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CONCRETENESS, IMAGERY, AND MEANINGFULNESS VALUES FOR 925 NOUNS¹

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Groups of Ss were used to scale 925 nouns on abstractness-concreteness (C), imagery (I), and meaningfulness (m). Concreteness was defined in terms of directness of reference to sense experience, and I, in terms of a word's capacity to arouse nonverbal images; C and I were rated on 7-point scales. Meaningfulness was defined in terms of the mean number of written associations in 30 sec. The mean scale values for these variables are presented for each of the 925 nouns. Also reported are: the intercorrelations of the variables, together with an examination of the words for which C, I, and m values are most clearly differentiated; and reliability data, including comparisons with scale values for the variables from other studies.

Psychological effects of linguistic abstractness-concreteness and its semantic correlates have been investigated in a series of recent experiments (Kusyszyn & Paivio, 1966; Paivio, 1963, 1965, 1966, 1967; Paivio, in press; Paivio & Madigan, 1968; Paivio & Olver, 1964; Paivio & Simpson, 1966; Paivio & Steeves, 1967; Paivio & Yarmey, 1965; Paivio & Yuille, 1966; Paivio, Yuille, & Smythe, 1966; Simpson & Paivio, 1966; Yarmey & Paivio, 1965; Yuille & Paivio, 1967). The demands of this research program

created a need for normative data on the relevant attributes of a greater number of stimulus words (nouns) than were previously available. Such data are presented in this report for the parameters of concreteness, imagery, and associative meaningfulness.

Concreteness (C) has been found to correlate with performance in experiments on free recall (Dukes & Bastian, 1966; Olver, 1965; Stoke, 1929; Paivio, 1967), recognition memory (Gorman, 1961; Jampolsky, 1950; Olver, 1965), short-term memory (Borkowski & Eisner, 1968), paired-associate learning (e.g., Epstein, Rock, & Zuckerman, 1960; Paivio, 1965; Winnick & Kressel, 1965), associative speed (Paivio, 1966; Smith & Harleston, 1966; Yuille & Paivio, 1967; see also earlier studies cited in Woodworth

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& Schlosberg, 1954, p. 60), perceptual selectivity and recognition speed (Borkowski, Spreen, & Stutz, 1965; Riegel & Riegel, 1961; Spreen, Borkowski, & Benton, in press), and physiological indices of arousal (Paivio & Simpson, 1966; Simpson & Paivio, 1966; Smith & Harleston, 1966). The operational definition of concreteness in the above studies has varied from unspecified judgments by the experimenter alone to group scaling procedures. Gorman (1961) has presented the most extensive normative data, 1,061 nouns of varying frequencies of usage having been classified as concrete or abstract by two judges. Gorman's formal definition was in terms of directness of sensory reference, and her two judges worked with a dictionary. One implication of this procedure is that a word classified as concrete or abstract by conventional definition may be unfamiliar to some Ss and therefore without any psychological significance relevant to the formal definition. The value of Gorman's list is also limited by the restricted two-point scale that was used and the absence of normative data on other effective correlates of concreteness, such as associative meaningfulness (i.e., *m*; Noble, 1952). Spreen and Schulz (1966) scaled 329 A-frequency (Thorndike & Lorge, 1944) nouns for both concreteness, defined in terms of sense experience, and specificity, defined as the size of the referent class to which the word refers. The ratings were done by groups of Ss using seven-point scales. In addition, a group provided *m* data for the words, using a 30-sec. production interval. The Spreen and Schulz *C* norms are particularly valuable because of the extended scale intervals involved and because of the data provided on *m*. However, the nouns are restricted to one frequency range and

the sample is relatively small, particularly when one considers the substantial correlation of .70 between *C* and *m*, which limits the range of independent variation of the two attributes. Furthermore, no direct data are provided on the imagery value of the nouns.

In the context of the research program leading to the present study, the major effective psychological attribute underlying linguistic abstractness-concreteness was postulated to be imagery (Paivio, 1963, 1965). Because of their consistent association with specific objects and events, concrete nouns were assumed to be particularly effective stimuli for the arousal of sensory images, which are viewed in this context as conditioned sensations (cf. Mowrer, 1960, Ch. 5; Skinner, 1957, Ch. 17; Staats, 1961). Furthermore, it was hypothesized that stimulus-evoked images could function as mediators of response recall in paired-associate (PA) learning situations, much as they have long been assumed to do in mnemonic techniques that involve the use of imagery (see, e.g., Hunter, 1964, pp. 292-298; Miller, Galanter, & Pribram, 1960, pp. 134-138; Smith & Noble, 1965). This heuristic theory has been supported by the findings that concrete nouns exceed abstract nouns in imagery according to rating scales (Paivio, 1965), reaction time (Paivio, 1966), and physiological evidence (Paivio & Simpson, 1966; Simpson & Paivio, 1966). In addition, rated imagery (*I*) scores of stimulus members have been found to correlate positively with PA learning even with intrapair *C* and *m* controlled (Paivio, et al., 1966). The criterion definition of *I* in the above research has been the mean of Ss' ratings, on a five-point scale, of the ease with which a word arouses sensory images (somewhat

comparable variables have also been defined by Bowers, 1931; Haagen, 1949; and Tulving, McNulty, & Ozier, 1965). The correlation between *I* and dichotomous abstractness-concreteness was found to be .77 (r_{pbis}) for a sample of 152 nouns in one study (Paivio, et al., 1966); that between *I* and seven-point *C* ratings for 96 nouns in another (Paivio, in press) was .88 (r). The r 's between *I* and *m* for the same two samples were .59 and .78.⁸ These correlations and the results of a factor analysis (Paivio, in press) involving a total of 27 scaled attributes of nouns indicate that *I* and *C* are largely unidimensional, although concrete and abstract nouns also differed somewhat on variables (e.g., emotionality and *m*) other than *I*. Separation of the effects of *I* and *m* has also been difficult because they are moderately correlated and because the sample of nouns with available information on both variables has been relatively small.

Meaningfulness, as defined by various procedures including Noble's *m* technique, has been discussed and its effects on learning summarized in several sources (e.g., Goss & Nodine, 1965; Noble, 1963; Underwood & Schulz, 1960). Production *m* has been found to correlate with performance in verbal learning situations generally. In PA learning its effect is generally greater when varied among response

members of pairs, in contrast with *I* and *C*, which are consistently more effective as stimulus attributes (for discussions of these contrasting relations, see Paivio, 1965; Paivio, et al., 1966). Most of the research on *m* has involved relatively unfamiliar words or paralogues (Noble, 1952) as low *m* items and at the present time there is considerable uncertainty about the effects of *m* when varied entirely among "real" words. In any case, because of the apparent importance of *m*, and the desirability of either controlling it or further comparing its effects with those of *I* and *C* in future research, the variable was included in the normative study.

The present report includes the *C*, *I*, and *m* values for 925 nouns; the intercorrelations of these variables; and reliability data, including correlations between these new values and norms obtained in previous studies for subsamples of the nouns.

METHOD

Items.—A total of 925 words which *Es* judged to be relatively unambiguously classifiable as nouns constitute the word sample. Of these, 325 nouns had been scaled for *I* and 60 sec. *m* in previous research (Paivio, 1965, 1966; Paivio, et al., 1966). An additional 625 words (eventually edited to 600) were chosen from Thorndike and Lorge (1944) following a semirandom procedure. One restriction was imposed by the desirability of sampling several frequency ranges, taking into consideration the distribution of frequencies in the already available sample of 325. A second consideration was that highly concrete nouns apparently exceed abstract at every frequency level in the word population, and a rough attempt was accordingly made to reduce the skewness by first selecting a smaller sample entirely at random, then adding to the list further items that were judged by *E* to be relatively abstract. A small group of items, such as ghost, phantom, and shadow, were deliberately included because they suggested interesting possibilities regarding differences in *I* and *C* ratings. The selection procedure means, of

⁸ A correlation of .90 between *I* and *m* for 32 nouns was obtained by Paivio (1965). The variation in correlation values probably resulted from selection procedures. For example, Paivio (1965) selected concrete and abstract nouns which appeared to differ maximally in directness of sensory reference. Since *I* and *m* covary with concreteness, the procedure resulted in greater variability of *I* and *m* scores, and a higher correlation between them, than was the case in the larger word samples used in the other studies.

course, that the sample distribution of noun attributes is not representative of the population, but we were more concerned that the list be useful for research purposes. The final sample on which data are reported consists of 925 different nouns, some words having been discarded because of incomplete data and others because they were more appropriately classified as adjectives than as nouns. The words fall into three broad categories of Thorndike-Lorge frequencies. Thus, 272 are relatively high (A or AA), 295 are medium (range, 10-49 occurrences per million), and 358 are low frequency (1-9 per million for 332 words, less than one per million for 26 words). The frequencies are shown for individual words in the Appendix.

Ratings of imagery.—Ratings of *I* were obtained following the general procedure described by Paivio (1965), with the modification that the five-point very difficult-very easy image scale used by Paivio was changed to a seven-point low imagery-high imagery scale. The descriptive labels for the extremes of the scale were changed as a result of a preliminary study in which a group of Ss rated the present sample of words using the original difficult-easy descriptive labels and instructions along with a seven-point scale. The resulting mean *I* scores showed very low variability, with a concentration at the "easy" end of the scale. It was reasoned that the difficult-easy scale together with the instructions may have unintentionally given the impression that the task was an ability test and Ss accordingly hesitated to use the "difficult" end of the scale. Thus, the instructions and the descriptive labels accompanying the rating scale were modified to emphasize the attribute (i.e., the imagery value) of the words rather than S's reaction to them. A pilot study using 60 nouns showed that the new instructions did increase the range of *I* scores, and the procedure was adopted for the present study.⁴

Instructions and items were presented as a mimeographed booklet. The instructions read as follows:

Nouns differ in their capacity to arouse mental images of things or events. Some

⁴ The mean *I* scores obtained using the difficult-easy image scale nevertheless correlated .90 (word sample $N = 894$) with the *I* values reported here, which were obtained using the low imagery-high imagery scale. This finding supplements the reliability data reported in the Results section.

words arouse a sensory experience, such as a mental picture or sound, very quickly and easily, whereas others may do so only with difficulty (i.e., after a long delay) or not at all. The purpose of this experiment is to rate a list of words as to the ease or difficulty with which they arouse mental images. Any word which, in your estimation, arouses a mental image (i.e., a mental picture, or sound, or other sensory experience) very quickly and easily should be given a *high imagery* rating; any word that arouses a mental image with difficulty or not at all should be given a *low imagery* rating. Think of the words "apple" or "fact." Apple would probably arouse an image relatively easily and would be rated as high imagery; fact would probably do so with difficulty and would be rated as low imagery. Since words tend to make you think of other words as associates, e.g., knife-fork, it is important that you note only the ease of getting a mental image of an object or an event to the word.

Your ratings will be made on a seven-point scale, where *one* is the low imagery end of the scale and *seven* is the high imagery end of the scale. Make your rating by putting a circle around the number from 1 to 7 that best indicates your judgment of the ease or difficulty with which the word arouses imagery. The words that arouse mental images most readily for you should be given a rating of 7; words that arouse images with the greatest difficulty or not at all should be rated 1; words that are intermediate in ease or difficulty of imagery, of course, should be rated appropriately between the two extremes. *Feel free to use the entire range of numbers, from 1 to 7; at the same time, don't be concerned about how often you use a particular number as long as it is your true judgment.* Work fairly quickly but do not be careless in your ratings.

Below are four examples. Indicate the ease of getting an image by circling the appropriate number. (The Ss were allowed sufficient time to rate the sample items, AUTOMOBILE, WRITER, DEMOCRACY, and VAPOR, which appeared in the instruction page along with the rating scales.)

If necessary, refer back to these instructions when rating the words on the

following pages. If there are any questions, ask them now. Otherwise, turn the page and begin.

The ratings were obtained on a total of 1,000 words, 54 of which were repeated items from which a within-group reliability estimate could be determined. The words appeared on 50 pages, 20 words to a page, typed in capitals down the left hand margin. Opposite each word was the seven-point numerical scale, with its ends labeled Low Imagery and High Imagery. The words were randomly divided into two equal sets (A and B) of 500 words, or 25 pages, each. The order of the 25 pages in the collated booklets was varied for different Ss. The front sheet of each booklet contained the instructions and spaces for name, sex, etc.

The 1,000 words were rated in two sessions, two days apart, by 30 Ss (15 males). During the first session, half the Ss rated the A set of 500 words and the other half rated the B set. This was reversed in the second session. The testing was done in a classroom, but not during a regular lecture hour. The instructions were read aloud by E and any questions were answered before the rating period.

Ratings of concreteness.—The general procedure for obtaining C ratings was the same as that described for I. The 1,000 words were arranged in two booklets of 500, 20 words per rating sheet. Each word was accompanied by a seven-point bipolar numerical scale, with the extremes labeled Highly Abstract and Highly Concrete, respectively. Twenty-eight Ss (12 males) were tested in two sessions two days apart, again counterbalancing the sequence in which the two sets of 500 words were completed by subgroups of Ss.

