

An Empirical Thesaurus:
Meaning Norms for 54 Grade-School Words
Complete Tables
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ABSTRACT

An empirical thesaurus of meanings and meaning frequencies for a list of 54 gradeschool English words drawn from the Toglia, Battig, et al (1978) normative lists, was compiled. It contained 27 words which are difficult for Asian immigrants to learn and 27 comparison words. It was expected that the difficult words would be more ambiguous than the 27 comparison words. This hypothesis was supported.

This technical report contains the complete method and tables referenced in the shorter paper by Desmond S. Cartwright and W.D. Brant, "An Empirical Thesaurus: Meaning Norms for 54 Grade-School Words", 1981, (in preparation for publication).

An Empirical Thesaurus:
Meaning Norms for 54 Grade-School Words

The demands of researchers concerned with linguistics and/or verbal behavior for information about the semantic properties of English words to be used in selecting or calibrating verbal materials has resulted in the publication of a wide variety of normative word lists. These lists present normative data on such semantic word properties as concreteness (Gorman, 1961; Paivio, Yuille, & Madigan, 1968; Spreen & Schulz, 1966; Toggia, Battig, 1978), imageability (Paivio, Yuille, & Madigan, 1968; Toggia, Battig, et al 1978), meaningfulness (Locascio & Ley, 1972; Noble, 1952; Paivio, Yuille, & Madigan, 1968; Spreen & Schulz, 1966; Toggia, Battig, et al 1978), frequency (Thorndike & Lorge, 1944), categorizability and categorization (Battig & Montague, 1969; Cohen, Bousfield, & Whitmarsh, 1957; Shapiro & Palermo, 1970; Toggia, Battig, et al, 1978), familiarity (Toggia, Battig, et al, 1978), number of features (Toggia & Battig, 1978), pleasantness (Toggia, Battig, et al, 1978), pronunciability (Spreen & Schulz, 1966), and associates (Battig, 1964; Palermo & Jenkins, 1964; Perfetti, Lindsey & Garson, 1971; Postman & Keppel, 1970).

Interestingly, there are no empirical norms available for word meanings, with the exception of those compiled by Cartwright and Nickerson (1979), presumably because researchers have relied

upon dictionary and thesaurus meanings when information is needed about this particular semantic attribute.

Reliance upon dictionary and thesaurus meanings is an unsatisfactory solution, however, because the meanings subjects actually give to a given word may or may not be similar to the dictionary list. Subjects may assign only some or even none of the dictionary meanings. Subjects may assign word meanings which would not ordinarily be listed in a dictionary or thesaurus, such as technical terms and colloquial expressions. The experimenter has no guarantee that subjects are responding to the meaning of the verbal stimulus that he thinks they are responding to even if the intended meaning is given by a dictionary. This problem is compounded by the fact that neither a dictionary nor a thesaurus gives any indication of the likelihood that any particular meaning will be the meaning responded to; the meanings in dictionaries and thesauruses are not arranged from most to least common or frequent, as is commonly supposed.

Complete tables of meaning norms (with total frequency of usage and also frequency of first response) have been prepared for 90 common words (Nickerson and Cartwright, 1979). These data enable the researcher to give an accurate answer to the questions: What different meanings does a given word have in a contemporary population, and what are the relative frequencies with which such meanings are assigned to that word? The

quantitative answers to these questions then enable researchers to select words for study which have desired characteristics such as a specified amount of empirically determined ambiguity.

This research has so far been completed for only 90 words. It was the purpose of the present proposal to continue the research with a further set of 54 words. In order that the selected words may have special relevance to the teaching of English as a second language to persons recently immigrated from Asia, 27 of the words selected for study were chosen by two teachers in relevant programs in the Boulder Valley Adult Education Program. Also 27 words were chosen by the present investigator as being less likely to have several different meanings. Thus the present set of 54 words is expected to vary in ambiguity, such that the more ambiguous words are more difficult for students to learn. The present study provides the basic data concerning the different meanings given to each of these 54 words. Words differing in level of measured ambiguity will be used in a subsequent study of progress among Asian immigrant students in learning English as a second language.

Dictionaries such as The Random House Dictionary do make an attempt to explore the widely varied meanings of a given word and to organize these meanings according to some estimate of relative frequency. However, it is clear that their efforts fall short. What are their sources for frequency data? Presumably they use written documents for evidence, as did

Thorndike and Lorge (1944) in their famous work. But we are not dealing here with mere frequency of usage of the target word; we are concerned with the frequencies of different meanings given the word. Short of actual empirical research on specified populations, any assignment of relative frequencies to different meanings must be at best educated guesswork. In this program of research it has become necessary to know the meanings given to each word by the college student population at Boulder, and also to know the relative frequency with which each meaning is assigned. Only then is it possible to calibrate such matters as the probability of a particular meaning's being assigned by a sample of respondents, or the degree of ambiguity that characterizes a particular word for this population. Part of the research has been focussed upon imagery as stimulated by English words and also on the concreteness of English words as rated by samples of college students. Normative data on these and other semantic dimensions of 2854 words have been published by Toggia, Battig, Barrow, Cartwright, Posnansky, Pellegrino, Moore, and Camilli (1978). These norms are constantly used by ourselves and others in the calibration of stimulus materials for experimental work. They are also being used by other researchers on other kinds of problems. Our recent work on meaning norms and ambiguity is of interest to teachers of English as a

second language (c.f. Cornu, 1979).

