Ixpantepec Nieves Mixtec Word Prosody

This paper presents a phonological description and acoustic study of the word prosody of Ixpantepec Nieves Mixtec (Oto-Manguean, Mixteca Baja). Mixtec languages are usually described as having both complex lexical tone systems and word-level stress accent (e.g. Pankratz and Pike 1967; Pike and Oram 1976; Stark and Johnson 1991), but a shortage of acoustic data has left these descriptions open to interpretation or even suspicion (Hyman 2006). Here I show that Nieves Mixtec has both stress and tone contrasts which are acoustically independent, though tone distribution and tone processes are sensitive to stress.

Stress is predictable from morphological structure alone, as it is determined by a trochaic foot aligned to the last root in the word, and it is cued primarily by duration and intensity profile. The phonological role of stress is shown by (i) realization of long (i.e. bimoraic) vowels only in stressed positions, (ii) the realization of glottalization, a floating feature of the morpheme (Macaulay and Salmons 1995), only in stressed vowels, and (iii) the preservation of stress position in loanword adaptation from Spanish, through manipulation of vowel length and despite variation in tone. The position of stress is also shown acoustically, by comparing pre-tonic, tonic, and post-tonic syllables with matched segmental and tonal properties (1).

1.	a.	[**kā**(ˈsīkā)nā]	b.	[hā(ˈ**kā**sī)nā]	c.	[nì(ˈsī**kā**)sī]
		/**ka**-sika = na/		/ha = **ka**si = na/		/nì = si**ka** = si/
		PL-ask = 3P		CAUS = eat = 3P		PFV = ask = 3S.FORM

Tone is lexically determined as one of low, mid (/∅/) or high, and it is cued primarily by pitch. On stressed short vowels, no tone contour is permitted, while on long (bimoraic) vowels a wide variety of binary and ternary contour tones are permitted, and post-tonic vowels may host, besides the simplex tones, HL or LH contour tones. Tone further depends on stress in that (i) roots without stress more readily trigger tone processes and (ii) stressed roots are less susceptible to tone change, as the spread of /L/ tone onto toneless ([M]) vowels (2) is blocked when the vowel is stressed (1c).

2. [nì**hà**^{n}dʲāʒì**rà**] /nì = **ha**-(ˈ^{n}dʲaʒì) = **ɾa**/ PFV = CAUS-shake = 3M.FAM

This work addresses gaps in both areal and broader cross-linguistic word prosody, as the typological variation and acoustic properties of languages with both stress and tone are only beginning to be explored (Remijsen and van Heuven 2005; Pearce 2006). In a couple other Oto-Manguean languages (Chavez Peón 2008; DiCanio 2012), distinct acoustic correlates of stress and tone have been described, but no similar study in a Mixtec language has previously appeared. In contrast to the tone-dependent stress reported for Ayutla Mixtec (Pankratz and Pike 1967) or the additional final stress reported for Diuxi Mixtec (Pike and Oram 1976) and San Juan Colorado Mixtec (Stark and Johnson 1991), we find stress-sensitive tone in Nieves Mixtec, with no evidence of additional final stress. The findings of this study conform with the generalization that languages disprefer stressed low tone (de Lacy 2002), while running contrary to the generalization that contour tones prefer stressed vowels (Zhang 2004).