The printed instructions were essentially those used by Spreen and Schulz (1966), with the modification that the ends of the scale were defined in terms of abstractness-concreteness rather than low concreteness-high concreteness, as was done by Spreen and Schulz. For example, the present instructions stated that, "Any word that refers to objects, materials, or persons should receive a *high concreteness* rating; any word that refers to an abstract concept that cannot be experienced by the senses should receive a *high abstractness* rating, ..."

Meaningfulness.—The production method (Noble, 1952) for obtaining *m* data was closely followed. A total of 950 words were randomly arranged into booklets of 50, one

noun appearing on each page, repeated 15 times down the left-hand margin. The first page contained the mimeographed instructions, which were also read aloud by E. The Ss were allowed 30 sec. to associate to each word. The data were obtained from groups of Ss during regular classroom periods. A number of different classes, totalling approximately 500 Ss, were used inasmuch as each S associated only to 50 nouns. An attempt was made to obtain *m* data from 25 different Ss for each noun. This was generally achieved but in the case of 159 words the *m* scores were based on Ns ranging 22–24. To reduce systematic effects of any classroom differences, all nouns were represented as much as possible in every classroom, replicated as often as the classroom N permitted. In the case of 48 words, however, it was necessary to obtain *m* data from a single intact group. In this instance, 12 nouns from the larger sample of words, already administered to several classrooms, were added as marker items from which the comparability of the different sampling procedures could be assessed.

Subjects.—The Ss were university students, most of them enrolled in introductory psychology. Their ages ranged 17–46 yr., the median falling between 19 and 20.

RESULTS AND DISCUSSION

The words are presented in alphabetical order in the Appendix, together with the means and standard deviations of the *I*, *C*, and *m* scores for each word. The Thorndike-Lorge frequencies of the words are also indicated. The overall means and *SDs* of the mean values on the three attributes for the 925 words are: *I*, 4.97 and 1.93; *C*, 4.95 and 3.51; *m*, 5.81 and 1.21. It may be noted the *SD* for *C* is higher than for *I* although the means are almost identical. This may mean that the abstract-concrete rating scale is more obviously bipolar than the low imagery-high imagery scale. In addition, certain items differentiated on *I* and *C* (see below) contributed to the difference. A comparison of the Spreen and Schulz (1966) norms for 30-sec. *m* with the present ones for A-frequency words

indicates that the former are somewhat higher. This presumably is attributable to procedural differences, e.g. Spreen and Schulz's procedure involved three rating sessions on different days, with "motivational" instructions given on the second and third days.

Frequency distributions of the scaled attributes indicated that *I* and *C* are negatively skewed, with a high proportion of nouns falling within the range 6-7 (high *I* and *C*) on both scales. The *m* values are more normally distributed although somewhat leptokurtic, with a large proportion of values in the range 5.0-6.6. These distributions suggest caution in the interpretation of the correlations involving the attributes.

Reliability of I and C.—The intergroup reliability of mean scores for the variables was assessed in several ways, including comparisons with data obtained independently of the present study. The groups from whom *I* and *C* ratings were obtained were divided into two equal groups in such a manner that the sexes were proportionately represented in each, and that each included equal numbers of *Ss* who, in the counter-balancing procedure, had completed the two sets of words in different sequences over the two sessions. Within these limitations, *Ss* were randomly assigned to the two groups. The resulting subgroup *Ns* were 15 in the case of *I*, and 14 in the case of *C*. The correlations between subgroup mean values for the item attributes were .94 ($N = 925$) in the case of both *I* and *C*.

The present *I* values also correlate .87 ($N = 253$) with the scale values obtained in previous research (e.g., Paivio, et al., 1966) using a five-point difficult-easy rating scale (see also Method and Footnote 4 of the present paper). Furthermore, 90 of the nouns from the list were among those scaled

for *C* by Spreen and Schulz (1966), and the correlation between their *C* values and the present ratings is .97. Finally, the point-biserial correlation between the present *C* scores and Gorman's dichotomous abstract-concrete scale for 245 words common to the two lists is .87. These data indicate considerable intergroup stability of *I* and *C* ratings, and comparability of scale values obtained by different investigators using different scaling procedures.

The within-group stability of *I* and *C* ratings was estimated by correlating means based on the two sets of ratings, for each variable, for the 54 words that were repeated in the test booklets. The Pearsonian correlations were .98 and .96 for *I* and *C*, respectively, indicating high within-group reliability of the mean ratings.

Reliability of m.—The procedure used to obtain *m* data was such that it was not feasible to determine intergroup reliabilities for a large sample of items. However, *m* values were available from two independent groups for 12 marker items. The two sets of scores for these nouns correlated .94, and the means and standard deviations of the *m* values were highly similar in the two groups, indicating high intergroup reliability for these data. Sixty-second *m* data were also available from previous research for 317 of the nouns. Those values and the present 30-sec. *m* correlated .65. Finally, the present *m* values correlate .74 with the 30-sec. *m* values available for 90 of the items in Spreen and Schulz's (1966) list. These correlations suggest that *m* is more sensitive to procedural variations and possible group differences than either *I* or *C*. Within the procedure and subject sample used in the present study, however, as judged by the 12-marker items, the reliability seems comparable to that reported by Noble

(1952) for the 60-sec. *m* of his disyllable items.

Intercorrelations of the attributes.—The correlations between the scaled attributes for the 925 words are: *I* and *C*, .83; *I* and *m*, .72; *C* and *m*, .56. With AA and A words assigned frequency values of 100 and 50, respectively, Thorndike-Lorge frequency correlates .23 with *I*, .12 with *C*, and .33 with *m*, all of which are significant with the large *N* involved, although obviously low. It may be noted that Spreen and Schulz report a correlation of .70 between *C* and *m*, which is closer to the value obtained here between *I* and *m* rather than *C* and *m*. Furthermore the correlation between *I* and *C*, although substantial, is not as high as one might expect if it is assumed that both scales measure the same underlying variable (cf. Paivio, in press).

Items differentiating I and C.—Inspection of the relevant items clearly reveals that the nouns for which *I* and *C* are most discrepant have common characteristics. Fifty-one of the nouns show *I* to be higher than *C* by at least two scale units. Most of these are words with strong emotional or evaluative connotations. The largest group consists of terms referring to affective reactions or affective attitudes: AFFECTION, AGONY, AMAZEMENT, AMOUR, ANGER, ANXIETY, DEVOTION, FUN, GAIETY, GRATITUDE, GRIEF, HAPPINESS, HATRED, HOPE, HOSTILITY, HUMOR, INSOLENT, JEALOUSY, JOVIALITY, JOY, KINDNESS, LOVE, LOYALTY, MISERY, MOOD, PANIC, PASSION, PLEASURE, PRIDE, SADNESS, and SHAME. Others in this category are labels for attitudes and emotional situations, or are generally evaluative in meaning: BLESSING, BRAVERY, CHAOS, CHARM, CHRISTMAS, COURTSHIP, DEATH, GLORY, OBEDIENCE, OBSESSION, SAFETY, TRAGEDY, and VANITY. The remainder include

names of fictitious creatures (DEMON, DEVIL, GHOST, GODDESS, PHANTOM), a term implying sensory experience not related to immediate sensory stimulation (DELIRIUM), and one not classifiable (HIERARCHY). These words appear to have the common property of having been associated with sensory experience (usually affective in nature) but not specific things or classes of things, hence their relatively high imagery and lower concreteness ratings.

Only 17 words show the contrasting pattern in which *C* exceeds *I* by two or more scale units. These items are: ANTITOXIN, ARBITER, ARMADILLO, BIVOUAC, CHLORIDE, COPYBOOK, DELL, EMPORIUM, ENCEPHALON, GADFLY, GARRET, KINE, ORIGINATOR, SURTAX, THISTLEDOWN, WHOLESALER, and WORKHOUSE. These words are characterized by their unusualness (13 of the 17 have Thorndike-Lorge frequencies of one per million or less), suggesting that their low *I* ratings are attributable to infrequent association with concrete sensory experience. Nevertheless, the words are recognized as referring to concrete objects, hence their high ratings on *C*.

The psychological implications of the contrasting patterns for *I* and *C* on some items remains to be determined. Generally, however, the two scaling procedures appear to be defining a common dimension of word meaning derived from associations of the words with concrete objects and events, and for research purposes either scale, or a combination of the two (cf. Paivio & Madigan, 1968; Yuille & Paivio, 1967) can be used for item selection.

Items Differentiating m from C and I.—The correlations indicated that *m* is more closely related to *I* ($r = .72$) than to *C* ($r = .56$). This difference is largely attributable to the evaluative emotional items specified above, on

which *I* and *C* differ. Most of the items in that group are low *C* but not low *m* or *I*. The additional independence of *m* from both *I* and *C* is due mainly to items with low values on the last two. That is, many items can be found which are low *I* and low *C* but relatively high in *m*. The converse does not hold, however: Items that are high on *I* and *C* are also high *m*. This asymmetrical relation is consistent with the view that abstract items derive their meaning largely from intraverbal experience (cf. Paivio, 1966; Paivio, et al., 1966; Yuille & Paivio, 1967), which is expressed in terms of evoked verbal associates (i.e., *m*) but not necessarily evoked imagery. Highly concrete items, on the other hand, presumably are associated with both sensory and verbal experience, which are reflected in their high *I* and *m* values. These relationships between *C* and *I* on the one hand and *m* on the other appear to be precisely analogous to that suggested by Staats and Staats (1959) in the case of meaning and *m*—they are “correlated but separate.” With these norms it is possible, in any case, to control *m* at the middle range of scale values while achieving effective variation on *I* and *C* (e.g., Paivio & Madigan, 1968).

REFERENCES

- BORKOWSKI, J. G., & EISNER, H. C. Meaningfulness and abstractness in short-term memory. *J. exp. Psychol.*, 1968, 76, 56-60.
- BORKOWSKI, J. G., SPREEN, O., & STUTZ, J. Z. Ear preference and abstractness in dichotic listening. *Psychon. Sci.*, 1965, 3, 547-548.
- BOWERS, H. Memory and mental imagery. An experimental study. *Brit. J. Psychol.*, 1931, 21, 271-282.
- DUKES, W. F., & BASTIAN, J. Recall of abstract and concrete words equated on meaningfulness. *J. verbal Learn. verbal Behav.*, 1966, 5, 455-458.
- EPSTEIN, W., ROCK, I., & ZUCKERMAN, C. B. Meaning and familiarity in associative learning. *Psychol. Monogr.*, 1960, 74, (4, Whole No. 491).
- GORMAN, A. M. Recognition memory for nouns as a function of abstractness and frequency. *J. exp. Psychol.*, 1961, 61, 23-29.
- GOSS, A. E., & NODINE, C. F. *Meaningfulness, familiarization, and similarity in paired-associates learning*. New York: Academic Press, 1965.
- HAAGEN, C. H. Synonymity, vividness, familiarity, and association value ratings of 400 pairs of common adjectives. *J. Psychol.*, 1949, 27, 453-463.
- HUNTER, I. M. L. *Memory*. Harmondsworth: Penguin, 1964.
- JAMPOLSKY, M. Etude de quelques épreuves de reconnaissance. *Annee psychol.*, 1950, 49, 63-97.
- KUSYSZYN, I., & PAIVIO, A. Transition probability, word order, and noun abstractness in the learning of adjective-noun paired associates. *J. exp. Psychol.*, 1966, 71, 800-805.
- MILLER, G. A., GALANTER, E., & PRIBRAM, K. H. *Plans and the structure of behavior*. New York: Holt, 1960.
- MOWRER, O. H. *Learning theory and the symbolic processes*. New York: Wiley, 1960.
- NOBLE, C. E. An analysis of meaning. *Psychol. Rev.*, 1952, 59, 421-430.
- NOBLE, C. E. Meaningfulness and familiarity. In C. N. Cofer & B. S. Musgrave (Eds.), *Verbal behavior and learning*. New York: McGraw-Hill, 1963. Pp. 76-119.
- OLVER, M. A. Abstractness, imagery, and meaningfulness in recognition and free recall. Unpublished master's thesis, University of Western Ontario, 1965.
- PAIVIO, A. Learning of adjective-noun paired-associates as a function of adjective-noun word order and noun abstractness. *Canad. J. Psychol.*, 1963, 17, 370-379.
- PAIVIO, A. Abstractness, imagery, and meaningfulness in paired-associate learning. *J. verbal Learn. verbal Behav.*, 1965, 4, 32-38.
- PAIVIO, A. Latency of verbal associations and imagery to noun stimuli as a function of abstractness and generality. *Canad. J. Psychol.*, 1966, 20, 378-387.
- PAIVIO, A. Paired-associate learning and free recall of nouns as a function of con-

