Prosodic prominence does not facilitate word identification

Speakers can draw attention to particular words within an utterance by making them prosodically prominent. Prosodic prominence is defined as the standing out of a linguistic entity of its environments based on its prosodic characteristics, such as for example pitch accents. Psycholinguistic studies have consistently shown that prosodic prominence facilitates off-line language processing. Specifically, studies found that prosodically prominent target words were remembered better in word recognition-memory or word-recall studies (Fraundorf et al., 2010; Kember et al., 2020). In contrast, however, the results for effects of prosodic prominence on on-line language processing are not clear-cut. While Cutler & Swinney (1987) found that prosodic prominence facilitated language processing in a word-monitoring task with English-speaking participants, Zeyer & Penke (2024) could not replicate this result in a word-monitoring task with German-speaking participants. Thus, while word recognition-memory and word-recall are facilitated by prosodically prominent accents, it remains unclear if and how lexical access (as tested in word-monitoring) is influenced by prosodic prominence.

To investigate this issue, we conducted an auditory lexical-decision task with 50 German-speaking participants. Participants listened to 50 experimental words (bisyllabic, trochaic adverbials) and 50 pseudowords, presented in pseudo-randomized order, and were asked to decide as quickly as possible if what they had heard was a word or not. Following the scale of prominence established by Baumann & Röhr (2015), the target words and pseudowords either carried the highly prominent accent type L+H* or the low prominent deaccentuation (ø). The mean word frequency did not differ between experimental conditions (p =.765).

If prosodic prominence facilitated language processing, leading to a quicker lexical access as suggested by the results of Cutler & Swinney (1987), we would expect faster reaction times for words that are prosodically more prominent compared to words that are prosodically less prominent.

The mean reaction time in the prosodic prominent condition L+H* was 1334 ms (*SD* 246), in the less prominent deaccentuation condition, the mean reaction time was 1328 ms (*SD* 231). A linear mixed-effects model with random intercepts for participants and items and by-participant random slopes for experimental condition resulted in a non-significant effect for the two prosodic conditions ($\beta=-0.0023$, *SE*=0.0150, $t(98)=-0.153$, $p=0.879$), suggesting that prosodic prominence did not influence reaction times.

The results indicate that prosodically prominent target words carrying an L+H* accent were not identified faster than target words that were deaccented and prosodically less prominent. These results confirm the findings of Zeyer & Penke (2024) who could not find an influence of prosodic prominence in a word-monitoring task. Our results suggest that the off-line processing stages of word recognition-memory and word recall and the on-line processing stage of lexical access are influenced differently by prosodic prominence. While studies investigating the former processes have repeatedly shown that prosodically prominent target words are favoured in word recognition-memory and word recall, the results of this study imply that lexical access, is a processing stage that might not be influenced by prosodic prominence.