

Neural semantic effects of Swedish word accents

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Abstract

Swedish is a pitch accent language with two distinctive tonal members: a H*L contour for *accent 1* and L*HL for *accent 2* in South Swedish. Since tonal features are not extensively used for lexical distinction, indirectly suggested by the low number of minimal pairs, the lack of tonal manifestation in the absence of a phrasal prominence, and the strong tendency of stem tone - suffix combinations, the two-way contrastive tonal system has been questioned (Bruce & Gårding, 1978; Elert, 1972; Myrberg & Riad, 2015; Riad, 2014). While *accent 2* has been considered the “marked” member (Riad, 1998), *accent 1* has been repeatedly found to facilitate speech perception by allowing the prediction of unfolding full word forms (Roll, 2015, 2022; Roll et al., 2015; Söderström et al., 2016). In the present study, using minimal pairs and contextual constraints in an auditory comprehension task, we found that the tone accents are employed at the lexicosemantic level of processing. Incongruent tone accents were observed to impose difficulty in understanding the utterances, indicated by decreased accuracy of sentence comprehension, increased response times and elevated amplitude of the N400 ERP component, which reflects increased processing difficulty for the brain. Our study presents the first evidence of neural processing of the Swedish tonal minimal pairs and an auditory semantic N400 effect produced by contextually incongruent word accents. The findings further shed light on the multidimensional utilities of the functional load carried by the Swedish tone accents, in which several functions are accommodated by these tonal figures, including morphological and phonological roles as well as predictive functions in the lexical domain.

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