- creteness, specificity, imagery, and meaningfulness. *Psychol. Rep.*, 1967, 20, 239-245.
- PAIVIO, A. A factor-analytic study of word attributes and verbal learning. *J. verbal Learn. verbal Behav.*, in press.
- PAIVIO, A., & MADIGAN, S. A. Imagery and association value in paired-associate learning. *J. exp. Psychol.*, 1968, 76, 35-39.
- PAIVIO, A., & OLVER, M. Denotative-generality, imagery, and meaningfulness in paired-associate learning of nouns. *Psychon. Sci.*, 1964, 1, 183-184.
- PAIVIO, A., & SIMPSON, H. M. The effect of word abstractness and pleasantness on pupil size during an imagery task. *Psychon. Sci.*, 1966, 5, 55-56.
- PAIVIO, A., & STEEVES, R. The relations between personal values and the imagery and meaningfulness of value words. *Percept. mot. Skills*, 1967, 24, 357-358.
- PAIVIO, A., & YARMEY, A. D. Abstractness of the common element in mediated learning. *Psychon. Sci.*, 1965, 2, 231-232.
- PAIVIO, A., & YUILLE, J. C. Word abstractness and meaningfulness, and paired-associate learning in children. *J. exp. Child Psychol.*, 1966, 4, 81-89.
- PAIVIO, A., YUILLE, J. C., & SMYTHE, P. C. Stimulus and response abstractness, imagery, and meaningfulness, and reported mediators in paired-associate learning. *Canad. J. Psychol.*, 1966, 20, 362-377.
- RIEGEL, K. F., & RIEGEL, R. M. Prediction of word-recognition thresholds on the basis of stimulus-parameters. *Lang. Speech*, 1961, 4, 157-170.
- SIMPSON, H. M., & PAIVIO, A. Changes in pupil size during an imagery task without motor response involvement. *Psychon. Sci.*, 1966, 5, 405-406.
- SKINNER, B. F. *Verbal behavior*. New York: Appleton-Century-Crofts, 1957.
- SMITH, M. G., & HARLESTON, B. W. Stimulus abstractness and emotionality as determinants of behavioral and physiological responses in a word-association task. *J. verbal Learn. verbal Behav.*, 1966, 5, 309-313.
- SMITH, R. K., & NOBLE, C. E. Effects of a mnemonic technique applied to verbal learning and memory. *Percept. mot. Skills*, 1965, 21, 123-134.
- SREEN, O., BORKOWSKI, J. G., & BENTON, A. L. Auditory recognition in relation to meaningfulness, abstractness, and phonetic structure of words. *J. verbal Learn. verbal Behav.*, in press.
- SREEN, O., & SCHULZ, R. W. Parameters of abstraction, meaningfulness, and pronunciability for 329 nouns. *J. verbal Learn. verbal Behav.*, 1966, 5, 459-468.
- STAATS, A. W. Verbal habit families, concepts, and the operant conditioning of word classes. *Psychol. Rev.*, 1961, 68, 190-204.
- STAATS, A. W., & STAATS, C. K. Meaning and *m*: Correlated but separate. *Psychol. Rev.*, 1959, 66, 136-144.
- STOKE, S. M. Memory for onomatopoes. *J. genet. Psychol.*, 1929, 36, 594-596.
- THORNDIKE, E. L., & LORGE, I. *The teacher's wordbook of 30,000 words*. New York: Teachers College, Bureau of Publications, 1944.
- TULVING, E., McNULTY, J. A., & OZIER, M. Vividness of words and learning to learn in free-recall learning. *Canad. J. Psychol.*, 1965, 19, 242-252.
- UNDERWOOD, B. J., & SCHULZ, R. W. *Meaningfulness and verbal learning*. Chicago: Lippincott, 1960.
- WINNICK, W. A., & KRESSEL, K. Tachistoscopic recognition thresholds, paired-associate learning, and immediate recall as a function of abstractness-concreteness and word frequency. *J. exp. Psychol.*, 1965, 70, 163-168.
- WOODWORTH, R. S., & SCHLOSBERG, H. *Experimental psychology*. New York: Holt, 1954.
- YARMEY, A. D., & PAIVIO, A. Further evidence on the effects of word abstractness and meaningfulness in paired-associate learning. *Psychon. Sci.*, 1965, 2, 307-308.
- YUILLE, J. C., & PAIVIO, A. Latency of imaginal and verbal mediators as a function of stimulus and response concreteness-imagery. *J. exp. Psychol.*, 1967, 75, 540-544.

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APPENDIX

Listed on the following pages, in alphabetical order, are the 925 nouns together with each word's mean score on *I*, *C*, *m*, and Thorndike-Lorge frequency ("O" indicating frequencies of less than one per million). Also shown are the standard deviations for *I*, *C*, and *m* scores.

Noun	<i>I</i>		<i>C</i>		<i>m</i>		F
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
ABASEMENT	2.03	1.28	2.38	1.23	2.80	1.89	0
ABBESS	2.97	1.96	4.78	2.04	2.48	2.12	1
ABDICATION	3.57	1.89	2.66	1.45	4.72	2.11	1
ABDOMEN	6.00	1.37	6.83	0.60	4.75	1.67	7
ABDUCTION	4.93	1.43	3.48	1.83	4.80	1.85	0
ABERRATION	2.27	1.66	2.98	1.50	2.64	2.12	0
ABILITY	2.67	1.82	2.03	1.47	5.60	2.43	49
ABODE	5.07	1.62	6.31	1.17	6.64	2.81	16
ABYSS	5.17	1.74	5.40	1.73	5.88	1.73	5
ACCORDION	6.50	0.79	7.00	0.00	5.89	1.45	1
ACROBAT	6.53	0.75	6.38	0.99	5.67	1.95	1
ADAGE	2.77	1.70	3.63	1.73	3.00	2.35	1
ADMIRAL	6.20	1.09	6.35	0.94	6.11	2.19	20
ADVANTAGE	2.37	1.26	2.25	1.47	4.48	1.44	A
ADVERSITY	2.80	1.61	2.73	1.70	5.06	1.65	5
ADVICE	3.13	1.83	2.08	0.96	5.39	1.78	A
AFFECTION	4.87	1.84	2.18	1.68	6.36	2.14	37
AFTERLIFE	2.40	1.68	1.77	1.48	6.16	1.68	0
AGILITY	4.57	1.91	2.93	1.55	5.75	1.24	2
AGONY	5.43	1.38	3.13	1.66	6.06	1.18	24
AGREEMENT	3.33	1.61	2.93	1.52	4.48	1.71	31
AIR	4.17	2.06	5.67	1.65	6.36	1.41	AA
ALCOHOL	6.47	0.97	6.87	0.65	6.08	1.61	15
ALGEBRA	5.17	1.97	4.85	1.77	6.72	2.54	3
ALIMONY	4.47	2.15	4.87	1.83	5.72	3.23	1
ALLEGORY	2.13	1.50	2.56	1.52	4.48	1.92	1
ALLIGATOR	6.87	0.42	6.93	0.56	7.72	2.85	6
AMAZEMENT	4.47	1.43	2.18	1.26	4.50	1.58	19
AMBASSADOR	5.70	1.35	6.22	1.09	5.22	1.93	21
AMBULANCE	6.67	0.53	7.00	0.00	7.52	2.65	8
AMOUNT	2.73	1.58	3.62	1.99	5.84	1.95	AA
AMOUR	5.50	1.56	2.65	1.99	5.08	1.66	1
AMPLIFIER	5.80	1.30	6.53	1.20	5.96	1.88	1
ANECDOTE	3.77	1.96	4.87	1.73	5.84	1.82	7
ANGLE	5.50	1.45	5.19	1.55	6.24	2.05	30
ANGER	4.87	1.52	1.70	1.13	5.83	2.15	A
ANIMAL	6.10	1.40	6.75	0.69	7.00	2.70	AA
ANIMOSITY	3.60	1.82	1.81	0.88	5.19	2.04	4
ANKLE	6.77	0.55	7.00	0.00	6.82	1.83	21
ANTITOXIN	3.60	1.88	6.03	1.65	5.67	2.17	3
ANXIETY	4.03	1.84	1.63	0.87	5.69	1.70	22
APPEARANCE	4.07	1.90	3.40	2.14	5.68	2.12	A
APPLE	6.73	0.56	7.00	0.00	7.67	2.24	A
APPLIANCE	5.73	1.43	6.45	0.93	6.64	1.60	7
ANSWER	2.77	1.70	4.49	1.60	6.04	1.92	AA
APTITUDE	2.60	1.81	1.62	0.86	5.25	1.24	2
ARBITER	2.33	1.40	4.63	1.84	3.71	2.10	1
ARM	6.53	1.04	6.96	0.53	6.92	2.62	AA
ARMADILLO	3.77	2.18	6.44	1.38	4.38	2.28	1
ARMY	6.53	0.79	6.55	0.90	6.88	1.48	AA
ARRAY	3.30	1.76	3.60	1.62	4.17	1.89	20

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
ARROW	6.57	1.07	7.00	0.00	6.80	1.80	37
ARTIST	5.93	1.04	6.14	1.33	6.65	1.70	A
ASSAULT	4.80	1.55	4.19	1.81	5.56	1.72	22
ATHLETICS	5.70	1.65	4.60	1.46	6.92	1.96	7
ATMOSPHERE	4.23	1.99	3.76	2.08	7.17	2.30	38
ATTENDANT	5.03	1.47	6.07	1.30	4.50	1.58	26
ATTITUDE	2.77	1.70	1.83	1.19	5.60	1.94	A
ATROCITY	3.67	1.92	2.38	1.35	4.17	2.04	2
ATTRIBUTE	2.40	1.56	2.00	0.85	3.83	1.86	22
AUTOMOBILE	6.87	0.42	7.00	0.00	6.16	1.70	A
AUTHOR	4.53	1.86	6.04	1.13	5.24	1.64	A
AVALANCHE	6.27	1.04	6.38	1.15	6.72	2.19	4
AVENUE	6.07	0.95	6.48	0.85	6.09	2.56	A
BABY	6.70	0.72	6.90	0.57	7.04	2.49	AA
BACKGROUND	4.03	1.82	4.10	1.77	5.88	1.26	25
BACTERIA	5.33	1.63	6.38	1.04	6.12	2.33	8
BANNER	5.93	0.98	6.58	0.85	6.20	2.86	23
BAGPIPE	6.43	0.94	6.96	0.53	7.00	1.71	1
BANALITY	2.03	1.55	2.44	1.44	3.12	1.94	0
BANDIT	5.83	0.99	6.28	1.03	6.92	2.10	5
BANKER	6.03	1.12	6.38	0.91	6.56	1.59	27
BAR	6.40	1.03	6.83	0.61	6.08	1.28	A
BARD	4.90	1.57	5.03	1.87	4.80	2.52	8
BARNACLE	4.50	1.52	6.20	1.45	5.69	1.82	1
BARON	5.10	1.47	5.77	1.47	5.72	2.05	27
BARREL	6.57	0.61	6.94	0.61	6.16	1.65	32
BASEMENT	6.03	1.18	6.83	0.62	6.83	2.33	8
BEAST	5.90	1.28	6.51	0.82	6.08	2.16	A
BEAVER	6.50	1.13	6.96	0.53	8.19	1.68	23
BEGGAR	6.40	0.90	6.25	1.24	6.50	2.15	29
BELFRY	4.43	1.88	5.96	1.64	6.25	2.41	1
BELIEF	2.73	1.81	1.55	1.13	5.24	1.83	39
BELONGINGS	5.10	1.63	5.85	1.33	5.38	2.18	6
BEREAVEMENT	3.87	1.64	2.49	1.41	5.75	2.18	1
BETRAYAL	3.57	1.88	1.77	0.85	5.00	1.93	1
BEVERAGE	5.87	1.29	5.96	1.43	6.58	1.93	8
BIRD	6.67	0.73	6.96	0.53	7.88	2.60	AA
BIVOUC	3.37	2.07	5.37	1.70	5.36	2.53	1
BLACKSMITH	6.17	0.95	6.83	0.66	7.44	1.82	19
BLANDNESS	2.83	1.92	2.03	1.51	3.84	2.12	0
BLASPHEMY	3.17	1.69	2.88	1.77	5.19	1.68	3
BLESSING	4.43	1.66	1.75	1.14	6.19	1.72	29
BLISTER	6.53	0.61	6.67	0.71	7.13	1.20	6
BLOOD	6.70	0.63	6.82	0.76	6.56	1.64	AA
BLOOM	5.63	1.51	5.82	1.45	5.12	1.74	35
BLOSSOM	6.67	0.64	6.62	1.09	7.60	3.03	43
BLUNDERBUSS	3.47	2.24	5.25	1.95	3.56	2.06	1
BOARD	6.07	1.37	6.87	0.69	6.92	2.16	AA
BODY	6.40	0.86	6.58	0.89	5.61	2.74	AA
BOOK	6.43	1.13	6.96	0.53	7.68	1.97	AA
BOREDOM	3.83	1.63	1.94	0.80	4.63	2.16	1
BOSOM	6.57	0.61	6.09	1.40	5.50	1.32	27
BOSS	5.73	1.48	6.35	1.05	5.81	1.76	23
BOTTLE	6.57	0.75	6.94	0.55	7.24	2.22	A
BOULDER	6.13	1.21	6.96	0.53	5.88	2.13	A
BOUQUET	6.77	0.55	6.55	1.00	5.76	2.35	8
BOWL	6.30	1.17	6.90	0.58	7.24	2.82	A
BOY	6.57	0.87	6.93	0.56	6.96	2.05	AA

