Tapping into morphology with the help of subphonemic detail

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Research has shown that morphological structure leaks into subphonemic detail. Morphologically different types of word-final /s/ in English come with their unique durations (Schmitz et al., 2021a,b; Tomaschek et al., 2019; Plag et al., 2017). Schmitz (2022) investigated in a perception and two comprehension experiments whether subphonemic differences also play a role in decoding morphological categories and found that the durational differences can be perceived by English speakers and that they significantly affected the comprehension process.

The present study aims at investigating whether such durational cues are strong enough to guide a learner in morphological learning: Are not only phonemic but also subphonemic cues sufficient to build up new morphological representations? We invented an artificial language with varying final /f/ durations to be learned by adult German native speakers. Participants learned an alternation pattern that determined the encoding of singular and plural. The alternation pattern varied between experimental groups: The 'phonemic group' learned that plurality is indicated by a phonemic change [f~p alternation]. Two 'phonetic groups' learned that plurality is indicated by a shorter or a longer durational difference [f~f: alternation]. After training, participants were requested to perform a number decision task during which we collected accuracy as well as mouse tracking data. Data collection is currently under way but preliminary results indicate that learners of the 'phonemic group' perform much better than the 'phonetic groups'. Accuracy in `phonetic groups' seems to be rather low but more detailed analyses of mouse tracks reveal the expected advantage for the 'phonetic group' with longer duration differences over the one with shorter duration differences.

Our results indicate that information exchange between the domains of phonetics and morphology can be beneficial for language learners as they would be able to use subphonemic durational cues to identify morphologically relevant units.

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Literatur

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