

## Reading complex words in Hebrew as a non-concatenative language

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This study investigates decomposition of affixed vs unaffixed and templatic vs concatenative words in Hebrew using the ERP paradigm.

**Background:** In languages with concatenative morphologies (e.g. Indo-European), words are composed of lexical stems and affixes; these complex (affixed) words are decomposed during reading (Taft 2004). ERP and MEG studies revealed costs for decomposition and for inflectional at ~400ms (N400)(Leionen et al. 2009). In templatic Semitic languages, words (excluding borrowings) are inherently complex, consisting of a root and template (e.g. Hebrew root K.T.V. *writing* + verb template HiTR1aR2eR3, yields HiTKaTeV *correspond*). Furthermore, in concatenative languages, transposed stem letters (TL) words act as primes (e.g. Duñabeitia et al. 2007 [Spanish, Basque]), while in templatic languages, words with TL of two root letters don't prime (Velan & Frost [Hebrew] 2011). The lack of flexibility is in line with templatic words being decomposed into roots and templates during reading. The goal of this study is to investigate decomposition in Hebrew as a templatic language for both affixation and templatic structure.

**Methods:** In an ERP experiment, subjects (12 native Hebrew speakers 22-54 years, further data collection in progress) performed a lexical decision task, reading words one at a time. Half of the words were Semitic-templatic and half concatenative borrowings; half were affixed with inflectional plural and definite affixes and half were not. Words are controlled for length, frequency. Affixes are counterbalanced between lists.

**Results:** Affixed templatic words elicited a larger N400 amplitude than did unaffixed templatic words.

**Conclusion:** The N400 affect in Hebrew mirrors finding in other languages for affixed vs unaffixed words and implies similar decomposition mechanisms for inflectional affixes. The null effects with comparisons involving borrowings may reflect a more variable time-course by trials or subjects when reading these less typical words.

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