APPENDIX—Continued

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
BRAIN	5.93	1.24	6.63	0.95	6.80	1.26	A
BRAVERY	4.40	1.86	1.93	1.51	6.44	2.22	9
BRASSIERE	6.77	0.49	6.96	0.53	4.75	2.35	1
BREAST	6.77	0.42	6.80	0.68	5.81	1.28	A
BREEZE	5.87	1.21	5.94	1.17	7.33	2.17	29
BRONZE	6.17	1.08	6.59	0.96	6.19	1.05	19
BRUTALITY	4.90	1.82	3.19	1.68	5.06	2.15	2
BRUTE	5.17	1.32	5.44	1.58	6.08	1.64	14
BUFFOON	4.33	1.80	4.63	1.72	4.50	2.50	1
BUILDER	5.70	1.22	6.05	1.31	5.56	2.15	19
BUILDING	6.40	1.03	6.94	0.55	5.48	1.53	AA
BULLET	6.47	1.07	7.00	0.00	7.68	1.93	22
BUNGALOW	6.13	1.01	6.87	0.64	5.48	2.06	8
BUSYBODY	5.17	1.52	5.00	1.61	5.50	0.89	1
BUTCHER	6.27	0.76	6.42	0.90	6.72	2.91	22
BUTTER	6.57	0.83	6.96	0.53	6.91	1.93	AA
BUTTERFLY	6.63	0.69	6.93	0.56	7.80	2.22	22
CABIN	6.47	0.97	6.96	0.53	7.20	1.89	A
CAMOUFLAGE	5.20	1.47	5.26	1.60	6.38	1.63	2
CAMP	6.57	0.70	6.56	0.89	7.17	1.99	AA
CANDIDATE	4.67	1.65	5.53	1.37	5.76	2.18	45
CANDY	6.63	0.54	6.56	0.83	6.39	1.69	32
CANE	6.43	1.07	6.93	0.56	7.48	2.69	19
CAPACITY	3.40	1.81	2.41	1.38	5.44	1.73	37
CAPTIVE	5.27	1.22	5.80	1.66	5.39	1.61	21
CAR	6.87	0.42	7.00	0.00	6.38	2.30	AA
CARAVAN	5.83	1.05	6.15	1.12	6.52	2.79	7
CASEMENT	4.63	1.89	6.24	1.09	5.25	1.89	6
CASH	6.17	0.99	6.28	1.13	7.21	1.41	46
CAUSALITY	2.90	1.97	3.75	2.14	4.38	2.00	0
CAT	6.80	0.47	7.00	0.00	6.76	2.22	AA
CATERPILLAR	6.57	0.90	6.96	0.53	6.88	1.63	19
CATTLE	6.40	1.06	6.79	0.73	7.56	2.68	A
CEREBRUM	4.83	2.14	6.59	0.91	6.12	2.11	0
CEREMONY	5.37	1.49	4.58	1.36	5.17	1.50	25
CELL	6.47	0.87	6.63	0.95	7.52	1.86	A
CELLAR	6.27	1.10	6.83	0.62	6.79	2.06	32
CENTENNIAL	4.10	1.77	3.45	1.62	6.13	1.26	1
CHAIR	6.63	0.74	7.00	0.00	7.20	2.00	AA
CHANCE	2.50	1.52	1.51	0.85	5.61	1.41	AA
CHAOS	4.57	1.91	2.50	1.74	5.88	1.88	9
CHARLATAN	3.43	2.09	5.28	1.69	3.19	2.20	1
CHARM	4.70	1.74	2.17	1.11	6.13	1.78	A
CHARTER	3.83	1.81	5.05	1.77	4.89	1.41	20
CHASM	4.47	2.10	5.25	2.19	6.04	3.13	6
CHIEF	6.07	1.22	5.87	1.43	6.08	1.50	AA
CHILD	6.50	0.97	6.87	0.60	7.04	2.68	AA
CHIN	6.43	1.04	6.96	0.53	5.28	2.40	27
CHLORIDE	4.20	1.84	6.28	1.20	5.75	1.61	2
CHRISTMAS	6.70	0.63	4.53	1.52	8.76	3.22	A
CHURCH	6.63	0.74	6.59	1.12	7.52	2.68	AA
CIGAR	6.80	0.47	6.96	0.53	6.22	1.99	16
CIRCLE	6.23	1.38	6.00	1.58	4.88	1.36	AA
CIRCUIT	4.97	1.73	5.63	1.10	6.38	1.20	21
CITATION	3.57	1.84	4.42	1.65	5.06	1.53	1
CITY	6.43	0.70	6.41	1.00	7.72	1.40	AA
CLAW	6.33	1.06	6.89	0.58	6.67	2.01	23
CLEANNES	4.77	1.83	3.63	1.92	5.64	1.60	4

APPENDIX—Continued

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
CLEMENCY	2.90	1.92	1.97	0.99	3.94	2.55	1
CLOCK	6.50	0.87	6.94	0.55	7.08	2.58	A
CLOTHING	6.17	1.17	6.63	0.71	7.08	2.24	A
COAST	6.13	1.26	6.59	0.93	6.40	1.47	A
COBBLESTONE	5.87	1.38	6.58	1.27	6.38	1.45	1
CODE	4.53	1.72	4.53	1.98	6.63	1.50	21
COFFEE	6.73	0.56	6.89	0.58	7.28	1.90	A
COIN	6.50	1.01	6.90	0.58	7.09	2.52	A
COLLEGE	6.20	1.00	6.38	1.09	7.28	2.07	AA
COLONY	5.10	1.59	5.87	1.25	5.00	1.71	A
COMBUSTION	5.10	1.53	4.98	1.39	6.72	1.97	9
COMEDY	4.90	1.61	3.51	1.87	6.08	1.78	17
COMFORTER	5.03	1.92	5.06	1.79	6.19	1.83	5
COMMITTEE	5.03	1.23	6.35	1.59	5.95	2.19	A
COMPARISON	2.93	1.76	2.69	1.56	4.56	2.22	25
COMPETENCE	2.97	1.65	1.86	0.94	4.63	1.86	2
COMPETITION	4.53	1.60	3.08	1.76	5.69	1.30	28
COMRADE	5.57	1.34	5.65	1.83	5.58	1.56	26
COMRADESHIP	4.40	1.56	2.75	1.68	5.21	1.82	1
CONCEPT	1.93	1.32	1.97	1.69	3.76	1.36	3
CONFIDENCE	3.40	1.66	1.52	0.87	4.17	1.40	A
CONNOISSEUR	5.20	1.63	5.31	1.68	4.28	1.41	3
CONQUEST	4.03	1.84	3.11	1.68	5.81	1.52	26
CONTENTS	3.57	1.84	4.25	1.90	5.00	1.15	21
CONTEXT	2.13	1.31	2.73	1.78	4.44	1.46	1
CONTRACT	4.50	1.74	5.24	1.83	6.32	1.99	A
CONTRIBUTION	3.67	1.91	3.33	1.89	5.44	1.65	19
CONVENTION	5.07	1.93	5.38	1.74	4.92	1.29	A
CO-OPERATION	3.40	1.71	1.92	0.98	4.67	1.97	20
COPYBOOK	4.60	1.96	6.62	0.92	3.61	2.12	1
CORD	6.03	1.09	6.93	0.56	6.00	1.98	30
CORE	5.17	1.70	4.67	1.57	5.11	1.68	7
CORN	6.47	0.97	6.90	0.58	6.96	1.93	A
CORNER	6.13	1.07	6.65	0.72	5.67	2.17	AA
CORPSE	6.50	0.61	6.89	0.58	6.52	2.35	9
COST	3.57	2.06	3.41	1.53	6.24	1.92	AA
COSTUME	5.80	1.23	6.12	1.25	6.19	1.60	25
COTTAGE	6.50	0.87	6.90	0.58	7.76	2.40	46
COTTON	6.00	1.27	6.90	0.58	7.13	2.03	AA
COURTSHIP	5.30	1.74	3.22	1.70	6.13	1.31	4
COWHIDE	5.40	1.49	6.89	0.58	6.39	2.17	1
CRADLE	6.23	1.15	6.94	0.55	6.96	1.99	21
CRAG	4.77	1.86	6.42	1.03	5.44	2.80	8
CRANIUM	4.53	2.15	6.45	1.25	5.68	2.23	0
CREATOR	3.87	2.09	3.97	2.53	5.68	1.41	8
CREATURE	4.60	1.79	6.03	1.11	5.50	2.31	A
CRIME	4.43	1.45	3.81	1.75	6.84	1.75	A
CRISIS	3.43	1.72	2.81	1.47	5.44	2.12	19
CRITERION	1.83	1.08	1.93	1.18	3.00	1.82	1
CUISINE	5.57	1.81	5.52	1.77	6.32	2.43	1
CUSTOM	3.43	1.77	2.99	1.64	5.33	1.74	A
DAFFODIL	6.47	1.04	7.00	0.00	6.96	2.49	3
DALLIANCE	2.43	1.60	2.83	1.49	3.12	2.05	0
DAMSEL	6.03	1.40	6.58	0.82	6.12	2.05	36
DAWN	6.37	0.78	5.83	1.55	7.36	2.53	A
DAYBREAK	6.43	1.01	5.73	1.50	7.68	2.39	9
DAYLIGHT	5.90	1.17	5.75	1.25	5.80	1.71	25
DEATH	5.00	1.93	2.97	1.93	7.12	2.60	AA

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
DEBACLE	2.10	1.69	3.94	1.74	1.92	1.55	0
DECEIT	3.30	1.63	1.66	0.80	4.92	1.73	8
DECORATION	5.37	1.55	5.67	1.20	5.84	1.82	19
DECREE	3.30	1.72	4.58	1.57	5.16	2.06	20
DEDUCTION	2.67	1.61	2.94	1.65	5.08	1.53	3
DEED	3.63	1.91	4.19	1.77	5.32	2.64	A
DELIRIUM	4.80	1.57	2.79	1.38	5.00	2.33	2
DELL	3.37	2.04	5.58	1.66	4.56	1.89	11
DELUGE	4.57	2.16	4.38	1.96	5.32	3.20	2
DEMOCRACY	2.47	1.54	1.79	1.19	5.72	1.72	20
DEMON	4.70	1.85	2.56	1.28	5.04	2.34	8
DERELICT	4.60	1.99	5.66	1.73	4.52	2.35	1
DESTRUCTION	5.27	1.19	3.61	1.64	5.32	2.38	37
DETERMINATION	3.57	1.64	1.66	0.93	4.64	2.16	19
DETONATION	4.57	1.81	4.45	1.99	5.48	2.18	1
DEVELOPMENT	3.07	1.76	2.82	1.81	6.04	1.65	A
DEVIL	5.63	1.60	2.13	1.30	6.94	1.73	A
DEVOTION	3.90	1.71	1.48	0.73	5.52	2.80	21
DIAMOND	6.67	0.59	6.94	0.55	7.84	2.23	A
DIFFUSION	3.40	1.82	3.18	1.95	5.67	2.39	2
DIRECTION	3.83	1.85	3.19	1.69	6.78	2.00	AA
DIRT	6.10	1.03	6.66	0.71	6.44	2.62	21
DISASTER	5.10	1.77	4.12	1.84	6.56	1.98	23
DISCIPLINE	3.57	1.72	2.17	1.13	6.04	2.37	21
DISCLOSURE	2.17	1.52	2.51	1.39	3.56	1.85	2
DISCONNECTION	3.57	1.94	3.79	1.80	4.16	1.52	0
DISCOVERY	4.13	1.84	3.06	1.58	5.50	2.04	A
DISCRETION	2.27	1.83	1.34	0.77	4.20	1.50	9
DISEASE	4.87	1.45	5.63	1.16	7.44	1.41	A
DISPARITY	2.70	1.61	2.07	1.34	3.52	2.01	1
DISPOSITION	2.93	1.95	1.78	1.03	4.92	2.60	22
DISTINCTION	2.70	1.48	2.20	1.23	3.80	1.78	26
DISTRACTION	3.23	1.94	2.35	1.38	4.12	2.65	3
DISTURBER	4.10	1.96	5.07	1.74	4.60	2.36	1
DOCTOR	6.40	1.06	6.62	0.85	7.32	2.06	AA
DOLL	6.17	1.27	6.94	0.55	6.12	2.80	46
DOLLAR	6.50	1.04	6.62	0.96	6.48	2.83	AA
DOMICILE	4.20	1.96	4.89	2.25	4.96	2.24	1
DOOR	6.60	1.03	7.00	0.00	7.96	2.26	AA
DOORMAN	6.40	0.83	6.52	0.91	6.28	2.15	1
DOVE	6.53	0.75	6.90	0.58	6.36	2.45	19
DRAMA	4.90	1.65	3.66	1.93	7.00	1.94	23
DREAM	4.60	2.07	3.03	1.48	5.44	1.95	AA
DREAMER	5.33	1.51	5.10	1.97	5.04	1.90	4
DRESS	6.53	0.83	6.93	0.56	5.68	2.15	AA
DUMMY	5.83	1.44	6.34	1.16	4.88	2.05	2
DUST	6.03	1.18	6.67	0.65	6.84	1.75	A
DUTY	3.17	1.74	2.32	1.34	5.60	2.00	AA
DWELLER	4.37	1.77	5.80	1.30	5.09	1.62	7
DYNASTY	3.63	1.91	4.14	2.13	6.28	1.86	9
EARTH	6.27	0.88	6.58	0.77	7.56	2.27	AA
ECCENTRICITY	3.77	1.66	2.27	1.50	4.04	2.17	2
ECONOMY	3.20	1.82	2.28	1.18	5.88	2.86	21
EDIFICE	4.70	2.10	6.56	1.10	5.16	2.25	9
EDITION	3.40	1.88	4.64	1.61	5.88	2.64	19
EFFORT	3.33	1.59	2.22	1.23	5.75	2.17	AA
EGO	2.90	1.85	1.93	1.21	5.72	2.16	0
ELABORATION	2.63	1.57	2.18	1.31	4.36	1.87	1
ELBOW	6.30	1.08	6.94	0.55	5.16	1.37	26

