

An acoustic study of Mizo tones and morpho-tonology
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Mizo is a Tibeto-Burman language spoken by over half a million people (approximately 539,000 in India, 1,000 in Bangladesh, and 12,500 in Myanmar). There has been descriptive work on its sound system in general (e.g., Henderson 1948, Bright 1957, Burling 1957, Weidert 1975), and its tone system has been described and analyzed by native speakers (Chhange 1986; Fanai 1989, 1992) as having four tones: High, Low, Rising (=LH) and Falling (=HL). Chhange and Fanai also provide a few rules for the interactions of tones in suffixed or compounded words; however, both these researchers stress the desirability of acoustic analyses to support their descriptions.

In this work, we add to the previous research on Mizo in two ways. First, we provide an instrumental acoustic analysis of the tones in words whose tones have been provided by previous researchers. Second, in order to investigate morpho-tonological alternations, we examine the interaction of tones on lexical items with suffixes, and two and three word compounds, words which have not been reported in the previous literature.

A single Mizo speaker was recorded reading a list of target words in a frame sentence. The word list included monomorphemic words, words with suffixes, compounds of two and three words, and borrowed words. High quality recordings were made using a Sony TCD-D8 DAT recorder and a head-mounted Shure SM10A microphone, then digitized into a CSL model 4400 and acoustically analyzed using Praat 4.3.09. We confirm the findings of previous researchers by showing that Mizo has four distinct tones in the system, and show that these can be differentiated by two measures of pitch. The average F0 across the tone bearing unit (TBU=vowel plus voiced coda) relative to that of the preceding word in the frame sentence distinguishes between the H and L tones. Within a syllable with a contour tone, the pitch difference between the first and last F0s of the TBU can distinguish a rising tone from falling. Measurements were taken at 20ms after the initiation of the vowel and 20 ms before the end of the TBU, in order to avoid consonantal interference, and a significant difference was found, with rising tones averaging a 10.4 Hz increase and falling tones averaging a 52.0Hz decrease.

Using these characteristics to determine the tones of the words whose tone assignment was unknown, we are examining the tonology of words with suffixes and in compounds, providing a descriptive analysis of some of the morpho-tonology of Mizo. We thus add to our knowledge of this little studied language of the Sino-Tibetan family, and provide an acoustic phonetic basis for further research.

Selected References

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