NOTE

Imagery values for taxonomic-category names

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Rated imagery values are given for the Hunt and Hodge (1971) taxonomic-category names, and are shown to correlate positively with category-name m' as reported by Hunt and Hodge. The presence of a correlation is consistent with findings for other materials (Paivio, 1971). However, neither category-name m' nor the present values correlate with imagery values from the major scale of imagery in the literature (Paivio, Yuille, & Madigan, 1968), possibly because the Paivio et al. set of items included many nontaxonomic items or the range of values obscured finer grained differences among taxonomic items.

Hunt (1972, 1976) and Hunt and Wolfe (Note 1) found that category-name meaningfulness (m') influences the recall and clustering of category items in single-trial free recall tasks. Recently, it has been proposed that category-name imagery is an effective variable in concept identification (Katz & Paivio, 1975) and semantic-memory tasks (Rosch, Mervis, Gray, Johnson, & Boyes-Bream, 1976). Since it seems likely that these two variables are related, as Paivio (1971) found for other materials, the present study provides imagery norms for the Hunt and Hodge (1971) categories, with the hope that they will stimulate further examination of the m' -imagery relationship. The norms should also be useful for those interested in category-name imagery per se.

METHOD

Subjects

The subjects were 120 female and 87 male undergraduate students at the University of Tennessee at Chattanooga who participated during class time provided by their instructors.

Materials

The items to be rated were the 84 category names in Hunt and Hodge (1971), plus 6 more for which m' values were available. These were presented in mimeographed pamphlets in one of 10 different random orders. A 7-point rating scale beside each category name was numbered 1 through 7, with the extreme values described as "Low Imagery" (1) and "High Imagery" (7). To avoid position bias, the sequence was also reversed from 1 through 7 to 7 through 1; this was done at random for each order of items. On each page of the pamphlet, brief instructions reminded subjects of the sequence reversals and the descriptions of the extreme values.

Thanks are due Milton H. Hodge for his helpful comments on an earlier draft. As the author is no longer with the University of Tennessee at Chattanooga, reprint requests should be addressed to him at 1413 Cinderella Road, Lookout Mountain, Tennessee 37350.

Instructions, essentially those used by Paivio, Yuille, and Madigan (1968), were placed on a separate front page of each pamphlet.

Procedure

The pamphlets were distributed to the subjects so that approximately equal numbers received each random order, and adjacently seated subjects received different orders.

The instructions were read aloud by the experimenter while the subjects read along silently. After questions had been answered, the subjects rated each category by checking the numerical scale value representing the ease with which it aroused a mental image. Virtually all subjects finished in 20 min.

RESULTS

The ratings for each category were averaged to provide separate imagery values for females, males, and both combined. The results are given in Table 1 in descending order of the combined values.

To examine the relationship between imagery and m' , product-moment correlations were obtained for these data and for the Hunt and Hodge m' values. For females, $r = .69$; for males, $r = .52$; for the overall values, $r = .61$ (all $ps < .001$). There appears to be some commonality between the two variables and a fairly large independent variance.

Table 1
Category Imagery in Descending Order of Combined Value

Category	Females	Males	Combined
Articles of Clothing ^{1,2}	6.20	5.45	5.88
Automobiles ¹	5.73	5.71	5.72
Fruits ²	5.81	5.58	5.71
Colors ²	5.81	5.54	5.70
Trees ^{1,2}	5.84	5.52	5.70
Seasons ¹	5.65	5.43	5.56
Birds ^{1,2}	5.52	5.60	5.55
Beverages ¹	5.48	5.57	5.52
Sports ²	5.46	5.51	5.48
Jewels	5.57	5.25	5.44
Mountains ¹	5.59	5.20	5.43
Eating Utensils	5.50	5.34	5.43
Vegetables ¹	5.45	5.19	5.34
Musical Instruments ²	5.50	5.09	5.33
Holidays	5.60	4.95	5.33
Emotions	5.41	5.19	5.32
Flowers ^{1,2}	5.69	4.81	5.32
Reptiles ¹	5.11	5.60	5.32
Magazines ¹	5.43	5.16	5.32
Fish ²	5.12	5.59	5.31
Television Programs	5.47	5.05	5.29
Newspapers ¹	5.36	5.14	5.27
Universities ^{1,2}	5.31	5.22	5.27
Cities ^{1,2}	5.20	5.34	5.26