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
ELEPHANT	6.83	0.51	7.00	0.00	6.88	2.09	35
EMANCIPATION	3.20	1.89	2.49	1.36	5.20	2.58	1
EMBEZZLEMENT	3.17	1.67	3.05	1.15	5.54	1.74	0
EMERGENCY	5.03	1.65	3.25	1.93	6.28	1.93	19
EMPORIUM	2.93	2.00	5.16	1.69	4.04	2.33	1
ENCEPHALON	2.17	1.65	5.14	1.75	2.50	1.77	0
ENCORE	4.00	1.92	3.62	1.97	5.72	1.67	2
ENGAGEMENT	4.70	1.92	3.46	1.82	5.76	2.09	24
ENGINE	6.33	1.09	6.76	0.81	6.08	1.44	A
ENSEMBLE	4.63	1.84	5.45	1.15	4.80	1.50	4
ENTERPRISE	3.07	1.81	3.55	1.58	5.36	2.38	21
EPISODE	3.37	1.82	3.91	1.97	5.32	2.50	7
EPISTLE	4.23	1.93	5.58	1.87	5.63	1.44	7
EQUITY	2.23	1.38	2.57	1.48	3.72	2.01	5
ERRAND	4.27	1.58	4.21	1.90	6.48	2.37	20
ESSENCE	2.33	1.65	1.66	0.89	3.28	1.53	8
EVANGELIST	4.97	1.84	5.95	1.36	5.28	1.54	2
EVENT	2.90	1.77	3.72	1.54	5.04	1.70	A
EVIDENCE	3.23	1.79	3.45	2.40	6.20	2.12	A
EXACTITUDE	2.23	1.62	1.69	0.89	3.00	1.71	1
EXAMINATION	6.07	1.41	5.14	1.80	7.00	2.24	28
EXCLUSION	2.80	1.63	2.41	1.52	5.32	1.97	4
EXCUSE	2.77	1.54	3.05	1.32	4.04	1.46	A
EXERTION	4.33	1.59	2.88	1.43	6.00	2.04	7
EXHAUST	5.17	1.70	5.00	1.66	6.29	1.99	28
EXHAUSTION	5.10	1.63	3.40	1.83	6.08	2.50	9
EXPLANATION	2.90	1.75	3.25	1.99	5.80	1.98	31
EXPRESSION	3.57	1.79	2.48	1.83	6.13	1.85	A
EXTERMINATION	4.03	1.89	3.13	1.51	4.96	1.62	2
FABRIC	5.60	1.28	6.55	0.73	6.48	1.98	21
FACILITY	2.73	1.64	2.20	1.33	4.64	2.10	23
FACT	2.20	1.63	3.31	1.86	4.29	1.46	AA
FACTORY	6.43	0.75	6.87	0.60	6.00	1.19	A
FALCONER	4.03	2.16	5.90	1.67	5.64	3.01	1
FALLACY	2.30	1.61	1.89	1.13	3.72	1.59	2
FANTASY	3.70	1.95	2.03	1.37	5.06	1.89	4
FATE	2.37	1.55	1.46	1.00	4.00	1.79	A
FATIGUE	5.07	1.56	4.28	1.94	3.88	2.42	19
FAULT	2.83	1.65	2.87	1.53	4.80	1.47	A
FELINE	4.67	1.87	5.31	1.74	5.42	2.17	2
FESTIVITY	5.30	1.25	4.45	1.54	6.40	1.89	4
FEUDALISM	3.83	1.57	2.95	1.57	5.80	1.68	1
FIGMENT	2.30	1.59	1.90	0.87	4.00	1.61	0
FIORD	5.70	1.55	6.69	0.80	6.48	2.69	2
FIRE	6.70	0.68	6.66	0.90	7.36	2.23	AA
FIREPLACE	6.83	0.37	6.96	0.53	7.08	2.27	19
FIRMAMENT	4.30	2.20	4.50	1.24	4.96	2.01	7
FISHERMAN	6.50	0.75	6.52	0.93	7.84	2.41	26
FLAG	6.60	0.86	6.94	0.61	6.54	1.72	A
FLASK	6.50	0.83	7.00	-0.00	6.28	2.67	4
FLESH	6.13	1.13	6.90	0.58	5.84	1.72	A
FLEXIBILITY	4.00	1.85	3.22	1.64	5.60	2.22	1
FLOOD	6.33	1.77	6.62	0.77	6.36	2.18	A
FLOWER	6.57	0.79	6.96	0.53	7.13	2.46	AA
FOAM	6.33	1.06	6.73	0.79	6.44	2.48	21
FOIBLE	2.20	1.35	3.07	1.64	2.60	1.87	1
FOLLY	2.93	1.93	2.63	1.42	4.40	1.53	29
FOOTWEAR	6.10	1.09	6.58	0.84	7.38	1.66	0
FOREHEAD	6.27	0.84	6.93	0.55	5.08	1.78	41

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
FOREST	6.63	0.69	6.69	0.71	9.12	7.15	AA
FORETHOUGHT	2.57	1.56	1.83	1.38	4.40	1.73	1
FORK	6.57	1.01	6.94	0.61	7.08	1.80	31
FORM	4.30	1.78	4.08	1.94	4.60	1.76	AA
FORMATION	3.87	2.03	3.76	1.68	4.92	1.71	19
FORTUNE	4.57	1.68	3.82	1.99	6.00	1.63	A
FOWL	5.87	1.26	6.58	0.77	7.36	2.86	20
FOX	6.73	0.50	7.00	0.00	7.40	2.00	25
FRANCHISE	2.90	1.94	3.57	1.76	4.84	1.43	4
FREEDOM	3.83	1.90	1.98	1.46	6.36	1.73	A
FRICTION	4.33	1.85	4.26	1.54	5.28	1.62	9
FRIEND	6.37	0.90	4.89	2.18	6.40	2.16	AA
FROG	6.73	0.56	6.96	0.53	6.56	1.64	25
FRONTAGE	4.57	1.96	5.46	1.40	5.36	2.22	1
FUN	5.23	1.68	2.45	1.34	5.50	2.17	A
FUNCTIONARY	1.77	1.13	2.62	1.98	4.29	1.78	1
FUR	6.23	1.07	6.69	0.75	7.36	2.53	A
FURNITURE	6.17	1.02	6.83	0.61	6.60	2.10	A
GADFLY	3.77	2.07	5.87	1.83	3.28	2.11	1
GAJETY	5.63	1.31	2.15	1.44	6.72	2.35	5
GALAXY	6.00	1.11	5.03	1.43	6.00	2.00	3
GALLERY	5.97	1.20	6.49	0.83	5.88	2.28	28
GARDEN	6.73	0.56	6.83	0.65	6.36	2.18	AA
GARMENTS	5.83	1.35	6.59	0.84	6.20	2.14	40
GARRET	4.13	2.17	6.14	0.17	4.12	2.83	7
GEESE	6.53	0.83	6.83	0.80	7.48	1.76	26
GEM	6.40	0.74	6.59	0.77	6.88	2.09	24
GENDER	2.90	1.89	3.63	1.92	5.41	2.94	1
GENIUS	4.27	2.06	2.76	1.42	5.50	0.89	30
GENTLEMAN	6.20	0.86	6.42	0.84	5.80	2.04	AA
GHOST	5.37	1.71	2.97	2.01	6.00	1.89	32
GIFT	5.77	1.29	5.95	1.33	7.04	1.81	A
GILT	4.20	2.15	5.14	1.85	5.32	2.32	5
GINGHAM	5.33	1.89	6.17	1.14	5.65	2.85	5
GIRL	6.87	0.33	6.83	0.61	5.12	1.62	AA
GIST	1.97	1.57	1.77	1.00	3.33	1.41	1
GLACIER	6.07	1.29	6.93	0.56	7.21	1.32	8
GLORY	4.13	1.79	1.77	1.11	5.88	1.69	A
GLUTTON	5.77	1.26	5.77	1.27	5.32	1.75	2
GOBLET	6.03	1.49	6.96	0.53	5.72	2.72	7
GODDESS	5.23	1.73	3.04	2.26	6.48	1.45	22
GOLD	6.47	0.83	6.76	0.69	6.36	1.96	AA
GOLF	6.70	0.52	6.10	1.17	8.16	2.15	26
GORE	4.67	1.85	4.79	1.80	5.50	2.04	7
GRADUATION	6.03	1.15	4.28	1.69	6.28	2.03	5
GRANDMOTHER	6.43	0.70	6.66	0.71	6.08	2.41	48
GRASS	6.63	0.65	6.96	0.53	7.54	2.30	AA
GRATITUDE	3.70	1.69	1.59	0.77	4.32	2.54	22
GRAVITY	3.60	1.86	2.56	1.57	6.24	1.96	14
GREED	3.53	1.81	1.73	1.14	5.52	1.26	3
GREEN	6.60	0.65	5.46	1.98	6.68	1.99	AA
GRIEF	4.70	1.78	1.86	1.41	6.32	1.93	45
GUARDHOUSE	5.80	1.25	6.69	0.75	5.76	1.74	1
GYMNASTICS	5.83	1.32	5.08	1.46	5.52	1.33	3
HABITATION	4.60	1.84	6.03	1.40	5.26	1.84	7
HAIRPIN	6.13	1.29	6.96	0.53	6.00	2.42	1
HALL	6.37	1.18	6.72	0.75	6.16	2.19	AA
HAMLET	5.87	1.04	6.19	1.21	6.56	2.33	15
HAMMER	6.73	0.56	6.96	0.53	6.92	2.31	34

APPENDIX—Continued

Noun	I		C		m		F
	M	SD	M	SD	M	SD	
HANKERING	2.23	1.38	1.83	0.84	5.00	1.61	0
HAPPINESS	5.13	1.60	1.94	1.36	6.00	1.61	A
HARDSHIP	4.10	1.57	2.93	1.51	5.48	1.96	19
HARDWOOD	5.77	1.38	6.58	0.77	5.46	2.55	2
HARNESS	5.10	1.63	6.93	0.56	6.20	2.12	29
HARP	6.60	0.90	6.94	0.61	6.00	1.66	20
HATRED	3.97	2.09	1.59	0.78	4.84	1.99	20
HEADLIGHT	6.43	0.97	6.90	0.58	6.32	2.12	2
HEADQUARTERS	5.03	1.65	5.94	1.02	5.08	2.18	23
HEALTH	4.10	1.75	3.54	1.36	6.39	1.73	AA
HEARING	3.77	2.10	3.57	1.06	6.64	2.33	13
HEAVEN	4.13	2.01	2.75	2.14	6.52	1.36	AA
HENCHMAN	4.67	1.76	5.65	1.44	3.80	2.48	1
HEREDITY	3.53	1.98	2.98	2.04	5.64	1.32	3
HEROISM	4.17	1.78	2.26	1.40	5.84	2.15	5
HIDE	3.80	2.02	5.45	2.29	5.63	1.61	A
HIERARCHY	5.13	1.86	2.73	1.49	4.48	2.05	1
HILLSIDE	6.30	0.99	6.59	0.80	6.92	2.93	20
HINDRANCE	3.07	1.54	2.97	1.57	4.80	1.87	3
HINT	2.57	1.75	3.35	1.70	3.72	1.37	29
HISTORY	3.47	1.70	3.03	1.65	6.91	1.83	AA
HOME	6.50	0.97	6.25	1.26	6.88	2.65	AA
HOMICIDE	4.17	1.88	3.81	1.97	6.24	2.85	2
HONEYCOMB	6.23	0.94	6.50	0.79	5.78	2.05	4
HONOR	3.50	1.83	1.75	1.27	5.08	1.72	AA
HOOF	6.37	0.97	6.90	0.58	6.32	1.93	26
HORSE	6.80	0.47	6.94	0.55	8.67	2.50	AA
HORSEHAIR	5.67	1.44	6.80	0.68	6.20	1.29	2
HOPE	3.83	1.90	1.18	0.48	5.52	1.50	AA
HOSPITAL	6.53	1.01	6.80	0.67	7.44	1.87	A
HOSTAGE	5.57	1.26	6.05	1.19	6.40	2.35	3
HOSTILITY	4.23	1.62	2.18	1.24	5.64	2.14	12
HOTEL	6.40	0.97	6.80	0.63	5.96	1.62	A
HOUND	6.27	1.16	6.83	0.61	6.00	2.40	23
HOURL	3.60	2.26	2.93	1.62	5.56	1.78	AA
HOUSE	6.67	0.85	6.93	0.56	6.83	2.32	AA
HUMOR	4.57	1.81	2.31	1.38	5.72	1.77	41
HURDLE	6.33	0.82	6.65	0.92	5.92	1.78	2
HURRICANE	6.33	0.93	6.52	0.81	7.04	2.21	7
HYPOTHESIS	2.40	1.45	2.25	1.76	5.36	1.63	4
ICEBOX	6.17	1.14	6.90	0.57	6.28	2.23	1
IDEA	2.20	1.15	1.42	1.13	4.88	2.05	AA
IDIOM	3.00	1.66	3.44	1.97	4.60	2.16	1
IGNORANCE	3.57	1.84	1.75	0.90	4.00	1.55	22
ILLUSION	3.53	1.75	2.03	1.23	4.67	2.22	10
IMMUNITY	3.43	1.94	2.46	1.81	5.76	1.74	3
IMPACT	4.47	1.74	3.73	1.47	5.71	1.76	4
IMPOTENCY	3.40	2.06	2.62	1.92	3.16	1.80	0
IMPROPRIETY	1.87	1.21	2.08	1.38	3.75	2.13	1
IMPULSE	3.70	1.69	2.08	1.27	4.96	2.13	26
INANITY	1.83	1.37	2.36	1.50	2.16	2.01	0
INCIDENT	2.90	1.67	3.00	1.56	4.16	1.46	29
INCLEMENCY	3.03	1.86	2.49	1.59	4.32	2.38	0
INCREMENT	2.63	1.53	2.85	1.55	3.72	2.25	1
INDUCEMENT	2.93	1.68	2.34	1.38	3.68	1.49	3
INDUSTRY	5.77	1.01	5.76	1.24	6.00	1.80	AA
INEBRIETY	3.53	2.43	3.33	1.79	3.20	2.16	0
INFANT	6.33	0.99	6.76	0.65	7.20	2.25	22
INFECTION	4.87	1.50	5.08	1.56	6.12	1.79	8