Method

Subjects

One hundred University of Colorado students enrolled in introductory psychology courses served as subjects in partial fulfillment of course requirements. All subjects spoke English as their native language.

Materials

The twenty-seven stimulus words for which meanings were to be obtained were selected by James and Mary Jenkins of Boulder, Colorado. These words seem to give special difficulty to their Asian immigrant students who are now learning English as a second language. Table 1 shows these 27 words along with 27 comparison words. Each of the latter has been paired with a particular word from the first set of 27 using: (1) location of the pair of words in the Graded Word Lists of the Reading Department, Denver School District; (2) Type Number of the two words in the Handbook of Semantic Word Norms (Toglia, Battig, et al., 1978). These type numbers refer to the type of words as empirically determined by object-cluster analysis. Each type contains words that are highly similar to each other in all of the seven semantic dimensions employed in the study. As far as possible words were also matched on the initial letter, word length, grammatical type, and number of syllables. The list of 54 words appears in Table 1 below.

Table 1

List of Words Used as Materials in this Study

<u>Graded Word List Location</u>	<u>Difficult Word for Asian Students</u>	<u>Semantic Type</u>	<u>Measured^d Initial Ambiguity</u>	<u>Comparison Word</u>	<u>Semantic Type</u>	<u>Measured Initial Ambiguity</u>
1	ABOUT	2 ^b	.48	AFTER	2	.61
	AROUND		.74	ALONG		.58
	AT ^a	2	.63	ANY	2	.82
	BOX	8	.40	BOY	8	.19
	BY	2	.78	BEFORE	2	.69
	HOLD	5	.51	GIVE	5	.36
	IN ^a	2	.71	INTO	2	.31
	ON ^a	2	.82	OTHER	2	.65
	PARK	8	.64	PENNY	8	.20
	PET	8	.39	PONY	8	.05
	RUN ^a		.64	READ		.31
	TO ^a	2	.84	THERE	2	.61
	TRAIN	8	.22	TOWN	8	.41
2	BACK ^a	6	.58	BIRTH ^c	6	.51
	BAT	7	.33	BOARD	7	.40
	BILL	7	.43	BONE	7	.16
	LIKE ^a	5	.25	LISTEN	5	.17
	PICK	6	.51	PATH ^c	6	.25
	RACE	6	.54	ROUTE ^c	6	.68
	ROCK	8	.41	ROOF	8	.08
	WATCH	6	.48	WEEK	6	.03
3	DUMB	4	.37	DEAD	4	.12
	POOL		.38	PORCH		.30

Table 1 (Cont.)

<u>Graded Word List Location</u>	<u>Difficult Word for Asian Students</u>	<u>Semantic Type</u>	<u>Measured^d Initial Ambiguity</u>	<u>Comparison Word</u>	<u>Semantic Type</u>	<u>Measured Initial Ambiguity</u>
	SHIP	8	.27	SHIRT	8	.00
	SOCK	7	.44	SNAKE	7	.11
	STRIKE		.51	SCATTER		.70
5	PUNCH	6	.36	PRAYER ^a	6	.16

^a Not actually found in graded word lists; but closely similar or related words were found, e.g., "running" is in the list although "run" is not.

^b These are the actual O-Type numbers found in the Handbook referred to in the text. Where no number appears the particular word was not included in the list of 2854 words studied.

^c The comparison word here was actually from the Grade 3 list. It was judged suitable to take a word from a higher grade as the comparison word, since it is probable that words from higher grade lists are more difficult. Thus any bias in later research would go against the hypothesis that words having greater ambiguity are the more difficult for second-language acquisition.

^d Values determined from results of this study as explained below.

Using a computer program each of the stimulus words was printed, centered and capitalized at the top of a single page. A test booklet consisted of the fifty-four stimulus word pages for a given word set, plus a cover sheet of instructions for the subject. The order of the stimulus word pages in each word booklet was randomized, also by computer, so that the stimulus words were presented in a different order to each subject.

Procedure

Subjects were run in small groups of ten to twenty. Test book-

lets were randomized before distribution.

INSTRUCTIONS

The purpose of this experiment is to find out what meanings people commonly give to various words. The procedure will be as follows: at the top of each page in this mimeographed booklet is typed a word. You will be given 30 seconds to write down on the page beneath the word as many different meanings of the word as occur to you, in whatever order they occur to you. For example, if the word is MARK, you might write down the meanings

a boy's name

to grade papers

a foreign coin

etc. Please write only one meaning per line as shown in the example. If the meaning you give is a verb, please write the word "to" in front of it, for example, for the word "RAISE" write:

to lift up

When the 30 seconds are up, the experimenter will request you to turn the page. You are to stop writing immediately and turn to the next page where there will be another word for which you are to write down meanings. This procedure will be repeated for a total of 54 words.

