

MAGENTOENCEPHALOGRAPHIC INVESTIGATIONS OF MORPHOLOGICAL
IDENTITY AND IRREGULARITY

by

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ABSTRACT

This thesis addresses the longstanding debate in the psycholinguistics literature about the correct way to characterize the psychological status of morphological relatedness and irregular allomorphy. The model argued for here is one in which the mental lexicon consists of lexical roots (sound ~meaning pairs that are arbitrary in the Saussurian sense, such as CAT: 'feline' ↔ /kæt/) and functional morphemes (affixes such as the plural marker -s, that carry purely grammatical information). Complex words are assembled by the grammar out of these roots and affixes. We argue that this is true even for words like *gate* which don't clearly separate into two pieces, but are abstractly parallel to *walked*, which does. Evidence for this full, across the board decomposition model is provided in a series of priming experiments that use magnetoencephalography to measure the earliest stages of lexical processing. Both regular and irregular allomorphs of a root are shown to access their root equally. These results, then, are incompatible both with connectionist models which treat all morphological relatedness as similarity, and with dual mechanism models which argue that regular allomorphy and irregular allomorphy arise from completely different systems, and only regular allomorphy involves root activation and composition.

In this model, morphological relatedness is argued to be an identity relation between various allomorphs of a single, shared root, and is therefore clearly distinguished from semantic and phonological relatedness, which merely involve similarity between the meaning, or form, of different roots. The experiments reported in this dissertation support this model: the neural responses evoked by identity are significantly distinct from the neural responses evoked by similarity.

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