APPENDIX—Continued

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
INFIRMARY	5.63	1.40	6.43	0.90	6.65	1.94	1
INGRATITUDE	2.93	1.68	1.77	0.98	4.00	1.98	4
INHABITANT	4.33	1.82	6.00	1.50	5.33	1.31	30
INJURY	5.70	1.22	5.51	1.54	7.32	2.30	24
INK	6.37	1.28	6.87	0.65	6.96	2.82	20
INN	6.07	1.16	6.80	0.83	6.61	1.83	27
INSECT	6.10	0.93	6.80	0.63	6.32	1.60	40
INSOLENCE	3.93	1.60	1.93	1.15	4.76	2.57	3
INSTANCE	2.00	1.29	2.87	1.85	4.04	2.03	A
INSTITUTE	4.60	1.77	5.84	1.10	4.92	2.25	21
INSTRUCTOR	5.70	1.37	6.45	0.94	6.29	2.18	8
INSTRUMENT	5.67	1.40	6.25	0.97	6.72	2.09	42
INTELLECT	2.93	1.90	1.83	1.37	5.56	1.45	27
INTEREST	3.13	1.99	2.20	1.43	5.52	2.08	AA
INTERIM	1.97	1.51	2.67	1.45	4.08	2.33	1
INTERVIEW	5.03	1.53	4.34	1.72	4.88	2.57	26
INTIMATE	5.00	1.92	2.03	1.17	5.13	1.33	24
INVESTIGATION	3.60	1.77	3.32	1.57	5.80	2.08	23
INVOICE	5.17	1.57	6.14	1.43	6.28	2.17	1
IRON	6.07	1.08	6.87	0.58	6.12	1.24	AA
IRONY	2.83	1.74	2.10	1.39	5.24	1.67	4
ISLANDER	5.43	1.10	6.28	0.89	5.48	3.16	1
ITEM	3.67	1.96	5.27	1.76	4.96	2.82	26
JAIL	6.43	0.87	6.69	0.84	7.38	1.86	22
JEALOUSY	4.72	1.72	1.77	0.85	4.88	2.07	17
JELLY	6.40	0.90	6.73	0.70	6.00	1.53	19
JEOPARDY	3.03	1.89	2.00	0.91	3.48	1.64	2
JOKE	4.27	1.81	3.80	2.04	5.92	2.02	32
JOURNAL	5.60	1.62	6.69	0.76	5.88	1.70	AA
JOVIALITY	5.20	1.53	2.14	1.15	5.20	1.32	0
JOY	5.43	1.62	1.66	1.17	6.52	1.94	AA
JUDGE	6.27	0.95	6.25	1.34	7.04	2.13	AA
JUGGLER	6.10	1.35	6.45	0.84	5.84	2.15	1
JURY	6.07	0.95	6.17	0.97	6.88	1.96	26
JUSTICE	3.60	1.71	2.18	1.76	6.60	1.98	A
KEG	6.40	0.79	6.87	0.65	4.84	1.68	3
KERCHIEF	5.23	2.22	6.82	1.01	6.48	1.81	3
KEROSENE	5.77	1.52	6.87	0.60	6.04	1.86	7
KETTLE	6.23	1.13	7.00	0.00	7.44	2.33	27
KINDNESS	4.20	1.71	1.63	1.05	4.84	1.97	35
KINE	2.00	1.59	4.53	1.63	2.88	2.62	1
KING	6.27	0.95	6.34	1.08	7.50	2.34	AA
KISS	6.80	0.39	6.13	1.19	6.68	2.32	AA
KNOWLEDGE	2.97	1.79	1.56	0.95	6.36	2.10	AA
LABYRINTH	4.83	2.09	6.16	1.24	4.80	2.27	3
LAD	6.33	0.99	6.58	0.77	5.76	1.98	A
LAKE	6.67	0.53	6.90	0.57	9.22	2.02	AA
LANDSCAPE	6.43	0.61	6.20	0.86	7.12	2.57	19
LARK	6.20	1.15	6.83	0.67	5.84	2.58	22
LAW	3.73	1.93	3.23	2.04	6.32	1.31	AA
LAWN	6.57	0.76	6.96	0.53	7.28	2.28	36
LEADER	5.13	1.60	5.83	1.16	6.16	2.06	AA
LEAFLET	5.47	1.58	6.62	0.81	4.92	1.58	7
LECTURE	5.57	1.66	4.50	1.59	5.72	2.07	28
LECTURER	5.70	1.48	6.49	0.93	5.88	2.37	5
LEGGINGS	5.87	1.34	6.90	0.58	6.12	2.44	3
LEGISLATION	3.33	1.53	4.00	1.66	5.92	1.91	23
LEMON	6.83	0.45	6.96	0.53	7.72	2.54	27
LEMONADE	6.50	0.83	6.93	0.55	7.13	1.59	7

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
LENGTH	3.73	1.58	3.75	1.92	5.84	1.68	AA
LEOPARD	6.77	0.49	7.00	0.00	6.83	1.86	6
LETTER	6.37	1.03	6.94	0.55	5.96	1.88	AA
LETTERHEAD	5.13	1.95	6.45	1.03	4.92	2.04	1
LIBRARY	6.73	0.56	6.87	0.60	6.40	2.12	A
LICE	5.57	1.52	6.36	0.94	6.56	1.86	1
LIFE	4.07	2.09	2.96	1.97	6.78	1.96	AA
LIMB	6.17	0.92	6.93	0.56	6.80	2.53	38
LIME	5.67	1.73	6.69	0.92	7.12	2.35	27
LIMELIGHT	4.83	1.74	3.06	1.97	4.72	1.95	1
LINK	4.80	1.73	5.38	1.66	5.20	2.00	24
LIP	6.57	0.61	6.93	0.56	5.32	1.68	AA
LOBSTER	6.57	0.70	6.96	0.53	6.84	1.97	7
LOCKER	6.27	1.01	6.96	0.53	6.44	2.02	3
LOQUACITY	3.40	1.94	3.11	1.80	3.92	1.66	0
LORD	4.63	2.01	4.18	2.44	6.68	2.01	AA
LOVE	5.60	1.51	1.80	1.58	6.44	1.76	AA
LOYALTY	4.07	1.72	1.56	0.97	5.72	1.93	19
LUBRICANT	5.23	1.60	5.86	1.31	5.44	1.87	2
LUMP	5.63	1.40	6.20	1.17	5.44	1.80	20
MACARONI	6.47	0.91	7.00	0.00	6.00	2.29	2
MACHINE	6.00	1.14	6.75	0.69	5.88	2.19	AA
MADNESS	4.03	1.87	2.35	1.51	5.16	1.34	12
MAGAZINE	6.40	0.97	6.80	0.73	6.52	1.98	A
MAGNITUDE	2.50	1.60	3.03	1.93	5.68	2.51	7
MAIDEN	6.10	1.06	6.52	0.85	5.04	1.46	45
MAJORITY	3.63	1.80	3.48	1.88	5.48	1.61	A
MAKER	3.57	1.96	4.46	2.08	5.00	1.78	27
MALADY	3.37	1.77	3.72	1.85	6.00	2.58	6
MALARIA	4.83	1.65	5.66	1.61	6.64	1.50	4
MALICE	3.30	1.76	1.73	0.97	4.56	1.66	10
MAMMAL	5.57	1.54	6.31	0.90	5.80	1.76	6
MANAGEMENT	3.90	1.75	3.69	1.77	5.68	1.91	27
MANTLE	6.27	1.13	6.76	0.82	5.92	2.08	19
MARKET	6.13	1.36	6.08	1.08	7.04	2.72	AA
MARRIAGE	5.80	1.40	3.94	1.67	6.29	2.05	A
MAST	6.43	0.83	6.96	0.53	7.12	3.03	26
MASTER	4.97	1.84	5.53	1.34	5.28	1.77	AA
MASTERY	2.77	1.68	2.20	1.17	5.46	2.48	4
MATERIAL	5.07	1.92	6.10	1.25	5.92	2.83	AA
MATHEMATICS	4.50	1.60	4.35	1.88	6.88	1.90	8
MEADOW	6.43	0.70	6.69	0.80	8.00	2.81	47
MEAT	6.63	0.65	6.93	0.56	8.32	3.08	AA
MEDALLION	5.87	1.13	6.73	0.77	6.32	1.49	1
MEETING	5.20	1.57	4.80	1.85	5.00	1.22	AA
MEMORY	3.10	2.05	1.78	0.93	5.00	1.78	A
MENACE	3.73	1.74	3.70	2.03	5.04	2.23	21
MERCY	3.40	1.81	1.59	0.89	5.20	2.10	45
METAL	5.87	1.45	6.76	0.74	6.96	2.56	A
METHOD	2.63	1.64	2.20	1.24	5.20	1.66	AA
METROPOLIS	5.97	1.28	5.62	1.27	6.28	2.54	8
MICROSCOPE	6.57	0.97	7.00	0.00	5.48	1.45	9
MILEAGE	4.53	1.96	4.36	1.96	6.72	2.62	3
MIND	3.03	1.87	2.60	1.80	5.88	1.94	AA
MIRACLE	3.33	1.80	2.25	1.79	5.60	2.38	24
MIRAGE	4.97	1.67	3.50	1.37	5.63	1.67	1
MISCHIEF	4.03	1.67	2.90	1.54	5.44	1.58	20
MISCONCEPTION	2.30	1.53	1.79	1.13	3.96	1.46	1
MISERY	4.37	1.69	2.28	1.27	5.84	1.95	26

