INSTRUMENTATION & TECHNIQUES

Imagery, concreteness, age-of-acquisition, familiarity, and meaningfulness values for 205 five-letter words having single-solution anagrams

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Solution-word imagery appears to affect difficulty of anagram solving. To assist research in this area, we present imagery, concreteness, age-of-acquisition, familiarity, and meaningfulness values for 205 five-letter words known to form single-solution anagrams. None of the words have repeated letters. Intergroup reliabilities were satisfactory on all attributes. Significant correlations were found with previous word lists and the intercorrelations between dimensions matched previous findings.

Recent studies have found that high-solution word imagery facilitates anagram solving (Dewing & Hetherington, 1974; Jablonski & Mueller, 1972; Stratton, Jacobus, & Leonard, 1975). However, word imagery is correlated with other potentially important attributes, notably concreteness, meaningfulness, familiarity, and age-of-acquisition (Paivio, Yuille, & Madigan, 1968; Stratton, Jacobus, & Brinley, 1975). Analysis of the effects of such word attributes on anagram solving has been hampered by the lack of appropriate norms for a sufficiently extensive set of suitable words. The Paivio et al. list of imagery, concreteness, meaningfulness, and frequency values is not ideal for anagram research because of the variation in word lengths and the presence of letter repetition within words on the list. Stratton, Jacobus, and Brinley (1975) have provided a partial remedy with their list of imagery, familiarity, meaningfulness, and age-of-acquisition values for 543 words of which 72 are five-letter and 471 are six-letter. The list is clearly useful for six-letter words, but less so for five-letter words. The present study gathered imagery, concreteness, age-of-acquisition, familiarity, and meaningfulness values on 205 words taken from Olson and Schwartz's (1967) list of single-solution five-letter anagrams, and so provides a further stock of rated words to supplement those already available. The list may be useful in studies of word perception, learning, and memory, as well as in anagram research.

METHOD

Subjects

The subjects were first-year student volunteers attending Aberdeen University. Imagery ratings were given by 50 subjects. Concreteness, age-of-acquisition, and familiarity ratings were given by three separate groups of 40 subjects each. The rating

groups were equally divided between males and females. A total of 257 subjects were involved in the meaningfulness measuring procedure and each word's score was based on data from between 20 to 30 subjects.

Words

The 205 five-letter words were selected from the Olson and Schwartz (1967) list of single-solution words. The words selected were not plurals, were not proper names, could be used as nouns, and were judged to be reasonably familiar. None of the words selected had repeated letters.

Procedure

For the imagery, age-of-acquisition, concreteness, and familiarity ratings, the following procedure was used.

The words were printed in random order in columns on 10 rating sheets. Each subject in a given rating condition worked through all the different rating sheets in random order. The subjects were seated several feet apart and worked through the lists individually in single 40-min sessions. All ratings were obtained on seven-point scales. The scale was printed alongside each word and the subjects circled the number they felt was most appropriate.

The instructions for imagery ratings were taken from Paivio et al. (1968, p. 4). Words arousing images most readily were to be rated 7 and words arousing images with great difficulty or not at all were to be rated 1.

Concreteness ratings were obtained on a seven-point scale using instructions identical to those of Spreen and Schulz (1966, p. 460). Words referring to objects, materials, or persons were to receive a high concreteness rating, while words referring to abstract concepts that could not be experienced by the senses were to receive a low concreteness rating.

Age-of-acquisition ratings were obtained following the Carroll and White (1973, p. 564) instructions, except that a seven-point, rather than a nine-point scale was used. The scale ranged from 1 (age 0-2 years) to 7 (age 13 and older). Intermediate points on the scale were identified with 2-year age bands. Throughout the rating procedure, the subjects could refer to a table which related the scale points to age bands.

Familiarity ratings were obtained using instructions similar to Noble's (1953, p. 90), but using a seven-point scale (1 = "never seen, heard, or used," 7 = "seen, heard, or used every day") instead of a five-point scale.

