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Familiarity and organization of category terms in semantic memory

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In order to determine production frequencies for various category terms, 219 college students were asked to generate category terms (e.g. Automobiles, Vegetables, Relatives) during a 4-min period. The production frequency (i.e., the number of subjects who listed a particular term) for a given category term may be considered as reflecting the familiarity or amount of usage of that category term, and, as such, should be of value to memory researchers in designing experiments. Additionally, examination of the order in which terms were produced showed that subjects "clustered" related category terms, (e.g., "Countries" and "States" were often produced successively). This clustering of category terms is supportive of the hypothesis that categories are organized in semantic memory in some kind of higher order structure.

Research employing words from taxonomic categories (e.g., animals, foods) has figured prominently in work on human memory for over 20 years. For example, numerous studies have been concerned with the role of category organization in free recall learning (Kausler, 1974; Shuell, 1969; Tulving & Donaldson, 1972). Also, considerable work has recently been directed at elucidating which factors affect comprehension of category membership (Collins & Loftus, 1975; Perfetti, 1972; Smith, Rips, & Shoben, 1974). Investigators in both of these research areas have typically used categories selected from one of the existing category-word norms (Battig & Montague, 1969; Hunt & Hodge, 1971; Loess, Brown, & Campbell, 1969; Shapiro & Palermo, 1970; Cohen, Bousfield, & Whitmarsh, Note 1). These category-word norms present various category terms and, for each category, a list of words which subjects report to be examples of the category. One would hope that the categories used in the various norms represent the most common or most typical categories in the language. Nevertheless, with one exception (Shapiro & Palermo, 1970), none of the published norms state a precise criterion by which categories were selected for inclusion in the norms. Moreover, none of the norms report evidence that the categories therein are representative of what subjects would regard as categories, or which categories are most familiar to subjects. With the exception noted above, all developers of category-word norms appear to have used intuition as the criterion for selecting those categories used in the norms. While it is possible that the intuitions of norm-developers were successful in selecting predominantly familiar categories, this remains to be empirically verified. Consequently, the principal purpose of the present research was to determine which category terms, that is, superordinate labels, are the most common. The commonality of category frequency is potentially important experimentally since commonality of stimuli has long been known to affect performance in many cognitive tasks (Hall, 1970; Smith, 1968; Wilkins, 1971; Woodworth & Schlosberg, 1954).

In the present study, the procedure for ascertaining which category labels are most common in the language was simply to ask subjects to write down, within a limited time period, names of common categories. The category-term responses were then tabulated and rank ordered from most frequently produced to least frequently produced, thus allowing easy determination of the most common categories.

A second purpose of the study was to determine whether there is any consistency in the order of production of category labels across subjects. Bousfield and Sedgewick (1944) found that when subjects produced examples of a category (e.g., birds) they tended to produce words in conceptually common clusters (e.g., parrot, canary, parakeet). Similarly, the present study examined subject protocols for evidence of successive recall of category terms which are related (e.g., birds, animals, fish). Evidence of clustering of category terms would support recent research indicating a higher order structure of categories in semantic memory (Collen, Wickens, & Daniele, 1975; Herrmann, Shoben, Klun, & Smith, 1975).

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