

## The Influence of Instructions on Feature Selection in Semantic Memory

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In two experiments, subjects verified 15 bird and 15 tool names on a list as coming under either the category *bird/tool* (L2 verification) or the category *animate/inanimate* (L4 verification). From the model by Collins and Quillian (1969) it follows that words are processed for more features in the latter than in the former case; the model by Smith, Shoben, and Rips (1974) claims the exact opposite. Both incidental and intentional recall were used to test these predictions, on the assumption that a word can be reproduced better when it has been encoded on more features. The results speak clearly against the Collins and Quillian model. In either condition, subjects recalled fewer words following the L4 than the L2 verification, even when they were offered the respective L2 and L4 categories as retrieval cues during recall.

Attribute or feature theories of linguistic meaning have played an important role not only in linguistics and psycholinguistics (e.g., Katz & Fodor, 1964; Bierswisch, 1970; Engelkamp, 1973), but also, to an increasing extent, in the psychology of perception and memory (e.g., Bower, 1967; Norman, 1968; Underwood, 1969; Wickens, 1970; Prinz, 1974). Of particular importance in this context is the question of how the memory representations of meaning elements are used by subjects to encode words presented to them.

Among the recently proposed models, two have attracted special attention: the inference model of Collins and Quillian (1969), on one hand, and various set-theory models, on the other; from among the latter we shall select the well-developed feature comparison model of Smith, Shoben and Rips (1974) for

purposes of contrast with the Collins-Quillian model.

Collins and Quillian (1969) proceed as did Katz and Fodor (1964), from the hierarchical storing of semantic information. At the lowest level of the hierarchy, to be denoted as L1, we find the specific features of such words as *robin* or *hammer*. At the next-higher level, L2, we find the features common to all birds or tools. Stored at level L3 are those features that apply specifically to animals or tools. Finally, at the top level, L4, there are features applying specifically to the categories of animate or inanimate objects.

The assumption is that before making a decision at L4, the subject is obliged to scan all lower levels of the feature hierarchy. If he is to decide whether or not a robin is animate (L4 verification), he must first judge that *robin* is a bird, that *bird* is an animal, that *animal* is animate, hence *robin* is animate. When the test word is *hammer*, he decides that *hammer* is a tool, that *tool* is an instrument, that instrument is *inanimate*. When the subject has to decide that *robin* is a bird, or that *hammer* is a tool (L2 verification), he only has to scan the two lowest feature

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