Meaningfulness was defined as the mean number of associations given in a 30-sec production period. Noble's (1952, p. 425) instructions and scoring procedure were used. The subjects were given booklets of 20 words with each word repeated 15 times per page.

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Table 1
Word Attributes: Correlations and Summary Statistics

Word Characteristic	1	2	3	4	5	6
1. Imagery		.81	-.60	.30	.52	.23
2. Concreteness			-.43	.14	.40	.08
3. Age-of-acquisition				-.66	-.45	-.58
4. Familiarity					.40	.72
5. Meaningfulness						.32
6. Thorndike-Lorge (1944) frequency						
Mean	4.64	4.97	3.87	3.94	4.92	
SD	1.20	1.20	1.28	1.14	1.02	
Intergroup reliability	.904	.932	.960	.952	.690	
Correlation with Paivio et al. (1968) (N = 26)	.95	.94			.45	
Correlation with Stratton, Jacobus, and Brinley (1975) (N = 22)	.92		.94	.86	.70	

RESULTS AND DISCUSSION

The summary statistics and intercorrelations among the word attributes are given in Table 1. To facilitate comparison with other studies, the correlations are also given between the word attributes measured in the present study and Thorndike-Lorge (1944) frequencies. (AA frequencies were scored as 100 and A frequencies as 50 for the calculation.)

The male and female mean ratings were correlated for each word to assess intergroup reliabilities. In the case of meaningfulness, the subject sample was divided into two subgroups and the subgroup scores were correlated to assess intergroup reliability. Table 1 shows satisfactory intergroup reliabilities on all attributes. With one exception, the correlations among the word attributes are all significant (two-tailed test, $p < .05$, $df = 203$), although not all the correlations are high. The nonsignificant correlation is that between Thorndike-Lorge frequency and concreteness (.08).

Comparisons with other studies support the validity of the present results. The pattern of intercorrelations between the word attributes matches the results of Paivio et al. (1968) and Stratton, Jacobus, and Brinley (1975). The Paivio et al. list included 26 words used in the present study (viz., agony, ankle, cabin, chair, child, demon, fault, flask, glory, grief, house, judge, maker, mercy, month, nymph, opium, panic, plank, plant, style, thief, truck, venom, woman, world). The two sets of values correlated significantly for the overlapping words. There was also an overlap of 22 words with Stratton, Jacobus, and Brinley (viz., apron, batch, baton, brawl, chair, clerk, cloth, cramp, drink, fault, flirt, fruit, guard, havoc, house, judge, month, nymph, panic, trend, uncle, youth). High correlations were obtained on measures common to Stratton, Jacobus, and Brinley (1975) and the present study. The meaningfulness measures correlated less strongly with previous lists and also showed lower intergroup reliability than the other measures. This probably reflects the susceptibility of meaningfulness measures to group and

procedural differences noted by Paivio et al. (1968, p. 6).

The generally high correlations between the present measures and those of previous studies are encouraging in view of possible cultural differences between our Scottish subject sample and the North American samples of Paivio et al. (1968) and Stratton, Jacobus, and Brinley (1975). A comparative study by Morris and Reid (1972) also found a high correlation between British imagery ratings and Paivio et al.'s Canadian ratings. Similarly, Richardson (1975) has reported close correspondence between British and Canadian (Paivio et al., 1968) ratings of word imagery and concreteness. It seems then that word lists of the present type should be useful on both sides of the Atlantic. Despite the high overall correlations, however, a few words may differ in frequency between Britain and North America to such an extent as to affect their norms. Researchers should guard against this possibility, whether using British norms in North America or vice versa. One remedy would be for the researcher to use his judgment, or that of independent subjects, to exclude items of doubtful cross-cultural validity. Another precaution would be to use large word samples, when possible, in order to minimize the relative contributions of any culturally differing words. Use of large word samples is desirable, in any case, to help insure generality of results.

