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How do we process phonological and grammatical errors in L2 accented speech? Results from a German vs. Polish study

Accentedness can modulate the way we process speech. Native listeners show reduced brain responses towards various kinds of speech incongruencies when produced within an L2 accent, see e.g., Hanulíková et al. (2012), Grey & Van Hell (2017), and Goslin et al. (2021). In this talk, we will present an ERP study that contrasts brain responses towards L1 and L2 accented sentences containing either gender agreement violations or L2-typical vowel substitutions with sentences containing no such manipulation. We conducted same-structured experiments in German and Polish. Differences in the influence of L2 accent on the processing of grammatical and phonological errors were expected for P600, as the component is usually reported for morpho-syntactic violations (Friederici et al. 2002), but also for unexpected phonology (Domahs et al. 2009, Liu et al. 2011). Additionally, we investigated the accents' effect on the processing of phonological substitutions (PMN component). Our results indicate that the speakers' accent shapes neurocognitive responses towards errors, with differences between the languages investigated: Across both experiments, grammatical errors enhanced a late posterior positivity (P600) only for L1 accented speech. P600 was found for phonological substitutions in German only, and again, only for L1 accented speech. Furthermore, in Polish, but not in German, we found a PMN effect for the phonological mismatches, which emerged for L2-accented speech only. We will present an interpretation of the results including the difference found between Polish and German.