Present Progressive, don't trigger a grammatical High at all. In Silozi, the location of the Melodic High is limited to two positions—either on the ultima, as in the Recent Past, or the penult, as in the Negative Present. Many TAMPs, such as the Affirmative Present have no Melodic High. Finally, in Kikuria, depending on the TAMP, the Melodic High can appear on either the first, second, third, or even fourth TBU of the stem (the latter being the case, e.g., in the Inceptive).

While the existence of these melodic tones has been well-known for a long time, what is much less clear is exactly when and where in the grammar they are generated and how they ultimately dock onto the appropriate verbal TBU(s). In this paper, I consider the advantages and disadvantages of two different general approaches to account for grammatical tone realization. The first is what I dub the "Annotated Tones" hypothesis, where multiple *types* of floating High tones are introduced in the morphology and then linked in the phonology. So, for instance, in the Silozi case described above, there would be two different floating Melodic High tones generated by the morphosyntax—one which would be somehow annotated to ultimately dock onto the penult and another which would be annotated to ultimately dock onto the ultima. In this regard we consider a proposal from (Rolle & Lionnet 2020) which involves building "phantom structure" to encode or annotate this difference in grammatical tones. The second approach, assumed either implicitly or explicitly by a number of Bantu researchers, is the "Single Tone" hypothesis where one uniform (i.e. *non*-annotated) floating High is generated in the morphology and then linked in the phonology.

Two central questions which emerge as these approaches are contrasted are familiar ones: how much phonology if any does the morphology need to have access to in order to generate the Melodic Tones, and how much morphological information must the phonology access in order to properly associate them. I show that the Annotated Tone Hypothesis requires that the morphosyntax be sensitive to both inflectional as well as phonological properties of the verb, while the phonology proper need only be sensitive to phonological properties. Under the Single Tone Hypothesis, the morphosyntax need only be sensitive to inflectional and not phonological properties of the verb, but the phonology must be sensitive to both phonological and well as inflectional properties of the verb. Thus, both could be considered to be equally complex overall, but localize the complexity in different modules of the grammar. One requires a more complicated morphosyntax and one a more complicated phonology in terms of the information that must be accessed.

Still, there is some evidence that ultimately the Annotated Tone Hypothesis might in fact be the best one. Recall that the advantage of the Single Tone Hypothesis is that the morphosyntax does not need any phonological information in order the generate the Melodic High. While that seems to be true in the overwhelming majority of cases found in the literature, I present four cases—Lala, Tura, Logoori, and Tachoni, which appear to challenge this assumption. I.e. if the generation of certain Melodic Tones in these four languages are generated solely on the basis of the morphosyntax, without any recourse to phonological properties of the verb, then the actual tone rules necessary in the phonology in those cases are very strange and unintuitive ones—e.g. requiring rules which link the Melodic High tone only *if* it causes an OCP violation, and not to link it if it doesn't. In conclusion, a range of data from multiple languages will be presented and discussed which directly bear on issue of where in the grammar Bantu melodic tones are generated and linked.

Odden, David & Lee Bickmore (2014) "Melodic Tone in Bantu: Overview," *Africana Linguistica* 20, 3-13.

Rolle, Nicholas & Florian Lionnet (2020) "Phantom structure: A representational account of floating tone association," in Hyunah Baek, Chikako Takahashi & Alex Hong-Lun Yeung (eds.), *Supplemental Proceedings of the 2019 Annual Meeting on Phonology*. Washington, DC: Linguistic Society of America.