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APPENDIX

The following is an alphabetical listing of the 205 words together with each word's mean score (M) and standard deviation (SD) for imagery (I), concreteness (C), age-of-acquisition (A), familiarity (F), and meaningfulness (m).

WORD	I		C		A		F		m	
	M	SD	M	SD	M	SD	M	SD	M	SD
AGONY	4.78	1.75	3.65	2.06	4.65	1.13	4.60	1.16	5.45	1.77
ALBUM	5.52	1.84	5.92	1.39	3.82	1.14	4.60	1.64	4.69	1.74
ANKLE	5.96	1.25	6.52	.87	2.40	.70	4.85	1.51	6.15	2.50
APRON	5.82	1.28	6.32	1.08	2.50	.95	3.60	1.46	5.25	1.76
BANJO	6.02	1.17	6.42	1.02	3.55	1.07	3.17	1.32	4.45	1.16
BATCH	3.18	1.63	4.00	1.69	4.32	.96	3.45	1.26	3.19	1.83
BATON	5.48	1.64	6.27	1.12	4.40	.92	3.10	1.24	4.50	1.83
BENCH	6.14	.95	6.50	1.00	2.65	.65	4.60	1.34	5.60	1.43
BERTH	4.28	1.51	5.30	1.50	4.77	1.15	2.95	1.09	5.55	2.73
BIGOT	1.92	1.15	3.77	1.86	6.47	.63	3.00	1.28	5.65	1.28
BIRCH	4.84	1.69	6.22	1.08	3.95	1.00	3.27	1.61	6.10	2.47
BITCH	4.32	1.86	5.02	1.72	4.50	1.26	4.20	1.68	4.15	1.35
BLACK	5.08	2.02	4.67	2.23	1.77	.57	5.90	1.34	4.95	1.20
BLADE	5.60	1.46	6.32	1.06	3.02	.72	4.27	1.40	5.00	1.26
BLAZE	5.68	1.39	5.42	1.20	3.15	.88	4.20	1.47	6.00	2.02
BLIMP	2.24	1.88	3.22	2.04	5.85	1.33	1.75	1.02	1.66	2.04
BLOCK	4.64	1.68	5.60	1.51	2.38	1.02	4.60	1.39	4.55	1.69
BRAND	3.62	1.83	3.85	1.67	4.05	1.07	4.10	1.43	4.72	1.87
BRAWL	5.00	1.47	4.60	1.46	4.90	1.16	3.15	1.09	5.14	2.10
BRICK	6.44	.70	6.70	.64	2.00	.71	4.82	1.36	5.25	2.17
BRINE	3.54	1.87	5.17	1.60	5.67	1.06	2.45	1.07	3.90	1.67
BRINK	3.76	1.84	3.80	1.66	4.32	.93	3.72	1.32	5.15	1.59
BUNCH	4.94	1.49	4.92	1.33	2.47	.71	4.97	1.39	5.31	1.46
BUYER	4.06	1.63	5.15	1.64	4.20	1.00	4.07	1.46	5.97	1.61
CABIN	5.70	1.36	6.25	1.04	3.32	.93	3.30	1.42	5.30	1.45
CABLE	5.28	1.37	5.95	1.34	4.45	1.02	3.40	1.34	6.48	1.57
CAIRN	4.80	1.93	5.88	1.36	4.77	1.13	2.82	1.07	3.50	1.43
CHAIR	6.38	.96	6.52	.77	1.60	.58	6.45	.92	5.55	1.24
CHALK	6.24	1.07	6.35	1.11	2.50	.50	4.00	1.66	6.79	2.17
CHILD	6.32	1.12	6.38	.94	2.00	.71	4.07	.91	6.52	1.55
CHIME	4.62	1.83	4.67	1.78	3.82	1.02	3.57	1.53	5.33	1.52
CHIMP	4.08	1.00	6.02	1.49	3.02	.99	3.32	1.29	5.24	2.43
CHORD	4.48	1.96	5.40	1.26	4.30	1.19	4.05	1.64	5.15	1.65
CHUMP	2.44	1.39	3.70	1.73	4.27	1.36	2.22	.94	2.65	2.06
CHUNK	4.28	1.60	5.00	1.40	3.72	1.05	4.02	1.37	3.44	1.50
CLAMP	4.96	1.51	5.70	1.29	5.02	.96	3.55	1.26	3.70	1.55
CLASH	3.94	1.67	3.72	1.82	3.95	.97	4.15	1.28	4.76	1.55
CLERK	4.82	1.55	5.90	1.51	5.02	1.19	3.52	1.20	5.55	1.47
CLOAK	6.04	.94	6.30	1.10	3.25	1.02	3.17	1.45	2.85	1.62
CLOTH	5.40	1.33	6.20	.93	2.52	.63	5.25	1.36	5.10	1.67
CLOWN	6.20	1.13	5.55	1.87	2.13	.33	3.63	1.26	4.48	1.75
CORGI	5.76	1.49	6.30	1.19	3.42	1.22	2.75	1.20	5.20	1.63
COUNT	3.26	1.74	3.95	1.77	2.67	1.15	5.42	1.20	5.93	2.27
COUGH	5.08	1.65	5.17	1.36	2.35	1.13	5.00	1.24	5.95	1.72
COVER	4.76	1.61	5.13	1.49	2.70	.75	5.27	1.28	8.07	2.13
CRAFT	3.68	1.74	4.15	1.44	4.35	.94	4.13	1.14	3.20	1.63
CRAMP	3.44	1.76	4.10	1.62	4.57	.92	3.92	1.19	4.50	1.43
CRANK	4.00	2.06	4.02	1.93	5.17	.97	3.13	1.40	4.07	1.66
CRAZE	2.82	1.67	2.50	1.22	4.75	1.11	4.02	1.27	3.41	1.85
CROFT	5.66	1.44	6.15	1.04	4.60	1.18	3.63	1.53	5.25	2.17