Table 1 continued

Category	Females	Males	Combined
Articles of Furniture ^{1,2}	5.62	4.59	5.19
Types of Human Dwellings ²	5.25	5.10	5.19
United States Coins	5.10	5.31	5.19
Oceans	5.32	5.01	5.19
Meats ¹	5.06	5.32	5.17
Insects ²	5.01	5.37	5.16
Actors	5.20	5.10	5.16
Drugs	5.30	4.97	5.16
Stars ¹	5.35	4.91	5.16
Presidents of the United States	5.19	5.12	5.16
Races	5.22	5.05	5.15
Dances ²	5.51	4.59	5.12
Days of the Week	5.18	5.04	5.12
Professions ^{1,2}	5.10	5.12	5.11
Games	5.21	4.94	5.10
Months ¹	5.30	4.82	5.10
Fabrics ^{1,2}	5.71	4.24	5.09
Tools ¹	5.00	5.21	5.09
Continents	4.85	5.28	5.03
Weapons ^{1,2}	4.93	5.12	5.01
States ²	5.21	4.71	5.00
Rivers ¹	4.91	5.12	5.00
Islands	4.77	5.21	4.95
Indian Tribes	4.95	4.93	4.94
Planets	4.95	4.93	4.94
United States Armed Forces	4.87	4.90	4.88
Organs of the Body ²	5.05	4.63	4.87
Male First Names ²	5.12	4.48	4.85
Political Parties	5.18	4.33	4.82
Cosmetics	5.73	3.57	4.82
Types of Relatives ²	5.22	4.24	4.81
Types of Footgear ²	4.74	4.89	4.80
Metals ^{1,2}	4.51	5.04	4.73
National Television Networks	4.77	4.62	4.71
Diseases ^{1,2}	4.90	4.42	4.70
Religions	5.02	4.24	4.69
Famous Composers	5.20	3.97	4.68
Cheeses	4.80	4.50	4.67
Novels	4.98	4.16	4.64
Nations ²	4.81	4.35	4.62
Measuring Devices	4.69	4.49	4.60
Types of Bread	4.80	4.33	4.60
Units of Time	4.67	4.41	4.56
Senses	4.80	4.20	4.55
Vitamins	4.71	4.27	4.52
Sciences ^{1,2}	4.52	4.48	4.50
Names of Meals	4.53	4.28	4.42
Languages	4.35	4.45	4.39
Chemicals	4.35	4.36	4.35

Table 1 continued

Category	Females	Males	Combined
Names of Great Lakes	4.37	4.29	4.34
Spices	4.45	3.96	4.24
Units of Distance ²	4.25	4.18	4.22
Constellations	4.43	3.81	4.17
Types of Ships ²	4.15	4.20	4.17
Fuels ²	3.98	4.40	4.16
Charitable Organizations	4.50	3.66	4.15
Minerals	4.28	3.96	4.14
Forms of Government	4.21	4.03	4.13
Military Ranks ²	3.95	4.22	4.06
Weather Phenomena ²	3.95	4.17	4.04
Mythological Characters	4.08	3.95	4.02
Names of Wars	3.83	3.97	3.89
Government Agencies	3.72	4.10	3.88
Compass Points	3.39	4.39	3.81
Types of Tax	3.39	3.85	3.58
Labor Unions	3.62	3.51	3.57

Note—Variability estimates are not available, as over half of the data were lost in a recent move.

¹*Also in the Paivio, Yuille, and Madigan (1968) norms as a singular noun.*

²*Also in the Battig and Montague (1969) norms in a highly similar form.*

DISCUSSION

The hypothesis that category-name imagery and m' measure something in common was supported. Perhaps the present norms will prompt further investigation of the semantic-memory role of this form of imagery as well as its relation with other variables such as m' .

A related finding has implications for the scaling of stimulus attributes and possibly the nature of semantic processing: It is the lack of a significant correlation of the major published scale of imagery (Paivio et al., 1968) with the present values ($r = .29$, $n = 27$, $p > .10$) or with category-name m' ($r = -.28$, $n = 27$, $p > .10$). Nor does m' correlate with the Paivio et al. m scale ($r = -.26$), even though these measures are operationally very similar and give highly parallel results when obtained from the same set of items (Noble, 1963). Certainly, the correlations could be in error because of the small n . However, within each set of items the meaningfulness variables are positively correlated with imagery (for the Paivio et al. values, $r = .72$, $n = 925$; category-name correlations are provided above).

The last result indicates that there is some fundamental difference between the two item sets. (1) The Paivio et al. set contains 925 items, compared to the present 90 items, and (2) many of the Paivio et al. items do not seem to fit the concept of taxonomic category (i.e., a name of a class of things which are fairly easily enumerated). If the range of imagery values for the category names is considerably less than that for the entire set of Paivio et al. items, the contrasts among the category names may be obscured when mixed with the other items, an inference derived from Parducci's work on scaling with nonverbal stimuli (Parducci & Perrett, 1971). It also is supported by the fact that 20 of the 27 category-name items in both sets of norms have Thorndike-Lorge counts of AA or A (Thorndike & Lorge, 1944); the Paivio

et al. items essentially cover the entire Thorndike-Lorge range. Regarding the second possible difference, it may be that a subject who rates an entire set of a particular type of item, in this case taxonomic categories, encodes the item according to the nature of the set and may be rating different qualities than might otherwise be the case.

REFERENCE NOTE

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