APPENDIX—Continued

Noun	I		C		m		F
	M	SD	M	SD	M	SD	
MISSILE	6.33	1.20	6.80	0.60	6.48	2.38	2
MOISTURE	5.20	1.57	6.24	1.07	6.72	2.25	21
MOLECULE	4.43	1.81	5.38	1.44	6.68	2.17	3
MOMENT	2.50	1.62	2.52	1.53	4.38	1.56	AA
MONARCH	6.20	1.00	6.40	0.93	6.92	2.00	20
MONEY	6.43	1.13	6.63	0.84	6.68	1.84	AA
MONK	6.40	0.86	6.63	0.88	5.92	2.43	20
MONTH	4.37	2.22	3.20	1.69	4.58	1.74	AA
MOOD	3.67	2.08	1.52	0.89	5.36	1.75	27
MORAL	3.17	1.97	1.39	1.11	6.44	1.66	A
MORGUE	6.03	1.09	6.48	1.02	6.56	1.66	2
MOSQUITO	6.53	1.29	6.96	0.53	7.84	2.15	8
MOSS	6.33	0.89	6.87	0.60	7.04	2.30	22
MOTHER	6.67	0.73	6.52	0.95	5.83	1.58	AA
MOUNTAIN	6.77	0.49	7.00	0.00	7.58	2.86	AA
MUCUS	5.53	1.62	6.16	1.28	6.38	1.86	1
MULE	6.60	0.83	6.96	0.53	6.12	1.51	29
MULTIPLICATION	4.73	1.98	3.84	1.68	6.00	1.80	5
MURDER	5.40	1.23	4.60	1.77	7.80	3.10	A
MUSICIAN	6.13	1.21	6.53	0.90	6.52	1.76	18
NAIL	6.50	0.97	6.96	0.53	6.08	1.44	A
NAMESAKE	3.37	2.21	3.53	1.79	4.20	1.68	2
NECESSITY	3.00	1.87	1.97	1.14	5.92	3.12	A
NECTAR	5.33	1.40	6.41	0.92	6.92	2.25	2
NEPHEW	4.30	1.99	6.19	1.07	4.48	1.54	22
NEWSPAPER	6.57	0.83	6.56	0.53	6.12	2.03	AA
NIGHTFALL	6.17	1.11	5.73	1.45	6.52	2.60	5
NOOSE	6.23	1.10	6.20	1.40	6.20	2.02	2
NONSENSE	3.07	1.86	1.90	1.30	4.12	1.81	19
NORTHWEST	4.00	1.98	3.97	2.09	5.76	1.27	19
NUN	6.67	0.59	6.76	0.78	6.60	2.20	9
NURSERY	6.10	0.96	6.45	0.86	7.40	1.76	19
NUTMEG	5.37	1.96	6.87	0.65	5.60	2.04	2
NYMPH	5.63	1.18	4.40	1.95	5.36	2.06	13
OATS	6.07	1.24	6.90	0.57	7.16	1.68	23
OBEDIENCE	3.67	1.65	1.58	0.65	5.20	1.85	15
OBSESSION	3.87	2.04	1.65	0.78	4.16	1.84	2
OCEAN	6.77	0.42	6.90	0.57	8.76	2.30	AA
OCCASION	2.53	1.75	3.22	1.91	5.00	2.29	A
ODOR	5.13	1.95	5.83	1.55	5.76	1.45	27
OFFICER	6.23	1.04	6.32	1.09	5.43	1.88	AA
OFFSHOOT	3.67	1.89	4.20	1.29	4.56	2.10	1
ONSLAUGHT	3.67	1.71	3.34	1.65	5.84	2.13	2
OPINION	3.23	1.84	2.29	1.54	4.96	2.14	AA
OPIUM	4.60	1.77	6.44	0.88	5.88	1.54	7
OPPORTUNITY	3.03	1.67	2.63	1.65	4.08	1.71	A
ORCHESTRA	6.77	0.55	6.55	0.95	6.76	2.07	10
ORIGIN	2.30	1.53	3.25	1.93	5.32	1.55	48
ORIGINATOR	3.30	2.05	5.43	1.52	4.48	1.56	1
OSCULATION	2.70	2.11	4.20	1.00	3.71	1.76	0
OUTCOME	2.40	1.49	2.80	1.54	4.24	1.74	8
OUTSIDER	5.27	1.66	5.07	1.76	4.56	1.61	3
OVEN	6.40	1.03	6.96	0.53	8.08	1.75	29
OWNER	4.23	1.81	5.90	1.51	5.71	1.88	A
OWNERSHIP	3.27	1.92	3.07	1.47	5.20	2.18	9
OXYGEN	4.27	1.81	5.43	1.74	6.20	1.19	25
PACIFISM	3.90	1.99	2.06	1.63	3.80	1.96	1
PACT	3.50	1.79	3.77	1.66	5.12	2.62	4
PAINTER	5.87	1.26	6.59	0.85	6.40	2.66	25

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
PALACE	6.50	0.79	6.73	0.78	7.08	2.12	A
PANIC	5.33	1.71	2.18	1.16	6.72	2.01	19
PANORAMA	4.47	1.68	4.18	1.61	5.72	2.81	2
PAPER	6.30	1.46	6.89	0.63	7.68	2.97	AA
PARTY	6.27	0.84	5.50	1.42	7.08	2.24	AA
PASSAGEWAY	5.53	1.41	6.28	0.91	5.08	1.44	4
PASSION	5.30	1.85	1.66	1.12	5.68	2.54	A
PATENT	3.43	1.93	4.05	1.04	4.96	1.79	27
PEACEMAKER	4.03	1.96	4.97	1.82	5.08	2.31	1
PEACH	6.60	0.83	6.80	1.01	6.84	2.30	29
PELT	5.40	1.33	6.20	1.34	6.76	2.09	6
PENCIL	6.37	1.20	7.70	0.00	6.48	1.81	40
PEP	4.60	1.75	2.73	1.48	6.04	2.30	3
PEPPER	6.27	1.19	6.96	0.53	6.52	1.50	27
PERCEPTION	3.17	1.92	2.33	1.59	5.80	2.08	7
PERFORMER	5.43	1.45	6.01	1.21	6.48	1.98	4
PERIODICAL	4.93	1.74	6.14	1.15	5.52	2.12	7
PERJURY	3.37	1.84	2.70	1.58	5.92	1.87	1
PERMISSION	2.87	1.74	4.43	1.76	4.68	1.97	22
PERSON	5.83	1.42	6.51	0.85	5.68	2.69	AA
PHANTOM	5.03	1.62	2.50	1.59	5.00	1.75	6
PHOTOGRAPH	6.43	1.31	6.56	0.52	6.72	1.93	6
PHYSICIAN	6.37	0.74	6.59	0.89	5.92	1.41	43
PIANIST	6.43	0.83	6.55	0.85	5.96	1.77	2
PIANO	6.70	0.63	6.85	0.86	6.40	1.96	26
PICTURE	6.20	1.20	6.75	0.69	7.16	1.91	AA
PIPE	6.43	1.01	6.90	0.58	6.20	1.66	A
PISTON	5.37	1.87	6.87	0.60	7.40	2.97	5
PLAIN	5.37	1.49	5.28	2.05	5.20	1.63	AA
PLANK	6.30	1.02	6.96	0.53	6.20	2.38	19
PLANT	6.50	0.91	6.87	0.58	8.32	2.36	AA
PLEASURE	4.80	1.55	2.10	1.52	5.54	1.89	AA
PLEDGE	3.63	2.12	2.93	1.73	5.92	1.71	27
POET	5.27	1.50	6.35	0.98	5.36	1.87	A
POETRY	4.90	1.69	4.27	1.96	6.24	1.69	26
POLE	6.10	1.38	6.93	0.61	6.20	1.50	A
POLICEMAN	6.70	0.58	6.69	0.80	6.96	2.41	22
POLLUTION	4.63	1.97	4.14	1.97	7.40	2.06	3
PORTAL	5.10	1.91	6.25	1.14	5.63	2.24	7
PORTRAIT	5.87	1.36	6.63	0.76	5.52	1.36	19
POSITION	2.97	1.73	3.31	1.33	6.24	2.30	AA
POSTER	6.33	1.09	6.96	0.53	6.20	2.20	5
POTATO	6.50	1.10	7.00	0.00	7.13	1.85	A
POVERTY	5.07	1.52	3.17	1.77	5.44	1.96	24
POWER	4.47	1.77	2.73	1.52	5.88	1.62	AA
PRAIRIE	6.47	0.79	6.80	0.63	8.16	2.34	25
PRAYER	5.17	1.72	3.60	2.07	6.63	1.91	A
PREDICAMENT	3.30	1.57	2.18	0.96	4.64	2.20	3
PRESENT	4.80	2.22	3.88	2.31	6.13	1.70	AA
PRESSURE	4.10	2.02	3.63	1.54	5.80	1.89	48
PRESTIGE	3.67	1.89	1.73	0.71	4.56	2.24	7
PREVIEW	4.03	1.97	4.14	1.87	4.12	2.11	1
PRIDE	4.23	1.60	1.49	0.70	5.24	2.26	A
PRIEST	6.53	0.61	6.59	0.84	6.88	2.26	42
PRISON	6.23	0.87	6.62	0.81	7.21	1.74	A
PRISONER	6.23	0.87	6.45	0.92	6.76	1.74	A
PROCESSION	5.70	1.35	5.90	1.32	5.63	1.79	27
PRODUCT	4.20	1.57	5.80	1.36	5.12	1.92	A
PROFESSION	3.83	2.03	3.65	1.74	5.44	1.85	28

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
PROFESSOR	6.17	1.25	6.52	0.89	5.40	1.83	A
PROFILE	5.97	1.33	5.72	1.29	5.60	2.52	5
PROMOTION	3.33	1.97	3.56	1.74	5.56	1.89	10
PROPERTY	4.87	1.77	5.99	1.18	5.76	2.20	A
PROPRIETOR	5.10	1.61	6.45	0.92	5.72	2.26	12
PROSECUTOR	5.00	1.41	5.87	1.22	6.32	1.99	2
PROSPERITY	4.47	1.62	2.78	1.37	5.44	1.53	29
PROXY	2.70	1.82	3.72	2.06	4.84	2.34	1
PUDDING	6.27	0.91	6.60	0.77	7.31	1.99	17
PUPIL	6.37	0.78	6.63	0.88	6.24	2.09	A
PYTHON	5.47	2.09	6.42	1.29	5.88	2.45	1
QUALITY	3.10	1.92	2.13	1.26	5.52	2.42	A
QUANTITY	3.47	1.74	3.32	1.81	4.17	1.79	A
QUEEN	6.57	0.70	6.38	1.12	7.36	2.16	AA
QUEST	4.53	1.54	2.76	1.76	5.20	2.02	20
RACKETEER	5.07	1.66	6.07	1.09	5.56	1.94	5
RAILROAD	6.27	1.08	6.76	0.70	6.60	1.66	AA
RATING	2.60	1.66	2.66	1.49	5.12	3.10	1
RATTLE	6.30	0.92	6.60	0.88	6.80	2.36	28
REACTION	3.83	1.85	2.93	1.85	4.84	1.93	21
RECITAL	4.97	1.60	5.19	1.57	5.56	2.26	4
RECOGNITION	3.60	1.77	2.00	1.13	5.04	2.70	21
REFLECTION	5.90	1.28	3.12	2.10	6.56	1.69	22
REFLEX	4.73	1.83	4.08	1.50	5.88	1.92	2
REFRIGERATOR	6.67	0.82	7.00	0.00	7.36	1.96	11
REMINDER	2.83	1.80	3.48	1.72	5.20	2.81	17
RENDEZVOUS	5.20	1.61	4.00	1.59	6.04	2.72	3
REPLACEMENT	2.70	1.65	3.73	2.09	5.40	3.00	1
REPTILE	6.00	1.22	6.65	0.72	6.52	2.55	8
RESEARCH	4.13	1.75	3.22	1.80	6.92	1.85	22
RESIDUE	4.87	1.60	5.72	1.50	4.48	1.64	2
RESTAURANT	6.47	0.97	6.83	0.65	6.88	2.15	23
RETAILER	4.33	1.99	5.88	1.57	6.76	2.11	3
REVOLT	5.07	1.48	4.05	1.61	5.60	1.73	22
REVOLVER	6.70	0.58	6.96	0.53	7.40	2.61	9
RHAPSODY	4.23	1.98	4.38	2.21	5.12	1.56	1
RHEUMATISM	4.50	1.66	5.39	1.51	6.48	2.12	7
RITUAL	4.70	1.71	3.70	1.70	5.12	1.99	4
RIVER	6.63	0.54	6.83	0.61	7.52	2.22	AA
ROBBER	5.67	1.17	6.25	1.02	6.88	1.92	27
ROBBERY	5.00	1.44	4.75	1.88	6.16	2.06	9
ROCK	6.37	1.06	6.96	0.53	5.96	1.49	AA
ROD	5.97	1.38	6.62	0.89	6.04	1.63	44
ROSIN	4.20	2.32	5.88	1.43	4.56	2.53	1
RUBBLE	5.23	1.52	6.18	1.08	5.40	2.16	1
SADNESS	4.63	1.99	2.47	1.47	5.56	1.46	11
SAFETY	4.27	1.58	2.25	1.26	5.76	2.47	A
SALAD	6.53	0.91	6.83	0.61	7.20	1.98	28
SALARY	4.70	1.74	5.23	1.24	5.08	2.06	A
SALOON	6.43	0.70	6.70	0.79	7.12	2.44	12
SALUTATION	4.47	1.68	4.87	1.58	5.24	1.79	5
SALUTE	5.77	1.43	5.00	1.61	6.52	1.78	22
SATIRE	3.37	1.57	2.33	1.44	5.64	1.93	7
SAUCE	5.80	1.51	6.76	0.75	5.88	1.60	27
SAVANT	3.07	1.83	3.02	1.73	3.88	1.56	1
SCARLET	6.37	0.82	5.96	1.65	5.80	1.71	27
SCIENCE	4.07	1.70	3.05	1.55	6.56	1.53	A
SCORPION	6.27	0.95	6.93	0.61	6.24	2.42	3
SEA	6.73	0.56	6.79	0.73	7.16	1.93	AA

