Predicability (ease of predication) as semantic substrate of imageability in reading and retrieval

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Abstract

It was proposed by Jones (1985) that the apparent influence of a word’s imageability upon the probability of the word being read correctly by a deep dyslexic person could be understood in terms of an underlying semantic variable, ease of predication (also termed predicability). In a recent critique, de Mornay Davies and Funnell (2000) claim to have identified a number of problems with the ease of predication proposal. It is shown here, however, that it is the critique itself which is fundamentally flawed. In contrast, the predicability approach continues to identify correctly the semantic substrate of apparent effects of imageability upon reading and memory retrieval. © 2002 Elsevier Science (USA). All rights reserved.

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1. Introduction

Due particularly to the contribution of Paivio (e.g., Paivio, 1971, 1983), it had been established by the 1970s that the relative ease with which a word gives rise to the experience of a mental image—originally termed the word’s imagery value and later alternatively termed its imageability—is a strong correlate among the general population of its efficacy as a memory retrieval cue. By the 1980s, however, there was considerable puzzlement over the finding that, for patients with deep dyslexia, imageability is also a correlate of the ease with which a word can be read (e.g., Coltheart, Patterson, & Marshall, 1980). A deep dyslexic patient is more likely to read correctly a word which is high in imageability than one which is low—these are also often referred to as concrete and abstract words, respectively. Why should reading among the deep dyslexic population be sensitive to a variable that is related to memory retrieval in the general population? Marshall (1984, pp. 227–228) concluded that “in deep dyslexia … accuracy of reading is best for concrete nouns… Current models provide no truly convincing explanation.”

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The solution I proposed to this theoretical problem (Jones, 1985) is that deep dyslexic patients are better able to read highly imageable (or concrete) words not because their reading route involves the construction of a mental image, but instead because their reading proceeds by activating the meanings of words. It is variation in the ease with which individual words can activate their semantic predicates—originally termed the word’s "ease of predication" value and later alternatively termed its "predicability"—which is the determining factor, and the apparent involvement of imageability is epiphenomenal. Judgments of predicability were obtained for a corpus of nouns (Jones, 1985, Experiment 1) and it was shown that, as required by the semantic predicate hypothesis, they are extremely similar to judgments of imageability \((r = .88)\). To ensure clarity for participants, ease of predication judgments were operationalized by Jones (1985) as judgments of the ease of putting words into simple factual statements, such as (for the word "dog") “A dog is a type of animal,” “A dog often lives in a kennel,” and “A dog can be pedigree or mongrel.”

Predication has a family of usages in different theoretical disciplines—for example, Garver (1967) distinguished senses in (a) epistemology and semantics, (b) grammar and syntax, (c) logic, and (d) metaphysics. Hence it should perhaps be made explicit that predicates are being used here in the first of these senses, as descriptions or characterizations which comment on a particular topic. Further, it should also be noted that predicability is being used here to refer to the ease of activating a word’s predicates and not to refer to the classical philosophical issue of the possible range of different forms of predication that may be held to exist (see Keil, 1979; Sommers, 1965).

Since 1985, apparent effects of imageability on reading processes have frequently received predicability interpretations in terms of an underlying semantic variable. The semantic account of imageability has continued to be prominent in the case of deep dyslexia (e.g., McCarthy, 2001; Plaut, 1999; Plaut & Shallice, 1993), but has also been explored for related neuropsychological disorders such as abstract word anomia (e.g., Franklin, Howard, & Patterson, 1995; Hanley & Kay, 1997; Tyler & Moss, 1997), as well as for reading-related processes in the general population (e.g., Laing & Hulme, 1999; Strain, Patterson, & Seidenberg, 1995; van Hell & de Groot, 1998; Wise et al., 2000).

A recent article by de Mornay Davies and Funnell (2000), however, has reconsidered the ease of predication proposal of Jones (1985) and criticized it for a variety of supposed deficiencies. It is argued here, however, that it is the critique itself, rather than its target, which is flawed. The following comments focus successively on the critique’s textual content; the reliability of predicability; the generation of predicates; semantic features; and, finally, the separate issue of memory retrieval.

1.1. Textual content

de Mornay Davies and Funnell appear to have made the error of criticizing what they imagined Jones (1985) had written rather than what Jones (1985) actually wrote. Consider, as example, part of their opening paragraph (de Mornay Davies & Funnell, 2000, pp. 92–93):

The main source of evidence for this notion of differential semantic richness is a paper by Jones (1985) in which he claims that concreteness or imageability is a function of a variable which he terms "ease of predication." This is the ease with which any particular word "summons the element representing [it] in semantic memory [which] is associated with a number of features or, more fully, predicates" (1985, p. 2).
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