WORD	I		C		A		F		m	
	M	SD	M	SD	M	SD	M	SD	M	SD
CROWD	6.04	1.18	6.07	1.06	2.82	.77	5.65	1.01	5.00	2.10
CRUMB	5.68	1.14	6.13	1.10	2.10	.66	4.80	1.31	5.75	1.44
CRUSH	4.04	1.71	4.05	1.83	3.27	1.07	4.60	1.36	5.15	2.22
CRYPT	4.50	1.81	5.38	1.58	5.75	1.07	2.38	.89	4.34	1.90
DEMON	4.96	1.75	3.77	1.62	4.52	1.20	2.65	.99	6.00	1.70
DEPTH	4.08	1.68	3.27	1.57	3.50	1.12	4.63	1.07	4.69	1.86
DIVOT	3.18	2.17	5.30	2.01	5.63	1.46	2.32	1.56	4.00	3.19
DOUBT	2.38	1.48	2.47	1.50	3.75	1.04	5.57	1.24	2.85	1.53
DRAWL	3.52	1.81	3.20	1.76	5.38	1.13	2.60	1.18	4.30	1.82
DRINK	5.74	1.29	5.80	1.33	1.45	.89	6.47	.87	7.07	2.29
DRUNK	5.56	1.27	5.10	1.58	4.10	1.09	5.65	1.13	4.30	1.95
DUNCE	5.06	1.74	4.47	1.88	3.27	.74	2.60	.99	4.79	1.69
ENTRY	3.92	1.71	3.63	1.67	3.27	.77	5.07	1.31	5.60	1.80
FAIRY	5.56	1.46	3.60	1.74	1.85	.61	3.38	1.41	5.44	1.85
FAITH	2.32	1.41	2.22	1.59	4.22	1.41	4.42	1.51	4.41	1.47
FANCY	2.62	1.80	2.77	1.49	3.60	1.18	4.65	1.59	3.95	1.28
FAULT	2.56	1.72	2.82	1.45	2.95	1.09	5.02	1.11	4.22	1.52
FIGHT	5.16	1.51	4.63	1.62	2.25	.58	4.82	1.22	4.90	2.45
FILTH	4.58	1.90	5.05	1.52	2.90	.97	4.88	1.12	4.45	1.53
FINCH	4.32	1.57	5.70	1.85	4.38	1.16	2.47	.89	3.96	2.06
FLAKE	4.58	1.79	4.90	1.56	2.80	.75	3.97	1.44	4.50	1.36
FLAME	6.00	1.10	5.92	1.08	2.38	.73	5.07	1.49	3.80	2.06
FLANK	3.30	1.65	4.57	1.73	4.88	.93	2.85	1.09	4.30	1.58
FLASH	5.08	1.51	4.55	1.38	2.80	.78	4.45	1.48	4.85	1.74
FLASK	5.56	1.33	6.02	1.23	3.35	.88	4.05	1.40	6.24	1.90
FLIRT	4.06	1.92	4.05	1.86	5.52	.89	4.22	1.33	4.72	1.82
FLUKE	3.06	2.09	3.15	1.77	5.27	1.14	4.07	1.52	3.85	1.62
FORCE	3.36	1.94	3.72	1.97	3.75	.89	5.13	1.14	5.00	1.90
FORUM	3.14	1.82	3.85	1.92	6.27	.87	2.42	.89	3.83	1.95
FOVEA	3.40	1.98	4.38	2.20	6.85	.57	1.63	1.04	3.20	1.47
FRAUD	2.40	1.51	3.20	1.58	5.32	.82	3.55	1.40	4.67	1.75
FRONT	2.86	1.91	3.77	1.41	2.02	.61	6.35	.88	4.14	1.42
FROWN	4.54	2.05	4.57	1.76	2.92	.79	4.72	1.32	4.66	1.29
FRUIT	5.90	1.12	6.10	1.16	2.05	.59	5.77	1.11	6.55	1.80
GAUZE	5.24	1.63	6.13	.95	5.00	1.14	3.05	1.16	5.28	1.60