Should it happen that you are unable to read a word because

of its being too lightly printed, wait quietly until the 30 seconds for that word are up and then when the experimenter requests you to turn the page, turn the page and begin writing meanings for the next word.

Do not turn the page until told to do so.

The thirty-second intervals were timed with a standard stop watch.

Results

One hundred subjects listed meanings for the stimulus words. A single meaning listed by a subject for a stimulus word will hereafter be referred to as a meaning-response. The actual phrasing of a meaning-response is termed a meaning-expression. The difference between the terms meaning-response and meaning expression is rather subtle and is best illustrated by an example. If twelve subjects have written down "a scoundrel" for the stimulus word HEEL, there are twelve meaning-responses but only one meaning-expression. Within a single subject, however, a meaning-response is the meaning-expression of that response; listing "a scoundrel" in response to HEEL is both that subject's meaning-response and his meaning-expression of that response. The legible meaning-expressions given by subjects to any particular stimulus word were categorized as 1) MEANINGS, 2) CONFUSIONS, 3) MISTAKES, 4) ASSOCIATES, or 5) BLANKS.

MEANINGS

If a meaning-expression listed by a subject as his meaning-response to a given stimulus word could be found in a dictionary, thesaurus, slang dictionary, technical reference, foreign language dictionary, or other published reference work, or was recognized as being a common usage of the stimulus word, it was accepted as a legitimate meaning of that word. Legitimate meanings included:

1. dictionary-type definitions

examples: LEAD - "The starring role
in a play"

MOLE - "a dark spot on
the skin"

2. synonyms

examples: BASIN - "a washbowl"

ANGER - "Wrath"

3. names of persons, or the meaning-expression
"a name"

examples: JOY - "a girl's name"

ARCH - "short for Archie"

4. geographical place names

examples: EMERALD - "a bay in North Lake
Tahoe"

PALM - "Palm Springs"

5. team names

examples: CARDINAL - "a football team"

BEAR - "a team name"

6. slang terms
examples: CRANK - "heroin"
 BEAR - "something that is hard
 to do"
7. definition by example
examples: AUTOMOBILE - "Chevy"
 DYNASTY - "Ming Dynasty"
8. metaphorical, poetic, or symbolic usage
examples: BEAR - "someone who is big"
 MOLE - "a person with small eyes"
 OLIVE - "a peace symbol"
9. the completion of a phrase in which the word is
often found
examples: CAPITAL - "capital punishment"
 CARDINAL - "cardinal sin"
10. commercial product names (including beverage
names), brand names, company names
examples: JOY - "a dishwashing liquid"
 ARROW - "a shirt company"
 PASSION - "a drink"
11. technical or specialized terms
examples: CAMEL - "a skiing or iceskating maneuver"
 FILE - "a deck of cards" (computer science
 term)
12. abbreviations
examples: MASS - "the abbreviation of Massachusetts"
 CUSTOM - "short for customers"

13. foreign words
examples: DROP - "licorice in Dutch"
 PARDON - "a French word"
14. parts of words
examples: IN - "a prefix"
 IN - "a reagent in chemistry"
 (a suffix)
15. interjections, exclamations, and expressions
examples: WELL - "expression"
 PARDON - "sorry"
 HAIL - "Southern pronunciation of
 'hell'"
16. references to games, groups, records, and songs
examples: ARROW - "a card game"
 CHANCE - "a card in Monopoly"
 DEVOTION - "a song by Earth, Wind & Fire"
17. names of flowers, trees, and plants
examples: PASSION - "a flower"
 COTTON - "a plant"
18. book titles and characters and places in books,
 in the movies or on television
examples: OLIVE - "Popeye's girl friend"
 EMERALD - "Emerald City (in The Wizard
 of Oz)"

Different meaning-expressions denoting the same underlying

idea were combined into a single meaning-class. Thus, the meaning-expressions "a fool", "a bad guy", "a cad", "a scoundrel", "a jerk", "a fink", "an undesirable character", and "a creep" for the stimulus word HEEL were combined into the same meaning-class. Any one meaning-class may be composed of meaning-expressions representing one or several of the different kinds of legitimate meanings listed above. Generally however a meaning-class contains meaning-expressions which belong to only one syntactical class, i.e., the meaning-expressions within a meaning-class will refer only to nouns or only to verbs, etc. The set of all meaning-classes for a stimulus word constitutes the MEANINGS category of the stimulus word.

Each table lists the MEANINGS meaning-classes for a stimulus word. The different meaning-expressions within a meaning class are separated by commas and are given exactly as the subjects wrote them, except that punctuation and spelling may have been changed to conform to ordinary English usage, an article "a", "an", or "the" may have been added to the meaning-expressions which refer to nouns, and meaning-expressions which are verbs or verb phrases are always given in the infinitive form. The meaning-expressions listed in a meaning-class are not exhaustive; there may be other meaning-expressions which belong to a meaning-class which are not listed. An effort was made to select the most frequent or most representative examples of the meaning-expressions included in a meaning-class, in order to prevent the repetition of meaning-expressions which are trivially different and to prevent the tables from becoming

impossibly long. The table also lists, for each meaning-class, the number of subjects listing as their meaning-response one or more of the meaning-expressions in that meaning-class (F) and the number of subjects who listed as their first meaning-response one of the meaning-expressions in that meaning-class (F(1st)).

