

A typology of tones, with reference to the intonation of some varieties of English

Properties that have been assigned to tones are of three kinds:

1. *The tone's status in the grammar.* Lexical tones define the phonological shapes of words (Hyman 2002). Intonational tones enter into the composition of independent tonal morphemes (Lieberman 1975).
2. *The tone's location.* Tones may occur at phonological boundaries ('boundary tones'), in stressed locations ('pitch accents') or in other locations ('pitch accents', 'word melodies', 'syllable tone'). The third group here is negatively defined in that they exclude boundary tones and tones that are metrically bound. Their locations are lexically, morphologically and syntactically defined. I refer to them here as Non-Boundary-Non-Stress (NBNS) tones.
3. *The tone's integration:* Tones are either associated or float (Goldsmith 1976). Association implies the existence of a TBU (a mora, a syllable or a metrically strong syllable).

Tones combine properties from these different categories. Grice, Ladd & Arvaniti's (2000) 'phrase accent' is an intonational tone (*status*), a boundary tone (*location*) and associates (*integration*), and the H* of Japanese is a lexical tone (*status*), an NBNS-tone (*location*) which associates (*integration*), and so on. The question arises whether this widely adopted typology, interpreted here as a three-dimensional matrix of 2 (statuses) by 3 (locations) by 2 (modes of integration), in fact yields 12 attestable cases. If we disregard the association/floating dimension, there are six cells. In my talk, I will argue that, contra widespread assumptions, one of these has not been filled with a convincing example: an NBNS tone with an intonational function.

NSNB tones that have an intonational function might occur in intonation languages that have substrate languages with tone, to be found among creoles and New Englishes. Inspection of two of these, Nigerian English and Cantonese English, reveals that 'Englishes' with tonal substrate languages are in fact tone languages. For instance, Nigerian English will be argued to have NSNB tones: it has single-tone word melodies that spread to all the syllables in the word. Function words have L and major class words have H. H is downstepped after (L)H, and a final L% boundary tone occurs as the last tone in declaratives. Although Nigerian English prosody has understandably been described as an intonation system, its properties are typologically those of a tone language. There are three arguments.

First, because Nigerian English does not segmentally reduce function words, tonal minimal pairs exist like *can* 'be able'-AUX' vs *can* 'tin'; *to* vs *two*, etc. Second, with the exception of the L% boundary tone, the lexical composition of sentences fully determines the tone structure of the sentence, and thus lack the sort of variation encountered in British English. Third, listeners are sensitive to the pitch of every syllable, not just to that of the syllable with main stress, as shown by a perception experiment in which 20 native speakers of Nigerian English were given the task to rate sentence stimuli whose pitch had been manipulated for acceptability. The stimuli differed in the pitch transitions between the H of one word and the H of the next. In one half of the stimuli, the pitch remained level from the end of the first word (e.g. *mid* in *mid September*) to the non-initial stressed syllable of the next word (e.g. –*tem-* in *September*), where the downstep took place. In the other half, the pitch was

downstepped immediately after the first word (e.g. *mid*), causing the word-initial syllable of the second word (e.g. *Sep-* in *September*) to have lower pitch in the second manipulation than in the first. The effect of this variation was significant and very large, with a clear preference for downstep at the word boundary. In Nigerian English, the H-tone is spread to all syllables in the word, making the pitch of one syllable as significant as that of the next. In British English, unaccented syllables have no tone associations and are situated in less precisely defined zones of the pitch contour. These three properties, marginal lexical distinctions, invariant sentential tone structure, and syllabic as opposed to accentual processing of pitch make Nigerian English maximally different from British English, despite their obvious surface similarities. It is suggested that the three-way *location* distinction outlined above should be reorganized as a binary distinction: phonologically located tones (boundary tones and metrically bound pitch accents) and morpho-syntactically located tones (NBNS-tones), which distinction coincides with the *status* distinction between lexical and intonational tones.