GLAND	3.92	2.07	5.32	1.72	5.25	1.20	3.77	1.51	3.85	1.56
GLEAM	4.18	1.56	3.80	1.60	4.25	1.04	3.77	1.23	4.20	1.69
GLINT	4.38	1.66	4.02	1.72	4.52	1.22	2.77	1.08	4.80	1.57
GLORY	3.14	1.64	2.00	1.16	4.00	1.12	3.67	1.19	4.10	1.69
GLOVE	6.16	.90	6.25	1.39	2.07	.52	5.25	1.24	6.14	1.68
GNOME	5.70	1.10	4.50	1.82	3.07	1.06	2.95	1.26	4.90	1.89
GRAFT	3.24	2.00	4.17	1.60	6.02	.91	3.20	1.23	4.68	2.53
GRANT	4.00	2.09	5.07	1.68	5.40	1.22	5.05	1.38	4.05	1.28
GRAPH	5.84	1.33	5.50	1.40	4.70	.93	5.20	1.31	4.90	1.26
GRAVE	5.98	1.32	5.88	1.65	3.10	.73	4.25	1.39	6.24	1.77
GRIEF	4.72	1.60	2.85	1.85	4.75	.83	3.82	1.34	5.03	1.73
GROUP	5.16	1.55	4.88	1.55	3.07	.75	5.90	1.11	5.20	1.81
GUARD	5.96	1.30	5.52	1.73	2.92	.93	4.17	1.39	5.34	1.81
GUILT	2.70	1.68	2.42	1.28	3.85	1.06	4.40	1.37	5.69	1.84
HAVEN	3.92	1.85	3.65	1.80	5.50	1.10	3.25	1.36	5.30	1.82
HAVOC	4.02	1.93	2.88	1.52	5.30	.84	3.57	1.22	4.14	1.36
HONEY	5.90	1.10	6.13	1.36	2.42	.77	4.00	1.48	6.38	2.13
HORDE	3.60	1.92	4.57	1.67	4.72	1.05	2.90	1.20	5.25	1.76
HOUND	5.62	1.37	5.75	1.50	3.52	.97	3.57	1.63	5.62	1.91
HOUSE	6.68	.68	6.67	.65	1.38	.48	6.50	.84	6.22	2.56
HOVEL	4.18	1.66	5.02	1.60	5.50	1.16	2.72	1.14	5.03	1.73
HYENA	5.06	1.65	6.17	1.34	4.27	1.12	2.30	.60	4.63	2.11
IDLER	3.32	1.71	3.88	1.78	5.27	1.14	2.42	1.05	2.55	1.60
INDEX	4.28	1.97	4.82	1.56	4.75	.86	4.65	1.42	5.19	1.76
INPUT	2.60	1.71	2.85	1.85	5.77	.99	3.65	1.53	4.10	1.75
JUDGE	4.98	1.35	5.30	2.12	3.85	.94	4.47	1.18	6.17	1.82
JUICE	5.46	1.37	5.95	1.43	1.95	.71	5.17	1.22	5.00	1.98
JOINT	5.80	1.77	5.17	1.30	4.05	1.12	4.45	1.36	5.50	1.57
KNAVE	4.54	1.68	4.70	1.72	3.92	1.62	2.22	.52	4.11	1.69
KNIFE	6.28	1.02	6.57	.83	1.90	.58	6.52	.92	6.00	1.82
LARCH	4.16	1.86	5.82	1.61	4.27	1.14	2.90	1.36	3.80	2.23
LIGHT	5.42	1.73	4.80	1.54	1.90	.49	6.38	.99	6.76	1.83
LIMBO	3.66	1.97	2.77	1.93	5.85	1.22	2.17	1.02	3.86	2.12
LOGIC	1.90	1.33	2.13	1.23	6.13	.87	4.52	1.41	4.00	1.34
LOVER	5.44	1.59	5.40	1.53	5.05	1.28	4.85	1.37	4.05	1.80