CONFUSIONS

The second category of meaning-expressions listed in the tables is CONFUSIONS. A CONFUSION occurred when the subject mistook the spelling of the stimulus word to be that of another word, usually a word which has a similar or identical pronunciation. Thus, the meaning-expression "a milk bag" for UTTER is a CONFUSION for the word udder. Generally, a subject who had as one or more of his meaning-responses meaning-expressions which were CONFUSIONS listed the CONFUSIONS in addition to one or more meaning-responses which were MEANINGS meaning-expressions. CONFUSIONS meaning-expressions were grouped into meaning-classes and tabulated in the same way as MEANINGS meaning-expressions, and the interpretation of F and F(1st) is the same for CONFUSIONS meaning-classes as it is for MEANINGS meaning-classes.

MISTAKES

MISTAKES occurred when the subject misread the stimulus word as a completely different word and listed meanings-responses for that word rather than for the stimulus word. For example, one subject misread BONE as BONN and listed a German city as the meaning-response; three subjects misread TO as T00 and listed meaning-responses of ALS0. By definition, subjects whose meaning-

responses were classified as MISTAKES meaning-expressions never listed as meaning-responses meaning-expressions which could be MEANINGS or CONFUSIONS meaning-expressions for the stimulus word. The meaning-expressions for MISTAKES were not grouped into meaning-classes as were the meaning-expressions for MEANINGS and CONFUSIONS. Instead, an entry in the table merely states the fact that the stimulus word was mistaken to be some other word, specifies what that word was, and gives the number of subjects (F) who misread the stimulus word to be that other word. F(1st) has the same interpretation as F for MISTAKES.

ASSOCIATES

An ASSOCIATE occurred when a meaning-expression could not be classified as a MEANING, a CONFUSION, or a MISTAKE. This meaning-expression was usually a word or a phrase related to the stimulus word but not a meaning of it. Thus, "contact lense" was an ASSOCIATE of VISION and "chipped" was an ASSOCIATE of BASIN. ASSOCIATES were deleted from the analysis and are not listed in the tables.

BLANKS

The fifth category, BLANKS, occurred 1) when a subject listed no meaning-responses to a stimulus word, 2) when a subject listed no meaning-responses which could be classified as MEANINGS, CONFUSIONS, or MISTAKES meaning-expressions - i.e., he listed only ASSOCIATES, or 3) when a word page was inadvertently omitted or was otherwise

missing from a subject's word set. F indicates the number of subjects whose word page for a stimulus word was BLANK. $F(1st)$ has the same interpretation as F for BLANKS.

The MEANINGS, CONFUSIONS, RESULTS, MISTAKES, and BLANKS for each stimulus word are listed in a separate table. The tables for the stimulus words are arranged in the order shown in Table 1, with the "difficult" list first. Each table indicates the number of subjects ($n = 100$) listing meaning-responses for that stimulus word. As mentioned above, the meaning-expressions in the meaning-classes for MEANINGS and CONFUSIONS are given exactly as written by subjects. Any comments or clarifications by the authors are enclosed in parentheses. Some of the more common clarifications occur:

1. when it is unclear whether the meaning-expressions in a MEANINGS or CONFUSIONS meaning-class refer to the noun form or to the verb form of a stimulus word which can be interpreted as either a noun or a verb
example: ARCH - "to bend, to curve"
- "a bend, a curve"
- "bend, curve (noun or verb unspecified) "
 2. when the meaning-expressions in a MEANINGS or CONFUSIONS meaning-class for a stimulus word which is an emotion do not specify the exact nature of the emotion but merely state "an emotion", or "a feeling"
example: ANGER - "madness, being mad, ire, wrath, fury, hostility"
- "an emotion (unspecified) "
 3. when it may not be immediately apparent that the meaning-expressions in a MEANINGS or CONFUSIONS meaning-class refer to a slang usage of the stimulus word
example: CRANK - "speed, heroin (slang) "
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4. when the underlying denotation of a MEANINGS or CONFUSIONS meaning-class may not be immediately obvious.

example: ANXIETY - "nervousness, uneasiness, fear, apprehension,
tenseness, uptightness, worried anticipation,
(a negative emotion)"

- "anticipation, expectancy, anxiousness (a neutral
emotion)"

- "eagerness, longing, hopefulness (a positive emotion)"

5. when a MEANINGS or CONFUSIONS meaning-class consists of many meaning-expressions which are definitions by example

example: CAR - "an automobile, a vehicle, an auto, a motor vehicle
(and any specified make of car)"

6. as explanation of CONFUSIONS

example: THREAD - "a tire surface (confusion with tread)"

7. as explanations of MISTAKES

example: SOUL - " (word mistaken as sour)"

Within a category, the MEANINGS meaning-classes, CONFUSIONS meaning-classes, or MISTAKES explanations are ordered from most frequently to least frequently occurring meaning-classes or explanations, that is, from highest to lowest F . If the F_s for two (or more) meaning-classes are equal, the meaning-classes are listed in order from highest to lowest $F(1st)$.

