The Interaction of Animacy with Phonetic and Phonological Factors in Neoštokavian

This study presents a novel discovery of the influence of animacy on Neoštokavian pitch accents. Regression modeling is used to reveal the complex role of animacy, which not only has a significant main effect in predicting the location of High tone (henceforth: tone) — the only acoustic correlate of pitch accents that is not predictable — but also significantly interacts with phonetic and phonological factors that influence tone placement.

The database used to build the model includes 441 disyllabic masculine singular nouns, consisting of monosyllabic roots and inflectional endings, taken from a dictionary and accented according to the intuitions of four native speakers of the eastern Croatian variety of Neoštokavian. Nouns that showed variation in the location of tone (around 10%) were excluded from the database. Disyllabic masculine nouns fall into three accentual paradigms, which differ in the location of tone across different inflections:

1. Tone on root
2. Tone on affix
3. Mixed root and affix

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Logistic regression was used to estimate the probability of the location of tone as a function of the following predictors: Animacy (animate/inanimate), Case (genitive/locative), Root Vowel Length (long/short), Root Post-Vocalic Consonant (voiced/voiceless/sonorant).

All predictors have a significant main effect, and animacy mediates the effects of all other predictors. Figure 1 illustrates a three-way interaction of Animacy, Root Vowel Length, and Case, and its influence on the probability for the tone to be on the root. Nouns with a long root vowel are more likely to have tone on the root, suggesting that heavy syllables attract tone. While the effect of a long root vowel is uniform across inflections in animate nouns (left-hand side of the figure), the same is not the case in inanimate nouns (right-hand side of the figure). This mismatch corresponds to the third accentual paradigm, in which the tone occurs on the root in the genitive, and on the affix in the locative. It is thus the case that animacy influences the distribution of nouns between paradigms, but this influence is conditioned by vowel length: in nouns with a long root vowel, animacy determines the affiliation with accentual paradigms, but has no such effect in nouns with a short root vowel.
Animacy also mediates the effect of the quality of the post-vocalic consonant, but, as in the case of root vowel length, this effect is not uniform across animate and inanimate nouns. A voiced obstruent following the root vowel significantly increases the probability for the tone to be on the root. Since voiced consonants cause the preceding vowel to be longer (Peterson & Lehiste 1960), and tone is more likely to be located on a long vowel (as shown above), the effect of the post-vocalic consonant can be interpreted as an effect of phonetic length on syllable weight. Interestingly, this effect is present only in animate nouns, as illustrated in Figure 2. Thus it appears that even purely phonetic phenomena, such as phonetic length, are not necessarily equally influential across the board.

In addition to complex interactions and probabilistic effects surrounding animacy, syllable weight shows a more classical deterministic effect in determining the location of tone, corroborating the general preference for the tone to be associated with heavy syllables in the nouns in question. Namely, if the root syllable has a coda, the tone is always on that syllable (this fact has not previously been reported). This effect, together with the effect of root vowel length, goes against the claims that only vowels are moraic in Neoˇstokavian, and that tone avoids being associated with heavy syllables (Zec, 1999).

Both of the described effects show an interesting interaction between animacy and syllable weight in governing tone placement. First, animate and inanimate nouns with long vowels tend to be distributed in distinct accentual paradigms, while there is no such preference in nouns with a short vowel. Second, the lengthening effect of a voiced postvocalic consonant on the root vowel, which significantly increases the likelihood for the tone to be on the root, is present only in animate nouns. The purpose of this study is not to provide a final model of Neoˇstokavian accentual patterns, but rather to identify the relevant factors. Regression models are an ideal tool for discovering gradient and synergistic effects of factors, which are otherwise difficult to notice.

Word count: 745

Selected References