WORD	I		C		A		F		m	
	M	SD	M	SD	M	SD	M	SD	M	SD
LUNCH	5.40	1.26	5.80	1.23	2.38	.83	6.55	.84	6.86	2.36
LYRIC	3.48	1.88	4.72	1.60	5.90	.73	4.38	1.44	4.90	1.55
MAJOR	4.32	1.86	5.17	1.74	3.88	1.12	4.05	1.58	5.69	1.68
MAKER	2.38	1.60	4.30	1.72	3.05	1.14	3.97	1.33	4.55	1.72
MATCH	6.00	1.25	6.13	1.17	2.50	.81	5.55	1.16	5.90	2.51
MEDAL	5.34	1.34	6.00	1.48	3.35	.76	3.82	1.46	5.45	2.36
MERCY	2.58	1.56	2.07	1.21	4.10	.94	3.67	1.19	3.17	2.13
MIDGE	4.60	1.72	5.88	1.58	3.25	1.09	2.85	1.33	4.95	2.16
MINCE	6.08	1.04	6.05	1.32	2.27	.63	4.50	1.53	4.85	1.68
MINER	5.68	1.21	4.07	1.42	3.47	1.00	3.92	1.46	6.65	2.01
MIRTH	3.84	2.02	3.22	1.77	5.00	1.00	3.02	1.13	4.72	2.13
MIXER	5.32	1.76	5.35	1.68	3.20	1.03	3.70	1.42	3.93	1.68
MONTH	3.12	1.90	3.97	1.99	2.50	.74	5.85	1.06	5.70	2.78
MOUTH	6.38	1.07	6.38	1.07	1.40	.49	6.15	1.04	6.29	1.75
NYMPH	4.00	1.74	3.70	1.58	5.13	1.36	2.38	.91	5.25	1.44
ODIUM	1.34	.89	2.50	1.53	6.90	.30	1.52	.71	.44	.87
OPERA	5.54	1.47	5.63	1.22	4.45	.97	3.52	1.38	4.59	2.15
OPIUM	3.10	1.84	5.32	1.62	6.35	.73	2.65	1.17	4.62	1.97
ORBIT	4.40	1.80	3.92	1.63	4.70	1.10	3.47	1.45	5.40	1.85
OUNCE	2.96	1.93	4.67	1.72	3.47	.81	4.10	1.50	5.60	2.50
OVARY	4.20	2.03	5.42	1.74	6.40	.73	2.70	1.14	3.93	2.00
PANIC	3.98	1.58	3.10	1.59	4.13	.98	4.40	1.45	5.35	1.62
PERCH	5.34	1.62	5.63	1.51	3.45	1.02	3.10	1.28	5.55	1.28
PILOT	5.72	1.31	6.45	1.02	2.92	.79	3.60	1.37	5.15	1.82
PITCH	5.30	1.63	5.25	1.41	3.85	1.24	4.60	1.26	6.05	1.80
PIVOT	3.74	1.79	4.57	1.82	5.45	1.12	3.00	1.30	7.31	2.37
PLANK	5.78	1.33	6.42	1.05	2.57	.63	4.50	1.52	4.65	1.85
PLANT	5.88	1.26	6.22	1.23	2.22	.61	5.25	1.22	5.62	2.25
PLUCK	2.98	1.73	3.65	1.89	4.35	1.22	3.07	1.08	4.33	1.81
PLUME	5.36	1.38	5.55	1.55	4.77	1.11	2.57	1.02	4.90	1.77
PORCH	5.46	1.42	4.07	1.23	2.97	1.13	3.50	1.12	4.78	1.64
PRANK	3.04	1.67	3.32	1.47	4.00	1.10	3.52	1.38	5.55	1.63
PRAWN	5.48	1.57	6.15	1.35	4.80	1.12	3.22	1.33	5.34	2.32
PRIZE	4.98	1.52	5.55	1.24	2.32	.47	4.55	1.45	4.40	1.32
PRUNE	5.48	1.79	6.13	1.42	2.70	.78	3.05	1.26	4.90	1.66
