Non-fluent aphasics show an abnormal time course of semantic activation from the regular past tense

C. E. Longworth, W. D. Marslen-Wilson & L. K. Tyler

Double dissociations in processing the regular and irregular English past tense (Marslen-Wilson and Tyler, 1998, Tyler et al, 2002, Ullman, et al., 1997) imply separable systems processing morphophonologically complex and fully listed words. An alternative account (Joanisse and Seidenberg, 1999) argues that these double dissociations reflect impairments of phonology or semantics, with regular past tense deficits arising from impaired phonological and spared semantic processing. Against this view, we found that non-fluent aphasics with documented regular past tense deficits have greater difficulties with the regular past tense than words matched for phonological complexity (Tyler, et al., 2001). The current study tested the claim that semantic activation from regular past tense forms is normal in these patients. Healthy volunteers show equal semantic facilitation from verb primes irrespective of verb regularity and tense (Longworth, et al., 2001). If non-fluent aphasics have a normal time course of semantic activation from the regular past tense they should show similar priming. 4 non-fluent patients with L inferior frontal damage were tested using an auditory semantic priming/lexical decision task. Prime-target pairs (e.g. "jumped LEAP") were selected by manipulating semantic relatedness, verb tense and regularity. Verb stems showed semantic priming irrespective of regularity. Verbs inflected for tense showed an interaction between priming and verb regularity with only irregularly inflected words showing priming. This contrasts with healthy control performance, where both regular and irregular past tense show semantic priming. This suggests that non-fluent aphasics do not have a normal time course of semantic activation from the regular past tense.