When the number of BLANKS for a stimulus word exceeds five, an explanation is given in a footnote to the table of that stimulus word.

ANALYSES

A measure of initial ambiguity (A) was obtained as follows for each word:

$$A = 1 - \frac{F(1st)q}{100}$$

where F(1st)q is the greatest frequency for a single meaning-class. Thus, since the greatest frequency in F(1st) for the word ABOUT is 42, the A-value for that word is:

$$1 - \frac{42}{100} = .58$$

A sign test was used to determine whether there was a significant difference between the ambiguity values of the words in the target set and those of the comparison list. Results showed a significant difference in the direction of the target words being more ambiguous than those in the comparison list, where $Z = 2.69$, 27 df, $p < .01$.

Kruskal-Wallis tests were run on both the target set of words and the comparison list to determine whether there were significant differences between the semantic types (2, 4, 5, 6, 7, and 8) within each list. Results indicated there were significant differences, where $H = 12.05$, $p < .05$ for the target list and $H = 10.50$, $p < .05$ for the comparison set, with ties corrected for in each case.

SUMMARY AND CONCLUSIONS

An empirical thesaurus has been developed for 54 grade-school words. Half were words found difficult for Asian students to learn. It was expected that these difficult words would prove to be more ambiguous than a comparison list. This expectation was supported by the results of an analysis comparing the measured ambiguity of the difficult and comparison lists. It was also shown that words of different semantic 0-type also differ in measured ambiguity.

The present results add to a body of knowledge about empirically determined meanings of English words.

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ABOUT

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
relating to, referring to, pertaining to concerned with	60	42
approximating, to be around, to be near to turn (about face)	42	34
not quite, almost but not quite	12	5
up and around	6	3
subject	3	2
with	3	1
description of	1	0
exterior	1	1
an adverb	1	0
all over (e.g. scattered about)	1	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	10	10

AROUND

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to circle, encircle	30	26
to be near or in the vicinity	25	11
circumnavigate, go around	23	16
surround, encompass	19	11
about	16	13
circular	9	6
approximate	7	0
circumvent	7	4
go about	6	3
direction	3	0
hereabout	2	1
preposition	2	1
perimeter	2	0
covering	1	0
reference to time	1	0
goof around	1	1
be with (be around)	1	0
hang around	1	0
CONFUSIONS		
a round (part of boxing match)	1	0
MISTAKES	0	0
BLANKS	7	7

AT
n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to be there, to be somewhere, place of being	41	37
locative, location	19	11
where something is placed	12	10
in a certain place or time	7	6
"where it's at", "where you've at"	6	2
preposition	5	5
where	5	5
toward	3	1
in	2	2
to	2	1
when something occurs	2	0
direction	2	1
up to something	1	1
here	1	1
moment	1	0
CONFUSION	0	0
MISTAKES	0	0
BLANKS	17	17

BOX

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
carton, container, cardboard or wooden container, crate	89	60
to fight, to hit, to spar	61	23
square object	18	13
to trap, to box in	9	0
to pack, to pack in a container	8	1
slang for woman's sex organs, a woman's genitals	6	1
a cube		
to enclose		
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	1	1

BY

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
beside, next to	38	22
denotes authorship or credit	29	21
be in vicinity, be near	20	15
go past, pass up	14	7
preposition	7	6
"by the way"	4	2
via	4	3
direction	3	0
deadline	2	1
close	2	0
around	2	0
CONFUSIONS		
greeting	13	10
MISTAKES	0	0
BLANKS	13	13



HOLD

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to grab onto, to grip, to clasp	59	49
to restrain	21	9
hang onto something, cradle something in your arms	20	13
to have, to possess	16	11
to embrace	13	8
keep someone on phone	12	1
ship's cargo storage	11	1
to keep	7	3
to wait	6	0
set aside a purchase, to stand on	3	0
to have attention of	3	1
wrestling move	2	1
cherish	2	0
type of, brand of hairspray	2	0
to contain	2	1
to back off	1	0
to rob (hold up)	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	2	2

IN

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
inside	33	29
in style, chic, to be hip or cool	25	9
opposite of out	18	11
to enter	11	7
enclosed	10	4
within	8	7
preposition	6	5
direction (in that direction)	5	4
location	4	2
place to be	4	1
contained by	3	2
to be involved in	2	1
to get in	2	1
come in	1	0
CONFUSIONS		
bar, hotel (inn)	2	1
MISTAKES	0	0
BLANKS	16	16