PYLON	5.86	1.27	6.38	1.04	3.95	.89	3.57	1.28	5.60	1.74
QUERY	2.16	1.51	3.00	1.66	5.17	.95	3.82	1.36	3.52	1.53
QUILT	5.90	.98	6.10	1.14	2.88	1.31	4.63	1.43	5.37	2.33
RANCH	5.14	1.36	5.75	1.53	3.57	1.07	2.65	.85	5.15	1.82
RHYME	3.38	2.01	3.97	1.81	2.57	1.00	4.02	1.27	3.72	1.82
RIVET	4.00	1.84	5.72	1.63	5.30	1.19	2.92	1.29	5.40	2.01
ROWER	4.76	1.54	5.50	1.66	4.38	1.13	2.42	1.12	4.25	1.89
RUGBY	5.98	1.19	5.65	1.49	3.97	1.17	3.90	1.22	6.56	2.04
SCARF	6.14	1.18	6.35	1.17	2.10	.58	5.47	1.18	4.65	1.49
SCOUT	5.50	1.57	5.88	1.19	3.27	.63	3.50	1.34	5.00	1.69
SCRUM	5.58	1.40	5.15	1.90	5.00	1.10	3.15	1.11	4.41	2.03
SCYTH	5.62	1.28	6.15	1.15	3.92	.98	2.67	1.25	5.71	1.64
SHAWL	6.06	1.17	6.35	1.13	3.63	1.02	3.40	1.26	4.85	1.65
SNACK	5.60	1.37	5.75	1.24	3.38	1.07	5.88	1.12	4.85	1.98
SQUIB	4.54	2.05	5.02	1.81	3.80	1.17	2.70	1.08	3.79	2.28
STYLE	3.24	2.01	3.20	1.81	4.20	.98	4.88	1.29	4.31	1.53
TEMPO	3.00	1.89	3.25	1.67	5.52	1.07	3.13	1.62	4.00	1.52
THIEF	4.86	1.82	5.70	1.47	2.85	.79	4.50	1.41	6.14	1.96
THUMB	6.32	1.19	6.50	.95	1.63	.70	5.45	1.40	5.20	1.57
TOKEN	3.84	1.82	4.82	1.77	4.45	.89	3.85	1.22	5.90	1.45
TRAMP	6.10	1.20	6.02	1.17	2.95	.67	3.85	1.31	5.38	2.04
TREND	2.64	1.83	2.55	1.26	5.52	1.16	4.40	1.30	5.45	1.50
TRICK	3.22	1.75	3.80	1.55	2.70	.60	4.55	1.30	3.76	1.28
TRUCK	5.94	1.14	6.47	.77	2.40	.99	4.55	1.53	4.90	2.52
TRUMP	3.36	1.77	4.25	1.62	5.20	1.23	2.92	1.31	4.14	2.82
TULIP	6.46	.88	6.42	1.22	2.70	.64	3.17	1.16	5.45	1.77
UNCLE	5.30	1.45	6.00	1.14	1.57	.49	4.80	1.60	4.97	2.13
UNITY	2.30	1.49	2.15	1.42	5.92	.88	3.70	1.36	3.45	1.94
VALET	4.46	1.81	5.40	1.64	5.50	1.05	2.02	.88	3.73	2.11
VAULT	4.38	1.56	4.97	1.82	4.95	.97	2.95	1.20	6.70	1.85
VENOM	3.44	1.95	4.32	1.86	5.00	1.18	2.60	.89	4.32	1.87
VICAR	6.10	1.02	6.22	1.27	3.97	1.15	3.07	1.15	5.00	1.57
VIPER	5.28	1.91	5.80	1.62	4.22	.96	2.25	.80	4.55	2.22
VIRUS	3.68	1.99	4.88	1.54	5.50	1.12	3.40	1.14	3.85	1.68
VISOR	4.78	1.72	5.90	1.39	4.77	1.37	2.55	1.22	4.05	2.20

