

How often do you visit your relatives?
Family size and word frequency in Hebrew lexical access

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The well-known properties of the phonology-morphology interface in Semitic have provided an expansive empirical basis for divergent and often conflicting theories of lexical organization. Such theories of course have a much wider range of applicability than just one language family, and recently have been succinctly summarized by Blevins (2006). On the one hand, constructivist theories maintain that surface forms are built from morphemically-based roots and stems; the most well-known formal approach to this root-oriented model in Semitic is found in work by McCarthy (1979, 1981, *et seq.*). On the other hand, abstractionist theories argue for surface words as the basic elements of the system, with roots and stems resulting from abstractions over these forms. Formal models arguing for the abstractionist approach to Semitic include Bat-El (1994, 2003) and Ussishkin (1999, 2005, 2006).

Here, recent psycholinguistic evidence is adduced in favor of the abstractionist view in which the lexicon is composed of a set of whole-word forms. In addition, this view holds that abstract entities (such as consonantal roots in Semitic languages) play an important role, but that these entities are not necessarily assigned primitive roles. As such, the experimental results bear directly on the nature of lexical organization in Semitic. These results concern two important factors involved in lexical access: morphological family size and token word frequency.

Earlier experimental work has revealed an effect of morphological family size (henceforth MFS; e.g., Baayen and Schreuder 1997, 2000). In these papers, it has been shown that the number of morphologically related words that a given target has can affect response latency in a visual lexical decision task. This effect has been documented for German, Dutch, and English, all closely related languages with concatenative morphology. More recently, the same MFS effect has been demonstrated for Hebrew by Moscoso del Prado-Martín *et al.* (2005; henceforth MPM) in a visual lexical decision task. The results indicate not only a facilitatory effect of family size for semantically related morphological relatives (“related family size”), but also an inhibitory effect for semantically unrelated relatives (“unrelated family size”); that is, Hebrew words that happen to share the “same” consonantal root but which share little or no meaning. The results also importantly reveal a facilitatory effect of word frequency.

In the current paper, Experiment 1 involves an auditory replication of MPM, providing evidence for the MFS effect in Hebrew in a purely auditory domain. Specifically, both a facilitatory effect of related family size and an inhibitory effect of unrelated family size are found, in line with the results from MPM study. In addition, the same facilitatory effect of word frequency is found. These results implicate whole-word storage in the Hebrew lexicon, along with abstraction over forms that share a consonantal root.

Experiment 2 further examines the effects of morphological family size, but this time from the perspective of the vocalic patterns used to mark verbal class (binyan) membership in Hebrew. In this study, the response latency to pseudo-words composed of existing roots and vocalic patterns is dependent on the family size of the vocalic pattern. This fact is easily explained in a model that stores whole-word forms, again arguing for an abstractionist view, in which the lexicon is composed of whole words and abstractions over them. Such a model has the important advantage of being able to accommodate effects of token-based factors (such as word frequency) as well as effects of the more abstract properties (those driven by roots and patterns) found in Semitic languages.