ON

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
not off, opposite of off	27	18
in operation	19	12
to be on top of something	19	15
above	16	12
to turn something on, activate something	12	8
to turn on (take drugs)	11	4
to sit or be on something, to sit upon	14	8
to put on, jive	10	9
preposition, location	7	3
working	4	1
to continue, go on	4	2
sexually excite (turn on)	3	0
right on!	3	2
get on, board	3	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	5	5

PARK

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
stop or place a car	75	35
place to play, recreation place	54	36
garden, green place, wooded area in city	43	23
to place an object	5	4
last name, street name	4	0
to "park" and make out	4	1
to sit	3	0
a car gear	2	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	1	1

PET

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
animal, domestic animal	92	61
to stroke, pet, caress	56	27
sexual response	14	6
a favorite	11	3
favored child of a teacher's	10	2
nickname	6	1
loved one	5	0
brand of milk (Pet milk)	4	0
pet peeve	2	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

RUN

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to walk fast	41	36
go, move fast, quickly	38	32
a tear in stocking or hose	19	2
physical activity with legs	15	11
to operate something, operate a machine	14	0
to jog	9	6
to be in charge	8	1
to be in an election (run for office)	8	3
to hurry	5	3
be in a race	4	3
water run, flow	3	1
computer job	2	1
bleed colors	2	0
compete	2	0
salmon run	2	0
period of time (run of luck)	2	0
diarrhea	1	0
ski slope	1	0
a score in baseball	1	0
hit and run play in baseball	1	0
home run in baseball	1	0
make a trip	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	1	1



T0

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
direction, where one is going	18	14
preposition	16	16
action word	13	12
move or go towards	9	8
concerning or addressing	8	6
preface to verb	8	8
at	5	4
going somewhere	3	3
for	2	1
leading to	1	1
in order to	1	0
so that	1	0
join	1	1
CONFUSIONS	0	0
MISTAKES		
also (too)	2	1
BLANKS	25	25



TRAIN

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
rail transportation, locomotive, mode of transportation	94	78
to teach, instruct, educate	42	15
to fall behind (as in wedding dress)	13	0
to learn or develop skills	8	1
to condition	8	2
trail of thought	7	0
a sexual act with one woman and several men	6	2
trail behind	3	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	2	2



BACK

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
backside, rear part of body or anatomy	64	42
go backwards, move in reverse, retreat, move to rear	39	15
opposite of front	23	19
behind	22	13
to return, come back	14	2
to support	10	0
the rear or end	4	4
long ago, past	2	1
opposite of forward	1	1
to back someone into a corner	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	3	3

BAT

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
flying rat, rodent, animal mammal	93	67
a club, wooden object for baseball	71	30
to hit or swing at a ball (in baseball)	59	3
wink eye (bat an eye)	6	0
old crank	2	0
up at bat in baseball	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

BILL

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
man's name, boy's name, name	86	57
amount one owes, payment due, bill tab, invoice for money owed, debt	66	25
to charge someone, to send out an invoice	27	6
currency, money	27	6
bird's beak, duck's bill	25	5
a law, legislative act	6	0
bill for an item (grocery receipt, store receipt)	4	1
clean bill of health	1	0
front of cap or hat	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0



LIKE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
affection for, admire, fond of	86	75
similar to	51	20
enjoy	15	1
same	9	2
as	5	0
resembles	3	1
comparison	3	0
for instance	1	0
pleased with	1	0
for instance	1	0
CONFUSIONS	0	0
MISTAKES		
formation (line)	1	1
BLANKS	0	0



PICK

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to choose, to select	74	49
a tool (mining pick, ice pick)	37	17
to gather from a tree	18	11
to poke at	13	2
object for a guitar	11	9
to pick on someone	10	0
to pick a guitar	9	1
lift up	8	3
selection, choice	6	1
toothpick	6	1
to take apart	5	3
to pull at	4	0
to pluck	3	1
to clean (pick up room)	2	1
to be picky	2	0
to sort about	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	1	1

RACE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
a contest, a sport, a competition, running race	75	46
skin color, ethnicity, nationality, ethnic group	54	26
to compete against	23	15
to speed, hurry	20	6
to run against	6	5
election	4	0
to drive motor in neutral	3	0
street name	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	2	2

ROCK

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
hard mineral substance, stone, boulder, pebble	94	59
type of music, rock 'n roll	59	27
to sway, shake, to move back and forth	51	9
solid	9	1
a dance (rock out)	3	1
slang for diamond	2	1
to groove	2	1
name	1	0
to tip over	1	0
CONFUSIONS	0	0
MISTAKES		
missile (rocket)	1	0
BLANKS	1	1

WATCH

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to observe, watch closely, view, look at	86	52
timepiece, wrist clock	89	47
to look out for	8	1
to guard	6	0
guard shift	6	0
to concentrate on	5	0
to protect	2	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

DUMB

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
stupid, not smart, not bright, unintelligent	89	63
can't talk, can't speak	62	25
ignorant	15	7
idiotic	6	3
slow	3	0
retarded	2	0
uncoordinated, awkward	2	0
handicapped	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	2	2