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
SEASON	4.87	1.84	4.58	1.58	7.88	2.65	AA
SEAT	6.40	1.00	6.79	0.73	6.08	2.26	AA
SEMESTER	3.53	1.83	3.88	1.95	5.48	1.78	1
SENSATION	3.67	2.05	1.99	1.47	5.16	1.57	20
SENTIMENT	3.57	1.83	1.83	1.17	4.88	1.86	29
SERF	5.50	1.13	6.03	1.35	6.75	2.33	4
SERIES	4.47	1.68	3.88	1.79	5.36	2.10	A
SESSION	3.67	1.87	3.62	1.66	5.40	1.85	19
SETTLEMENT	4.60	1.89	5.13	1.92	6.24	1.85	A
SETTLER	5.40	1.56	6.07	1.10	6.48	2.40	20
SHADOW	5.63	1.31	4.94	1.45	5.28	1.84	A
SHAME	4.10	1.78	1.70	1.10	5.16	1.70	A
SHIP	6.67	0.59	6.93	0.56	7.87	1.94	AA
SHEEPSKIN	6.13	1.26	6.83	0.66	6.44	1.80	2
SHOCK	4.67	1.76	3.97	1.92	6.20	2.16	A
SHOES	6.63	0.82	7.00	0.00	7.52	2.18	AA
SHORE	6.63	0.47	6.69	0.79	8.13	1.85	AA
SHOTGUN	6.60	0.79	6.96	0.53	7.88	2.47	3
SHRIEK	5.73	1.72	5.70	1.79	6.92	1.78	1
SICKNESS	5.17	1.39	4.94	1.60	6.36	2.22	25
SILENCE	4.10	1.87	3.09	1.59	5.82	1.97	AA
SIMILE	2.90	1.89	3.97	2.04	5.25	1.92	2
SINGER	6.17	0.95	6.35	1.04	6.64	2.18	20
SITUATION	2.53	1.52	2.76	1.41	4.84	2.03	A
SKILLET	6.10	1.33	6.80	0.82	7.43	1.80	2
SKIN	6.43	0.90	6.96	0.53	5.67	1.93	AA
SKULL	6.47	0.91	6.96	0.53	6.64	1.78	13
SKY	6.73	0.56	6.18	1.51	7.84	2.17	AA
SLAVE	6.23	0.87	6.38	1.12	6.17	1.67	A
SLIPPER	6.47	0.75	6.94	0.55	6.04	1.92	20
SLUSH	6.27	1.04	6.65	0.85	6.80	2.36	1
SNAKE	6.90	0.29	7.00	0.00	6.88	2.52	28
SOBRIETY	3.50	1.64	2.90	1.63	4.52	1.78	2
SOCIALIST	3.13	1.79	4.69	2.01	4.54	1.50	19
SOIL	6.00	1.19	6.87	0.64	8.00	2.18	AA
SONATA	4.53	2.21	5.73	1.75	5.56	2.66	1
SOUL	2.13	1.60	1.87	1.60	6.40	2.20	AA
SOVEREIGN	5.73	1.22	5.94	1.23	7.12	2.39	23
SPEAKEASY	3.80	2.30	4.84	1.68	5.43	2.66	1
SPEAKER	5.67	1.37	6.13	1.21	5.54	1.82	25
SPEECH	4.33	1.94	4.87	1.87	5.36	2.08	AA
SPINACH	6.47	0.94	6.90	0.57	7.08	2.31	8
SPIRE	5.57	1.60	6.72	0.91	4.72	1.88	11
SPIRIT	3.43	1.89	1.86	1.24	5.72	2.02	AA
SPRAY	6.17	0.85	6.21	0.96	6.48	2.37	22
SPREE	4.27	1.60	2.81	1.52	5.79	2.13	2
SQUARE	6.37	1.38	5.70	1.60	5.44	1.34	AA
STAGECOACH	6.43	0.79	6.90	0.57	6.96	1.80	3
STAIN	5.93	1.08	6.25	1.02	5.25	1.42	28
STAR	6.70	0.77	6.73	0.79	7.04	1.74	AA
STEAM	6.37	0.86	6.41	0.89	7.46	2.00	A
STEAMER	6.53	0.66	6.94	0.55	6.32	2.10	28
STEERAGE	3.00	1.87	4.29	1.99	4.65	1.43	1
STONE	6.23	1.04	6.96	0.53	7.24	2.15	AA
STOREROOM	5.87	1.29	6.73	0.70	6.52	2.02	2
STORM	6.43	0.83	6.45	0.89	7.21	2.73	AA
STRAWBERRY	6.80	0.47	7.00	0.00	6.71	2.10	19
STREET	6.57	0.97	6.62	0.87	7.48	2.80	AA
STRENGTH	4.63	1.80	2.90	0.57	5.12	1.59	AA

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
STRING	6.20	1.42	6.90	0.63	5.29	1.65	A
STUB	4.97	1.82	6.20	1.33	5.24	2.03	5
STUDENT	6.27	0.80	6.38	1.03	5.96	1.65	A
STYLE	3.83	1.93	3.18	1.67	5.84	1.55	A
SUBSTITUTE	3.13	1.74	4.56	1.86	4.48	1.12	29
SUBTRACTION	3.80	1.99	3.73	1.84	5.52	2.29	1
SUDS	6.40	0.90	6.75	0.79	7.29	2.35	3
SUGAR	6.57	0.90	6.96	0.53	7.00	1.83	AA
SULPHUR	6.03	1.15	6.72	0.79	6.25	1.36	21
SULTAN	5.57	1.60	6.52	0.81	7.24	1.79	14
SUNBURN	6.70	0.58	6.52	0.86	7.72	2.78	3
SUNSET	6.83	0.37	6.07	1.43	6.96	2.58	24
SUPPLICATION	2.80	1.63	2.89	2.04	4.04	1.99	3
SUPPRESSION	2.83	1.57	2.35	1.19	3.89	1.75	4
SURTAX	1.63	1.35	4.12	1.42	2.96	2.27	1
SWAMP	6.33	0.82	6.62	0.81	6.67	2.08	29
TABLE	6.50	1.01	7.00	0.00	7.60	2.55	AA
TABLESPOON	6.33	1.17	6.90	0.73	5.63	1.91	24
TANK	6.23	1.13	6.87	0.58	6.48	1.29	19
TEACHER	5.77	1.50	6.38	0.96	6.00	2.27	AA
TEMERITY	2.33	1.40	2.19	1.18	2.04	2.17	1
TEMPEST	5.63	1.15	5.62	1.68	6.96	1.99	14
TEMPLE	6.13	1.21	6.69	0.88	6.75	2.15	A
TENDENCY	2.20	1.59	1.78	0.78	4.08	2.20	27
THEOLOGIAN	4.47	1.84	5.88	1.35	6.36	2.00	2
THEORY	2.57	1.60	1.90	1.41	5.88	1.67	A
THICKET	5.60	1.36	6.49	0.75	6.04	2.15	19
THIEF	5.70	1.17	6.08	1.08	6.50	2.02	28
THISTLEDOWN	3.83	2.06	6.14	1.31	4.76	2.73	1
THORN	6.33	0.89	6.87	0.65	6.44	1.58	24
THOUGHT	2.77	2.06	1.28	0.61	5.32	1.99	AA
TICKET	6.20	1.17	7.00	0.00	7.21	1.74	A
TIDBIT	4.37	1.82	5.40	1.91	5.79	1.64	1
TIME	4.13	2.28	2.47	1.68	7.00	2.80	AA
TIMEPIECE	6.10	1.12	6.76	0.75	6.08	1.44	1
TOAST	6.57	0.87	6.93	0.56	7.84	1.68	20
TOBACCO	6.27	1.27	6.87	0.60	7.84	1.65	36
TOMAHAWK	6.57	0.79	6.87	0.65	6.44	1.83	3
TOMB	6.37	0.82	6.73	0.68	6.04	1.74	22
TOOL	5.77	1.43	6.80	0.62	6.88	2.17	40
TOWER	6.53	0.66	6.96	0.53	6.42	2.54	A
TOY	6.17	0.95	6.63	0.76	6.96	2.07	49
TRACTION	4.77	1.54	4.14	1.94	6.40	2.29	1
TRAGEDY	4.70	1.69	2.59	1.52	5.84	1.65	27
TREE	6.77	0.55	7.00	0.00	6.79	1.82	AA
TRELLIS	5.60	1.86	6.69	0.92	5.00	2.31	2
TRIBUTE	3.57	1.79	3.12	1.57	5.52	1.76	22
TRIPOD	6.23	1.24	6.82	0.66	5.76	2.26	2
TROOPS	6.13	1.07	6.69	0.71	7.54	2.11	A
TROUBLE	3.53	1.86	2.25	1.54	5.08	2.10	AA
TRUCE	4.80	1.63	3.05	1.66	6.17	1.81	3
TRUCK	6.60	0.74	7.00	0.00	6.48	2.00	23
TRUMPET	6.60	0.74	7.00	0.00	6.80	2.20	17
TRUTH	2.73	1.88	1.69	1.15	4.78	2.32	AA
TWEEZERS	6.57	0.61	6.93	0.56	5.80	1.87	1
TWILIGHT	5.93	1.27	5.77	1.34	6.56	2.45	29
TYPHOON	5.50	1.29	6.20	0.99	6.28	1.79	0
UMBRELLA	6.60	1.00	7.00	0.00	6.76	2.45	13
UNBELIEVER	2.60	1.70	4.00	2.06	4.72	2.23	1

APPENDIX—*Continued*

Noun	<i>I</i>		<i>C</i>		<i>m</i>		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
UNDERWORLD	4.37	1.53	4.43	2.03	5.76	2.01	5
UNIFICATION	2.77	1.66	2.51	1.53	4.76	1.49	1
UNIT	2.87	1.56	4.33	1.85	4.80	1.87	29
UNIVERSITY	6.53	0.83	5.87	1.63	7.20	2.60	A
UNREALITY	2.10	1.61	1.18	0.41	4.92	1.68	1
UPKEEP	3.07	1.78	2.50	1.42	4.76	1.59	2
UTENSIL	5.47	1.64	6.58	0.77	6.08	2.18	8
VACCINATION	5.97	1.12	5.70	1.47	6.12	1.59	2
VACUUM	4.77	2.01	3.87	2.07	5.94	2.24	5
VALLEY	6.57	0.79	6.66	0.66	6.56	2.04	AA
VANITY	3.83	1.55	1.77	1.19	4.92	2.43	20
VAPOR	4.80	1.97	5.93	1.13	5.76	2.01	27
VEGETABLE	5.83	1.65	6.76	0.74	6.92	2.16	A
VEHICLE	6.23	0.97	6.45	0.97	7.08	2.31	13
VELOCITY	3.97	1.99	3.32	1.75	5.72	1.89	8
VENOM	4.23	1.70	5.62	1.80	6.40	1.66	5
VESSEL	5.90	1.20	6.99	0.71	7.82	2.15	A
VEST	6.37	0.97	6.73	0.61	5.96	1.51	21
VESTIBULE	5.43	1.79	6.73	0.74	6.00	2.07	2
VICTIM	5.07	1.78	5.49	1.52	5.36	1.75	36
VICTORY	4.93	1.27	2.95	1.32	6.12	2.33	A
VIGILANCE	3.53	1.74	2.60	1.40	5.72	1.95	5
VIGOR	4.43	1.83	2.60	1.33	5.72	2.54	19
VILLAGE	6.50	0.71	6.69	0.79	5.32	2.52	AA
VIOLATION	3.57	1.91	2.92	1.50	5.92	1.75	8
VIRTUE	3.33	1.96	1.46	1.55	4.87	2.07	A
VISION	4.73	1.92	4.00	1.64	6.39	2.03	45
VOCATION	3.80	1.94	3.26	1.62	6.12	2.65	4
VOLCANO	6.63	0.69	6.83	0.66	7.60	2.33	14
VOLUME	4.53	1.64	5.14	1.77	6.16	2.01	A
WARBLER	5.57	1.73	6.63	0.84	5.79	2.50	2
WARMTH	5.70	1.53	4.00	1.78	7.36	1.68	23
WATER	6.60	0.70	6.96	0.53	7.50	1.98	AA
WEAPON	5.73	1.22	6.38	0.99	7.84	2.21	42
WELFARE	3.17	1.80	2.35	1.28	6.16	1.72	25
WENCH	5.30	1.65	6.20	0.97	5.08	1.55	4
WHALE	6.50	0.97	6.96	0.53	7.24	1.98	8
WHALEBONE	4.90	1.71	6.87	0.75	7.04	2.19	1
WHEAT	6.40	0.94	7.00	0.00	7.96	1.74	A
WHOLESALE	3.87	2.06	6.15	1.37	4.88	1.72	1
WIFE	6.53	0.61	6.52	0.89	6.48	2.24	AA
WIGWAM	6.23	1.01	6.83	0.67	5.88	1.99	1
WINDOW	6.37	1.00	7.00	0.00	6.76	1.96	AA
WINE	6.60	0.60	6.96	0.53	7.54	2.25	A
WINTER	6.53	1.04	5.83	1.42	8.32	2.44	AA
WISTFULNESS	3.13	1.88	1.83	0.93	4.16	2.43	1
WOMAN	6.70	0.52	6.63	1.08	6.40	2.55	AA
WOODS	6.70	0.45	6.87	0.70	7.84	2.73	AA
WORKHOUSE	4.00	1.92	6.31	0.95	4.88	1.86	1
WORLD	5.97	1.31	5.90	1.44	6.88	1.79	AA
YACHT	6.77	0.49	6.96	0.53	7.20	2.14	2