

Review

Are regular and irregular verbs dissociated in non-fluent aphasia? A meta-analysis

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Received 10 February 2007; received in revised form 7 June 2007; accepted 12 June 2007
Available online 5 July 2007

Abstract

The cognitive mechanisms and neuroanatomical substrates used by the brain to effortlessly generate morphologically complex words (*write + ing → writing*) are little understood. The left inferior frontal gyrus (LIFG, including Broca's area) is often implicated as being involved, although its specific role is unclear. Data from brain damaged individuals, particularly those with Broca's aphasia, are often used as evidence to support or refute various theoretical perspectives. Typically, performance on two types of morphologically complex verbs, regulars (*walk-walked, slip-slipped*) and irregulars (*sing-sang, sleep-slept*) is contrasted for evidence of single or double dissociations. The question of how Broca's aphasic individuals dissociate in their production of inflectional morphology is important to our understanding of how the brain is organized to compute morphologically complex words. This article is a synthesis of research studies investigating the production of morphologically complex regular and irregular verbs in individuals with Broca's aphasia. The question being asked is if there is a robust and consistent dissociation, and if this dissociation can be tied to lesions of the left frontal lobe. This meta-analysis of 75 patients failed to show a single consistent dissociation pattern and over half the datasets had no significant difference between regulars and irregulars. There was also no relationship of any performance pattern to frontal lobe lesions, highlighting the difficulty of identifying any single neuroanatomical lesion for regular–irregular verb production deficits. The implications for various theoretical and neuroanatomical hypotheses are discussed. The role of neuropsychological dissociations in constraining hypothesis of normal neuroanatomical organization is evaluated.

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Keywords: Morphology; Broca's aphasia; Language production; Sentence completion; Repetition; Verb
