The Intonational Phonology of Czech

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The aim of this paper is to contribute to the field of prosodic typology (see Jun 2006; 2014) by presenting the phonology of intonation and phrasing of Czech (West-Slavic language). In contrast to many Germanic or Romance languages, Slavic languages are still strongly understudied within the AM framework (Pierrehumbert 1980; Ladd 1996; Gussenhoven 2004) and Czech is no exception here. Despite the long tradition of research on Czech intonation (see, e.g., Daneš 1957; Palková 1994; Janíková 2012 among others), its modelling within the AM framework is still at the beginning (see, e.g., Duběda 2011, 2014; Pešková 2017; Pešková et al. 2018). Regarding some prosodic properties, Czech is an intonational language, has a fixed stress on the first syllable, and is considered a mix-timed language for its rhythmic features (Dankovičová & Dellwo 2007). Moreover, it has been argued (Pešková 2017, Pešková et al. 2018) that Czech belongs to the group of phrase languages (Féry 2017) or to the so-called head-edge prominence languages (Jun 2014).

For the purposes of the present study, I examined data elicited by means of a production experiment. Participants were reading 115 randomly ordered sentences embedded in question-answer contexts (e.g., context: "Co maluje Malena?" '*What does Malena paint*?' / target-answer: "Malena maluje mandarinky" '*Malena paints tangerines*'). The material includes different types of both neutral and biased sentences such as declaratives, questions, imperatives and vocatives (see examples in Figures 1–8). The selected words were controlled for voiced segments and number of syllables. (Previous research on Czech intonation has shown that differences in the number of syllables are important for the description of the tune-text alignment of F0 shapes within accentual phrases). Twenty-one monolingual speakers (14 F, 7 M) from Brno (the second largest Czech city) were recorded in a soundproof laboratory at the Faculty of Informatics (Masaryk University) in Brno. A total of 2.300 sentences were obtained for the intonational and acoustic analysis with Praat (Boersma & Weenink 1996–2018).

Preliminary results reveal at least four main pitch accents (H*, L*, L+H*, L*+H), two accentual phrase tones (Ha, La) and four boundary tones occurring both at the BI 3 and BI 4 (L-/L%, !H-/!H%, H-/H%, LH-/LH%). Furthermore, Czech shows a sparser pitch accent or AP distribution especially in the sentence-medial positions of declaratives as well as questions, where the tonal events are not regularly distributed within the prenuclear stretch or they are strongly reduced in pitch. This speaks in favour of a medium macro-rhythm (Jun 2014) in Czech. Other segmental or durational cues (e.g., glottal stops, lengthening of segments) can mark boundaries between words too at the both initial and final edges of APs. The data show quite a large inter-speaker variation found in the data, but each speaker is consistent in his/her productions, meaning that the intra-speaker variation is low. Another observation is that Czech tends to solve tonal crowding (a context where two or more tones are associated with the same segmental element) by means of tonal compression. Finally, the question remains whether Czech uses lexical markers and/or modal particles that may impact on pragmatic meaning of utterances instead of intonation, as it was stated, for example, for German or Friulian (see Roseano et al. 2015).

The research hopes to contribute to the study of intonational properties in Czech as well as to the study of prosodic typology and cross-linguistic variation in general.

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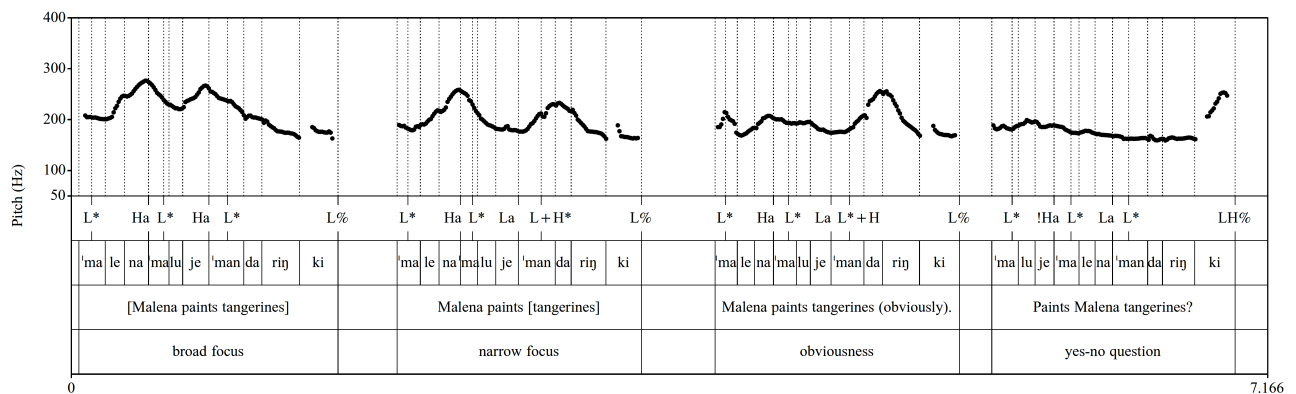
Figures 1-4: *Intonation contours of different sentence types I (with English literal translation)*
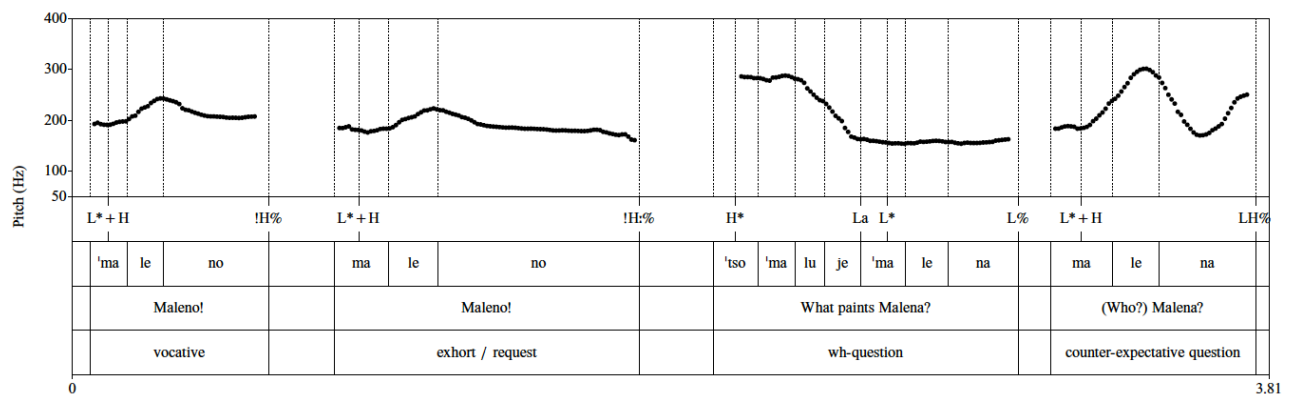
Figures 5-8: *Intonation contours of different sentence types II (with English literal translation)*