
Focus Prominence in Whistled Turkish

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A whistled language is a surrogate of a spoken language with a reduced system in which certain differences are neutralized due to the articulatory constraints. The investigation of whistled languages reveals how languages are modeled, how the deficits in the system are compensated for, and the strategies that are (in)dispensable. Whistled languages are either tone-based or formant-based languages. Tone-based languages transpose the fundamental frequency and pitch, and formant-based languages transpose the formants (Meyer 2015). Whistled Turkish (WT) is expected to emulate the formants as a non-tonal language. However, the patterns of pitch change at the sentence level are essential in Turkish to mark focus prominence. For example, the constituent preceding the question particle bears focus in polar questions, and the H*L pitch accent maps onto this constituent (Göksel, Keleşir & Üntak-Tarhan 2009). This study investigates the prosody of focus in polar questions in WT to reveal the strategies used to transpose this intonation contour. We collected data from four male whistlers from Giresun, Kuşköy. The whistlers acted out dialogues in pairs in Turkish and then in WT, including six polar questions with *-mI* appearing in 3 positions (6 (target sentences) x 3 (conditions) x 4 (speakers)). The question particle follows the subject, object, and verb. Using Praat, we annotated the sentences and marked the boundaries of words in Turkish and WT. We extracted the pitch and intensity values of each word, and the mean pitch value of the syllable preceding the particle, which bears the high pitch accent in Turkish. Time normalization and word alignments were done via MATLAB to get representative contours across speakers.

The high-pitch accent systematically accompanies the focused phrase preceding the particle in Turkish. In WT, a high-frequency value systematically accompanies the syllable preceding the question particle only when the verb bears focus, confirmed by the mean pitch values extracted from Praat. However, unlike Turkish, a high pitch value is not systematically observed when the subject or the object precedes the particle. Based on these results, we suggest that even in this reduced communication system in which intelligibility across long distances is the ultimate goal, focus prominence is reflected via modulations in the pitch value. Still, this strategy is restricted to a single position in polar questions. As a next step, we investigate how focus prominence is reflected in declarative clauses in WT.

References: • Göksel, A. & Keleşir, M. & Üntak-Tarhan, A. (2009). Decomposition of question intonation: The structure of response-seeking utterances. In *Phonological domains; universals and deviations*. Mouton de Gruyter. • Meyer, J. (2015). *Whistled Languages: A Worldwide Inquiry on Human Whistled Speech*. Berlin: Springer-Verlag.