Estimating the magnitude of sensitivity to morphosyntax and first language influence during self-paced reading in a second language.

Despite extensive theorizing and empirical research, we do not have general estimations of the magnitude of sensitivity to morphosyntax during L2 online processing or of the extent of L1 influence. This is largely due to a heavy reliance on null hypothesis significance testing rather than effect sizes in research into L2 online processing. The current study set out to consider the value of providing effect sizes for reaction time data from one elicitation technique, self-paced reading, with a view to providing an initial 'framework of reference' for estimating the size of general effects in online processing. First, we provide the key findings from a methodological synthesis of the use of SPR in L2 research, across 64 studies. We then present the results of a meta-analysis drawing on reaction time data from 48 studies (N=2587), in order to estimate sensitivity to L2 morphosyntax and how far this is modulated by L1-L2 differences. We found a reliable sensitivity to L2 morphosyntax at advanced proficiencies (d = 0.31, 95% CIs 0.24, 0.38). This was similar to that of native speakers and not meaningfully affected by L1-L2 differences, study design, linguistic feature, sentence region, or processing phenomenon, though for native speakers anomaly detection showed reliably stronger effects (d = 0.54) than ambiguity resolution (d = 0.25). Reading speeds for native speakers were reliably half a standard deviation unit faster than for advanced L2 learners. Our study proposes a preliminary framework within which to contextualise future research in this domain.