POOL

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
swimming place	63	42
body of water, pond	42	29
a game, billiards	38	13
to collect, put together	21	6
carpool	19	6
a collection of something	12	2
contest pool	7	0
gambling group	6	1
group of people	5	1
gathering	5	0
to share	4	0
puddle	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

SHIP

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
boat, water transportation, sea-going vessel	99	73
to send	46	15
to mail, deliver UPS	16	5
to transport	11	7
to ship out (leave)	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

SOCK

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
stockings, foot clothing	96	56
to hit, to punch	77	34
a punch, a blow	12	10
wind direction device	3	0
a hit	1	0
a noise	1	0
sock hop dance	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

STRIKE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to hit	86	49
to protest not to work, refusal to work, union boycott	61	23
swing and miss a ball in baseball	36	15
in bowling, knocking down all the pins	14	4
a pitch in baseball	10	5
to light a match	7	3
rebellion	3	0
strike force	3	0
clock movement	2	0
cigarette brand	1	0
get rich	1	0
snake's attack	1	0
action which counts against you	1	1
to score against	1	0
to slap	1	0
to swing at	1	0
to cross out	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

PUNCH

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to hit, to sock	95	64
juice drink, red drink, party drink	82	32
puppet's name (Punch and Judy)	16	0
a paper punch, tool for hole-punching paper	7	1
to remove paper hole, to punch hole in paper	6	1
punch line of joke	5	1
British magazine	3	0
forceful idea	3	0
to be quick	2	0
punch bowl	2	0
"punchy"	1	0
cast iron	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	1	1

AFTER

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
later than, later, to occur later	45	39
following, subsequent to, what follows	20	13
not before, opposite of after	18	18
to chase or go after	10	4
post	9	3
behind	8	9
afterwards	6	5
time reference	5	3
past	5	1
beyond	3	1
CONFUSIONS		
rear of ship (aft)	1	0
MISTAKES	0	0
BLANKS	4	4

ALONG
n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
come with, go with, be with, with, come along	56	42
next to, beside, beside something	35	25
comply, agree with, go along with	17	11
together with	8	4
move along	6	5
stroll down a path	6	3
follow along	4	2
a location	3	2
during	3	1
preposition	2	2
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	3	3

ANY

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
either one, one of many	21	18
some	18	18
quantifier, a number of	17	15
free choice, choice	13	11
no particular or specific one	11	10
variety	7	6
anything	5	5
amount, amount of	5	5
whatever	3	2
whichever	2	1
random selection	1	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	8	8

BOY

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
small man, young man, little guy, young male child	87	81
word of exclamation (oh boy!)	27	3
male gender, male sex	18	11
derogatory word for blacks, servants	10	1
opposite of girl	7	4
youth	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

BEFORE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
pre, preceding	43	31
antecedent to, prior to	25	19
in front of, anterior to	23	12
opposite of after	16	11
previous	13	10
comes first	10	6
ahead of	4	1
preposition denoting time	2	2
earlier	2	2
beginning	1	0
until	1	0
introduction	1	1
not later	1	1
above	1	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	3	3



GIVE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to hand something over, to relinquish to hand over	65	64
donate	18	16
give a gift	8	6
to share	5	4
to give way (fall apart)	4	1
to pass	3	1
give a little	2	0
to convey	2	1
opposite of receive	2	1
give thanks	2	0
demand (give!)	1	1
give and take	1	0
contribute	1	0
yield	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	5	5

INTO

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
go within, go inside, enter	74	69
to be involved in, interested in	26	10
transformation, change	6	3
through	5	4
preposition	4	4
direction	4	2
location	1	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	7	7

OTHER

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
additional choice, something else	45	35
different	19	15
not that one	17	12
the rest, all else	8	8
opposite	5	3
aside from, besides	5	4
one of a pair	4	3
either	2	0
comparison word	2	1
female sex, other sex	2	0
alien	1	0
variety	1	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	18	18



PENNY

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
one cent, coin, money	98	80
dog's name, woman's name, girl's name, name	65	19
way to compare (measure) nails by length	4	0
blouse for sports	1	0
bid for sports	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	1	1

PONY

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
small horse	99	95
hair style	16	2
small keg	9	1
dance	7	0
glass for cocktails	3	0
baseball league	2	0
cheater's notes	2	0
derogatory term for woman	2	0
car model	2	0
small (adjective)	2	0
pony express	1	0
type of tennis shoe	1	1
corporation	1	0
CONFUSIONS	0	0
MEANINGS	0	0
BLANKS	1	1

READ

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to understand and comprehend words and sentences, to perceive words and sentences	73	69
to read a book	23	12
to understand	12	8
to have read	11	1
visually scan	7	1
to have understood	6	1
to look at	3	2
to obtain information	2	1
a name	2	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	4	4

THERE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
a place, at a certain place	42	39
not here	34	26
a location	14	11
direction	7	4
over there	4	4
away from	4	3
a demonstrative	3	2
position	2	1
"there, there"	2	0
beyond	1	1
present	1	1
at	1	0
CONFUSIONS	0	0
MISTAKES		
number between 2 and 4 (three)	1	1
BLANKS	7	7

