Acquisition of New "Words" in Normal Subjects: A Suggestion for the Treatment of Anomia

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The study explores the efficacy of three learning methods in normal controls. Thirty subjects, randomly assigned to the repetition, reading aloud, or orthographic cueing method, were asked to learn 30 new ''words'' (legal nonwords arbitrarily assigned to 30 different pictures); 30 further new ''words'' were used as controls. Number of trials to criterion was significantly lower, and number of words remembered at follow-up was significantly higher for the orthographic cueing method. Two aphasic patients with damage to the output lexicons were also rehabilitated with the same three methods. In both patients the orthographic cueing method was significantly more efficacious. The differences in learning efficacy of the three methods are discussed. © 2001 Academic Press

INTRODUCTION

When we speak, word retrieval is usually a quick and easy process albeit word-finding difficulties may also occur in normal speakers. At times, proper names or precise words may in fact be difficult to retrieve even if we know them. In aphasic patients difficulty in word retrieval is the most pervasive symptom of language breakdown, and naming disorders may result in a wide variety of errors due to damage to different stages in the process of naming. The similarities between aphasic errors and normal slips of the tongue have been noted by many authors. Freud claimed that ''the paraphasia in aphasic patients does not differ from the incorrect use and the distortion of words which the healthy person can observe in himself in states of fatigue or divided attention'' (1953, p. 13).

The pervasiveness of word-finding difficulties has motivated several studies devoted to the management of the deficit and its effectiveness. Group studies suggest that word-finding deficits in general can be ameliorated (Hillis, 1989; Howard, Patterson, Franklin, Orchard-Lisle, & Morton, 1985a, 1985b; Marshall, Pound, White-Thompson, & Pring, 1990; Myers-Pease & Goodglass, 1978) but in group studies it is difficult to evince what treatment has been useful for what type of patients. Error types in normal subjects and aphasic patients have provided important clues to the architecture of the normal lexical processing system and many authors have recently proposed relying on cognitive neuropsychological models to reach a functional diagnosis, which should then be used as a guide to aphasia therapy (Behrmann, 1987; Byng, 1988; Hillis & Caramazza, 1987). Theoretically based treatments have been published presenting cases of patients whose deficits were identified relative to a

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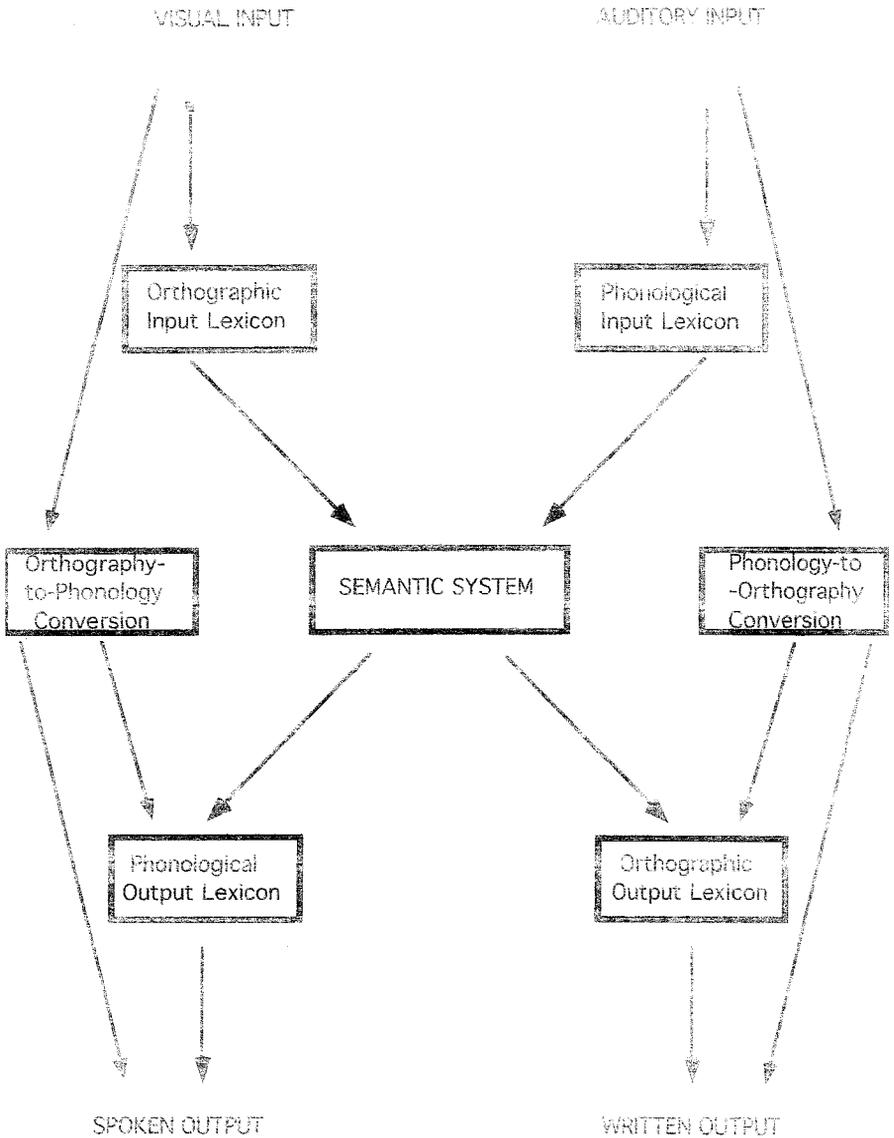
FIG. 1. Functional architecture of the lexical-semantic system and the sublexical-conversion mechanisms.

functional model of single word processing and rehabilitated following the cognitive neuropsychological approach (Howard et al., 1985b; Miceli, Amitrano, Capasso & Caramazza, 1996).

The background model we will refer to has the functional architecture shown in Fig. 1 (for a detailed description of the model see Caramazza & Hillis, 1990; Miceli, Giustolisi, & Caramazza, 1991). Briefly, the model assumes that written language does not depend on spoken language and makes a distinction between input and output word-form stores. The single semantic component is independently connected with the phonological and the orthographic input and output lexicons, which contain the phonological and the orthographic representations of words. The segmental processing of new words in reading aloud is based on grapheme-to-phoneme conversion rules, and in writing to dictation on phoneme-to-grapheme conversion rules; the seg-