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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 28(28)

ISSN

1069-7977

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Publication Date

2006

Peer reviewed

More than Knowledge: Word Frequency Influences Preferences for Thematic Associates

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Key words: language acquisition; word meanings; knowledge representation

Introduction

The purpose of the current study is to determine if frequency of occurrence, at least partially independent of definitional knowledge, may play a role in the shift of attention to thematic relationships during the acquisition of word knowledge.

Early, partial representations of word knowledge are likely to consist of categorical information (Chaffin, 1997; Whitmore, Shore, & Smith 2004). This attentional focus on categorical relationships during initial encounters is documented in both the developmental (e.g., Mandler, 2000) and adult (Whitmore, et al, 2004) literatures. Once category membership is understood, attention may shift to different types of relationship as we encounter the word in various contexts. A thematic shift is widely reported in the developmental literature and has been demonstrated with adults (Chaffin, 1997). However, Whitmore et al (2004) found that categorical information remains more readily available to the language learner at all levels of knowledge when using low frequency words. It is possible that the high-frequency words used in Chaffin's study and in the developmental literature represent the far end of the word meaning continuum, whereas the low-frequency words used by Whitmore et al represent a different point on that continuum. Low-frequency words, even when part of the expressive vocabulary, are experienced in limited contexts and thus may be represented by limited thematic relationships.

To address this contradiction, participants generated associates to both high- and low frequency targets. It was hypothesized that high frequency targets would elicit thematic responses, while low frequency targets would elicit categorical responses.

Method

Thirty-five participants completed the level of word knowledge assessment task (LOWKAT)(e.g., Durso & Shore, 1991) that included 40 low-frequency, concrete nouns (e.g., dowager, hovel), 15 high-frequency, concrete nouns (e.g., picture) and 9 pseudowords (e.g., edarthic). Targets that were correctly defined or used in a sentence formed the known set of targets for each participant. No other targets were included in the current analyses.

Using a coding scheme adapted from Chaffin (1997), two coders determined if and how associates were meaningfully related to the targets. The scheme consisted of fourteen possible relation types (e.g., categorical, verb response), including 'no identifiable relation'.

Results

The mean proportion of meaningful thematic and categorical responses at each frequency was calculated for each participant.

Table 1: Mean Proportions (standard deviations) of Thematic & Categorical Responses to Low and High Frequency Targets

	High frequency	Low Frequency
Thematic	.57 (.14)	.25 (.17)
Categorical	.35 (.13)	.59 (.18)

A MANOVA revealed that more meaningfully related responses were provided for high frequency targets $F(1,34)=7.79$, $p<.01$. However, there was no difference in type of response provided, $p> .05$. Interestingly, type of response varied as a function of frequency $F(1,34)=81.72$, $p<.001$. Participants provided more thematic associates to high frequency targets and more categorical associates to low frequency targets.

Conclusions

The results support the hypothesis. High frequency words seem to be represented by thematic relationships, while low-frequency words are represented by categorical relationships.

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