Paradigms of whole word forms in the mental lexicon
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Paradigms are hypothesized to be really stored in the mental lexicon on the basis of theoretical considerations (Albright, 2010, 2005), but there has been little experimental work to confirm this (but see Smolka et al., 2007). This raises the question whether they stored as abstract slots or as whole words (Ackerman et al., 2009; Bertram et al., 2000; Schreuder & Baayen, 1997)? In this paper we provide experimental evidence for the reality of paradigms in the mental lexicon as well as evidence for the reality of whole-word storage on the basis of experimental data from German and Hungarian.

We investigated nominal paradigms of German nouns that take a schwa as plural sometimes with accompanying umlaut and sometimes without, as in the pairs Boot ∼ Boote and Bart ∼ Bärte. The diminutive form of both words has an umlaut: Boötchen and Börtchen. In a lexical decision task, in which 56 Germans participated, we tested whether the nonce form Böct affected the word Boot to the same extent as the nonce Bärct did with Bart. The nonce form Böct has support only from the diminutive form and the nonce Bärct has support from both the plural and the diminutive form. We also included words such as Fest and Feste in which there is, obviously, no umlaut.

The results, illustrated in figure 1, show that a nonce such as Bärct took longer to reject than a nonce such as Böct (the plot for the word Fost as nonce for Fest is included for completeness sake). This shows that the members of a paradigm are activated during lexical access. Whether it is controversial whether the unumlauted plural forms are stored or derived, we performed a second experiment to investigate whether the members of a paradigm are stored as whole words or not.

To this end we investigated monosyllabic nouns in Hungarian, a language that has back harmony. Despite the backness harmony, front, unrounded vowels are transparent and they sometimes take suffixes with back vowels and sometimes take suffixes with front vowels (Benus & Gafos, 2007; Blaho & Szeredi, 2013; Törkenczy, 2011). Experiments contradict each other as to whether transparent vowels that take back suffixes are more retracted phonetically (Benus & Gafos, 2007) or whether they have the same acoustics as those that take front suffixes (Blaho & Szeredi, 2013).

In a reading task 21 Hungarians were asked to silently read a sentence in which an inflected existing monosyllabic word occurred. In the next sentence this word occurred uninflected and they were asked to pronounce this uninflected word. We then measured the F2 of the transparent vowel.

The results, illustrated in figure 2, show that transparent vowels in words that take back voweled suffixes are slightly, but statistically significant, lower than those that take front suffixes. We explain this as an effect of whole word storage.

In short, we provide experimental evidence for the reality of paradigms in the mental lexicon and that the members of a paradigm are stored as wholes.

References
Figure 1: There is a larger difference in latencies between accepting and rejecting Bart words (nonce: Bär), than between accepting and rejecting Boot words (nonce: Böt), and Fest words (nonce: Fost).

Figure 2: The backness of transparent vowels in monosyllabic words is related the backness of the suffix in its paradigm.