TOWN

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
city, small city	67	59
place where people live	25	20
community	17	6
settlement	12	7
village	10	6
the center	5	1
"uptown"	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	1	1

BIRTH

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
when one comes to life, is born, to be born, delivery of a baby	74	49
first stage of life	23	21
the beginning of anything	20	9
to give birth, have a child	15	10
newborn	2	2
innovation, creation	3	3
arrival	1	1
CONFUSIONS		
place for ship (confused with "berth")	6	1
MISTAKES	0	0
BLANKS	4	4

BOARD

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
flat wood, wooden plank, pieces of wood	86	60
group of people, panel or board of people	27	10
blackboard, thing to write on	26	8
to get on, to get inside, to board a plane, to board a ship	19	9
food, subsistence	15	5
gameboard	3	2
surfboard	2	1
boardroom	1	0
CONFUSIONS		
(bored)	12	4
MISTAKES	0	0
BLANKS	1	1

BONE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
part of anatomy, skeletal structure, skeletal system	94	84
dog bone, something a dog chews	16	5
dispute, bone to pick	12	3
color (bone white)	7	1
slang for marijuana cigarette	5	1
to bone up on (sharpen up, study up)	8	3
skinny	2	0
slang meaning for intercourse	2	0
bone dry, dry	2	1
to fillet	1	0
CONFUSIONS	0	0
MISTAKES		
(Bonn, city in Germany)	1	1
BLANKS	1	1

LISTEN

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to hear	88	83
to concentrate, be attentive, pay attention to	33	11
command to be quiet (listen!)	10	4
to understand	5	1
to perceive	4	1
be aware	4	0
heed	1	0
obey	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0



PATH

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
trail, well-traveled road, walkway	85	75
course, way, route	44	21
method, way to go	13	4
make a way	2	0
circuit path	1	0
pathway of life	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0



ROUTE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
way to go, direction of travel	43	32
highway, trail, road	43	26
path, pathway	22	17
directions on map	16	5
method, way to do something	12	7
paper route	9	3
course	5	3
box or route #	5	3
to send	4	0
to direct	3	1
to make a map	3	1
to detour (re-route)	3	0
means	2	1
CONFUSIONS		
to arouse from sleep	3	0
to ferret out	1	0
to dig out	1	0
MISTAKES	0	0
BLANKS	1	1

ROOF

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
covering of, or top of house or building	95	92
top of mouth	19	1
to apply shingles (to roof)	16	1
top of anything	7	3
ceiling	4	3
to put a top on something	3	0
upper limit	1	0
top of car	1	0
CONFUSIONS		
dog's noise (ruff)	11	0
MISTAKES	0	0
BLANKS	0	0



WEEK

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
Sunday through Saturday, 7-days, section of time, section of month	100	97
CONFUSIONS		
lacking in strength (weak)	7	3
MISTAKES	0	0
BLANKS	0	0



DEAD

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
not living, deceased, without life, lifeless, not alive	90	88
defunct, out of use	16	6
a rock group (Grateful Dead)	13	4
tired	12	1
boring	7	1
out of style	3	0
dead-end street	2	0
limp	2	0
nothing happening	2	0
dead of night	1	0
depressed	1	0
"you're dead" (meaning in trouble)	1	0
the end	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0



PORCH

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
open, outside front part of house or building, where people sit	72	70
outdoor patio	10	8
a stoop, a veranda	8	8
lanai, deck	5	3
balcony	2	1
portico	2	2
swingset	2	1
gazebo	1	1
CONFUSIONS		
a car (Porsche)	2	2
MISTAKES		
doggy (pooch)	1	1
BLANKS	3	3

SHIRT

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
Garment, blouse, clothing that covers torso, clothing, apparel	100	100
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0

SNAKE

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
reptile, animal	99	89
sneaky or devious person	22	4
to twist and wind	18	2
to move silently	14	3
plumbing tool	8	1
a dance	3	0
nickname	2	0
to swindle or rip off	2	0
to get something	2	0
fireworks	1	0
in dice - snake eyes	1	1
river name (Snake R.)	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0



SCATTER

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
to spread, to spread out	36	30
to throw around	25	22
to disperse	22	18
asunder	10	7
loose minded, scatter brain	8	3
to scramble	8	4
to run in all directions	8	2
to mess up	6	3
to separate	6	2
to go in all directions	5	2
to move away	4	1
to flee	3	0
strewn about	3	3
type of diagram or plot	2	0
type of rug	2	0
to diversify	2	1
type of fire (gunfire)	2	1
leave quickly	2	1
toss lightly	1	0
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	0	0



PRAYER

n=100

	<u>F</u>	<u>F(1st)</u>
MEANINGS		
religious talk with God, sacred words	85	84
a chance (doesn't have a prayer)	8	2
plea	6	3
give thanks	4	2
person who prays	3	1
asking for something, making a request	3	3
message	3	1
wish	3	0
to praise (God)	1	1
CONFUSIONS	0	0
MISTAKES	0	0
BLANKS	3	3