WORD	I		C		A		F		m	
	M	SD	M	SD	M	SD	M	SD	M	SD
VISTA	2.96	2.17	3.50	1.80	6.22	1.03	1.88	.84	2.95	3.25
VIXEN	4.62	1.77	5.57	1.83	4.52	1.20	2.32	.75	4.75	2.00
VODKA	5.66	1.61	6.38	1.20	6.05	.74	4.47	1.69	5.59	2.15
WALTZ	5.04	1.59	6.38	1.20	3.90	.99	3.15	1.15	4.41	1.81
WATCH	6.34	1.27	4.77	1.56	2.40	.73	6.50	.87	6.48	1.69
WENCH	5.12	1.60	6.07	1.35	5.92	.88	2.75	1.50	4.65	1.62
WHARF	4.82	1.62	5.67	1.52	5.32	1.23	2.27	1.05	6.32	2.51
WHEAT	5.64	1.34	5.57	1.61	3.25	.92	3.82	1.36	5.03	1.38
WIDTH	3.60	1.85	6.32	.93	3.40	.89	5.00	1.24	5.38	1.79
WITCH	6.08	1.29	3.95	1.64	2.25	.62	3.17	1.18	6.76	1.94
WOMAN	6.42	.96	4.52	2.00	2.07	.79	6.67	.57	5.45	1.97
WORLD	5.40	1.60	6.52	1.00	2.40	.77	6.05	1.00	5.41	2.27
WOUND	5.38	1.60	5.05	1.86	3.42	.86	3.85	1.30	5.85	1.46
WRECK	5.90	1.06	5.55	1.26	3.07	.75	3.95	1.47	4.80	1.54
YOUTH	5.16	1.83	5.30	1.50	4.07	1.01	5.15	1.31	4.45	1.72