

## The interaction of tone and intonation in Uspanteko

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Uspanteko is a Mayan language spoken in central Guatemala by 2500-4000 people. Uspanteko is endangered, as many children in the Uspanteko area do not speak the language natively.

Uspanteko is one of the few Mayan languages with lexical tone, and the only one in Guatemala. Tone is relatively simple in Uspanteko, involving either a privative [H] vs. [∅] or binary [H] vs. [L] contrast, depending on the analysis. However, lexical tone interacts with other aspects of word-level prosody. Tone always falls on the penultimate mora: it occurs on the word-final syllable when the last vowel is long, or on the penult when the last vowel is short. Stress is normally word-final, but when tone falls on the penult stress retracts, so that tone and stress always coincide.

The precise phonetics of tone in Uspanteko are not yet understood. This is unfortunate, as phonetic data could shed light on the proper phonological analysis of the tone system (privative [H] vs. [∅] or binary [H] vs. [L]). However, intonation poses a significant challenge for an investigation of lexical tone, as intonational melodies often seem to neutralize tonal contrasts in the language.

We report on a study which attempts to control for the influence of intonation on lexical tone contrasts in Uspanteko. In this study, a native speaker of Uspanteko read from a list of pre-prepared questions, and participants responded by translating a pre-prepared answer from Spanish into Uspanteko. Each answer contained a target word, which could be tonal or non-tonal. Question-answer pairs were controlled to elicit target words under focused (new-information) and discourse-given conditions, as well as in both sentence-medial and sentence-final position. Thirteen native speakers of Uspanteko participated in the study.

Results show that the tonal contrast is most reliably realized (i) on long vowels, and (ii) under focus. Focus involves general pitch raising, which is more substantial on tonal items than on non-tonal items. This is consistent with a privative [H] vs. [∅] analysis of the tonal system, assuming that focus exaggerates the [H] target to a greater extent than it raises unspecified [∅] vowels. At the same time, tonal contrasts are highly variable and quite modest in size. We explore several explanations for this observation, involving (i) the low functional load of tone in Uspanteko, (ii) possible task effects, and (iii) the possibility that the tone system is undergoing phonetic change in some Uspanteko communities.