

Is “Count” and “Mass” Information Available When the Noun Is Not? An Investigation of Tip of the Tongue States and Anomia

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To use a word in a sentence requires speakers to access information such as the meaning of the word, its use in a sentence (i.e., its syntax), and its sound form. In this study we examine whether when speakers cannot retrieve the sound form of a word, they are nevertheless able to indicate its syntactic properties. More specifically, we investigated whether English speakers in a tip of the tongue state, and a brain-damaged speaker in an anomic state, could correctly guess whether target words are either “count nouns” (e.g., *an opinion*) or “mass nouns” (e.g., *some knowledge*) when they could not say them. Results showed that speakers can correctly guess syntactic features such as count and mass, extending previous results concerning grammatical gender in Italian. We discuss the implications for models of language production in which lexical retrieval includes two steps. The first step involves retrieval of a word’s abstract representation, specifying meaning and syntax. The second step involves the retrieval of the sound pattern of the word. Additional evidence from slips of the tongue in Italian, Spanish, and German showing syntactic constraints on phonological errors is also presented. © 1999 Academic Press

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When asked to provide a name for a picture depicting a bird cage (*volière*, in French), pa-

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tient GM (described in Henaff Gonon, Bruckert, & Michel, 1989) said the following: “. . . ça commence par V . . . ils peuvent voler . . . ça commence par voi . . . dans les musées . . . quand les oiseaux peuvent voler à l’intérieur . . . c’est “une,” j’en suis sûr . . . ça ressemble à voilier . . . il y a peut-être un autre mot qui me vient quand je pense à celui-là . . . ” (p. 359) [. . . it starts with V . . . they can fly . . . it starts with VOI . . . in museums . . . when birds can fly inside . . . it’s feminine, I am sure of it . . . it sounds like sailing boat (voilier) . . . there is perhaps another word which comes when I’m thinking of this one . . .]. Patient GM is experiencing a lexical retrieval problem. However, as the example illustrates, even if the full phonological form of the target word is not available to him for production, he shows remarkable knowledge regarding different aspects of the word, such as

that the word is feminine (i.e., its grammatical gender), that the word starts with a V, and that it sounds like "voilier."

The lexical retrieval problem of patient GM is phenomenologically analogous to the *tip of the tongue phenomenon* (TOT), the condition—familiar to all of us—in which we want to say a word, but we cannot find it. Like patient GM, often when we are in a TOT state we know something about the word we want to say, for example, how the word starts, if it is a long word, and so on. Indeed, a number of studies have shown that speakers in a TOT state can correctly guess lexical properties of the words such as grammatical gender in a language such as Italian, number of syllables, and number of letters (Brown & McNeill, 1966; Burke, McKay, Worthley, & Wade, 1991; Koriat & Lieblich, 1974; Meyer & Bock, 1992; Miozzo & Caramazza, 1997; Vigliocco, Antonini, & Garrett, 1997).

The TOT phenomenon has fascinated psychologists since the end of the 19th century, when William James (1890) provided the first description of this state.

Suppose we try to recall a forgotten name. The state of our consciousness is peculiar. There is a gap therein: but no mere gap. It is a gap that is intensely active. A sort of wraith of the name is in it, beckoning us in a given direction, making us at moments tingle with the sense of closeness, and then letting us sink back without the longed-for term. If wrong names are proposed to us, this singularly defined gap acts immediately so as to negate them. They do not fit into its mould. (pp. 251–252)

More recently, researchers in language production have turned to this phenomenon as a window from which to observe how lexical retrieval occurs during fluent language production (Burke et al., 1991; Butterworth, 1989; Garrett, 1984; Levelt, 1989; Miozzo & Caramazza, 1997; Vigliocco et al., 1997).

In this paper, we deal with TOT states occurring in both language-impaired and language-unimpaired speakers of English. Previous studies in Italian have investigated the ability of normal speakers in a TOT state (Caramazza & Miozzo, 1997; Miozzo & Caramazza, 1997; Vigliocco et al., 1997) and of brain-damaged

subjects (Badecker et al., 1995; Vigliocco, Garrett, & Martin, 1996) to correctly guess *syntactic* features of the words they could not say such as grammatical gender (masculine or feminine) in Italian. These studies found that speakers were able to correctly report grammatical gender when in a TOT state, even when they were unable to report any other information (i.e., number of syllables and phonological segments). The main purpose of the present study is to assess the generalizability across languages of these findings by assessing a different syntactic feature (i.e., the distinction between *count* and *mass* nouns) in a different language (i.e., English). Furthermore, we use data from experiments on induction of TOT states to address the question of how different kinds of information (i.e., syntactic, metrical, and segmental) are related to one another or, in other words, whether retrieval of segmental information depends on the retrieval of syntactic and metrical information during production.

We will start by presenting a general theoretical framework concerning lexical retrieval in language production and some of the evidence that motivates it. We will then turn to a description of how syntactic features are retrieved within this framework and to the predictions we can derive with respect to whether speakers are able to correctly report syntactic features during lexical retrieval failures. Finally, we will present the two experiments.

LEXICAL RETRIEVAL IN LANGUAGE PRODUCTION

How is lexical retrieval achieved? According to a number of authors (e.g., Bock, 1986; Butterworth, 1989; Garrett, 1993; Levelt, 1992) lexical retrieval comprises two major steps: retrieval of a lemma and retrieval of a lexeme. On the basis of a message, conveying the speaker's intentions, a first lexical representation is retrieved. This representation, referred to as a *lemma* (Kempen & Huijbers, 1983), is an abstract representation of the word not yet phonologically interpreted (Garrett, 1982) which specifies the meaning and the syntax of the word. Lemmas are retrieved from a separate lexicon of such representations called the *se-*

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